

Title 7: Education K-12  
Part 57: Health Science – Career Pathway –  
Health Sciences



## 2014 Health Sciences (Core)

Mississippi Department of Education

Program CIP 51.00000 Health Services/Allied Health/Health Sciences, General

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Published by

Office of Career and Technical Education  
Mississippi Department of Education  
Jackson, MS 39205

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The Research and Curriculum Unit (RCU), located in Starkville, MS, as part of Mississippi State University, was established to foster educational enhancements and innovations. In keeping with the land grant mission of Mississippi State University, the RCU is dedicated to improving the quality of life for Mississippians. The RCU enhances intellectual and professional development of Mississippi students and educators while applying knowledge and educational research to the lives of the people of the state. The RCU works within the contexts of curriculum development and revision, research, assessment, professional development, and industrial training.

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# Acknowledgments

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The Health Sciences (Core) curriculum was presented to the Mississippi Board of Education on March 20, 2014. The following persons were serving on the state board at the time:

Dr. Carey M. Wright, State Superintendent of Education  
Dr. O. Wayne Gann, Chair  
Mr. Howell “Hal” N. Gage, Vice Chair  
Ms. Kami Bumgarner  
Mr. William Harold Jones  
Dr. John R. Kelly  
Mr. Charles McClelland  
Mr. Richard Morrison  
Mrs. Rosemary G. Aultman  
Mr. Simon F. Weir II

Jean Massey, Associate Superintendent of Education for the Office of Career and Technical Education, at the Mississippi Department of Education assembled a taskforce committee to provide input throughout the development of the *Health Sciences (Core) Curriculum Framework and Supporting Materials*.

Suzanne Tribble, PhD, Instructional Design Specialist for the Research and Curriculum Unit at Mississippi State University researched and authored this framework. [suzanne.tribble@rcu.msstate.edu](mailto:suzanne.tribble@rcu.msstate.edu)

Also, special thanks are extended to the teachers who contributed teaching and assessment materials that are included in the framework and supporting materials:

Lee Ann Rhaly, West Lauderdale High School, Collinsville, MS  
Karan Burns, Senatobia-Tate County Career Technical Center, Coldwater, MS  
Naomi Jordan, Madison Career & Technical Center, Madison, MS  
Martha Stokes, Philadelphia-Neshoba County Career Technical Center, Philadelphia, MS  
Melissa Parker, Calhoun County Career and Technical Center, Calhoun City, MS  
Susan Siedell, Pascagoula Applied Technology Center, Pascagoula, MS  
Judy Dalgo, Ocean Springs Career and Technical Education Center, Ocean Springs, MS  
Sharon Murphey, Carl Keen Career and Technical Center, Clarksdale, MS  
Rae Hollingsworth, Forest-Scott County Career and Technical, Forest, MS  
Julie Owen, Clarke County Career and Technology Center, Quitman, MS  
Tammy Creel, McComb Business and Technology Complex, McComb, MS  
Brenda White, Simpson County Technical Center, Mendenhall, MS  
Mary Slaughter, Madison Career and Technical Center, Madison, MS  
Laura Fails, Lamar County Career and Technical Center, Purvis, MS  
Kay Berry, Simpson County Technical Center, Mendenhall, MS  
Judy Grice, Forrest County AHS, Brooklyn, MS  
Shelly Varnon, Pontotoc Ridge Career and Technology Center, Pontotoc MS  
Jeri Montgomery, Pontotoc Ridge Career and Technology Center, Pontotoc MS

Appreciation is expressed to the following professional who provided guidance and insight throughout the development process:

Pam Hindman, Program Coordinator, Office of Career and Technical Education and Workforce Development, Mississippi Department of Education, Jackson, MS [phindman@mde.k12.ms.us](mailto:phindman@mde.k12.ms.us)

# Standards

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Standards are superscripted in each unit and referenced in the appendices. Standards in the Health Sciences (Core) Curriculum Framework and supporting materials are based on the following:

## **National Healthcare Skill Standards**

The National Healthcare Skill Standards were developed by the National Consortium on Health Science Education (formerly the National Consortium on Health Science and Technology Education) and WestEd Regional Educational Laboratory West, in partnership with educators and health care employers. The standards were developed to inform current and future health care workers, employers, and educators on what skills and knowledge workers need to succeed.

## **Common Core State Standards Initiative**

The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy. Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved. States and territories of the United States as well as the District of Columbia that have adopted the Common Core State Standards in whole are exempt from this provision, and no attribution to the National Governors Association Center for Best Practices and Council of Chief State School Officers is required. Reprinted from <http://www.corestandards.org/>.

## **National Educational Technology Standards for Students**

Reprinted with permission from *National Educational Technology Standards for Students: Connecting Curriculum and Technology*, Copyright 2007, International Society for Technology in Education (ISTE), 800.336.5191 (U.S. and Canada) or 541.302.3777 (International), iste@iste.org, www.iste.org. All rights reserved. Permission does not constitute an endorsement by ISTE.

## **21st Century Skills and Information and Communication Technologies Literacy Standards**

In defining 21<sup>st</sup>-century learning, the Partnership for 21st Century Skills has embraced five content and skill areas that represent the essential knowledge for the 21st century: global awareness; civic engagement; financial, economic, and business literacy; learning skills that encompass problem-solving, critical-thinking, and self-directional skills; and information and communication technology (ICT) literacy.

## Preface

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Secondary career and technical education programs in Mississippi face many challenges resulting from sweeping educational reforms at the national and state levels. Schools and teachers are increasingly being held accountable for providing true learning activities to every student in the classroom. This accountability is measured through increased requirements for mastery and attainment of competency as documented through both formative and summative assessments.

The courses in this document reflect the statutory requirements as found in Section 37-3-49, *Mississippi Code of 1972*, as amended (Section 37-3-46). In addition, this curriculum reflects guidelines imposed by federal and state mandates (Laws, 1988, Ch. 487, §14; Laws, 1991, Ch. 423, §1; Laws, 1992, Ch. 519, §4 eff. from and after July 1, 1992; Carl D. Perkins Vocational Education Act IV, 2007; and No Child Left Behind Act of 2001).

# Mississippi Teacher Professional Resources

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The following are resources for Mississippi teachers.

Curriculum, Assessment, Professional Learning, and other program resources can be found at The Research and Curriculum Unit's website: <http://www.rcu.msstate.edu>

Learning Management System: An online resource

Learning Management System information can be found at the RCU's website, under Professional Learning.

Should you need additional instructions, please call 662.325.2510.

My PLC: An online registration for all professional-development sessions

To register for any session, teachers will need an account in the registration system, MyPLC, <https://myplc.rcu.msstate.edu>. To create an account, click on the link and navigate to the "Request a Guest ID" link. The ID should be the teacher's first initial and last name and the last four (4) digits of the social security number. Teachers should complete the entire form, which will then be sent to a secure server. Upon activation of the teacher's account, he or she will receive an e-mail with login instructions. The teacher may then browse for the available sessions and register for the desired courses.

Should you need additional instructions, please call 662.325.2510.

# Executive Summary

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## **Pathway Description**

Health Sciences (Core) is a pathway of courses for students in the Health Sciences career cluster.

The Health Sciences (Core) pathway includes classroom and hands-on experiences that will provide students with an overview of the health-care field, as outlined according to the Health Science Cluster in the National Career Clusters Framework and the National Consortium on Health Science Education (NCHSE), as well as begin to prepare students for careers in occupations predicted to have a high number of available jobs in the next 10 years, including careers in nursing services (registered nurse, nurse aide, practical nurse, home health aide), therapeutic services (sports medicine, athletic trainer, dietitian, respiratory therapy), diagnostic services (radiologist, phlebotomist, radiologic tech, sonographer, CT technology, medical lab technician), health informatics (health information technician, medical coder), veterinary services, medical services (optometrists, medical assistants), emergency services, rehabilitative services (physical therapy, occupational therapy, speech therapy) counselors, pharmacists, mental health services (psychologists).

Scheduling and operating more than one course in the same classroom/laboratory with the same teacher is not recommended. In order to enable the teacher to instruct students in skills on a 1 on 1 basis, the recommended class size is 12-15 students for the first 2 credits. For students taking the last 2 credits who are job shadowing, the recommended class size is 10 - 12 students. Please be aware that health care facilities often require a 10 to 1 student/teacher ratio in order to participate in job shadowing. Having a class that is too large decreases the quality experience that Health Sciences (Core) is meant to be for the student.



This program includes a minimum of 100 hours of clinical-type experience to be obtained by the program's completion. It is recommended to spread these hours out among the length of the program. This clinical-type experience can include: tours of health-care facilities, guest speakers, participation in health fairs or community service, laboratory practice, demonstration in the classroom, and observation or job shadowing experiences in medical facilities.

It is recommended that students complete Health Sciences (Core) with a grade of C or higher in classwork to advance to the next level.

### **Industry Certification**

By implementing the standards set forth in the Health Sciences (Core) pathway, students who successfully master the curriculum should have the necessary skills to be successful in a health science field. In addition, students whose programs meet additional criteria and approval by their respective agencies are prepared to complete the requirements and take a certification test.

### **Assessment**

The latest assessment blueprint for the curriculum can be found

at <http://www.rcu.msstate.edu/Curriculum/CurriculumDownload.aspx>

### **Student Prerequisites**

In order for students to be able to experience success in the Health Sciences (Core) pathway, the following prerequisites are suggested:

1. C or higher in English (the previous year)
2. C or higher in math (last course taken or the instructor can specify the math)
3. Instructor approval and a TABE Reading Score of eighth grade or higher
4. C or higher in biology (or the last science course taken as approved by instructor)

**or**

1. TABE Reading Score of eighth grade or higher
2. Instructor approval

**or**

1. Instructor approval

### **Academic Credit**

The latest academic credit information can be found

at <https://www.rcu.msstate.edu/MDE/PathwaystoSuccess.aspx>. Once there, click the “*Counselor Resources*” Tab, then click “*Curriculum Enhancement List.*” Check this site often as it is updated frequently.

### **Teacher Licensure**

The latest teacher licensure information can be found at <http://www.mde.k12.ms.us/educator-licensure>

### **Professional Learning**

If you have specific questions about the content of any of training sessions provided, please contact the Research and Curriculum Unit at 662.325.2510 and ask for an instructional design specialist.

# Course Outlines

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## Option 1—Two One-Carnegie-Unit Courses

This curriculum consists of two one-credit courses, which should be completed in the following sequence:

1. **Health Sciences Core I —Course Code: 995003**
2. **Health Sciences Core II—Course Code: 995004**

### Course Description: Health Sciences Core I

The Health Sciences Core A course introduces students to the theory and practical applications of tasks related to employment in the field of health science. Students will cover topics such as safety in the workplace, infection control, and health care systems. The course offers insight into careers in health care as well as the educational requirements, and the professional, legal, and ethical responsibilities involved.

### Course Description: Health Sciences Core II

The Health Sciences Core B course continues to familiarize students with the theory and practical applications of the field of health science. Topics covered include the vital organs of the human body and health maintenance practices. Students will explore careers in health care as well as the educational requirements, and the professional, legal, and ethical responsibilities involved.

### Health Sciences Core I—Course Code: 995003

Unit	Unit Name	Hours
1	Course Orientation and Professional Organizations	7
2	Safety and Infection Control	35
3	Health Care Systems, Legal and Ethical Practices	25
4	Communication and Teamwork	28
5	Body Organization, Covering, Support, and Movement	45
Total		140

### Health Sciences Core II — Course Code: 995004

Unit	Unit Name	Hours
6	Vital Organs and Protection	42
7	Intake and Elimination	40
8	Control, Regulation, and Coordination	33
9	Reproduction, and Health Maintenance Practices	25
Total		140

## Option 2—One Two-Carnegie-Unit Course

This curriculum consists of one two-credit course, which should be completed in the following sequence:

### Health Sciences (Core)—Course Code: 995000

#### Course Description: Health Sciences (Core)

The Health Sciences (Core) course introduces students to the theory and practical applications of tasks related to employment in the field of health science. Students will cover topics such as safety in the workplace, infection control, health care systems, and the vital organs of the human body. The course offers insight into careers in health care as well as educational requirements and the professional, legal, and ethical responsibilities involved.

### Health Sciences (Core)—Course Code: 995000

Unit	Unit Name	Hours
1	Course Orientation and Professional Organizations	7
2	Safety and Infection Control	35
3	Health Care Systems, Legal and Ethical Practices	25
4	Communication and Teamwork	28
5	Body Organization, Covering, Support, and Movement	45
6	Vital Organs and Protection	42
7	Intake and Elimination	40
8	Control, Regulation, and Coordination	33
9	Reproduction and Health Maintenance Practices	25
Total		280

# Research Synopsis

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## **Introduction**

The Health Sciences (Core) pathway covers the broad field of occupations related to health care and medicine. Health care is the largest and fastest growing industry in the United States. The health care field alone will generate more new jobs in the coming years than any other industry, largely in response to rapid growth in the elderly population. In fact, ten of the 20 fastest growing occupations are related to health care. Employment in home-health care and nursing and residential care should increase rapidly as life expectancies rise and families need assistance caring for their elderly family members and thus rely more on long-term care facilities. New technologies will continue to enable earlier diagnoses of many diseases, which often increases the ability to treat conditions that were previously terminal. Industry growth will also occur as a result of the shift from inpatient to less expensive outpatient and home-health care because of improvements in diagnostic tests and surgical procedures, along with patients' desires to be treated at home. Rapid growth is expected for workers in occupations concentrated outside the inpatient hospital sector, such as pharmacy technicians and personal and home-care aides. Traditional inpatient hospital positions are no longer the only option for many future health care workers.

The Health Sciences (Core) pathway will target careers at the professional and technical levels in health care. Students enrolled in these courses should be well prepared to pursue degrees at the community college and 4-year-college level.

## Needs of the Future Workforce

Description	Current Jobs (2012)	Projected Jobs (2020)	Change (Number)	Change (Percent)	Median Hourly Earning
Anesthesiologists	160	165	5	3.00	\$76
Dentists (General)	784	957	173	22.00	\$78
Dietician Technicians	166	194	28	17.00	\$9
Dieticians/Nutritionists	384	433	49	13.00	\$26
Emergency Medical Technicians and Paramedics	1,595	1,778	183	11.00	\$15
Health Diagnosing and Treating Practitioners	178	221	436	24.00	\$28
Home Health Aides	4,701	7,359	2,658	57.00	\$9
Licensed Practical Nurses	752,300	920,800	168,500	22.00	\$19
Medical and Clinical Laboratory Technicians	1,489	1,771	282	19.00	\$17
Nursing Aides, Orderlies, and Attendants	15,090	18,423	3,333	22.00	\$9
Obstetricians and Gynecologists	220	227	7	3.00	\$26
Occupational Therapists	961	1,290	329	34.00	\$34
Optometrists	245	338	93	38.00	\$46
Orthodontists	51	62	11	22.00	\$26
Orthotists and Prosthetists	18	25	7	39.00	\$41
Pharmacists	591	688	97	16.00	\$53
Physical Therapists	1,442	1,976	534	37.00	\$35
Physical Therapy Assistant	553	761	208	38.00	\$18
Podiatrists	80	90	10	13.00	\$25
Recreational Therapists	292	645	53	18.00	\$15
Registered Nurses	2,737,400	3,449,300	711,900	26.00	\$31
Respiratory Therapists	1,195	1,479	284	24.00	\$22
Surgeon	350	361	11	3.00	\$26

Source: U.S. Department of Labor, Bureau of Labor Statistics, 2011

### Perkins IV Requirements

The Health Sciences (Core) curriculum meets Perkins IV requirements of high-skill, high-wage, and/or high-demand occupations by introducing students to and preparing them for occupations in health care fields. It also offers students a program of study, including secondary, postsecondary, and Institutions of Higher Learning (IHL) courses, that will further prepare them for health care careers. Additionally, this curriculum is integrated with academic Common Core

Standards. Lastly, the curriculum focuses on ongoing and meaningful professional development for teachers as well as relationships with industry.

## **Curriculum Content**

### Summary of Standards

The standards to be included in the Health Sciences (Core) curriculum are the Common Core Standards for Mathematics, Common Core Standards for English/Language Arts, 21st Century Skills, and the National Educational Technology Standards (NETS) for Students. Combining these standards to create this document will result in highly skilled, well-rounded students who are prepared to enter a postsecondary academic or career and technical program. They will also be prepared to compete academically at a national level, as the Common Core Standards are designed to prepare students for success in community colleges, institutes of higher learning, and the workforce.

## **Academic Infusion**

The Health Sciences (Core) curriculum is aligned to the Mississippi Academic Science Standards for Human Anatomy and Physiology. The content of the courses has been aligned to the Human Anatomy and Physiology Framework.

## **Transition to Postsecondary Education**

The latest articulation information for Secondary to Postsecondary can be found at the Mississippi Community College Board (MCCB) website <http://www.mccb.edu/>

## **Best Practices**

### *Innovative Instructional Technologies*

Recognizing that today's students are digital learners, the classroom should be equipped with tools that will teach them in the way they need to learn. The Health Sciences teacher's goal should be to include teaching strategies that incorporate current technology. It is suggested that

each classroom house a set of desktop computers for students and one laptop for the teacher. To make use of the latest online communication tools such as wikis, blogs, and podcasts, the classroom teacher is encouraged to use a learning management system (LMS), such as the Health Sciences teacher learning management system that introduces students to education in an online environment and places the responsibility of learning with the student.

### *Differentiated Instruction*

Students learn in a variety of ways. Some are visual learners, needing only to read information and study it to succeed. Others are auditory learners, thriving best when information is read aloud to them. Still others are tactile learners, needing to participate actively in their learning experiences. Add the student's background, emotional health, and circumstances, and a very unique learner emerges. By providing various teaching and assessment strategies, students with various learning styles can succeed.

### *Career and Technical Education Student Organizations*

Teachers should investigate opportunities to sponsor a student organization. Future Health Professionals (HOSA) is the student organization for Health Sciences. HOSA provides a unique program of leadership development, motivation, and recognition exclusively for secondary, postsecondary, adult, and collegiate students enrolled in health occupations education programs.

### *Cooperative Learning*

Cooperative learning can help students understand topics when independent learning cannot. Therefore, you will see several opportunities in the Health Sciences (Core) curriculum for group work. To function in today's workforce, especially within the health care system, students need to be able to work collaboratively with others and solve problems without



excessive conflict. The Health Sciences (Core) curriculum provides opportunities for students to work together and help one another to complete complex tasks.

### **Conclusions**

Health Sciences (Core) is one of Mississippi's most comprehensive health curricula. Students that complete these programs are well equipped for a variety of endeavors. Instructors are urged to encourage these students to pursue educational opportunities at community colleges and universities in Mississippi.

# Professional Organizations

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## **Association for Career and Technical Education**

<https://www.acteonline.org>

## **Mississippi ACTE** <http://www.mississippiacte.com/>

### **American Association of Medical Transcriptionist**

4230 Kiernan Avenue  
Suite 130  
Modesto, CA 95356  
800.982.2182 (toll free)  
209.527.9620 (direct)  
209.527.9633 (fax)  
[www.ahdionline.org](http://www.ahdionline.org)  
[ahdi@ahdionline.org](mailto:ahdi@ahdionline.org)

### **American Association for Respiratory Care**

9425 N. MacArthur Blvd.  
Suite 100  
Irving, TX 75063-4706  
972.243.2272  
[www.aarc.org](http://www.aarc.org)

### **American Dental Assistants Association**

35 East Wacker Drive  
Suite 1730  
Chicago, IL 60601-2211  
312.541.1550  
312.541.1496 (fax)  
[www.dentalassistant.org](http://www.dentalassistant.org)

### **American Dental Association**

211 East Chicago Ave.  
Chicago, IL 60611-2678  
312.440.2500  
[www.ada.org](http://www.ada.org)

### **American Health Care Association**

1201 L Street, N.W.  
Washington, DC 20005  
202.842.4444  
202.842.3860 (fax)  
[www.ahca.org](http://www.ahca.org)

### **American Hospital Association**

One North Franklin  
Chicago, Illinois 60606-3421  
312.422.3000  
[www.aha.org](http://www.aha.org)

### **American Medical Association**

515 N. State Street  
Chicago, IL 60610  
800.621.8335  
[www.ama-assn.org](http://www.ama-assn.org)

### **American Red Cross National Headquarters**

2025 E Street NW  
Washington, DC 20006  
800.REDCROSS (toll free)  
800.257.7575 (Español)  
[www.redcross.org](http://www.redcross.org)

### **American Society of Radiologic Technologists**

15000 Central Ave. SE  
Albuquerque, NM 87123-3909  
800.444.2778, Press 5 (toll free)  
505.298.4500, Press 5 (direct)  
505.298.5063 (fax)  
[www.asrt.org](http://www.asrt.org)

### **Hospital Corporation of America**

One Park Plaza  
Nashville, TN 37203  
615.344.9551  
[www.hcahealthcare.com](http://www.hcahealthcare.com)

**National Association of Emergency  
Medical Technicians**

P.O. Box 1400  
Clinton, MS 39060-1400  
Physical Address  
132-A East Northside Dr.  
Clinton, MS 39056  
1-800-34-NAEMT (toll free)  
601.924.7744 (direct)  
601.924.7325 (fax)  
[info@naemt.org](mailto:info@naemt.org)  
[www.naemt.org](http://www.naemt.org)

**National Athletic Trainer's Association**

2952 Stemmons Freeway #200  
Dallas, TX 75247  
214.637.6282  
214.637-2206 (fax)  
[www.nata.org](http://www.nata.org)

**LifeWorks: Explore Health and Medical  
Science Careers Early**

<http://science.education.nih.gov/lifeworks>

**National Health Council**

1730 M Street, NW  
Suite 500  
Washington, DC 20036  
202.785.3910  
202.785.5923 (fax)  
[www.nationalhealthcouncil.org](http://www.nationalhealthcouncil.org)

**Nurses for a Healthier Tomorrow**

[www.nursesource.org](http://www.nursesource.org)

**Nursing Spectrum**

[www.nurse.com](http://www.nurse.com)

**Ovarian Cancer National Alliance**

910 17th Street, N.W.  
Suite 1190  
Washington, D.C. 20006  
202.331.1332  
202.331.2292 (fax)  
[ocna@ovariancancer.org](mailto:ocna@ovariancancer.org)  
[www.ovariancancer.org](http://www.ovariancancer.org)

**Society of Nuclear Medicine**

1850 Samuel Morse Drive  
Reston, Virginia 20190  
703.708.9000  
[www.snm.org](http://www.snm.org)

**St. Jude Children's Research Hospital**

332 N. Lauderdale  
Memphis, TN 38105  
901.495.3300  
[www.stjude.org](http://www.stjude.org)

**Le Bonheur Children's Medical Center**

50 N. Dunlap Street  
Memphis, TN 38103  
901.287.KIDS (5437)  
[info@lebonheur.org](mailto:info@lebonheur.org)

**Mississippi Nurses Association**

31 Woodgreen Place  
Madison, MS 39110  
601.898.0670  
601.898.0190 (fax)  
<http://www.msurses.org/>

**American Heart Association**

440 E. Pass Road Gulfport, MS, 39507  
609 Corinne Street Hattiesburg, MS, 39401  
4830 McWillie Circle Jackson, MS, 39206  
[www.americanheart.org](http://www.americanheart.org)

**The Center for Health and Health Care in  
Schools**

202.466.3396  
[chhcs@gwu.edu](mailto:chhcs@gwu.edu)  
[www.healthinschools.org](http://www.healthinschools.org)

**American Cancer Society**

800.ACS.2345 (toll free)  
[www.cancer.org](http://www.cancer.org)

**The Diabetes Foundation of Mississippi**

16 Northtown Drive  
Suite 100

Jackson, MS 39211

601.957.7878

601.957.9555 (fax)

[www.msdiabetes.org](http://www.msdiabetes.org)

**Mississippi Office of Healthy Schools —  
A Division of Mississippi Department of  
Education**

Central High School  
359 Northwest Street

P.O. Box 771

Jackson, MS 39205-0771

[www.healthyschoolsms.org](http://www.healthyschoolsms.org)

[www.rxlist.com](http://www.rxlist.com)

[www.PDR.net](http://www.PDR.net)

**American Health Information  
Management Association – AHIMA**

233 N. Michigan Ave, 21st Floor

Chicago, IL 60601-5800

312.233.1100

[www.ahima.org](http://www.ahima.org)

**American Lung Association of Mississippi**

P.O. Box 2178

Ridgeland, MS 39158

731 Pear Orchard Road

Suite 18

Ridgeland, MS 39157

800.586.4872 (toll free)

601.206.5810 (direct)

601.206.5813 (fax)

[www.alams.org](http://www.alams.org)

**American Nurses Association**

8515 Georgia Ave, Suite 400

Silver Springs, MD 20910

800.274.4ANA

[www.nursingworld.org](http://www.nursingworld.org)

**American Speech-Language-Hearing  
Association**

2200 Research Boulevard

Rockville, MD 20850-3289

800.638.8255

[www.asha.org](http://www.asha.org)

**American School Health Association**

7263 State Route 43

P.O. Box 708

Kent, Ohio 44240

330.678.1601

330.678.4526 (fax)

[asha@ashaweb.org](mailto:asha@ashaweb.org)

[www.ashaweb.org](http://www.ashaweb.org)

**National School Boards Association**

1680 Duke Street

Alexandria, VA 22314

703.838.6722

703.683.7590 (fax)

[info@nsba.org](mailto:info@nsba.org)

[www.nsba.org](http://www.nsba.org)

**Association for Professionals in Infection  
Control and Epidemiology**

1275 K St., NW, Suite 1000

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# Using this Document

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## **Suggested Time on Task**

An estimated number of clock hours of instruction that should be required to teach the competencies and objectives of the unit. A minimum of 140 hours of instruction is required for each Carnegie unit credit. The curriculum framework should account for approximately 75–80% of the time in the course.

## **Competencies and Suggested Objectives**

A competency represents a general concept or performance that students are expected to master as a requirement for satisfactorily completing a unit. Students will be expected to receive instruction on all competencies. The suggested objectives represent the enabling and supporting knowledge and performances that will indicate mastery of the competency at the course level.

## **Integrated Academic Topics, 21st Century Skills and Information and Communication Technology Literacy Standards, ACT College Readiness Standards, and Technology Standards for Students**

This section identifies related academic topics as required in the Subject Area Testing Program (SATP) in Algebra I, Biology I, English II, and U.S. History from 1877, which are integrated into the content of the unit. Research-based teaching strategies also incorporate ACT College Readiness standards. This section also identifies the 21st Century Skills and Information and Communication Technology Literacy skills. In addition, national technology standards for students associated with the competencies and suggested objectives for the unit are also identified.

## **References**

A list of suggested references is provided for each unit. The list includes some of the primary instructional resources that may be used to teach the competencies and suggested objectives. Again, these resources are suggested, and the list may be modified or enhanced based on needs and abilities of students and on available resources.

# Unit 1: Course Orientation and Professional Organizations

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<b>Competencies and Suggested Objectives</b>
<ol style="list-style-type: none"><li>1. Describe the purpose of the course and related professional organizations.<sup>DOK 1</sup><ol style="list-style-type: none"><li>a. Identify student and course expectations.</li><li>b. Explore health science professional organizations (HOSA).</li><li>c. Explore leadership skills and parliamentary procedures with professional organizations.</li></ol></li></ol> <p>Note: A list of skills and activities, which may be used to enhance the teaching of the Health Science Core, may be found at the RCU download page, “Teacher Resource Documents”. The practice/performance of the skills on this list may be used to count toward the clinical hours required for this course.</p>



## Scenarios

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### Unit 1

There are no scenarios associated with the orientation unit.

### Attachments for competencies:

<http://www.hosa.org/>

## Unit 2: Safety and Infection Control

Competencies and Suggested Objectives	
1. Describe personal and environmental safety practices. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>CNA, DOK 1, HCFS 7</sup>	
<ul style="list-style-type: none"> <li>a. Apply principles of body mechanics.</li> <li>b. Apply safety techniques (personal and patient) in the health care setting in order to prevent accidents and injuries.</li> </ul>	
2. Identify common safety hazards. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>DOK 1, HCFS 7</sup>	
<ul style="list-style-type: none"> <li>a. Comply with safety signs, symbols, and labels.</li> <li>b. Recognize Safety Data Sheets (SDS) and discuss safety implications of handling hazardous materials (checking labels, and checking solutions).</li> </ul>	
3. Utilize emergency procedures and protocols. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>DOK 2, HCFS 7</sup>	
<ul style="list-style-type: none"> <li>a. Practice fire safety in a health care setting.</li> <li>b. Recognize principles of basic emergency response in natural disasters and other emergencies</li> </ul>	
4. Describe the principles of infection control. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>CNA, DOK 1, HCFS 7</sup>	
<ul style="list-style-type: none"> <li>a. Explain the classes of microorganisms and diseases caused by each one. Include the following: <ul style="list-style-type: none"> <li>• Aerobic</li> <li>• Anaerobic</li> <li>• Bacteria</li> <li>• Fungi</li> <li>• Helminths</li> <li>• Nonpathogens</li> <li>• Pathogens</li> <li>• Protozoa</li> <li>• Rickettsiae</li> <li>• Viruses</li> </ul> </li> <li>b. Identify the types of infections. Include the following: <p><b>Bacterial:</b></p> <ul style="list-style-type: none"> <li>• boils</li> <li>• botulism</li> <li>• cholera</li> <li>• diphtheria</li> <li>• gonorrhea</li> <li>• meningitis</li> <li>• methicillin-resistant staphylococcus</li> <li>• pertussis</li> <li>• pneumonia</li> <li>• rheumatic fever</li> <li>• strep throat</li> <li>• syphilis</li> <li>• tetanus</li> <li>• toxic shock</li> <li>• tuberculosis</li> <li>• typhoid</li> <li>• urinary tract infections</li> <li>• wound infections</li> </ul> </li> </ul>	



**Protozoa:**

- African sleeping sickness
- amebic dysentery
- malaria
- trichomonas

**Fungal:**

- athlete's foot
- ring worm
- histoplasmosis
- thrush
- yeast vaginitis

**Rickettsiae:**

- Rocky Mountain spotted fever
- typhus fever

**Viruses:**

- chicken pox
- common cold
- ebola
- H5N1 (bird flu)
- hepatitis B
- hepatitis C
- herpes
- human immunodeficiency
- influenza
- Marburg
- measles
- monkey pox
- mumps
- polio
- severe acute respiratory syndrome (SARS)
- virus (HIV)
- warts
- West Nile virus (WNV)

**Helminths:**

- hook worms or flukes
- ascariasis
- enterobiasis
- taenia solium
- trichinella spiralis

- c. Describe the chain of infection and describe the types of infections (endogenous, exogenous, nosocomial (hospital acquired or health care associated), and opportunistic).
- d. Identify the levels of aseptic control.
- e. Demonstrate the proper procedure for aseptic hand washing.

5. Explain standard precaution based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>CNA, DOK 1, HCFS 7</sup>
- a. Describe OSHA's blood-borne pathogen standards.
  - b. Explore employer requirements according to the Needle Stick Safety and Prevention Act.
  - c. Identify the basic rules of standard precaution.

6. Describe the principles of sterile technique. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>CNA, DOK 1, HCFS 7</sup>

<p>a. Demonstrate skills related to sterile technique for example, donning sterile gloves, sterile dressing, and sterilizing instruments.</p>
<p>7. Explain the importance of maintaining transmission-based isolation precautions. (NOTE: The content from this unit will be reinforced throughout the program.) <sup>DOK 1, HCFS 7</sup></p> <p>a. Identify the precautions needed to prevent the spread of communicable diseases.</p> <p>b. Demonstrate the proper procedure for applying personal protective equipment (PPE).</p> <p>c. Explain the need for protective or reverse isolation.</p>

## Scenarios

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### Unit 2

1) Working in pairs, students will be assigned a certain area of the school (e.g., cafeteria, school office, gymnasium, or CTE classrooms) to evaluate for potential health and safety hazards. Students will note the hazards on paper and will follow their notations with an explanation of how that particular hazard might be harmful and then make a suggestion for removing the hazard.

2) Set up the scene of a hospital room with a mannequin (or a student playing the patient). Create safety violations such as bed rails down, hair dryer where oxygen is in use, loose cords or other ambulatory hazards. Have the students check the room for safety hazards and record what they find. Have them identify the hazards, explain the associated risks, including any specific danger to the patient, and state what actions would correct the hazards.

3) In small groups of three to four students, develop an educational presentation for middle school students. The presentation will include appropriate infection control procedures for a determined medical hazard. Groups will deliver the presentation in front of middle school students and videotape the performance.

4) Using the plastic wounds from a wound care kit, glue them on the appropriate body part using body glue. Add liquid to the wound (simulated blood, or drainage) and cover. Using a sterile dressing tray, have a student complete the procedure of a sterile dressing change. The student should read the physician's order and follow its instructions to clean and redress the wound. Have other students watch for a break in the sterile technique.

### Attachments for Scenarios

None

## Unit 3: Health Care Systems, Legal and Ethical Practices

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<b>Competencies and Suggested Objectives</b>	
1.	Explain the role of the health care professional in a department, organization, and the overall health care environment. <sup>DOK 1, HCFS 3</sup> a. Explain the health care delivery system (public, private, government, and non-profit facilities/agencies). b. Explain the factors influencing health care delivery systems. c. Describe the responsibilities of consumers within the health care system.
2.	Identify how health care systems affect the services that are performed and the quality of care. <sup>DOK 2, HCFS 3</sup> a. Explain the impact of emerging issues such as technology, epidemiology, bioethics, and socioeconomics on health care delivery systems. b. Discuss common methods of payment for health care.
3.	Describe the legal implications associated with health care. <sup>DOK 2, HCFS 5</sup> a. Analyze legal responsibilities of health care systems. b. Apply procedures for accurate documentation and record keeping.
4.	Describe and demonstrate legal practices associated with health care. <sup>DOK 2, HCFS 5</sup> a. Identify the standards of Health Insurance Portability and Accountability Act (HIPAA). b. Describe advance directives. c. Summarize the Patient’s Bill of Rights (for acute care) and the Resident’s Bill of Rights (for long-term care). d. Recognize informed consent. e. Explain criminal laws governing harassment, labor, and scope of practice. f. Explain civil laws including torts.
5.	Recognize and discuss ethical boundaries within the health care environment. <sup>DOK 2, HCFS 6</sup> a. Differentiate between ethical and legal issues impacting health care. b. Recognize ethical issues and their implications related to health care.
6.	Discuss the accepted ethical practices within the health care environment. <sup>DOK 1, HCFS 6</sup> a. Define procedures for reporting activities and behaviors that affect the health, safety, and the welfare of others.
7.	Identify cultural, social, and ethnic diversity within the health care environment. <sup>DOK 2, HCFS 6</sup> a. Compare religious, spiritual, and cultural values as they impact health care. b. Demonstrate respectful and empathetic treatment of all patients/clients.

# Scenarios

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## Unit 3

1) Divide students into small groups. Bring a variety of health insurance Explanation of Benefits packages from area businesses. Distribute one Explanation of Benefits package to each group. (As an alternative, ask students to go to area businesses they are interested in and ask about the benefits the companies offer.) Students will read through the plans and complete the Understanding Health Benefits Worksheet.

2) Students consider a situation wherein their best friend's 72-year-old grandfather has been diagnosed with terminal cancer and has less than 6 months to live. His income is just below the poverty level. Students should determine what health services and/or insurance he is likely to need and is eligible to receive. Students should prepare to present and defend their conclusions to the class.

3) Working in small groups, students will analyze court cases related to liability, standard of care, privacy, confidentiality, privileged communication, or negligence. Each group will make a chart to highlight the pertinent facts surrounding the case. As a class, discuss the similarities and differences in the cases and their verdicts.

4) Students assume the roles of members of the Medical Center Transplant Committee.

Case: Three people are on the transplant list for a kidney due to irreversible renal failure.

- Patient #1 is a 22-year-old woman who was in good health prior to a motor vehicle accident, where internal injuries damaged her kidneys. She has a history of alcohol use and recreational drug use, mostly marijuana. Her father is often a financial contributor to the hospital.
- Patient #2 is a 65-year-old man with a history of diabetes. His renal failure is due to diabetic complications. His diabetes is now fairly well controlled.
- Patient #3 is a 36-year-old single mother who suddenly went into renal failure following a hysterectomy. She is a smoker and a social drinker. She is 30 lbs overweight.

All three patients are a perfect blood and tissue match. The committee must decide who will receive the kidney.

## Attachments for Scenarios

PBS. (2008). National discussion and debate series: Health care (Lesson two: Health insurance overview). Retrieved from [http://www.pbs.org/newshour/extra/teachers/lessonplans/us/jan-june08/healthcare\\_lp2.pdf](http://www.pbs.org/newshour/extra/teachers/lessonplans/us/jan-june08/healthcare_lp2.pdf)

## Unit 4: Communication and Teamwork

<b>Competencies and Suggested Objectives</b>	
1. Describe the concepts of effective communication. a. Interpret verbal and nonverbal communication. b. Recognize barriers to communication. c. Differentiate subjective and objective information. d. Recognize the elements of communication using a sender-receiver model. e. Demonstrate speaking and active listening skills.	DOK 2, HCFS 2
2. Compare the roles and responsibilities of individual members as part of the health care team. a. Describe roles and responsibilities of team members. b. Recognize characteristics of effective teams.	DOK 1, HCFS 8
3. Explain the principles of interacting effectively and sensitively with all members of the health care team. a. Recognize methods for building positive team relationships. b. Analyze attributes and attitudes of an effective leader. c. Apply effective techniques for managing team conflict.	DOK 2, HCFS 8
4. Introduce appropriate medical terminology and abbreviations. a. Use roots, prefixes, and suffixes to communicate information. (See below.) b. Use medical abbreviations to communicate information. (See below.) c. Describe elements of written and electronic communication (spelling, grammar, and formatting).	DOK 1, HCFS 2

### Medical Roots, Prefixes, and Suffixes

1. gastr-	stomach	20. -ologist	a specialist in the study of
2. cardi-	heart	21. rhin-	nose
3. megal-	enlarged	22. gingiv-	gum
4. -itis	inflammation	23. -malacia	soft, soft condition
5. dermat-	skin	24. -ology	study of
6. plast-	surgical repair, plastic repair	25. spasm	involuntary contraction
7. cerebr-	brain	26. -algia	pain, painful condition
8. path-	disease	27. crani-	skull
9. -ectomy	surgical removal of all or part of	28. end-	inside, within
10. enter-	intestines (usually small)	29. hemi-	half
11. -osis	condition, any condition	30. -oid	like, resembling
12. -otomy	cut into, incision into	31. hyper-	above, more than normal
13. aden-	gland	32. cyst-	sac containing fluid, bladder
14. angi-	vessel (usually blood)	33. chole-	bile
15. -oma	tumor	34. hypo-	under, beneath, deficient
16. nephr-	kidney	35. scop-	look, observe
17. hepat-	liver	36. hyster-	uterus (womb)
18. arthr-	joint	37. -ostomy	to create an opening
19. blephar-	eyelid	38. para-	beside, beyond
		39. -lysis	loosening, destruction, set free

40.	cervic-	neck	95.	vaso-	vessel
41.	chondr-	cartilage	96.	melan-	black
42.	cyan-	blue	97.	cauda-	tail
43.	hem(at)-	blood	98.	lingua-	tongue
44.	ost-	bone	99.	myring-	eardrum
45.	psycho-	mind	100.	spondyl-	spinal column or vertebra
46.	lip-	fat	101.	ovar-	egg (female reproduction cell)
47.	my-	muscle	102.	-centesis	puncture
48.	lith-	stone	103.	oto-	ear
49.	ophthalm-	eye	104.	bili-	bile
50.	proct-	anus	105.	squam-	scale
51.	cost-	rib	106.	mening-	membrane
52.	-gram	record, write	107.	cec-	blind passage
53.	acro-	extremities	108.	macul-	spot (or stain)
54.	rhaxis-	break, burst	109.	-pexy	suspension, fixation
55.	carcin-	cancer	110.	onco-	tumor, swelling or mass
56.	-penia	decrease	111.	or-	mouth
57.	gen-	original, production	112.	sub-	under, beneath, below
58.	burso-	sac	113.	spiro-	coil
59.	retr(o)-	backwards	114.	lacrim-	tear
60.	trip-	rub, friction	115.	viscero-	organ
61.	strept-	twist	116.	lact-	milk
62.	-desis	binding, fixation	117.	onych-	nail, claw
63.	mani-	madness, mental disturbance	118.	thorac-	chest
64.	glosso-	tongue	119.	pyle-, pyloro-	gate
65.	-trophy	development, growth	120.	vesic-	bladder
66.	supra-	above, over	121.	sphenic-	wedge, wedge-shaped
67.	-ptosis	falling, drooping	122.	myel-	marrow (spinal cord)
68.	dyn-	pain	123.	anti-	against
69.	mast-	breast	124.	myco-	fungus
70.	-rrhaphy	suture, suturing	125.	hallux	great toe, big toe
71.	dent-	teeth	126.	physio-	nature
72.	cephal-	head	127.	bucc(o)-	cheek
73.	auto-	self	128.	palpebr-	eyelid
74.	epi-	upon, in addition to	129.	plasia-	development or growth
75.	hydro-	water	130.	rug-	wrinkle, fold, crease
76.	lobo-	section	131.	aur-	ear
77.	-emesis	vomiting	132.	acoust(i)	hearing, sound
78.	contra-	against, counter	133.	colp(o)-	hollow, vagina
79.	-iasis	condition, formation of, presence of	134.	phon-	voice, sound
80.	trans-	through, across, beyond	135.	leio-	smooth
81.	brady-	slow	136.	cor-	heart
82.	-ectasis	expansion	137.	ren-	kidney
83.	cyt-	cell	138.	orchi-	testis
84.	odont-	tooth	139.	encephal-	brain
85.	leuk-	white	140.	thalam-	inner chamber
86.	-esthesia	sensation, feeling	141.	plexus	braid, an interweaving, or network
87.	cantho-	angle at the end of the eyelid	142.	cilia	eyelash
88.	steno-	narrow, contracted	143.	dendr-	tree, branching (as in nervous system)
89.	cheil-	lip	144.	phleb-	vein
90.	-cele	hernia, tumor or swelling	145.	pilo-	hair
91.	benign	mild, not cancerous	146.	histo-	tissue
92.	semen	seed	147.	stoma-	mouth or opening
93.	celio-	abdomen	148.	tympan-	eardrum or its enclosure
94.	erythro-	red			

149.	umbilic-	navel	202.	cheir-, chir-	hand
150.	salpingo-	tube	203.	calc-	heel, stone
151.	helio-	sun, light	204.	cine-	move, movement
152.	astr-	star-shaped	205.	digit	finger, toe
153.	-asthenia	weakness	206.	dors-	back
154.	facia	sheet, band	207.	gangli-	swelling, knot-like mass
155.	iso-	equal	208.	gemin-	twin, double
156.	tarso-	ankle region or framework of the eyelid	209.	grad-	walk, take steps
157.	-tope	place	210.	gran-	grain, particle
158.	pod-	foot	211.	labi-	lip
159.	malign-	bad, harmful	212.	micr-	small
160.	adnexa	ties, connections	213.	peps-, pept-	digest
161.	ocul-	eye	214.	pleur-	pleura (membrane), rib, side
162.	lapar-	abdominal wall	215.	mamm-	breast
163.	dacry-	tear	216.	colla-	glue, gelatin like
164.	ment-	mind	217.	later-	side
165.	part-	labor, bring forth	218.	rachi-	spinal column
166.	scler(a)-	hard	219.	phob-	fear
167.	somato-	body	220.	phot-	light
168.	trachel-	neck, neck like	221.	dys-	bad, out of order
169.	sinus	hollow space	222.	cut-	skin
170.	hypno-	sleep	223.	en-	in
171.	sept-	wall, fence	224.	peri-	about, around
172.	scirr(h)-	hard	225.	pro-	in front of, before
173.	antr-	cavity or chamber	226.	mechano-	machine
174.	-crine	to secrete	227.	dynam-	power
175.	dura	hard	228.	osmo-	odor
176.	pneum-	lung, air	229.	traumat-	wound, injury
177.	phage	to eat	230.	trich-	hair
178.	phren-	mind	231.	maxill-	upper jawbone
179.	corne-	horny, hornlike	232.	an-, a-	without, not
180.	plak-	plate	233.	phak-	lens
181.	iris	rainbow (eye membrane)	234.	pre-	in front of, before
182.	kerat-	horny, horny tissue	235.	strict-	to draw tight, narrowing
183.	pulmon-	lung	236.	turbin-	shaped like a top
184.	ptyal-	saliva	237.	ameb-	change
185.	alveol-	cavity, socket	238.	semi-	half
186.	oophor-	ovary (female reproductive gland)	239.	neo-	new
187.	oment-	covering (of internal abdominal organs)	240.	hormone-	excite or set in motion
188.	sedat-	quiet, calm	241.	therm-	heat
189.	furca-	fork-shaped	242.	syn-, sym-	together
190.	radic-	root	243.	vuls(e)-	twitch or pull
191.	radi-	ray	244.	post	after, behind in time
192.	fistul-	pipe, a narrow passage	245.	metr-	uterus
193.	edema-	swelling (by fluid)	246.	tegument	covering or skin
194.	dactyl-	finger, toe	247.	pan-	all
195.	metabol(e)-	change	248.	poly-	many or much
196.	pariet-	wall	249.	ramus	branch
197.	ependym-	wrapping, a covering	250.	neuro-	nerve (nervous system)
198.	gravid	pregnant	251.	thromb-	lump, clot
199.	aer-	air	252.	ab-	away from, not
200.	glyco-	sweet, sugar	253.	-plegia	paralysis
201.	tarso-	ankle region	254.	ante-	before
			255.	thel-	nipple
			256.	ex-	out, away from
			257.	lien-	spleen

258.	tumor	swelling	305.	amphi-	around, on both sides
259.	vestibule	entrance	306.	brachy-	short
260.	puer-	child	307.	capit-	head
261.	sarc-	flesh	308.	cau-	burn
262.	proli-	offspring	309.	clas-	break
263.	macro-	large	310.	duct-	tube
264.	lal-	speech	311.	fiss-	split
265.	intra-	within	312.	ger-	old
266.	inter-	between	313.	heter-	other
267.	infra-	beneath	314.	infer-	under
268.	cryo-	cold	315.	hom-	same
269.	mal-	bad	316.	olfact-	smell
270.	glom-	ball	317.	orth-	straight
271.	tens-	stretch	318.	gyn-	female
272.	spas-	pull, draw	319.	pachy-	thick
273.	somni-	sleep	320.	phrag-	fence
274.	pharmac-	drug	321.	poster-	back part
275.	lumbo-	loins	322.	cata-	down
276.	arter-	artery	323.	platy-	flat
277.	appendic-	appendix	324.	pseud-	false
278.	thyro-	thyroid	325.	schiz-	split
279.	splen-	spleen	326.	proxim-	nearest
280.	ovario-	ovary	327.	scol-	curved
281.	adreno-	adrenal gland	328.	apo-	away from
282.	basi-	base	329.	di-	twice
283.	pelvi-	pelvis	330.	dia-	through
284.	vena-	vein	331.	eur-	broad
285.	urethr-	urethra	332.	pect-	chest
286.	utero-	uterus	333.	necr-	dead
287.	sacro-	sacrum	334.	mi-	less
288.	pharyng-	pharynx	335.	morph-	form
289.	duodeno-	duodenum	336.	dis-	apart
290.	ureter	ureter	337.	fac-	make, do
291.	laryng-	larynx	338.	lept-	slender
292.	bronch-	bronchus	339.	lymph-	watery fluid
293.	col-	colon	340.	meta-	beyond
294.	esophagi-	esophagus	341.	-rrhag	burst, burst forth
295.	bi-	two, double, both	342.	sta-	stand
296.	tri-	three	343.	ton-	stretch
297.	ile-	ileum	344.	volv-	to roll
298.	ili-	ilium	345.	splanchn-	internal organs
299.	lig-	ligament	346.	-rrhe	flow
300.	therap-	therapy	347.	med-	middle
301.	ventr-	front	348.	xer-	dry
302.	vert-	turn	349.	per-	throughout
303.	eu-	good	350.	blast-	bud
304.	ambi-	both			

## Medical Abbreviations

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• A & P	anatomy and physiology	• ASAP	as soon as possible
• ad lib	freely, at will	• ax	axillary
• ac	before meals	• bid	twice a day
• adm	admission	• BM	bowel movement
• AED	automated external defibrillator	• BMI	body mass index
• amb	ambulate	• BMR	basal metabolic rate



• BP	blood pressure	• noct	night
• BRP	bathroom privileges	• NKA	no known allergies
• c	with	• NPO	nothing by mouth
• CBC	complete blood count	• O2	oxygen
• CC	chief complaint	• OOB	out of bed
• CHO	carbohydrate	• OR	operating room
• cl liq	clear liquids	• OTC	over the counter
• c/o	complains of	• p	after
• CPR	cardiopulmonary resuscitation	• pc	after meals
• CT	computerized tomography	• po	by mouth
• D/C	discontinue	• PPE	personal protective equipment
• DNR	do not resuscitate	• prn	as necessary
• Dx	diagnosis	• pt	patient
• EEG	electroencephalogram	• q2h	every 2 hours
• EKG, ECG	electrocardiogram	• qhs	every night at bedtime
• FBAO	foreign body airway obstruction	• qs	quantity sufficient
• FBS	fasting blood sugar	• qid	four times a day
• FF	force fluids	• R	respiration
• GB	gallbladder	• R	right
• Hgb	hemoglobin	• RBC	red blood cell
• Hct	hematocrit	• RN	registered nurse
• HOB	head of bed	• R/O	rule out
• hs	hour of sleep, bedtime	• ROM	range of motion
• ht	height	• Rx	prescription, take, treatment
• hx	history	• s	without
• IM	intramuscular	• ss	one half
• IV	intravenous	• STAT	immediately
• LOC	level of consciousness	• STD	sexually transmitted disease
• LPN, LVN	licensed practical (vocational) nurse	• T	temperature
• LTC	long-term care	• tab	tablet
• L	left	• tid	three times a day
• MD	Medical Doctor	• TPR	temperature, pulse, respiration
• MI	Myocardial Infarction	• UA	urinalysis
• MRI	magnetic resonance imaging	• VS	vital signs
• N/A	not applicable	• WBC	white blood cells
• neg	negative	• w/c	wheelchair
• NG	nasogastric	• wt	weight
		• WNL	within normal limits

# Scenarios

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## Unit 4

1) Have students role-play a situation involving a family member who becomes irate when the patient's nurse misinterprets a physician's order for medication and gives the patient the wrong dosage. Although the patient is not harmed, the family is upset and verbally abusive to the nurse. The nurse and supervisor must utilize communication skills to resolve the situation. Roles to include: patient, nurse, family member, and nurse supervisor.

2) Prior to class, the teacher will make a crazy, abstract model out of play dough. The more colors used, the more difficult the task, which will likely make the lesson more effective. After the observation period described below, the teacher should place the model behind a curtain or otherwise out of sight. Divide class into groups of four to five students. Each group must decide who will have which job: One will be the observer, one the communicator and the other two to three students will be the builders. The goal of each group is to make a play-dough model as close as possible to the one made by the teacher. Place groups in areas of the classroom away from each other so that they do not try to copy one another's models. The roles of each job are as follows:

- a. Observer—The observers from each group will have 2 minutes to observe as much detail as possible about the model. Then he or she will describe to the communicator what was observed. Observers should sit with their backs to the rest of the class so that they cannot see what the groups are building.
- b. Communicator—The communicator from each group will listen to his or her respective observers and then relay the information to the group of builders, instructing them how to build the models. The communicator should not help build. He or she can go back and forth between the builders and observer as often as needed.
- c. Builders—The builders will attempt to construct the models according to what their respective communicators tell them to build.

After about 5-10 minutes, the observers will be allowed to observe the teacher's model again for an additional 1 minute. Then the groups will spend approximately another 5 minutes to finish. After the time allotted has elapsed, show the class the original model again. Compare the products of each group to the original to determine who came the closest to replicating the original.

In closing, have the students journal using the following prompts:

1. How did you have to use communication skills?
2. How did you use teamwork?
3. What was most frustrating to you?
4. What could happen if good communication is not being used in health care?
5. How do health care workers work together in teams?

Adapted from:

Glenn, A. (n.d.). Health science teamwork and communication activity. Retrieved from [https://docs.google.com/folder/d/0BxQiDnliTqWHNzRiYzI1ZDAtZTM2Ny00NGZILTk5NGQtNGNhYWJmOTE3Y2Ux/edit?hl=en\\_US&pli=1&docId=0BxQiDnliTqWHNDgwNmJiODMtMGE3MS00MDFhLWFlYTIiYjE2N2FjYzdhYmM4](https://docs.google.com/folder/d/0BxQiDnliTqWHNzRiYzI1ZDAtZTM2Ny00NGZILTk5NGQtNGNhYWJmOTE3Y2Ux/edit?hl=en_US&pli=1&docId=0BxQiDnliTqWHNDgwNmJiODMtMGE3MS00MDFhLWFlYTIiYjE2N2FjYzdhYmM4)

### **Attachments for Scenarios**

None

# Unit 5: Body Organization, Covering, Support, and Movement

## Body Organization, Integumentary System, Skeletal System, and Muscular System

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NOTE: The following academic foundations are for teaching and reinforcement of the content within this unit only. These are to be embedded throughout all of the competencies and objectives as the instructor deems applicable.

1. Apply inquiry-based and problem-solving processes and skills to scientific investigations. DOK 3 HCFS 1
  - a. Use current technologies such as CD-ROM, DVD, Internet, and online data searches to explore current research related to a specific topic.
  - b. Clarify research questions and design laboratory investigations.
  - c. Demonstrate the use of scientific inquiry and methods to formulate, conduct, and evaluate laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development).
  - d. Organize data to construct graphs (e.g., plotting points, labeling x- and y-axes, creating appropriate titles and legends for circle, bar, and line graphs) in order to draw conclusions and make inferences.
  - e. Evaluate procedures, data, and conclusions to critique the scientific validity of research.
  - f. Formulate and revise scientific explanations and models using logic and evidence (data analysis).
  - g. Collect, analyze, and draw conclusions from data to create a formal presentation using available technology (e.g., computers, calculators, SmartBoard, or CBL's).
2. Apply mathematical skills in health care practices. DOK 2, HCFS 1
  - a. Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
  - b. Analyze diagrams, charts, graphs, and tables to interpret health care results.
  - c. Record time using the 24-hour clock.

### **Competencies and Suggested Objectives**

1. Describe the organization of the body. DOK 1, HCFS 1
  - a. Apply and relate appropriate anatomical terms to the body in anatomical position.
    - Relationship of body parts
    - Major cavities and essential organs
  - b. Explain how specific mechanisms (e.g., feedback, transport, pH, or temperature regulation) maintain homeostasis.
  - c. Categorize the relationship of the cell and its functions to the more complex levels of organization within the body.
    - Four major categories of tissues and their respective locations, structures, and functions.
2. Discuss the structures and functions of the integumentary system. DOK 1, HCFS 1
  - a. Identify the parts comprising the integumentary system and their respective functions.

<p>b. Discuss the concept of pigmentation.</p>
<p>3. Explain diseases and disorders of the integumentary system and related signs and symptoms and treatment methods. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify diseases and disorders that affect the integumentary system. Include the following:</p> <ul style="list-style-type: none"> <li>• acne vulgaris</li> <li>• athlete's foot</li> <li>• basal cell carcinoma</li> <li>• dermatitis</li> <li>• eczema</li> <li>• impetigo</li> <li>• melanoma</li> <li>• psoriasis</li> <li>• ringworm</li> <li>• squamous cell carcinoma</li> <li>• verrucae</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with diseases and disorders of the integumentary system.</p> <p>c. Describe various skin eruptions. Include: macules, papules, vesicles, pustules, crusts, wheals, and ulcers.</p>
<p>4. Compare the structures and functions of the skeletal system with its relationship to movement. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify the bones of the body, noting differences between males and females. <sup>AP3</sup></p> <p>b. Identify the structures that comprise bones. <sup>AP3</sup></p> <p>c. Explain the functions of the skeletal system. <sup>AP3</sup></p> <p>d. Identify the types of joints and their related movements. <sup>AP3</sup></p>
<p>5. Discuss diseases and disorders of the skeletal system and related signs, symptoms, and treatment methods. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify diseases and disorders that affect the skeletal system. Include the following:</p> <ul style="list-style-type: none"> <li>• bursitis</li> <li>• colles fracture</li> <li>• comminuted fracture</li> <li>• compound or open fracture</li> <li>• depressed fracture</li> <li>• dislocation</li> <li>• green stick fracture</li> <li>• impacted fracture</li> <li>• osteoarthritis</li> <li>• osteomyelitis</li> <li>• osteoporosis</li> <li>• Rheumatoid arthritis</li> <li>• ruptured disk</li> <li>• simple or close fracture</li> <li>• spinal curvatures (scoliosis, lordosis, and kyphosis)</li> <li>• spiral fracture</li> <li>• sprain</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with skeletal diseases, disorders, and injury. <sup>AP3</sup></p>
<p>6. Compare the structures and functions of the muscular system with its relationship to movement. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify the three types of muscles.</p> <p>b. Identify the major components and functions of skeletal muscle fiber.</p> <p>c. Identify the major skeletal muscles.</p> <p>d. Explain the function of the muscles.</p> <p>e. Describe the process of muscle contraction.</p>

f. Introduce active/passive range of motion: adduction, abduction, flexion, extension, rotation, and circumduction.

7. Discuss diseases, disorders, and injury of the muscular system and related signs, symptoms, and treatment methods. <sup>DOK 1, HCFS 1</sup>

a. Identify diseases and disorders that affect the muscular system. Include the following:

- fibromyalgia
- muscular dystrophy
- myasthenia gravis
- muscle spasms
- strain

b. Identify signs, symptoms, and treatment methods associated with muscular diseases and disorders.

c. Research and evaluate the impact of medical technology on muscle physiology and disease.

# Scenarios

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## Unit 5

- 1) With a partner and using play dough or clay, have students create a stick-like figure with a head, trunk, arms, and legs. As the teacher calls out directional or organizational terms, the students will use toothpicks to identify the respective areas. After discussing the terms, students will cut the figure according to body planes.
- 2) Create poster or diagram showing at least 1 specific mechanism that assists in maintaining the body's homeostasis. Determine what would happen if the body did not have this ability.
- 3) Tape a small piece of paper to various places on patient-care mannequins. Some pieces have the words *wound*, *fracture*, and *internal damage*. Each will have a description of the injury. Have the students use directional terms, planes, and abdominal regions to describe the location of the injured area (e.g., spiral fracture of the left distal fibula).
- 4) Using various shapes of dry pasta, have students construct a skeleton on precut squares of cardboard. Have students label specific bones as determined by the teacher.
- 5) Divide the class into groups of three to five students. Have some students act as patients in hospital beds. After determining what causes skin breakdown that may lead to the formation of decubitus ulcers, have the students situate the patients in bed in each of the following positions: prone, supine, fowlers, and side lying. Then, discuss for each case where on the body the skin is in the most danger of breaking down. Next, students should turn and adjust the patient in each of the above positions, but this time providing proper support with pillows, towel rolls, or blanket rolls to help prevent a chance of skin breakdown. Have the students perform peer assessments.

## Attachments for Scenarios

The HOSA Physical Therapy Assisting Rubric can be found at:  
<http://www.hosa.org>

# Unit 6: Vital Organs and Protection

## Cardiovascular, Respiratory, and Lymphatic Systems

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NOTE: The following academic foundations are for teaching and reinforcement of the content within this unit only. These are to be embedded throughout all of the competencies and objectives as the instructor deems applicable.

1. Apply inquiry-based and problem-solving processes and skills to scientific investigations. DOK 3 HCFS 1
  - a. Use current technologies such as CD-ROM, DVD, Internet, and online data searches to explore current research related to a specific topic.
  - b. Clarify research questions and design laboratory investigations.
  - c. Demonstrate the use of scientific inquiry and methods to formulate, conduct, and evaluate laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development).
  - d. Organize data to construct graphs (e.g., plotting points, labeling x- and y-axes, creating appropriate titles and legends for circle, bar, and line graphs) in order to draw conclusions and make inferences.
  - e. Evaluate procedures, data, and conclusions to critique the scientific validity of research.
  - f. Formulate and revise scientific explanations and models using logic and evidence (data analysis).
  - g. Collect, analyze, and draw conclusions from data to create a formal presentation using available technology (e.g., computers, calculators, SmartBoard, or CBL's).
2. Apply mathematical skills in health care practices. DOK 2, HCFS 1
  - a. Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
  - b. Analyze diagrams, charts, graphs, and tables to interpret health care results.
  - c. Record time using the 24-hour clock.

### Competencies and Suggested Objectives

1. Identify and discuss the structures and functions of the cardiovascular system and their role in maintaining homeostasis. DOK 1, HCFS 1
  - a. Identify blood types (A, B, AB, and O including Rh factor) and the four parts of blood in terms of morphology, function, and origin.
  - b. Identify the type of blood vessels and the action of each.
  - c. Identify the anatomy of the heart and its electrical conduction.
  - d. Describe pulmonary and systemic circulation.
  - e. Define systolic and diastolic pressures in relationship to cardiovascular health.
2. Discuss diseases and disorders of the cardiovascular system and related signs, symptoms, and treatment methods. DOK 1, HCFS 1
  - a. Identify diseases and disorders that affect the cardiovascular system. Include the following:
    - aneurysm
    - iron deficiency anemia
    - aplastic anemia
    - leukemia



<ul style="list-style-type: none"> <li>• arteriosclerosis</li> <li>• atherosclerosis</li> <li>• congestive heart failure</li> <li>• embolus</li> <li>• hemophilia</li> <li>• hypertension</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with cardiovascular diseases and disorders.</p>	<ul style="list-style-type: none"> <li>• myocardial infarction</li> <li>• pernicious anemia</li> <li>• phlebitis</li> <li>• sickle cell anemia</li> <li>• varicose veins</li> </ul>
<p>3. Describe the structures and functions of the respiratory system. <small>DOK 1, HCFS 1</small></p> <p>a. Identify the structures of the respiratory system.</p> <p>b. Differentiate between breathing and respiration.</p> <p>c. Describe the gaseous exchange between air and blood.</p> <p>d. Explain how gaseous transport takes place in the blood.</p>	
<p>4. Discuss diseases and disorders of the respiratory system and related signs, symptoms, and treatment methods. <small>DOK 1, HCFS 1</small></p> <p>a. Identify diseases and disorders that affect the respiratory system. Include the following:</p> <ul style="list-style-type: none"> <li>• asthma</li> <li>• bronchitis</li> <li>• chronic obstructive pulmonary disease</li> <li>• emphysema</li> <li>• epistaxis</li> <li>• influenza</li> <li>• laryngitis</li> <li>• lung cancer</li> <li>• pleurisy</li> <li>• pneumonia</li> <li>• rhinitis</li> <li>• sinusitis</li> <li>• sleep apnea</li> <li>• tuberculosis</li> <li>• upper respiratory infection</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with respiratory diseases and disorders.</p>	
<p>5. Explain the structures and functions of the lymphatic system. <small>DOK 1, HCFS 1</small></p> <p>a. Identify the structures and components that comprise the lymphatic system and their respective functions.</p> <p>b. Identify the types of immunity and immune responses.</p> <p>c. Describe the relationship of the lymphatic system to the circulatory system and immunity.</p>	
<p>6. Discuss diseases and disorders of the lymphatic system and related signs, symptoms, and treatment methods. <small>DOK 1, HCFS 1</small></p> <p>a. Identify diseases and disorders that affect the lymphatic system.</p> <ul style="list-style-type: none"> <li>• adenitis</li> <li>• Hodgkin's disease</li> <li>• lymphangitis</li> <li>• splenomegaly</li> <li>• tonsillitis</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with diseases and disorders of the lymphatic system.</p>	

# Scenarios

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## Unit 6

- 1) In small groups, students will develop a children's book or play to tell the story of a blood cell's journey through the body. The story should include the flow of blood and the effects it has on organs along the way (or vice versa).
- 2) Using large paper, draw the structures of the heart and label it. Have the students walk in sock feet showing the blood flow through the heart. Color the right side red and the left side blue to show oxygenation of the blood.

## Attachments for Scenarios

The HOSA Nursing Assisting Rubric can be found at: <http://www.hosa.org>

# Unit 7: Intake and Elimination

## Digestive System and Urinary System

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NOTE: The following academic foundations are for teaching and reinforcement of the content within this unit only. These are to be embedded throughout all of the competencies and objectives as the instructor deems applicable.

1. Apply inquiry-based and problem-solving processes and skills to scientific investigations. DOK 3 HCFS 1
  - a. Use current technologies such as CD-ROM, DVD, Internet, and online data searches to explore current research related to a specific topic.
  - b. Clarify research questions and design laboratory investigations.
  - c. Demonstrate the use of scientific inquiry and methods to formulate, conduct, and evaluate laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development).
  - d. Organize data to construct graphs (e.g., plotting points, labeling x- and y-axes, creating appropriate titles and legends for circle, bar, and line graphs) in order to draw conclusions and make inferences.
  - e. Evaluate procedures, data, and conclusions to critique the scientific validity of research.
  - f. Formulate and revise scientific explanations and models using logic and evidence (data analysis).
  - g. Collect, analyze, and draw conclusions from data to create a formal presentation using available technology (e.g., computers, calculators, SmartBoard, or CBL's).
2. Apply mathematical skills in health care practices. DOK 2, HCFS 1
  - a. Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
  - b. Analyze diagrams, charts, graphs, and tables to interpret health care results.
  - c. Record time using the 24-hour clock.

### Competencies and Suggested Objectives

1. Describe the structures and functions of the digestive system. DOK 1, HCFS 1
  - a. Identify the structures comprising the digestive system (alimentary canal and accessory structures).
  - b. Describe the roles of each digestive organ in the mechanical and chemical digestion of food and nutrient absorption.
  - c. Explain the pathway of food as it moves through the alimentary canal.
  - d. Discuss the role of enzymes and gland secretions as they relate to the absorption of digestion products.
2. Discuss diseases and disorders of the digestive system and related signs, symptoms, and treatment methods. DOK 1, HCFS 1
  - a. Identify diseases and disorders that affect the digestive system. Include the following:
    - appendicitis
    - cholecystitis
    - cirrhosis
    - constipation
    - hepatitis type A (HAV)
    - hepatitis type B (HBV)
    - hepatitis type C (HCV)
    - hernia

<ul style="list-style-type: none"> <li>• diarrhea</li> <li>• diverticulitis</li> <li>• gastroenteritis</li> <li>• gastroesophageal reflux disease (GERD)</li> <li>• hemorrhoids</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with diseases and disorders of the digestive system.</p>	<ul style="list-style-type: none"> <li>• pancreatitis</li> <li>• peritonitis</li> <li>• ulcer</li> <li>• ulcerative colitis</li> </ul>		
<p>3. Explain the structures and functions of the urinary system as they relate to the formation, composition, and elimination of urine. <small>DOK 1, HCFS 1</small></p> <p>a. Identify the structures comprising the urinary system.</p> <p>b. Describe the roles of each of the urinary structures as it relates to the production and elimination of urine.</p>			
<p>4. Discuss diseases and disorders of the urinary system and related signs, symptoms, and treatment methods. <small>CNA, DOK 1, HCFS 1</small></p> <p>a. Identify diseases and disorders that affect the urinary system. Include the following:</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• albuminuria</li> <li>• anuria</li> <li>• cystitis</li> <li>• dysuria</li> <li>• glomerulonephritis</li> <li>• hematuria</li> <li>• incontinence</li> <li>• nocturia</li> <li>• oliguria</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>• polyuria</li> <li>• proteinuria</li> <li>• pyelonephritis</li> <li>• pyuria</li> <li>• renal calculus</li> <li>• renal failure</li> <li>• uremia</li> <li>• urethritis</li> <li>• urine retention</li> </ul> </td> </tr> </table> <p>b. Identify signs, symptoms, and treatment methods associated with diseases and disorders of the urinary system.</p>		<ul style="list-style-type: none"> <li>• albuminuria</li> <li>• anuria</li> <li>• cystitis</li> <li>• dysuria</li> <li>• glomerulonephritis</li> <li>• hematuria</li> <li>• incontinence</li> <li>• nocturia</li> <li>• oliguria</li> </ul>	<ul style="list-style-type: none"> <li>• polyuria</li> <li>• proteinuria</li> <li>• pyelonephritis</li> <li>• pyuria</li> <li>• renal calculus</li> <li>• renal failure</li> <li>• uremia</li> <li>• urethritis</li> <li>• urine retention</li> </ul>
<ul style="list-style-type: none"> <li>• albuminuria</li> <li>• anuria</li> <li>• cystitis</li> <li>• dysuria</li> <li>• glomerulonephritis</li> <li>• hematuria</li> <li>• incontinence</li> <li>• nocturia</li> <li>• oliguria</li> </ul>	<ul style="list-style-type: none"> <li>• polyuria</li> <li>• proteinuria</li> <li>• pyelonephritis</li> <li>• pyuria</li> <li>• renal calculus</li> <li>• renal failure</li> <li>• uremia</li> <li>• urethritis</li> <li>• urine retention</li> </ul>		

# Scenarios

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## Unit 7

1) Give students a list of food and drink consumed by a patient for a 24-hour period. The patient has IV fluids infusing and a nasogastric tube for intermittent suction. Give them the amount of IV fluid infused and the amount of gastric fluid removed. Also, give them a list of times and amounts of urine output and bowel movement. Have students calculate the total amount of the patient's intake and the total amount of output. Determine if the patient is in danger of over-hydration, dehydration, or possibly an electrolyte imbalance.

2) Trace the path that food takes, beginning with the first bite taken and ending with elimination from the body. Include the role played by the accessory organs on digestion, along with enzymes that act on the food. Create a poster, skit, story, or other visual aid and present it to the class.

## Attachments for Scenarios

None

# Unit 8: Control, Regulation, and Coordination

## Nervous System, Sensory Organs, Endocrine System

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NOTE: The following academic foundations are for teaching and reinforcement of the content within this unit only. These are to be embedded throughout all of the competencies and objectives as the instructor deems applicable.

1. Apply inquiry-based and problem-solving processes and skills to scientific investigations. DOK 3 HCFS 1
  - a. Use current technologies such as CD-ROM, DVD, Internet, and online data searches to explore current research related to a specific topic.
  - b. Clarify research questions and design laboratory investigations.
  - c. Demonstrate the use of scientific inquiry and methods to formulate, conduct, and evaluate laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development).
  - d. Organize data to construct graphs (e.g., plotting points, labeling x- and y-axes, creating appropriate titles and legends for circle, bar, and line graphs) in order to draw conclusions and make inferences.
  - e. Evaluate procedures, data, and conclusions to critique the scientific validity of research.
  - f. Formulate and revise scientific explanations and models using logic and evidence (data analysis).
  - g. Collect, analyze, and draw conclusions from data to create a formal presentation using available technology (e.g., computers, calculators, SmartBoard, or CBL's)
2. Apply mathematical skills in health care practices. DOK 2, HCFS 1
  - a. Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
  - b. Analyze diagrams, charts, graphs, and tables to interpret health care results.
  - c. Record time using the 24-hour clock.

### Competencies and Suggested Objectives

1. Describe the structures and functions of the nervous system. DOK 1, HCFS 1
  - a. Identify the four types of neurological cells and their respective functions.
  - b. Identify the major structures of the nervous system and their respective functions.
  - c. List and describe the divisions of the nervous system (central nervous system, peripheral nervous system, sympathetic, and parasympathetic).
  - d. Describe the conduction of a nerve impulse.
2. Discuss diseases and disorders of the nervous system and related signs, symptoms, and treatment methods. DOK 1, HCFS 1
  - a. Identify diseases and disorders that affect the nervous system. Include:
    - amyotrophic lateral sclerosis
    - carpal tunnel syndrome
    - cerebral palsy
    - cerebrovascular accident
    - encephalitis
    - multiple sclerosis
    - neuralgia
    - hemiplegia
    - paraplegia
    - quadriplegia

<ul style="list-style-type: none"> <li>• epilepsy</li> <li>• hydrocephalus</li> <li>• meningitis</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with nervous system diseases and disorders.</p>	<ul style="list-style-type: none"> <li>• Parkinson's disease</li> <li>• shingles</li> </ul>
<p>3. Identify the basic structures and functions associated with the sensory organs. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify each of the sensory organs and describe their respective functions.</p> <p>b. Identify environmental factors that affect the responses of the sensory organs.</p>	
<p>4. Discuss diseases and disorders of the sensory organs. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify diseases and disorders that affect the sensory organs.</p> <ul style="list-style-type: none"> <li>• amblyopia</li> <li>• astigmatism</li> <li>• cataract</li> <li>• conjunctivitis</li> <li>• glaucoma</li> <li>• hearing loss</li> <li>• hyperopia</li> <li>• macular degeneration</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with sensory organ diseases and disorders.</p>	
<p>5. Identify the structures and functions of the endocrine system. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify and locate the structures comprising the endocrine system.</p> <p>b. Identify the function of and type of hormones generated by each endocrine gland. (See below.)</p>	
<p>6. Discuss diseases and disorders of the endocrine system and related signs, symptoms, and treatment methods. <sup>DOK 1, HCFS 1</sup></p> <p>a. Identify diseases and disorders that affect the nervous system.</p> <ul style="list-style-type: none"> <li>• acromegaly</li> <li>• Addison's disease</li> <li>• Cushing's syndrome</li> <li>• diabetes insipidus</li> <li>• diabetes mellitus</li> <li>• dwarfism</li> </ul> <p>b. Identify signs, symptoms, and treatment methods associated with endocrine system diseases and disorders.</p>	

### The Endocrine System

GLAND	HORMONE	ACTION
<b>Pituitary</b> (Anterior Lobe)	ACTH- adrenocorticotropic	Stimulates growth & secretion of the cortex of the adrenal gland
	TSH-thyrotropin	Stimulates growth & secretion of the

		thyroid gland
	GH-somatotropin	Growth hormone, stimulates normal body growth
	FSH-follicle stimulating	Stimulates growth & hormone production in the ovarian follicles of females, production of sperm in males
<b>Pituitary (Posterior Lobe)</b>	ADH-vasopressin	Antidiuretic hormone, promotes, reabsorption of water in kidneys, constricts blood vessels
	Oxytocin (Pitocin)	Causes constriction of uterus during childbirth, stimulates milk flow from breasts
<b>Thyroid</b>	Thyroxine & tri-iodothyronine	Increase metabolic rate; stimulate physical and mental growth; regulate metabolism of carbohydrates, fats, and proteins.
<b>Parathyroid</b>	Parathormone (PTH)	Regulates amount of calcium and phosphate in the blood, increases reabsorption of calcium and phosphates from bones, stimulates kidneys to conserve blood calcium, stimulates absorption of calcium in the intestine.
<b>Adrenal (Cortex)</b>	Mineralocorticoids --Aldosterone	Regulate the reabsorption of sodium in the kidney & elimination of potassium, increase the reabsorption of water by the kidneys
	Glucocorticoids --Cortisol- hydrocortisone --Cortisone	Aide in metabolism of proteins, fats, and carbohydrates; increase amount of glucose in blood; provide resistance to stress; and depress immune response (anti-inflammatory)
	Gonadocorticoids --Estrogens --Androgens	Act as sex hormones --Stimulate female sexual characteristics --Stimulate male sexual characteristics
Adrenal (Medulla)	Epinephrine (adrenaline)	Activates sympathetic nervous system, acts in times of stress to increase cardiac output and increase blood pressure
	Norepinephrine	Activates body in stress situations
<b>Pancreas</b>	Insulin	Used in metabolism of glucose (sugar) by promoting entry of glucose into cells to decrease blood glucose levels, promotes transport of fatty acids and amino acids (proteins) into the cells
	Glucagon	Maintains blood level of glucose by stimulating the liver to release stored glycogen in the form of glucose
<b>Ovaries</b>	Estrogen	Promotes growth and development of sex



		organs in female individuals
	Progesterone	Maintains lining of uterus
<b>Testes</b>	Testosterone	Stimulates growth and development of sex organs in male individuals, stimulates maturation of sperm
<b>Thymus</b>	Thymosin (thymopoietin)	Stimulates production of lymphocytes and antibodies in early life
<b>Pineal</b>	Melatonin	May delay puberty by inhibiting gonadotropic (sex) hormones, may regulate sleep/wake cycles
	Serotonin	May prevent vasoconstriction of blood vessels in the brain, inhibits gastric secretions
<b>Placenta</b>	Estrogen	Stimulates growth of reproductive organs
	Chorionic gonadotropin	Causes corpus luteum of ovary to continue secretions
	Progesterone	Maintains lining of uterus to provide fetal nutrition

## Scenarios

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### Unit 8

Have students group into pairs, with one in each pair playing the role of the patient and the other performing a basic neurological assessment. Check sensory responses to sharp and dull objects, pupil response to light, eye movement and the ability to follow objects, reflexes, coordination, balance, and gait. Each pair should perform the assessment in front of the class for peer review, with classmates noting any missed or inaccurate protocol.

### Attachments for Scenarios

None

# Unit 9: Reproduction and Health Maintenance Practices

## Reproductive System

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NOTE: The following academic foundations are for teaching and reinforcement of the content within this unit only. These are to be embedded throughout all of the competencies and objectives as the instructor deems applicable.

1. Apply inquiry-based and problem-solving processes and skills to scientific investigations. <sup>DOK 3 HCFS 1</sup>
  - a. Use current technologies such as CD-ROM, DVD, Internet, and online data searches to explore current research related to a specific topic.
  - b. Clarify research questions and design laboratory investigations.
  - c. Demonstrate the use of scientific inquiry and methods to formulate, conduct, and evaluate laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development).
  - d. Organize data to construct graphs (e.g., plotting points, labeling x- and y-axes, creating appropriate titles and legends for circle, bar, and line graphs) in order to draw conclusions and make inferences.
  - e. Evaluate procedures, data, and conclusions to critique the scientific validity of research.
  - f. Formulate and revise scientific explanations and models using logic and evidence (data analysis).
  - g. Collect, analyze, and draw conclusions from data to create a formal presentation using available technology (e.g., computers, calculators, SmartBoard, or CBL's).
2. Apply mathematical skills in health care practices. <sup>DOK 2, HCFS 1</sup>
  - a. Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
  - b. Analyze diagrams, charts, graphs, and tables to interpret health care results.
  - c. Record time using the 24-hour clock.

### Competencies and Suggested Objectives

1. Discuss the structures and functions of the male and female reproductive systems. <sup>DOK 1, HCFS 1</sup>
  - a. Identify the major structures and functions of the female and male reproductive system.
  - b. Discuss the role of hormones in maturation and reproduction.
2. Discuss diseases and disorders of the reproductive system and related signs, symptoms, and treatment methods. <sup>DOK 1, HCFS 1</sup>
  - a. Identify diseases and disorders that affect the reproductive system. Include the following:
    - breast tumors
    - orchitis
    - prostate cancer
    - cervical cancer
    - ovarian cancer
    - prostatic hypertrophy
    - endometriosis
    - pelvic inflammatory disease
    - testicular cancer
    - epididymitis
    - premenstrual syndrome
    - uterine cancer
  - b. Identify sexually transmitted diseases (STDs). Include the following:
    - acquired immune deficiency syndrome,
    - pubic lice

<ul style="list-style-type: none"> <li>• chlamydia</li> <li>• gonorrhea</li> <li>• herpes</li> </ul>	<ul style="list-style-type: none"> <li>• syphilis</li> <li>• trichomoniasis</li> </ul>
<p>c. Identify signs, symptoms, and treatment methods associated with diseases (including STDs) and disorders of the reproductive system.</p>	
<p>3. Describe the fundamentals of wellness, healthy behaviors, and the prevention of disease processes. <small>DOK 1, HCFS 9</small></p> <ul style="list-style-type: none"> <li>a. Discuss the aspects of good nutrition.</li> <li>b. Discuss the aspects of normal weight.</li> <li>c. Discuss the aspects of exercise.</li> <li>d. Discuss the aspects of sleep.</li> </ul>	
<p>4. Describe strategies for the prevention of diseases, including health screenings, examinations, and self-care. <small>DOK 1, HCFS 9</small></p> <ul style="list-style-type: none"> <li>a. Discuss routine check-ups.</li> <li>b. Discuss periodic screenings.</li> <li>c. Discuss dental visits.</li> <li>d. Discuss treatment of illnesses.</li> <li>e. Discuss immunizations.</li> <li>f. Discuss stress management.</li> <li>g. Discuss minimizing health risks.</li> </ul>	
<p>5. Discuss complementary (alternative) health practices as they relate to wellness and disease prevention. <small>DOK 1, HCFS 9</small></p> <ul style="list-style-type: none"> <li>a. Explore complementary therapies including alternative medical systems, natural therapies, manipulative methods</li> <li>b. Explore holistic medicine including expanding traditional medicine, considering the entire person, and psychosomatic illnesses.</li> </ul>	

# Scenarios

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## Unit 9

1) Following the method taught in this unit, have students determine the total number of calories they need each day. Students who are overweight should determine how many fewer calories they need to consume each week in order to lose 1-2 pounds per week. Students who are underweight should determine how many more calories they need to consume each week in order to gain 1-2 pounds per week. Next, have students determine the type and duration of exercise they do each week and how many calories are burned during each activity. Have students adjust their calculated caloric intake goals to account for the number of calories they burn through exercise. Finally, have students keep a food and exercise journal (for a predetermined amount of time) to see how closely they adhere to their calculations.

2) Create patient scenarios describing the weight, health, dietary restrictions, activity level, and desired outcomes and distribute scenarios to the students. Have the students prescribe a diet and/or fitness plan for their patients to help them reach the desired results. (Alternative option: Allow the students to determine the desired results as well as prescribe the diet/fitness plan for their assigned patient scenarios based on the other information.)

### Attachments for Scenarios

None

# Student Competency Profile

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**Student's Name:** \_\_\_\_\_

This record is intended to serve as a method of noting student achievement of the competencies in each unit. It can be duplicated for each student, and it can serve as a cumulative record of competencies achieved in the course.

In the blank before each competency, place the date on which the student mastered the competency.

<b>Unit 1: Course Orientation and Professional Organizations</b>	
	1. Describe the purpose of the course and related professional organizations.
<b>Unit 2: Safety, and Infection Control</b>	
	1. Describe personal and environmental safety practices.
	2. Identify common safety hazards.
	3. Utilize emergency procedures and protocols.
	4. Describe the principles of infection control.
	5. Explain standard precaution based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
	6. Describe the principles of sterile technique.
	7. Explain the importance of maintaining transmission-based isolation precautions.
<b>Unit 3: Health Care Systems, Legal and Ethical Practices</b>	
	1. Explain the role of the health care professional in a department, organization, and the overall health care environment.
	2. Identify how health care systems affect the services that are performed and the quality of care.
	3. Describe the legal implications associated with health care.
	4. Describe and demonstrate legal practices associated with health care.
	5. Recognize and discuss ethical boundaries within the health care environment.
	6. Discuss the accepted ethical practices within the health care environment.
	7. Identify cultural, social, and ethnic diversity within the health care environment.
<b>Unit 4: Communication and Teamwork</b>	
	1. Describe the concepts of effective communication.
	2. Compare the roles and responsibilities of individual members as part of the health care team.
	3. Explain the principles of interacting effectively and sensitively with all members of the health care team.
	4. Introduce appropriate medical terminology and abbreviations.

**Unit 5: Body Organization, Covering, Support, and Movement**

	1.	Describe the organization of the body.
	2.	Discuss the structures and functions of the integumentary system.
	3.	Explain diseases and disorders of the integumentary system and related signs and symptoms and treatment methods.
	4.	Compare the structures and functions of the skeletal system with its relationship to movement.
	5.	Discuss diseases and disorders of the skeletal system and related signs, symptoms, and treatment methods.
	6.	Compare the structures and functions of the muscular system with its relationship to movement
	7.	Discuss diseases, disorders, and injury of the muscular system and related signs, symptoms, and treatment methods

**Unit 6: Vital Organs and Protection**

	1.	Identify and discuss the structures and functions of the cardiovascular system and their role in maintaining homeostasis.
	2.	Discuss diseases and disorders of the cardiovascular system and related signs, symptoms, and treatment methods.
	3.	Describe the structures and functions of the respiratory system.
	4.	Discuss diseases and disorders of the respiratory system and related signs, symptoms, and treatment methods.
	5.	Explain the structures and functions of the lymphatic system.
	6.	Discuss diseases and disorders of the lymphatic system and related signs, symptoms, and treatment methods.

**Unit 7: Control, Regulation, and Coordination**

	1.	Describe the structures and functions of the nervous system.
	2.	Discuss diseases and disorders of the nervous system and related signs, symptoms, and treatment methods
	3.	Identify the basic structures and functions associated with the sensory organs.
	4.	Discuss diseases and disorders of the sensory organs.
	5.	Identify the structures and functions of the endocrine system.
	6.	Discuss diseases and disorders of the endocrine system and related signs, symptoms, and treatment methods.

**Unit 8: Intake and Elimination**

	1.	Describe of the structures and functions of the digestive system.
	2.	Discuss diseases and disorders of the digestive system and related signs, symptoms, and treatment methods.
	3.	Explain the structures and functions of the urinary system as they relate to the formation, composition, and elimination of urine.
	4.	Discuss diseases and disorders of the urinary system and related signs, symptoms, and treatment methods.

**Unit 9: Reproduction and Health Maintenance Practices**

	1.	Discuss the structures and functions of the male and female reproductive systems.
	2.	Discuss diseases and disorders of the reproductive system and related signs and symptoms, and treatment methods.
	3.	Describe the fundamentals of wellness, healthy behaviors, and the prevention of disease processes.
	4.	Discuss strategies for the prevention of diseases, including health screenings, examinations, and self-care.
	5.	Discuss complementary (alternative) health practices as they relate to wellness and disease prevention

## Appendix A: Unit References

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All of the Health Sciences (Core) units use the same resources. Suggested resources are listed below.

Badasch, S., Chesebro, D. (2008). *Health science fundamentals: Exploring career pathways* (7th ed.). Upper Saddle River, NY: Prentice Hall.

Booth, K.A. (2004). *Health care science technology: Career foundations*. New York, NY: Glencoe/McGraw Hill.

DCM Instructional Systems (2013). Dean Vaughn Total Retention System™ series of educational programs for Healthcare. Retrieved from: <https://www.dcminstructionalsystems.com>

Ehrlich, A., Schroeder, C. L. (2009). *Introduction to Medical Terminology* (2nd ed). Clifton Park, NY: Delmar Cengage Learning.

Gerdin, J. (2011). *Health careers today* (5th ed.). St. Louis, MO: Mosby Elsevier.

Health Sciences Instructional Supplements (n.d.). National Consortium for Health Science Education. Retrieved from: [www.healthscienceconsortium.org](http://www.healthscienceconsortium.org)

National Governors Association Center for Best Practices, Council of Chief State School Officers (2010). Common core state standards initiative. Retrieved from: <http://www.corestandards.org>

National Educational Technology Standards for Students: Connecting Curriculum and Technology (2007). Advancing digital age teaching. Retrieved from: <http://www.iste.org/standards/nets-for-teachers>

Partnership for 21st Century Skills (2010). 21st century skills standards. Retrieved from: <http://www.p21.org>

Practice Fusion, Inc. (2013). The largest physician-patient platform. Retrieved from: <http://practicefusion.com>

Simmers, L., Simmers-Nartker, K., & Simmers-Kobelak, S. (2009). *Diversified health occupations* (7th ed.). Clifton Park, NY: Delmar Cengage.

Scott, A. S., Fong, E. (2008). *Body structures and functions* (12th ed.). Clifton Park, NY: Cengage Learning.



## Appendix B: Certified Nursing Assistant (CNA) Skills

<b>Crosswalk for Certified Nursing Assistant (CNA) Skills</b>										
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
a. i.			X						X	X
a. ii.			X	X	X					
a. iii.						X	X	X	X	
b. i.										
b. ii.					X					
c.				X	X					
d. i.			X							X
d. ii.										X
d. iii.										
d. iv.									X	
d. v.										X
d. vi.										
d. vii.										
d. viii.			X							
d. ix.										X
d. x.										X
d. xi.										
d. xii.										
d. xiii.										
d. xiv.									X	
d. xv.										
d. xvi.										
d. xvii.										
d. xviii.										X
d. xix.										
d. xx.										X
d. xxi.										X
d. xxii.										X
d. xxiii.									X	
d. xxiv.										

The following are skills required to become a certified nursing assistant (CNA). <sup>DOK 2</sup>

- a. Explain the following categories of physical care skills:
  - i. Activities of daily living (ADL): hygiene, dressing and grooming, nutrition and hydration, elimination, and rest/sleep/comfort.

- ii. Basic nursing: infection control, safety/emergency procedures, therapeutic/technical procedures, data collection and reporting.
- iii. Restorative: injury prevention and self-care/independence.
- b. Identify and explain the following categories of psychosocial care skills:
  - i. Emotional and mental health needs.
  - ii. Spiritual and cultural needs.
- c. Describe the role of the nurse aide as it relates to communication, client rights, legal and ethical behavior, and as a member of the health care team.
- d. Perform required ADL skills:
  - i. Wash hands.
  - ii. Apply one knee-high, elastic stocking.
  - iii. Assist to ambulate using transfer belt.
  - iv. Assist with use of bedpan.
  - v. Clean upper or lower denture.
  - vi. Count and record radial pulse.
  - vii. Count and record respirations.
  - viii. Donning and removing Personal Protective Equipment (gown and gloves).
  - ix. Dress client with affected (weak) right arm.
  - x. Feed client who cannot feed self.
  - xi. Give modified bed bath (face, one arm, hand, and underarm).
  - xii. Make an occupied bed (patient/client does not need assistance to turn).
  - xiii. Measure and record blood pressure.
  - xiv. Measure and record urinary output.
  - xv. Measure and record weight of ambulatory client.
  - xvi. Perform passive range of motion (PROM) for one knee and one ankle.
  - xvii. Perform PROM for one shoulder.
  - xviii. Position on side.
  - xix. Provide catheter care for a female patient.
  - xx. Provide fingernail care on one hand.
  - xxi. Provide foot care on one foot.
  - xxii. Provide mouth care.
  - xxiii. Provide perineal care (peri-care) for a female patient.
  - xxiv. Transfer from bed to wheelchair using transfer belt.

# Appendix C: Industry Standards

## National Healthcare Foundation Standards

Crosswalk for Health Sciences (Core)										
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
NHFS 1.1			X			X	X	X	X	X
NHFS 1.2			X			X	X	X	X	X
NHFS 1.3			X			X	X	X	X	X
NHFS 2.1					X					
NHFS 2.2					X					
NHFS 2.3					X					
NHFS 3.1				X						
NHFS 4.1		X								
NHFS 4.2		X								
NHFS 4.3		X		X						
NHFS 4.4										
NHFS 5.1				X						
NHFS 5.2				X						
NHFS 6.1				X						
NHFS 6.2				X						
NHFS 7.1			X							
NHFS 7.2			X							
NHFS 7.3			X							
NHFS 7.4			X							
NHFS 7.5			X							
NHFS 8.1					X					
NHFS 8.2					X					
NHFS 9.1										X
NHFS 10.1						X	X	X	X	X
NHFS 11.1					X	X	X	X	X	X
NHFS 11.2					X	X	X	X	X	X
NHFS 11.3					X	X	X	X	X	X

### **Foundation Standard 1: Academic Foundation**

Health care professionals will know the academic subject matter required for proficiency within their area. They will use this knowledge as needed in their role. The following accountability criteria are considered essential for students in a health science program of study.

#### **Accountability Criteria**

##### **1.1 Human Structure and Function**

- 1.11 Classify the basic structural and functional organization of the human body (tissue, organ, and system).
- 1.12 Recognize body planes, directional terms, quadrants, and cavities.

- 1.13 Analyze the basic structure and function of the human body.
- 1.2 Diseases and Disorders**
  - 1.21 Describe common diseases and disorders of each body system (prevention, pathology, diagnosis, and treatment).
  - 1.22 Recognize emerging diseases and disorders.
  - 1.23 Investigate biomedical therapies as they relate to the prevention, pathology, and treatment of disease.
- 1.3 Medical Mathematics**
  - 1.31 Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
  - 1.32 Analyze diagrams, charts, graphs, and tables to interpret health care results.
  - 1.33 Record time using the 24-hour clock.

## **Foundation Standard 2: Communications**

Health care professionals will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.

### **Accountability Criteria**

#### **2.1 Concepts of Effective Communication**

- 2.11 Interpret verbal and nonverbal communication.
- 2.12 Recognize barriers to communication.
- 2.13 Report subjective and objective information.
- 2.14 Recognize the elements of communication using a sender-receiver model.
- 2.15 Apply speaking and active listening skills.

#### **2.2 Medical Terminology**

- 2.21 Use roots, prefixes, and suffixes to communicate information.
- 2.22 Use medical abbreviations to communicate information.

#### **2.3 Written Communication Skills**

- 2.31 Recognize elements of written and electronic communication (spelling, grammar, and formatting).

## **Foundation Standard 3: Systems**

Health care professionals will understand how their role fits into their department, their organization and the overall health care environment. They will identify how key systems affect services they perform and quality of care.

### **Accountability Criteria**

#### **3.1 Health Care Delivery Systems**

- 3.11 Understand the health care delivery system (public, private, government, and non-profit).
- 3.12 Explain the factors influencing health care delivery systems.
- 3.13 Describe the responsibilities of consumers within the health care system.
- 3.14 Explain the impact of emerging issues such as technology, epidemiology, bioethics, and socioeconomics on health care delivery systems.
- 3.15 Discuss common methods of payment for health care.

#### **Foundation Standard 4: Employability Skills**

Health care professionals will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.

##### **Accountability Criteria**

#### **4.1 Personal Traits of the Health Care Professional**

- 4.11 Classify the personal traits and attitudes desirable in a member of the health care team
- 4.12 Summarize professional standards as they apply to hygiene, dress, language, confidentiality and behavior.

#### **4.2 Employability Skills**

- 4.21 Apply employability skills in health care.

#### **4.3 Career Decision-making**

- 4.31 Discuss levels of education, credentialing requirements, and employment trends in health care.
- 4.32 Compare careers within the health science career pathways (diagnostic services, therapeutic services, health informatics, support services, or biotechnology research and development).

#### **4.4 Employability Preparation**

- 4.41 Develop components of a personal portfolio.
- 4.42 Demonstrate the process for obtaining employment.

#### **Foundation Standard 5: Legal Responsibilities**

Health care professionals will understand the legal responsibilities, limitations, and implications of their actions within the health care delivery setting. They will perform their duties according to regulations, policies, laws and legislated rights of clients.

##### **Accountability Criteria**

#### **5.1 Legal Implications**

- 5.11 Analyze legal responsibilities.
- 5.12 Apply procedures for accurate documentation and record keeping.

#### **5.2 Legal Practices**

- 5.21 Apply standards for Health Insurance Portability and Accountability Act (HIPAA).
- 5.22 Describe advance directives.
- 5.23 Summarize the Patient's Bill of Rights.
- 5.24 Understand informed consent.
- 5.25 Explain laws governing harassment, labor and scope of practice.

#### **Foundation Standard 6: Ethics**

Health care professionals will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health care environment. They will perform quality health care delivery.

##### **Accountability Criteria**

#### **6.1 Ethical Boundaries**

- 6.11 Differentiate between ethical and legal issues impacting health care.
- 6.12 Recognize ethical issues and their implications related to health care.

## **6.2 Ethical Practice**

- 6.21 Apply procedures for reporting activities and behaviors that affect the health, safety, and welfare of others.

## **6.3 Cultural, Social, and Ethnic Diversity**

- 6.31 Understand religious and cultural values as they impact health care.
- 6.32 Demonstrate respectful and empathetic treatment of ALL patients/clients (customer service).

## **Foundation Standard 7: Safety Practices**

Health care professionals will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.

### **Accountability Criteria**

#### **7.1 Infection Control**

- 7.11 Explain principles of infection control.
- 7.12 Describe methods of controlling the spread and growth of microorganisms.

#### **7.2 Personal Safety**

- 7.21 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
- 7.22 Apply principles of body mechanics.

#### **7.3 Environmental Safety**

- 7.31 Apply safety techniques in the work environment.

#### **7.4 Common Safety Hazards**

- 7.41 Comply with safety signs, symbols, and labels.
- 7.42 Understand implications of hazardous materials.

#### **7.5 Emergency Procedures and Protocols**

- 7.51 Practice fire safety in a health care setting.
- 7.52 Apply principles of basic emergency response in natural disasters and other emergencies.

## **Foundation Standard 8: Teamwork**

Health care professionals will understand the roles and responsibilities of individual members as part of the health care team, including their ability to promote the delivery of quality health care. They will interact effectively and sensitively with all members of the health care team.

### **Accountability Criteria**

#### **8.1 Health Care Teams**

- 8.11 Understand roles and responsibilities of team members.
- 8.12 Recognize characteristics of effective teams.

#### **8.2 Team Member Participation**

- 8.21 Recognize methods for building positive team relationships.
- 8.22 Analyze attributes and attitudes of an effective leader.
- 8.23 Apply effective techniques for managing team conflict.

## **Foundation Standard 9: Health Maintenance Practices**

Health care professionals will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.

## **Accountability Criteria**

### **9.1 Healthy Behaviors**

- 9.11 Apply behaviors that promote health and wellness.
- 9.12 Describe strategies for the prevention of diseases including health screenings and examinations.
- 9.13 Discuss complementary (alternative) health practices as they relate to wellness and disease prevention.

## **Foundation Standard 10: Technical Skills**

Health care professionals will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

## **Accountability Criteria**

### **10.1 Technical Skills**

- 10.11 Apply procedures for measuring and recording vital signs including the normal ranges.
- 10.12 Apply skills to obtain training or certification in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.

## **Foundation Standard 11: Information Technology Applications**

Health care professionals will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health care applications.

## **Accountability Criteria**

### **11.1 Health Information Literacy and Skills**

- 11.11 Identify methods and types of data collected in health care.
- 11.12 Use health record data collection tools (such as input screens, document templates).
- 11.13 Differentiate between types and content of health records (patient, pharmacy, and laboratory).
- 11.14 Ensure that documentation in the health record reflects timeliness, completeness, and accuracy.
- 11.15 Adhere to information systems policies and procedures as required by national, state, local, and organizational levels.

### **11.2 Privacy and Confidentiality of Health Information**

- 11.21 Apply the fundamentals of privacy and confidentiality policies and procedures.
- 11.22 Identify legal and regulatory requirements related to the use of personal health information.
- 11.23 Identify and apply policies and procedures for access and disclosure of personal health information.
- 11.24 Describe the consequences of inappropriate use of health data in terms of disciplinary action.
- 11.25 Describe appropriate methods to correct inaccurate information/errors personally entered into an electronic medical record (EMR).

### **11.3 Basic Computer Literacy Skills**

- 11.31 Apply basic computer concepts and terminology in order to use computers and other mobile devices.

- 11.32 Demonstrate basic computer operating procedures.
- 11.33 Demonstrate use of file organization and information storage.
- 11.34 Use basic word processing, spreadsheet, and database applications.
- 11.35 Evaluate the validity of web-based resources.
- 11.36 Demonstrate use of appropriate email and social media usage.

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# Appendix D: 21st Century Skills<sup>1</sup>

21 <sup>st</sup> Century Crosswalk for Health Sciences (Core)										
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
CS1			X		X					
CS2		X		X						
CS3			X		X					
CS4		X	X	X	X	X	X	X	X	X
CS5			X	X						
CS6					X					
CS7					X					
CS8					X					
CS9										
CS10										
CS11										
CS12										
CS13										
CS14										
CS15										
CS16										

## CSS1-21st Century Themes

### CS1 Global Awareness

1. Using 21st century skills to understand and address global issues
2. Learning from and working collaboratively with individuals representing diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
3. Understanding other nations and cultures, including the use of non-English languages

### CS2 Financial, Economic, Business, and Entrepreneurial Literacy

1. Knowing how to make appropriate personal economic choices
2. Understanding the role of the economy in society
3. Using entrepreneurial skills to enhance workplace productivity and career options

### CS3 Civic Literacy

1. Participating effectively in civic life through knowing how to stay informed and understanding governmental processes
2. Exercising the rights and obligations of citizenship at local, state, national, and global levels
3. Understanding the local and global implications of civic decisions

### CS4 Health Literacy

1. Obtaining, interpreting, and understanding basic health information and services and using such information and services in ways that enhance health
2. Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance, and stress reduction
3. Using available information to make appropriate health-related decisions

<sup>1</sup> *21st century skills*. (n.d.). Washington, DC: Partnership for 21st Century Skills.

4. Establishing and monitoring personal and family health goals
5. Understanding national and international public health and safety issues

**CS5 Environmental Literacy**

1. Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water, and ecosystems.
2. Demonstrate knowledge and understanding of society's impact on the natural world (e.g., population growth, population development, or resource consumption rate).
3. Investigate and analyze environmental issues, and make accurate conclusions about effective solutions.
4. Take individual and collective action toward addressing environmental challenges (e.g., participating in global actions, designing solutions that inspire action on environmental issues).

CSS2-Learning and Innovation Skills

**CS6 Creativity and Innovation**

1. Think Creatively
2. Work Creatively with Others
3. Implement Innovations

**CS7 Critical Thinking and Problem Solving**

1. Reason Effectively
2. Use Systems Thinking
3. Make Judgments and Decisions
4. Solve Problems

**CS8 Communication and Collaboration**

1. Communicate Clearly
2. Collaborate with Others

CSS3-Information, Media and Technology Skills

**CS9 Information Literacy**

1. Access and Evaluate Information
2. Use and Manage Information

**CS10 Media Literacy**

1. Analyze Media
2. Create Media Products

**CS11 ICT Literacy**

1. Apply Technology Effectively

CSS4-Life and Career Skills

**CS12 Flexibility and Adaptability**

1. Adapt to change
2. Be Flexible

**CS13 Initiative and Self-Direction**

1. Manage Goals and Time
2. Work Independently

3. Be Self-directed Learners

**CS14 Social and Cross-Cultural Skills**

1. Interact Effectively with others
2. Work Effectively in Diverse Teams

**CS15 Productivity and Accountability**

1. Manage Projects
2. Produce Results

**CS16 Leadership and Responsibility**

1. Guide and Lead Others
2. Be Responsible to Others

# Appendix E: Common Core Standards

	Units	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
<b>Common Core Standards</b>										
RL.11.1.										
RL.11.2.										
RL.11.3.										
RL.11.4.										
RL.11.5.										
RL.11.6.										
RL.11.7.										
RL.11.8.										
RL.11.9.										
RL.11.10.										
RI.11.1.										
RI.11.2.										
RI.11.3.										
RI.11.4.										
RI.11.5.										
RI.11.6.										
RI.11.7.										
RI.11.8.					X					
RI.11.9.										
RI.11.10.										
W.11.1.										
W.11.2.										
W.11.3.										
W.11.4.										
W.11.5.										
W.11.6.										
W.11.7.					X					
W.11.8.										
W.11.9.										
W.11.10.										
SL.11.1.										
SL.11.2.										
SL.11.3.										
SL.11.4.										
SL.11.5.					X					
SL.11.6.										
L.11.1.					X					
L.11.2.										
L.11.3.										
L.11.4.										
L.11.5.										
L.11.6.										
RH.11.1.										
RH.11.2.										
RH.11.3.										
RH.11.4.										
RH.11.5.										
RH.11.6.										
RH.11.7.										
RH.11.8.										
RH.11.9.										
RH.11.10.										
RST.11.1.										
RST.11.2.										
RST.11.3.										

RST.11.4.					X					
RST.11.5.										
RST.11.6.										
RST.11.7.										
RST.11.8.										
RST.11.9.										
RST.11.10.										
WHST.11.1.										
WHST.11.2.					X					
WHST.11.3.										
WHST.11.4.										
WHST.11.5.										
WHST.11.6.										
WHST.11.7.										
WHST.11.8.										
WHST.11.9.										
WHST.11.10.										

## Reading Standards for Literature (11-12)

### College and Career Readiness Anchor Standards for *Reading Literature*

#### Key Ideas and Details

RL.11.1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RL.11.2. Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

RL.11.3. Analyze the impact of the author’s choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).

#### Craft and Structure

RL.11.4. Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.)

RL.11.5. Analyze how an author’s choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.

RL.11.6. Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).

### Integration of Knowledge and Ideas

RL.11.7. Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (Include at least one play by Shakespeare and one play by an American dramatist.)

RL.11.8. (Not applicable to literature)

RL.11.9. Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.

### Range of Reading and Level of Text Complexity

RL.11.10. By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

By the end of grade 12, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 11–CCR text complexity band independently and proficiently.

## **Reading Standards for Informational Text (11-12)**

### **College and Career Readiness Anchor Standards for *Informational Text***

#### Key Ideas and Details

RI.11.1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RI.11.2. Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.

RI.11.3. Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.

#### Craft and Structure

RI.11.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

RI.11.5. Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.

RI.11.6. Determine an author’s point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness, or beauty of the text.

### Integration of Knowledge and Ideas

RI.11.7. Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

RI.11.8. Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., *The Federalist*, presidential addresses).

RI.11.9. Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln’s Second Inaugural Address) for their themes, purposes, and rhetorical features.

### Range of Reading and Level of Text Complexity

RI.11.10. By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

By the end of grade 12, read and comprehend literary nonfiction at the high end of the grades 11–CCR text complexity band independently and proficiently.

## **College and Career Readiness Anchor Standards for *Writing***

### Text Types and Purposes

W.11.1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

- a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.

b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases.

c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

e. Provide a concluding statement or section that follows from and supports the argument presented.

W.11.2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

a. Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.

c. Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

d. Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.

e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

W.11.3. Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.



- a. Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.
- b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters
- c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution).
- d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.
- e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

### Production and Distribution of Writing

W.11.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

W.11.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 11–12 on page 54.)

W.11.6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

### Research to Build and Present Knowledge

W.11.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

W.11.8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

W.11.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

a. Apply grades 11–12 Reading standards to literature (e.g., “Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics”).

b. Apply grades 11–12 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning [e.g., in U.S. Supreme Court Case majority opinions and dissents] and the premises, purposes, and arguments in works of public advocacy [e.g., *The Federalist*, presidential addresses]”).

### Range of Writing

W.11.10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

## **College and Career Readiness Anchor Standards for *Speaking and Listening***

### Comprehension and Collaboration

SL.11.1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.

a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.

b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.

c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.

d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

SL.11.2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and

solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

SL.11.3. Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.

### Presentation of Knowledge and Ideas

SL.11.4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

SL.11.5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

SL.11.6. Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. (See grades 11–12 Language standards 1 and 3 for specific expectations.)

## **College and Career Readiness Anchor Standards for *Language***

### Conventions of Standard English

L.11.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

a. Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.

b. Resolve issues of complex or contested usage, consulting references (e.g., Merriam-Webster’s Dictionary of English Usage, Garner’s Modern American Usage) as needed.

L.11.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

a. Observe hyphenation conventions.

b. Spell correctly.

### Knowledge of Language

L.11.3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

- a. Vary syntax for effect, consulting references (e.g., Tufte’s *Artful Sentences*) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

### Vocabulary Acquisition and Use

L.11.4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.
- b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).
- c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage.
- d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

L.11.5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

- a. Interpret figures of speech (e.g., hyperbole, paradox) in context and analyze their role in the text.
- b. Analyze nuances in the meaning of words with similar denotations.

L.11.6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

## **Reading Standards for Literacy in History/Social Studies (11-12)**

### Key Ideas and Details

RH.11.1 Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.

RH.11.2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas

RH.11.3. Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain

### Craft and Structure

RH.11.4. Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

RH.11.5. Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.

RH.11.6. Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.

### Integration of Knowledge and Ideas

RH.11.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

RH.11.8. Evaluate an author's premises, claims, and evidence by corroborating or challenging them with other information.

RH.11.9. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

### Range of Reading and Level of Text Complexity

RH.11.10. By the end of grade 12, read and comprehend history/social studies texts in the grades 11–CCR text complexity band independently and proficiently.

## **Reading Standards for Literacy in Science and Technical Subjects (11-12)**

### Key Ideas and Details

RST.11.1. Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST.11.2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

### Craft and Structure

RST.11.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.

RST.11.5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

RST.11.6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

### Integration of Knowledge and Ideas

RST.11.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11.8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11.9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

## Range of Reading and Level of Text Complexity

RST.11.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11–CCR text complexity band independently and proficiently.

## **Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects (11-12)**

### Text Types and Purposes

WHST.11.1. Write arguments focused on discipline-specific content.

- a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
- b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience’s knowledge level, concerns, values, and possible biases.
- c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- e. Provide a concluding statement or section that follows from or supports the argument presented.

WHST.11.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

- a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.

- c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
- d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
- e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

WHST.11.3. (Not applicable as a separate requirement)

#### Production and Distribution of Writing

WHST.11.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11.6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

#### Research to Build and Present Knowledge

WHST.11.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

WHST.11.8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

WHST.11.9. Draw evidence from informational texts to support analysis, reflection, and research.



## Range of Writing

WHST.11.10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

## Common Core Crosswalk for Mathematics (11-12)

	Units	1	2	3	4	5	6	7	8	9
<b>Common Core Standards</b>										
N-RN.1.										
N-RN.2.										
N-RN.3.			X							
N-Q.1.									X	
N-Q.2.									X	
N-Q.3.									X	
N-CN.1.										
N-CN.2.										
N-CN.3.										
N-CN.4.										
N-CN.5.										
N-CN.6.										
N-CN.7.										
N-CN.8.										
N-CN.9.										
N-VM.1.										
N-VM.2.										
N-VM.3.										
N-VM.4.										
N-VM.5.										
N-VM.6.										
N-VM.7.										
N-VM.8.										
N-VM.9.										
N-VM.10.										
N-VM.11.										
N-VM.12.										
A-SSE.1.										
A-SSE.2.										
A-SSE.3.										
A-SSE.4.										
A-APR.1.										
A-APR.2.										
A-APR.3.										
A-APR.4.										
A-APR.5.										
A-APR.6.										
A-APR.7.										
A-CED.1.										
A-CED.2.										
A-CED.3.										
A-CED.4.										
A-REI.1.										
A-REI.2.										
A-REI.3.										
A-REI.4.										
A-REI.5.										
A-REI.6.										
A-REI.7.										
A-REI.8.										
A-REI.9.										
A-REI.10.										
A-REI.11.										
A-REI.12.										
F-IF.1.										
F-IF.2.										
F-BF.3.										

F-BF.4.												
F-LE.1.												
F-LE.2.												
F-LE.3.												
F-LE.4.												
F-LE.5.												
F-TF.1.												
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F-TF.7.												
F-TF.8.												
F-TF.9.												
G-CO.1.												
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G-CO.3.												
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G-CO.10.												
G-CO.11.												
G-CO.12.												
G-CO.13.												
G-SRT.1.												
G-SRT.2.												
G-SRT.3.												
G-SRT.4.												
G-SRT.5.												
G-SRT.6.												
G-SRT.7.												
G-SRT.8.												
G-SRT.9.												
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G-SRT.11.												
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## Mathematics (High School)

### Number and Quantity

#### The Real Number System

N-RN.1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.

N-RN.2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.

N-RN.3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

#### Quantities

N-Q.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

N-Q.2. Define appropriate quantities for the purpose of descriptive modeling.

N-Q.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

## The Complex Number System

N-CN.1. Know there is a complex number  $i$  such that  $i^2 = -1$ , and every complex number has the form  $a + bi$  with  $a$  and  $b$  real.

N-CN.2. Use the relation  $i^2 = -1$  and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.

N-CN.3. (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

N-CN.4. (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.

N-CN.5. (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example,  $(-1 + \sqrt{3}i)^3 = 8$  because  $(-1 + \sqrt{3}i)$  has modulus 2 and argument  $120^\circ$ .

N-CN.6. (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.

N-CN.7. Solve quadratic equations with real coefficients that have complex solutions.

N-CN.8. (+) Extend polynomial identities to the complex numbers. For example, rewrite  $x^2 + 4$  as  $(x + 2i)(x - 2i)$ .

N-CN.9. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

## Vector and Matrix Quantities

N-VM.1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g.,  $\mathbf{v}$ ,  $|\mathbf{v}|$ ,  $\|\mathbf{v}\|$ ,  $v$ ).

N-VM.2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.

N-VM.3. (+) Solve problems involving velocity and other quantities that can be represented by vectors.

N-VM.4. (+) Add and subtract vectors

N-VM.4.a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes.

N-VM.4.b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.

N-VM.4.c. Understand vector subtraction  $v - w$  as  $v + (-w)$ , where  $-w$  is the additive inverse of  $w$ , with the same magnitude as  $w$  and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.

N-VM.5. (+) Multiply a vector by a scalar.

N-VM.5.a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as  $c(v_x, v_y) = (cv_x, cv_y)$ .

N-VM.5.b. Compute the magnitude of a scalar multiple  $cv$  using  $\|cv\| = |c|v\|$ . Compute the direction of  $cv$  knowing that when  $|c|v \neq 0$ , the direction of  $cv$  is either along  $v$  (for  $c > 0$ ) or against  $v$  (for  $c < 0$ ).

N-VM.6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.

N-VM.7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.

N-VM.8. (+) Add, subtract, and multiply matrices of appropriate dimensions.

N-VM.9. (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties

N-VM.10. (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.

N-VM.11. (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.

N-VM.12. (+) Work with  $2 \times 2$  matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area.

## Algebra

### Seeing structure in expressions

A-SSE.1. Interpret expressions that represent a quantity in terms of its context.

A-SSE.1.a. Interpret parts of an expression, such as terms, factors, and coefficients.

A-SSE.1.b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret  $P(1+r)^n$  as the product of  $P$  and a factor not depending on  $P$ .

A-SSE.2. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

A-SSE.3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

A-SSE.3.a. Factor a quadratic expression to reveal the zeros of the function it defines.

A-SSE.3.b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.

A-SSE.3.c. Use the properties of exponents to transform expressions for exponential functions.

A-SSE.4. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.

### Arithmetic with Polynomials and Rational Expressions

A-APR.1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials

A-APR.2. Know and apply the Remainder Theorem: For a polynomial  $p(x)$  and a number  $a$ , the remainder on division by  $x - a$  is  $p(a)$ , so  $p(a) = 0$  if and only if  $(x - a)$  is a factor of  $p(x)$ .

A-APR.3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

A-APR.4. Prove polynomial identities and use them to describe numerical relationships.

A-APR.5. (+) Know and apply the Binomial Theorem for the expansion of  $(x + y)^n$  in powers of  $x$  and  $y$  for a positive integer  $n$ , where  $x$  and  $y$  are any numbers, with coefficients determined for example by Pascal's Triangle.

A-APR.6. Rewrite simple rational expressions in different forms; write  $a(x)/b(x)$  in the form  $q(x) + r(x)/b(x)$ , where  $a(x)$ ,  $b(x)$ ,  $q(x)$ , and  $r(x)$  are polynomials with the degree of  $r(x)$  less than the degree of  $b(x)$ , using inspection, long division, or, for the more complicated examples, a computer algebra system.

A-APR.7. (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

### Creating Equations

A-CED.1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

A-CED.2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

A-CED.3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.

A-CED.4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law  $V = IR$  to highlight resistance  $R$ .

### Reasoning with Equations and Inequalities

A-REI.1. Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

A-REI.2. Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

A-REI.3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

A-REI.4. Solve quadratic equations in one variable.



A-REI.4.a. Use the method of completing the square to transform any quadratic equation in  $x$  into an equation of the form  $(x - p)^2 = q$  that has the same solutions. Derive the quadratic formula from this form.

A-REI.4.b. Solve quadratic equations by inspection (e.g., for  $x^2 = 49$ ), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as  $a \pm bi$  for real numbers  $a$  and  $b$ .

A-REI.5. Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.

A-REI.6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

A-REI.7. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line  $y = -3x$  and the circle  $x^2 + y^2 = 3$ .

A-REI.8. (+) Represent a system of linear equations as a single matrix equation in a vector variable.

A-REI.9. (+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension  $3 \times 3$  or greater).

A-REI.10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

A-REI.11. Explain why the  $x$ -coordinates of the points where the graphs of the equations  $y = f(x)$  and  $y = g(x)$  intersect are the solutions of the equation  $f(x) = g(x)$ ; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where  $f(x)$  and/or  $g(x)$  are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

A-REI.12. Graph the solutions to a linear inequality in two variables as a half plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

## Functions

### Interpreting Functions

F-IF.1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If  $f$  is a function and  $x$  is an element of its domain, then  $f(x)$  denotes the output of  $f$  corresponding to the input  $x$ . The graph of  $f$  is the graph of the equation  $y = f(x)$ .

F-IF.2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

F-IF.3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by  $f(0) = f(1) = 1$ ,  $f(n+1) = f(n) + f(n-1)$  for  $n \geq 1$ .

F-IF.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.

F-IF.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function  $h(n)$  gives the number of person-hours it takes to assemble  $n$  engines in a factory, then the positive integers would be an appropriate domain for the function.

F-IF.6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.

F-IF.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

F-IF.7.a. Graph linear and quadratic functions and show intercepts, maxima, and minima.

F-IF.7.b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.

F-IF.7.c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.

F-IF.7.d. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.

F-IF.7.e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.

F-IF.8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

F-IF.8.a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.

F-IF.8.b. Use the properties of exponents to interpret expressions for exponential functions.

F-IF.9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

### Building Functions

F-BF.1. Write a function that describes a relationship between two quantities.

F-BF.1.a. Determine an explicit expression, a recursive process, or steps for calculation from a context.

F-BF.1.b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.

F-BF.1.c. (+) Compose functions. For example, if  $T(y)$  is the temperature in the atmosphere as a function of height, and  $h(t)$  is the height of a weather balloon as a function of time, then  $T(h(t))$  is the temperature at the location of the weather balloon as a function of time.

F-BF.2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.

F-BF.3. Identify the effect on the graph of replacing  $f(x)$  by  $f(x) + k$ ,  $k f(x)$ ,  $f(kx)$ , and  $f(x + k)$  for specific values of  $k$  (both positive and negative); find the value of  $k$  given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.

F-BF.4. Find inverse functions.

F-BF.4.a. Solve an equation of the form  $f(x) = c$  for a simple function  $f$  that has an inverse and write an expression for the inverse.

F-BF.4.b. (+) Verify by composition that one function is the inverse of another.

F-BF.4.c. (+) Read values of an inverse function from a graph or a table, given that the function has an inverse.

F-BF.4.d. (+) Produce an invertible function from a non-invertible function by restricting the domain.

F-BF.5. (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

### Linear, Quadratic, and Exponential Models

F-LE.1. Distinguish between situations that can be modeled with linear functions and with exponential functions.

F-LE.1.a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

F-LE.1.b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.

F-LE.1.c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another

F-LE.2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

F-LE.3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.

F-LE.4. For exponential models, express as a logarithm the solution to  $ab^ct = d$  where  $a$ ,  $c$ , and  $d$  are numbers and the base  $b$  is 2, 10, or  $e$ ; evaluate the logarithm using technology.

F-LE.5. Interpret the parameters in a linear or exponential function in terms of a context.

## Trigonometric Functions

F-TF.1. Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

F-TF.2. Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

F-TF.3. (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for  $\pi/3$ ,  $\pi/4$  and  $\pi/6$ , and use the unit circle to express the values of sine, cosine, and tangent for  $\pi-x$ ,  $\pi+x$ , and  $2\pi-x$  in terms of their values for  $x$ , where  $x$  is any real number.

F-TF.4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

F-TF.5. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.

F-TF.6. (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.

F-TF.7. (+) Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

F-TF.8. Prove the Pythagorean identity  $\sin^2(\theta) + \cos^2(\theta) = 1$  and use it to find  $\sin(\theta)$ ,  $\cos(\theta)$ , or  $\tan(\theta)$  given  $\sin(\theta)$ ,  $\cos(\theta)$ , or  $\tan(\theta)$  and the quadrant of the angle.

F-TF.9. (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.

## **Geometry**

### Congruence

G-CO.1. Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

G-CO.2. Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).

G-CO.3. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.

G-CO.4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.

G-CO.5. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

G-CO.6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

G-CO.7. Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

G-CO.8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

G-CO.9. Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

G-CO.10. Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to  $180^\circ$ ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

G-CO.11. Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

G-CO.12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, or dynamic geometric software). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

G-CO.13. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

## Similarity, Right Triangles, and Trigonometry

G-SRT.1. Verify experimentally the properties of dilations given by a center and a scale factor:

G-SRT.1.a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.

G-SRT.1.b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.

G-SRT.2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

G-SRT.3. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.

G-SRT.4. Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.

G-SRT.5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

G-SRT.6. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

G-SRT.7. Explain and use the relationship between the sine and cosine of complementary angles.

G-SRT.8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

G-SRT.9. (+) Derive the formula  $A = \frac{1}{2} ab \sin(C)$  for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.

G-SRT.10. (+) Prove the Laws of Sines and Cosines and use them to solve problems.

G-SRT.11. (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

## Circles

G-C.1. Prove that all circles are similar.

G-C.2. Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.

G-C.3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

G-C.4. (+) Construct a tangent line from a point outside a given circle to the circle.

G-C.5. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

## Expressing Geometric Properties with Equations

G-GPE.1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.

G-GPE.2. Derive the equation of a parabola given a focus and directrix.

G-GPE.3. (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.

G-GPE.4. Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point  $(1, \sqrt{3})$  lies on the circle centered at the origin and containing the point  $(0, 2)$ .

G-GPE.5. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

G-GPE.6. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

G-GPE.7. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.



## Geometric Measurement and Dimension

G-GMD.1. Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.

G-GMD.2. (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.

G-GMD.3. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.

G-GMD.4. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

## Modeling with Geometry

G-MG.1. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

G-MG.2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

G-MG.3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

## **Statistics and Probability**

### Interpreting Categorical and Quantitative Data

S-ID.1. Represent data with plots on the real number line (dot plots, histograms, and box plots).

S-ID.2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.

S-ID.3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).

S-ID.4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate.

Use calculators, spreadsheets, and tables to estimate areas under the normal curve.

S-ID.5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.

S-ID.6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

S-ID.6.a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.

S-ID.6.b. Informally assess the fit of a function by plotting and analyzing residuals.

S-ID.6.c. Fit a linear function for a scatter plot that suggests a linear association.

S-ID.7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.

S-ID.8. Compute (using technology) and interpret the correlation coefficient of a linear fit.

S-ID.9. Distinguish between correlation and causation.

### Making Inferences and Justifying Conclusions

S-IC.1. Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

S-IC.2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?

S-IC.3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

S-IC.4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.

S-IC.5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.

S-IC.6. Evaluate reports based on data.

## Conditional Probability and the Rules of Probability

S-CP.1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).

S-CP.2. Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.

S-CP.3. Understand the conditional probability of A given B as  $P(A \text{ and } B)/P(B)$ , and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

S-CP.4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.

S-CP.5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

S-CP.6. Find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A, and interpret the answer in terms of the model.

S-CP.7. Apply the Addition Rule,  $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ , and interpret the answer in terms of the model.

S-CP.8. (+) Apply the general Multiplication Rule in a uniform probability model,  $P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B)$ , and interpret the answer in terms of the model.

S-CP.9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems.

## Using Probability to Make Decisions

S-MD.1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.

S-MD.2. (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

S-MD.3. (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.

S-MD.4. (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

S-MD.5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.

S-MD.5.a. Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.

S-MD.5.b. Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.

S-MD.6. (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).

S-MD.7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

# Appendix F: National Educational Technology Standards for Students (NETS-S)

NETS Crosswalk for Health Sciences (Core)										
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
<b>NETS Standards</b>										
T1										
T2					X					
T3					X					
T4					X					
T5					X					
T6					X					

- T1** Creativity and Innovation
- T2** Communication and Collaboration
- T3** Research and Information Fluency
- T4** Critical Thinking, Problem Solving, and Decision Making
- T5** Digital Citizenship
- T6** Technology Operations and Concepts

**T1** Creativity and Innovation  
 Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students do the following:

- a. Apply existing knowledge to generate new ideas, products, or processes.
- b. Create original works as a means of personal or group expression.
- c. Use models and simulations to explore complex systems and issues.
- d. Identify trends and forecast possibilities.

**T2** Communication and Collaboration  
 Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students do the following:

- a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
- d. Contribute to project teams to produce original works or solve problems.

**T3** Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information. Students do the following:

- a. Plan strategies to guide inquiry.
- b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- d. Process data and report results.

**T4** Critical Thinking, Problem Solving, and Decision Making

Students use critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Students do the following:

- a. Identify and define authentic problems and significant questions for investigation.
- b. Plan and manage activities to develop a solution or complete a project.
- c. Collect and analyze data to identify solutions and/or make informed decisions.
- d. Use multiple processes and diverse perspectives to explore alternative solutions.

**T5** Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students do the following:

- a. Advocate and practice safe, legal, and responsible use of information and technology.
- b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- c. Demonstrate personal responsibility for lifelong learning.
- d. Exhibit leadership for digital citizenship.

**T6** Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students do the following:

- a. Understand and use technology systems.
- b. Select and use applications effectively and productively.
- c. Troubleshoot systems and applications.
- d. Transfer current knowledge to learning of new technologies.

# Health Sciences

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Program CIP: 51.0000

## Ordering Information

Research and Curriculum Unit for Workforce Development  
Vocational and Technical Education  
Attention: Reference Room and Media Center Coordinator  
P.O. Drawer DX  
Mississippi State, MS 39762  
<https://cia.rcu.msstate.edu/curriculum/download/>  
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## Direct inquiries to

Emily Owen	Program Coordinator
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## Published by

Office of Vocational and Technical Education  
Mississippi Department of Education  
Jackson, MS 39205

Research and Curriculum Unit for Workforce Development  
Mississippi State University  
Mississippi State, MS 39762

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Louis Randle, Binding Specialist  
Ashleigh Murdock, Editor

The Research and Curriculum Unit (RCU), located in Starkville, Mississippi, as part of Mississippi State University, was established to foster educational enhancements and innovations. In keeping with the land grant mission of Mississippi State University, the RCU is dedicated to improving the quality of life for Mississippians. The RCU enhances intellectual and professional development of Mississippi students and educators, while applying knowledge and educational research to the lives of the people of the state. The RCU works within the contexts of curriculum development and revision, research, assessment, professional development, and industrial training.

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# Acknowledgments

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The *Health Sciences Curriculum Framework and Supporting Materials* was presented to the Mississippi Board of Education on May 15, 2008. The following persons were serving on the state board at this time:

Dr. Hank M. Bounds, Executive Secretary  
Claude Hartley, Chair  
William Harold Jones, Vice-Chair  
Howell “Hal” N. Gage  
Dr. O. Wayne Gann  
Rebecca Harris  
Charles McClelland  
Sondra Parker Caillavet  
Rosetta Richards  
Dr. David Sistrunk

Mike Mulvihill, Interim Associate State Superintendent of Education for the Office of Vocational Education and Workforce Development at the Mississippi Department of Education, assembled an oversight committee to provide input throughout the development of the *Health Sciences Curriculum Framework and Supporting Materials*. Members of this taskforce are the following:

Dr. Kay Berry—Simpson County School District  
Dr. Sam Bounds—Mississippi Association of School Superintendents  
Beverly Brahan—Mississippi Association of Educators  
David Campbell—Mississippi Association of Middle Level Educators  
Tommye Dale Favre—Mississippi Department of Employment Security  
Mary Hardy—Mississippi PTA  
Dr. Anna Hurt—Mississippi Association of School Administrators  
Jay Moon—Mississippi Manufacturers Association  
Dr. Dean Norman—Center for Advanced Vehicular Systems Extension  
Michael Ray—Western Line School District  
George Schloegal—Hancock Bank  
Charlene Sproles—Mississippi School Counselor Association  
Mike Thomas—North American Coal Corporation  
Pete Walley—Institutions of Higher Learning  
Clarence Ward—Boys and Girls Clubs of the Gulf Coast  
Dr. Debra West—State Board for Community/Junior Colleges

The members of the *Health Sciences Curriculum Framework and Supporting Materials* Professional Advisory Team were a vital part of the curriculum. Members of this team include the following:

Sheree Zbylot—State Board of Nursing, Interim Executive Director  
Ricki Garrett—Mississippi Nurses Association, Executive Director  
Cheryl Fowler—Mississippi State Department of Health, Bureau of Licensure  
Vanessa Henderson—Mississippi Health Care Association, Executive Director  
Gwen Causey—Mississippi Health Care Association, Director of Long Term Care Quality and Regulatory Services  
Rosalyn Campbell—North Mississippi Medical Center (Tupelo), Career Counselor  
Judy Pigg—Beverly Living Center (Carthage), Director of Clinical Education

Ruth Greer—Tupelo Nursing and Rehabilitation, Director of Nursing  
Danny Mullins—Gilbert’s Home Health Agency (Tupelo), Director of Operations  
Cindy Owens—State Home Health Agency (Jackson), Education Director  
Jennifer Hitt—Baptist Memorial Hospital North Mississippi (Oxford), Nurse Recruiter  
Tammie Hinton—Forrest General Hospital (Hattiesburg), Employment Manager  
Dawnell Thomas—Rush Foundation Hospital (Meridian), Employee Coordinator  
James Holland—The Meadows (Fulton), Owner  
Margie Major—Scott Regional Medical Center, Director of Nursing  
Sean Johnson—Quitman County Hospital, CEO  
Becky Ulmer—Jasper General Hospital (Bay Springs)  
Brenda Castleberry—Mississippi Baptist Health Systems (Jackson), Director of Educational Resource Center  
Dr. Marcia M. Rachel—UMMC School of Nursing, Assistant Dean for Health Systems and Quality Improvement  
Laleta Stone—EMCC, Nursing Instructor  
Betty Davis—Meridian CC, Health personnel  
Maxine Kron—Hinds CC, LPN Instructor  
Dr. Libby Mahaffey—Hinds CC, Allied Health Dean  
Dr. Sheila Adams—MUW, College of Nursing and Speech, Language Pathology Dean  
Mary Jo Kirkpatrick—MUW, Associate Nursing Director  
Dr. Linda Cox—MUW, Baccalaureate Nursing Director

The teachers who contributed teaching and assessment materials that are included in the *Health Sciences Curriculum Framework and Supporting Materials* were also a vital part of the curriculum. Members who contributed are the following:

Pam Hindman—Louisville Municipal School District, Louisville, MS  
Leshia Lott—Greene County Schools, Richton, MS  
Lee Ann Rhaly—Lauderdale County School District, Lauderdale, MS  
Melanie Ford—Columbus Municipal School District, Columbus, MS  
Judy Dalgo—Ocean Springs School District, Ocean Springs, MS  
Missy Staggers—Starkville Public School District, Starkville, MS  
Dr. Libby Mahaffey—Hinds Community College, Jackson, MS  
Dr. Richie McAlister—Meridian Community College, Meridian, MS

Appreciation is also expressed to the following staff members at the Mississippi Department of Education who provided guidance and insight throughout the development process:

Jodi Rankin—Program Coordinator, Office of Vocational Education and Workforce Development, Mississippi Department of Education, Jackson, MS  
Chris Wall—Director of Instructional Programs and Student Organizations, Office of Vocational Education and Workforce Development, Mississippi Department of Education, Jackson, MS

Finally, standards in the *Health Sciences Curriculum Framework and Supporting Materials* are based on the following:

**Human Anatomy and Physiology**

Mississippi Department of Education Subject Area Testing Program

**21st Century Skills and Information and Communication Technologies Literacy Standards**

In defining 21st century learning, the Partnership for 21st Century Skills has embraced five content and skill areas that represent the essential knowledge for the 21st century: global awareness; civic engagement; financial, economic, and business literacy; learning skills that encompass problem solving, critical thinking, and self-directional skills; and Information and Communication Technology (ICT) Literacy.

**National Educational Technology Standards for Students**

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**ACT College Readiness Standards**



The College Readiness Standards are sets of statements intended to help students understand what is expected of them in preparation for the ACT. These standards are integrated into teaching and assessment strategies throughout the curriculum framework.

**National Health Care Foundation Skill Standards**

The National Health Care Skill Standards were developed by the National Consortium on Health Science and Technology and West Ed Regional Research Laboratory, in partnership with educators and health care employers. The standards were developed to inform current and future health care workers, employers, and educators what skills and knowledge workers need to succeed.



## Health Sciences Executive Summary

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### Program Description

Health Sciences is a pathway of courses for students in the Health Sciences career cluster. The Health Sciences pathway includes classroom and hands-on experiences that will provide students with an overview of the health care field as outlined in the States' Career Clusters Health Science Cluster and the National Consortium on Health Science and Technology Education as well as begin to prepare students for careers in occupations predicted to have a high number of available jobs in the next 10 years including registered nurses, nurse aides, practical nurses, and home health aides.

### Industry Certification

By implementing the National Health Care Foundation Skill Standards in the Health Sciences Pathway, students who successfully master the curriculum should have the skills required to take the National Health Science Assessment, which is based on industry-validated performance indicators. In addition, students should be prepared to take the Mississippi Home Health Aide and the Mississippi Homemaker exams through the Mississippi Department of Education and to complete the requirements and take the certification test to become a certified nurse aide through a certified nurse aide registry approved site.

### Dual Enrollment

Dual enrollment in a community college practical nursing program provides an opportunity for senior high school students to complete the first semester of a practical nursing program during their senior year. Mississippi's dual enrollment/dual credit practical nursing programs provide qualified high school seniors the opportunity to earn college credit for the first three courses in the postsecondary Practical Nursing (PN) curriculum. Upon successful completion of those courses and graduation from high school, dually enrolled PN students are eligible to sit for CNA licensure and are entitled to advanced placement into the colleges' regular Practical Nursing program. Students who continue seamlessly into the second semester of the regular college program have the potential to sit for the NCLEX-PN licensure exam and become licensed practical nurses within 6 months of high school graduation. The dual enrollment/dual credit practical nursing program is the administrative responsibility of the community colleges and the practical nursing programs, in coordination and cooperation with their partnering high schools.

## **Assessment**

Students will be assessed using the Health Sciences MS-CPAS2 test. The MS-CPAS2 blueprint can be found at <http://info.rcu.msstate.edu/services/curriculum.asp>. If there are questions regarding assessment of this program, please contact the Health Sciences instructional design specialists at the Research and Curriculum Unit at 662.325.2510.

## **Student Prerequisites**

In order for students to be able to experience success in the Health Sciences Pathway program, the following student prerequisites are in place:

5. C or higher in English (the previous year)

6. C or higher in Math (last course taken or the instructor can specify the math)

**or**

1. TABE Reading Score (eighth grade or higher)

**or**

1. Instructor Approval

## **Applied Academic Credit**

Applied science content from the curriculum was aligned to the 2007 Mississippi Science Framework Revised Academic Benchmarks. Upon the completion of this program, students will earn two applied science credits that can be used for graduation requirements.

## **Licensure Requirements**

Mississippi teacher license endorsement 961 is needed to teach the Health Sciences Pathway. Requirements for the 961 educator endorsement are listed below:

1. Applicants must be registered nurses who are graduates of an accredited school of nursing with associate degrees or higher.

2. Applicants with associate degrees must have at least 2 years of verifiable occupational experience in the past 10 years. Experience must be appropriate to the subject to be taught.

Applicants with bachelor or higher degrees must have at least 1 year of verifiable occupational experience in the past 10 years. Experience must be appropriate to the subject to be taught. Applicants must possess and maintain an unrestricted Mississippi Registered Nurse License.

3. Applicants must enroll immediately in the Vocational Instructor Preparation (VIP) or the Redesign Education Program (REP).

4. Applicants must complete the individualized Professional Development Plan (PDP) requirements of the VIP or REP prior to the expiration date of the 3-year vocational license.
5. Applicants must possess and maintain CPR certification.
6. Applicants must possess and maintain health-care provider basic life saver instructor level certification.
7. Applicants must possess and maintain first aid certification.
8. Applicants must successfully complete an MDE-approved computer literacy certification exam.
9. Applicants must successfully complete certification for an online learning workshop, module, or course that is approved by the MDE.
10. Applicants must successfully complete a health science certification workshop, module, or course that is approved by the MDE.

**Note:** If an applicant meets all requirements listed above, that applicant will be issued a 961 endorsement—a 5-year license. If an applicant does not meet all requirements, the applicant will be issued a 3-year endorsement license, and all requirements stated above must be satisfied prior to the ending date of that license.

## **Professional Learning**

*The professional learning itinerary for the middle school or individual pathways can be found at <http://redesign.rcu.msstate.edu>. If you have specific questions about the content of each training session provided, please contact the Research and Curriculum Unit at 662.325.2510, and ask for the Professional Learning Specialist.*

## **Course Outlines**

This curriculum provides options for local school districts to meet student needs and scheduling demands. The first option groups units into four 1-Carnegie unit courses. The second option groups units into two 2-Carnegie courses. Please see below for a description of each option.

### **Option 1**

Upon completion of this course, students will be trained to be entry-level general basic health-care assistants and trained in CPR and first aid. Students will be able to make an informed choice of a health occupation that they plan to pursue. The course consists of four one-credit courses that should be completed in the following sequence:

1. Orientation to Health Science (Course Code: 995002)
2. Theory and Application of Health Science I (Course Code: 995003)

3. ~~Theory and Application of Health Science II (Course Code: 995004)~~

4. ~~Workplace and Employment Skills in Health Science (Course Code: 995005)~~

**Course Description:** ~~Orientation to Health Science includes the foundation skills necessary in the health science industry. Content such as safety and standard precautions; medical, legal, and ethical responsibility; medical terminology; and organization, converting support, movement, and protection will be offered to students. This is a 1-Carnegie unit course.~~



**Course Description:** Theory and Application of Health Science I emphasizes real world, hands-on practice. Content related to vital organs, intake, and elimination; regulation, coordination, and reproduction; therapeutic personal care; therapeutic services; and diagnostic services is offered to students. This 1-Carnegie unit course should only be taken after students successfully pass Orientation to Health Science (Course Code: 995002).

**Course Description:** Theory and Application of Health Science II focuses on therapeutic personal care, therapeutic services, and diagnostic services. This 1-Carnegie unit course should only be taken after students successfully pass Theory and Application of Health Science, Part A (Course Code: 995003).

**Course Description:** Workplace and Employment Skills in Health Science is a culminating course that places emphasis on growth and development; health informatics; and academic, workplace, and employment skills. This is a 1-Carnegie unit course and should be taken after students successfully pass Orientation to Health Science (Course Code: 995002) and Theory and Application of Health Science, parts A and B (Course Codes: 995003 and 995004).

**Orientation to Health Sciences (One Carnegie Unit) – Course Code: 995002**

Unit	Title	Hours
1	Orientation and Career Exploration	20
2	Safety and Standard Precautions	25
3	Medical, Legal, and Ethical Responsibility	15
4	Introduction to Medical Terminology	20
5	Organization, Covering, Support, Movement, and Protection	40
		120

**Theory and Applications of Health Science I (One Carnegie Unit) – Course Code: 995003**

Unit	Title	Hours
6	Vital Organs, Intake, and Elimination	70
7	Regulation, Coordination, and Reproduction	30
		100

**Theory and Applications of Health Science II (One Carnegie Unit) – Course Code: 995004**

Unit	Title	Hours
8	Orientation, Safety, Asepsis, and Infection Control	40
9	Direct Personal Care	45
10	Therapeutic Services	40
		125

**Workplace and Employment Skills in Health Sciences (One Carnegie Unit) – Course Code: 995005**

Unit	Title	Hours
11	Diagnostic Services	20
12	Growth and Development	20
13	Health Informatics	20
14	Academic, Workplace, and Employment Skills	25
		85

**Option 2**

**Course Description:** The first course of the secondary Health Sciences program introduces students to careers available in the health field, basic anatomy and physiology, and basic patient care skills. Upon completion of this course, students will be trained to be entry-level general basic health-care assistants and trained in CPR and first aid. Students will be able to make an informed choice of a health occupation that they plan to pursue. This course offers 2 Carnegie units. Students who complete Health Sciences I may count one of the credits earned in this course as one science credit toward graduation requirements if they complete both years of the Health Sciences program.

**Course Description:** The emphasis of the second course is primarily to expose students to advanced skills in the various health occupations and the basic health-care sciences. Students may participate in shadowing experiences in selected health-care facilities. Upon completion of this advanced course, students will be trained to work as entry-level assistants in various health occupations and will be certified in CPR at the health-care provider level. This course offers 2 Carnegie units. Students who complete Health Sciences II may count one of the credits earned in this course as one science credit toward graduation requirements if they complete both years of the Health Sciences program.

This program includes a minimum of 100 hours of clinical-type experience during the second course. This clinical-type experience can include tours of health-care facilities, guest speakers, laboratory practice/demonstration in the classroom, and observation experiences in medical facilities.

**Health Sciences I (Course Code: 995000)**

Unit	Title	Hours
1	Orientation and Career Exploration	20
2	Safety and Standard Precautions	25
3	Medical, Legal, and Ethical Responsibility	15
4	Introduction to Medical Terminology	20
5	Organization, Covering, Support, Movement, and Protection	40
6	Vital Organs, Intake, and Elimination	70
7	Regulation, Coordination, and Reproduction	30
		220

**Health Sciences II (Course Code: 995001)**

<b>Unit</b>	<b>Title</b>	<b>Hours</b>
8	Orientation, Safety, Asepsis, and Infection Control	40
9	Growth and Development	20
10	Direct Personal Care	45
11	Therapeutic Services	40
12	Diagnostic Services	20
13	Health Informatics	20
14	Academic, Workplace, and Employment Skills	25
		210

# Preface

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Secondary vocational–technical education programs in Mississippi are faced with many challenges resulting from sweeping educational reforms at the national and state levels. Schools and teachers are increasingly being held accountable for providing true learning activities to every student in the classroom. This accountability is measured through increased requirements for mastery and attainment of competency as documented through both formative and summative assessments.

The courses in this document reflect the statutory requirements as found in Section 37-3-49, Mississippi Code of 1972, as amended (Section 37-3-46). In addition, this curriculum reflects guidelines imposed by federal and state mandates (Laws, 1988, ch. 487, §14; Laws, 1991, ch. 423, §1; Laws, 1992, ch. 519, §4 eff. from and after July 1, 1992; Carl D. Perkins Vocational Education Act IV, 2007; and No Child Left Behind Act of 2001).

# Professional Organizations

---

## **American Association of Medical Transcriptionist**

4230 Kiernan Avenue  
Suite 130  
Modesto, CA 95356  
(800) 982-2182 (toll free)  
(209) 527-9620 (direct)  
(209) 527-9633 (fax)  
[www.ahdionline.org](http://www.ahdionline.org)  
[ahdi@ahdionline.org](mailto:ahdi@ahdionline.org)

## **American Association for Respiratory Care**

9425 N. MacArthur Blvd.  
Suite 100  
Irving, TX 75063-4706  
(972) 243-2272 (phone)  
[www.aafc.org](http://www.aafc.org)

## **American Dental Assistants Association**

35 East Wacker Drive  
Suite 1730  
Chicago, IL 60601-2211  
(312) 541-1550 (phone)  
(312) 541-1496 (fax)  
[www.dentalassistant.org](http://www.dentalassistant.org)

## **American Dental Association**

211 East Chicago Ave.  
Chicago, IL 60611-2678  
(312) 440-2500 (phone)  
[www.ada.org](http://www.ada.org)

## **American Health Care Association**

1201 L Street, N.W.  
Washington, DC 20005  
(202) 842-4444 (phone)  
(202) 842-3860 (fax)  
[www.ahca.org](http://www.ahca.org)

## **American Hospital Association**

One North Franklin  
Chicago, Illinois 60606-3421  
(312) 422-3000 (phone)  
[www.aha.org](http://www.aha.org)

## **American Medical Association**

515 N. State Street  
Chicago, IL 60610  
(800) 621-8335 (phone)  
[www.ama-assn.org](http://www.ama-assn.org)

## **American Red Cross National Headquarters**

2025 E Street NW  
Washington, DC 20006  
(800) REDCROSS  
(800) 257-7575 (Español)  
[www.redcross.org](http://www.redcross.org)

## **American Society of Radiologic Technologists**

15000 Central Ave. SE  
Albuquerque, NM 87123-3909  
(800) 444-2778, Press 5  
(505) 298-4500, Press 5  
(505) 298-5063 (fax)  
[www.asrt.org](http://www.asrt.org)

## **Hospital Corporation of America**

One Park Plaza  
Nashville, TN 37203  
(615) 344-9551 (phone)  
[www.hcahealthcare.com](http://www.hcahealthcare.com)

## **National Association of Emergency Medical Technicians**

P.O. Box 1400  
Clinton, MS 39060-1400  
Physical Address  
132-A East Northside Dr.  
Clinton, MS 39056  
(601) 924-7744  
1-800-34-NAEMT (toll free)  
(601) 924-7325 (fax)  
[info@naemt.org](mailto:info@naemt.org)  
[www.naemt.org](http://www.naemt.org)

## **National Athletic Trainer's Association**

2952 Stemmons Freeway #200  
Dallas, TX 75247  
(214) 637-6282 (phone)  
(214) 637-2206 (fax)  
[www.nata.org](http://www.nata.org)

LifeWorks: Explore Health and Medical Science Careers Early  
<http://science.education.nih.gov/lifeworks>

**National Health Council**

1730 M Street, NW  
Suite 500  
Washington, DC 20036  
(202) 785-3910 (phone)  
(202) 785-5923 (fax)  
[www.nationalhealthcouncil.org](http://www.nationalhealthcouncil.org)  
**Nurses for a Healthier Tomorrow**  
[www.nursesource.org](http://www.nursesource.org)

**Nursing Spectrum**

[www.nurse.com](http://www.nurse.com)

**Ovarian Cancer National Alliance**

910 17th Street, N.W.  
Suite 1190  
Washington, D.C. 20006  
(202) 331-1332 (phone)  
(202) 331-2292 (fax)  
[ocna@ovariancancer.org](mailto:ocna@ovariancancer.org)  
[www.ovariancancer.org](http://www.ovariancancer.org)

**Society of Nuclear Medicine**

1850 Samuel Morse Drive  
Reston, Virginia 20190  
(703) 708-9000 (phone)  
[www.snm.org](http://www.snm.org)

**St. Jude Children's Research Hospital**

332 N. Lauderdale  
Memphis, TN 38105  
(901) 495-3300 (phone)  
[www.stjude.org](http://www.stjude.org)

**Le Bonheur Children's Medical Center**

50 N. Dunlap Street  
Memphis, TN 38103  
(901) 287-KIDS (5437)  
[info@lebonheur.org](mailto:info@lebonheur.org)

**Mississippi Nurses Association**

31 Woodgreen Place  
Madison, MS 39110  
(601) 898-0670 (phone)  
(601) 898-0190 (fax)  
<http://www.msurses.org/>

**American Heart Association**

440 E. Pass Road Gulfport, MS, 39507  
609 Corinne Street Hattiesburg, MS, 39401  
4830 McWillie Circle Jackson, MS, 39206  
[www.americanheart.org](http://www.americanheart.org)

**The Center for Health and Health Care in Schools**

(202) 466-3396  
[chhcs@gwu.edu](mailto:chhcs@gwu.edu)  
[www.healthinschools.org](http://www.healthinschools.org)

**American Cancer Society**

1-800-ACS-2345  
[www.cancer.org](http://www.cancer.org)

**The Diabetes Foundation of Mississippi**

16 Northtown Drive  
Suite 100  
Jackson, MS 39211  
(601) 957-7878 (phone)  
(601) 957-9555 (fax)  
[www.msdiabetes.org](http://www.msdiabetes.org)

**Mississippi Office of Healthy Schools—A Division of Mississippi Department of Education**

Central High School  
359 North West Street  
P.O. Box 771  
Jackson, MS 39205-0771  
[www.healthyschoolsms.org](http://www.healthyschoolsms.org)  
[www.rxlister.com](http://www.rxlister.com)  
[www.PDR.net](http://www.PDR.net)

**American Lung Association of Mississippi**

P.O. Box 2178  
Ridgeland, MS 39158  
731 Pear Orchard Road  
Suite 18  
Ridgeland, MS 39157  
(601) 206-5810 (phone)  
(800) 586-4872 (toll free)  
(601) 206-5813 (fax)  
[www.alams.org](http://www.alams.org)

**American Speech-Language-Hearing Association**

2200 Research Boulevard

Rockville, MD 20850-3289  
(800) 638-8255  
[www.asha.org](http://www.asha.org)

**American School Health Association**

7263 State Route 43  
P.O. Box 708  
Kent, Ohio 44240  
(330) 678-1601 (phone)  
(330) 678-4526 (fax)  
[asha@ashaweb.org](mailto:asha@ashaweb.org)  
[www.ashaweb.org](http://www.ashaweb.org)

**National School Boards Association**

1680 Duke Street  
Alexandria, VA 22314  
(703) 838-6722 (phone)  
(703) 683-7590 (fax)  
[info@nsba.org](mailto:info@nsba.org)  
[www.nsba.org](http://www.nsba.org)

**Association for Professionals in Infection Control and Epidemiology**

1275 K St., NW, Suite 1000  
Washington, D.C. 20005-4006  
(202) 789-1890 (phone)  
(202) 789-1899 (fax)  
[www.apic.org](http://www.apic.org)

**The American Assembly for Men in Nursing**

AAMN 6700 Oporto Madrid Blvd.  
Birmingham, AL 35206  
(205) 956-0146 (phone)  
[www.aamn.org](http://www.aamn.org)

**Association of Allied Health Programs**

4400 Jenifer Street, NW Suite 333  
Washington, D.C. 20015  
(202) 237-6481 (phone)  
(202) 237-6485 (fax)  
[www.asahp.org](http://www.asahp.org)

**Health Professions Network**

1850 Samuel Morse Drive  
Reston, VA 20190-5316  
(703) 708-9000 (phone)  
(703) 708-9015 (fax)  
[membership@healthpronet.org](mailto:membership@healthpronet.org)  
[www.healthpronet.org](http://www.healthpronet.org)

**American Health Information Management**

Association - AHIMA  
233 N. Michigan Avenue, 21st Floor  
Chicago, IL 60601-5800  
(312) 233-1100  
[www.ahima.org](http://www.ahima.org)

**HIPPA Standard Certification**

[www.hippaademo.com](http://www.hippaademo.com) (Provides essential foundation of HIPPA knowledge of which any program can add)  
[www.cdc.gov/train.htm](http://www.cdc.gov/train.htm) (Provides access to training sites Web broadcast for health care workers/students)

**Centers for Disease Control HBV/HIV/Infection**

**Control** (Allows individuals to subscribe for e-mails related to specific topics and links to other useful sites)  
[www.cdc.gov/subscribe.html](http://www.cdc.gov/subscribe.html)

**OSHA Standards** (Includes PowerPoint slides, questions, tests, and keys to tests given)

[www.healthsafe.uab.edu/pages/educationandtraining/educationandtraining.html](http://www.healthsafe.uab.edu/pages/educationandtraining/educationandtraining.html)

**Catalogue** (Describes allied health professions)

[www.ama-assn.org/go/alliedhealth](http://www.ama-assn.org/go/alliedhealth)

**CPR** (Useful charts for CPR)

[www.funcpr.com](http://www.funcpr.com)

# Using this Document

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Each secondary vocational–technical course consists of a series of instructional units that focus on a common theme. All units have been written using a common format that includes the following components:

## **Unit Number and Title**

### **Suggested Time on Task**

An estimated number of clock hours of instruction that should be required to teach the competencies and objectives of the unit. A minimum of 140 hours of instruction is required for each Carnegie unit credit. The curriculum framework should account for approximately 75 to 80% of the time in the course.

### **Competencies and Suggested Objectives**

A competency represents a general concept or performance that students are expected to master as a requirement for satisfactorily completing a unit. Students will be expected to receive instruction on all competencies. The suggested objectives represent the enabling and supporting knowledge and performances that will indicate mastery of the competency at the course level.

### **Suggested Teaching Strategies**

This section of each unit indicates research-based strategies that can be used to enable students to master each competency. Emphasis has been placed on strategies that reflect active learning methodologies. Teachers should feel free to modify or enhance these suggestions based on needs of their students and resources available in order to provide optimum learning experiences for their students.

### **Suggested Assessment Strategies**

This section indicates research-based strategies that can be used to measure student mastery. Examples of suggested strategies could include rubrics, class participation, reflection, and journaling. Again, teachers should feel free to modify or enhance these suggested assessment strategies based on local needs and resources.

### **Integrated Academic Topics, 21st Century Skills and Information and Communication Technology Literacy Standards, ACT College Readiness Standards, and Technology Standards for Students**

This section identifies related academic topics as required in the Subject Area Assessment Program (SATP) in Algebra I, Biology I, English II, and U. S. History from 1877, which are integrated into the content of the unit. Research-based teaching strategies also incorporate ACT College Readiness standards. It also identifies the 21st Century Skills and Information and Communication Technology Literacy skills. In addition, national technology standards for students are associated with the competencies and suggested objectives for the unit are also identified.

### **References**

A list of suggested references is provided for each unit. The list includes some of the primary instructional resources that may be used to teach the competencies and suggested objectives. Again, these resources are suggested, and the list may be modified or enhanced based on needs and abilities of students and on available resources.





# Health Sciences I

## Unit 1: Orientation and Career Exploration

**Competency 1:** Describe the purpose of the course and related professional organizations. (DOK 1)<sup>HSF2, HS4, HSF11</sup>

### Suggested Objectives

- a. Identify student and course expectations. (DOK 1)
- b. Identify the role of student and professional organizations in individual career development. (DOK 1)

### Suggested Teaching Strategies

- Hooks (ways to engage students) may include distributing medical equipment related to various careers on each student's desk prior to arrival so that students can guess the function of the equipment. Demonstrate and allow students to use equipment.<sup>T4, T6</sup>
- Introduce the career field, and discuss job requirements (e.g., certifications) and occupation-specific and soft skills needed. Outline the units of the program and how they relate to various jobs in the field. Pre-assess student knowledge by leading students in a discussion about what they know about the field, the types of jobs available, and the salaries of those jobs. Place fake money appropriate to various jobs in envelopes, and have students match the money to the jobs earning that salary.<sup>CLS1, CLS2</sup>
- Use an online Jeopardy game to play a game about various careers and professional and student organizations.<sup>CLS1, CLS2, CLS3, T1, T2, T3, T4</sup>
- Describe key school and program policies and safety procedures to the class based on industry standards and requirements (may use the school handbook and any program-specific information). Introduce workplace skills and how they will be used to relate the classroom work to meet industry requirements. Have students research hospital or clinic policies in the local area and compare and contrast the school policy with those policies. Explain to the students that since workplace skills are so important for their success on the job, they will be evaluated regularly on these skills.<sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Use a multiple learning styles inventory to determine students' learning styles and interests. Share with the students their styles and the impact they have. Throughout the year, provide varied projects to meet the learning styles. Work with the special populations instructor to assess the reading, writing, and math skills of each student and to provide materials that are appropriate for each student. Plan to reassess students at the end of the year. Divide students into groups based on learning styles, and assign each group a specific set of policies and procedures to review from the handbook/information. Have each group use technology to construct a presentation (poster, collage, role play, multimedia presentation, Photo Story, or

Movie Maker) outlining the school and program policies and procedures related to the assigned topic. Have each group present its policies and procedures for peer review. <sup>E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

- Have students explore the HOSA Web site and/or view HOSA videos, listen to lecture and participate in class discussion about HOSA, and listen to an explanation of team work skills related to HOSA and medical careers. Have students write a summary about what they have learned about HOSA. Have students participate in parliamentary procedure role play by practicing a HOSA meeting. <sup>E1, E2, E3, E4, E5, E6, R1, R5, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate policies presentation for content and appearance using a presentation rubric.
- Evaluate written summary for content and appearance using a written report rubric.
- Assess students' knowledge through a written assessment.

**Competency 2:** Introduce health care careers, and interpret various roles in the health care environment and how systems affect services performed and quality of care. (DOK 2) <sup>HSF3</sup>

### Suggested Objectives

- a. Describe systems theory and its components. (DOK 1)
- b. Examine the health care delivery system including models or factors (e.g., cost, technology, and aging population) that may affect them and cost effectiveness of various systems. (DOK 2)
- c. Describe scope of practice and the interdependence of health care professions within a given health care delivery system. (DOK 2)

### Suggested Teaching Strategies

- Show the clip from the movie *John Q* or a movie, television show, or Web Site (such as <http://www.oprah.com>) related to health care access, and have students answer questions as they watch the movie and write a brief description of what they thought was the most interesting part and why. Prior to showing videos, video clips, Web sites, and so forth, it is strongly advised that you review the content for objectionable material. You may also send a form to parents/guardians prior to showing the information asking for permission for the student to view it. In addition, you must always follow copyright laws. <sup>E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5</sup>
- Discuss the systems theory, various health care delivery systems, and the scope of practice of various professionals. Have students work in teams to research and compare and contrast health care systems in various countries (socialized, private, etc.) and make a poster using

word processing or other software to create text and visuals. Give students money based on the job each student is interested in, and have each one choose various insurance plans (with varying deductibles) and compare the benefits with various illnesses. <sup>E1, E2, E3, E4, E5, E6, R1, R5, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

- Have students research the cost of a heart transplant and the amount of out-of-pocket cost for patients with various types of insurance or government assistance. Lead students in a debate about access to health care from the viewpoint of the insurance agency, the health care provider, the patient, and so forth. <sup>E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T3</sup>

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate poster for content and appearance using a rubric.
- Use a rubric to assess posters.
- Assess students' knowledge through a written assessment.

**Competency 3:** Analyze the function of the health care team and the ability to promote the delivery of quality health care. (DOK 2) <sup>HSF8</sup>

### Suggested Objectives

- a. Compare health care teams to determine the meaning of team concept, characteristics of effective teams, roles of various team participants, and the role of compromise. (DOK 2)
- b. Formulate procedures for team member participation (e.g., communication, collaboration, active listening, leadership, and respect). (DOK 2)

### Suggested Teaching Strategies

- Hook students with the analogy of a football team, a puzzle with a missing piece, the game Jenga, or Lego blocks that would be used to build a structure to illustrate the importance of all members of the team, or give each student a clue that is related to a mystery, and have students work together to solve the mystery. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Discuss the health care team and how it works together to promote quality care. Have students work together to research teamwork concepts and develop a Venn diagram to illustrate how people in a hospital work together. Have students analyze case studies at <http://www.vhct.org/studies.htm> to compare the characteristics of effective teams and present their work (using electronic media such as PowerPoint) to the class. <sup>E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Have students role play members of a team in which one member of the team does not act appropriately. Have each student write procedures for appropriate team participation, and then have other students evaluate procedures and make suggestions for changes. <sup>E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate case studies using a rubric.
- Review written procedures for appropriateness.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 4:** Introduce employability skills in order to enhance employment opportunities and job satisfaction; demonstrate key employability skills, and maintain and upgrade skills as needed. (DOK 2) <sup>HSF4</sup>

### Suggested Objectives

- a. Analyze the effects of key employability skills. (DOK 2)

- b. Develop a health sciences career path (considering levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential). (DOK 3)
- c. Design a plan for personal growth and development in order to meet the health sciences career path outlined. (DOK 3)

### Suggested Teaching Strategies

- Use different probing techniques to determine students' prior knowledge of characteristics of desirable behavior. Describe the learning goals of the unit; remind students that behavior, personality, and work ethic are important in the workplace; and explain the characteristics of desirable behavior. Lead students in a discussion of the consequences of various scenarios in which employees do not exhibit good behavior, personality, or work ethic (e.g., not telling the truth, stealing, tardiness, or recording fictitious information). Make sure students understand appropriate actions. Lead them to make inferences about what would happen if a particular incident occurred. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5
- Divide students into groups based on learning styles. Give each group a different scenario involving serving the public, communicating with employees, and personal work ethic where desirable characteristics were lacking. Have each group role play, prepare a multimedia presentation, compose a rap song or rhyme, or create a cartoon of scenario to include the desired professional behavior or characteristics. Following each group presentation, have the class discuss and evaluate the solutions presented by each group. Lead the class to draw conclusions about the consequences of poor personal behavior and characteristics. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Distribute articles related to employability skills to students. Before the students begin to read, ask them to write answers to the following questions: 1. Based on the title of the articles, what do you expect to learn from your reading? 2. What is the purpose of reading this article? Instruct students to ask themselves the following questions after each section of the article and write their responses: 1. Do I understand what I am reading? 2. What new information have I learned so far? After students finish reading the selected articles, ask them to write answers to the following questions: 1. What was the main idea of the articles that you read? 2. What are the supporting topics of the articles? 3. How can you use this information throughout this course? E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, W1, W2, W3, W4, W5, CLS2, CLS4
- Have students keep a typed weekly journal of their experiences dealing with others in the public or in the workplace throughout the year. Have students identify the behavior and characteristics that are present or that are lacking. E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Have students work together to research and present to the class about health care in other countries, including the culture, people, and so forth. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4,

CLS5, T1, T2, T3, T4, T5, T6

- Have students discuss the job outlook in various health-care fields in Mississippi, the United States, and internationally and the reasons for growth or decrease in jobs. Have students choose a health-care field and develop a career path and plan for personal growth. Students should determine the salary, and develop a personal budget including gross pay/net pay and explain the reason for deductions. Have students create a podcast in which they compare salaries for high school, community college, and university graduates and discuss advantages and disadvantages of working for someone and owning a business. Have students share it with the class. Have students begin an electronic portfolio of activities performed during the unit and continue to add materials throughout the year. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor discussion of behavior scenarios.
- Use a rubric to assess role-play, multimedia presentation, rap song or rhyme, or cartoon for content.
- Evaluate answers to questions from articles for content.
- Use a rubric to assess journals according to content and grammar.
- Assess Podcast for content.
- Use a checklist each grading period to assess workplace skills.
- Use a rubric to assess the portfolio.

**Competency 5:** Use communication skills. (DOK 2)<sup>HSF2</sup>

### Suggested Objectives

- Apply concepts of interpersonal and written communication, and interpret technical materials used for health care practices and procedures. (DOK 2)
- Adjust communication to others' (patient and co-worker) abilities to understand. (DOK 2)
- Apply the elements of communication using the sender-receiver model. (DOK 1)
- Apply active listening skills using reflection, restatement, and clarification techniques.
- Demonstrate courtesy to others including self-introduction. (DOK 1)
- Interpret verbal and nonverbal behaviors to augment communication and within scope of

practice. (DOK 2)

### Suggested Teaching Strategies

- As a hook, have students line up according to birth date without talking, have students investigate various forms of nonverbal communication and play a game in which a person's body language gives away a secret or indicates if someone is telling the truth, or show a video differentiating personal and professional touch and communication. Conduct pre-assessment inventory of students' communication skills in an informal game of gossip. Begin the game by whispering a statement to one student who then repeats the statement to the next student. When the statement reaches the last student, have the student announce the statement to the class. Compare the last statement to the original statement, and discuss why communication is important. E1, E2, E3, E4, E5, E6, CLS3
- Pair students, and have them sit back to back with a flat surface in front of each student. Give each student an identical set of Legos or other building blocks, and instruct the students that they cannot look at the other's work or ask each other questions at any time. Have one student build a structure and then give the partner oral instructions to build an identical structure. Compare the structures. (You could also have students draw pictures with crayons.) Repeat the exercise, and allow students to ask questions as they receive instructions. Have students work in small groups to analyze the communication process and discuss communication barriers that were present during any of the suggested activities. Have students complete a reflective writing activity using word processing software to describe how they communicate differently according to their audience (i.e., parents, peers, employer, etc.). E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Identify, define, and discuss the types of communication to include verbal, nonverbal, and written. Provide examples of each type of communication within your career area. Discuss the complexity of the communication process in the workplace. Explain that effective communication is an essential component of organizational success. Contrast and compare forms of subjective and objective communication. Have students research proper verbal and nonverbal communication techniques in the United States and other countries. Have them work cooperatively to prepare a chart, mural, or television program comparing and contrasting various techniques. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Discuss the components of sending and receiving messages to include sending, decoding, encoding, and receiving. Lead students to critique samples of written and oral communication. E1, E2, E3, E4, E5, E6, R1, R5
- Conduct post-assessment inventory of students' communication skills in an informal game of gossip as described above. Compare the last statement to the original statement, and compare the differences and similarities between the pre- and post-results. E1, E2, E3, E4, E5, E6, R1, R5, CLS3



### **Suggested Assessment Strategies**

- Evaluate the project comparing communication techniques for accuracy and neatness.
- To evaluate the Lego activity, use a scale of 1 to 5 with 5 being the highest. Have all students rotate through the finished products to evaluate each structure on how it best resembles the original structure. Tally the scores to find the best structure.
- Monitor class activity to ensure that all students participate.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

### ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R5 — Meaning of Words
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

### National Industry Standards

- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF3 — Health-care workers will understand how their role fits into their department, their organization, and the overall health-care environment. They will identify how key systems affect services they perform and quality of care.
- HSF4 — Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills as needed.
- HSF8 — Health-care workers will understand the roles and responsibilities of individual members as part of the healthcare team, including their ability to promote the delivery of quality health care. They will interact effectively and sensitively with all members of the health-care team.
- HSF11 — Health-care workers will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health-care applications.

### National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making

T5 — Digital Citizenship  
T6 — Technology Operations and Concepts

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For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Case Study Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4-Points	Accomplished 3-Points	Needs Improvement 2-Points	Unsatisfactory 1-Point	Score
<b>Comprehension</b>	Shows complete understanding of the issues and grasps implications beyond the immediate issue	Asks for more details to clarify understanding of the issue	Shows partial understanding of the issue but does not ask for clarification	Resists attempts to get clarification	
<b>Strategizing</b>	Develops realistic strategies that provide a satisfactory conclusion	Chooses appropriate strategies that may satisfy	Shows evidence of strategy that may or may not satisfy	Needs assistance to choose a strategy	
<b>Innovation</b>	Devises more than one resolution to the problem	Offers a solution	Offers a solution with a limited point of view	Shows some understanding of the problem	
<b>Communication</b>	Convincingly communicates resolution	Explains solution so others can understand	Conveys an opinion	Unsure of how to explain	
<b>TOTAL</b>					

**Comments:**

# Journal Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

CATEGORY	Excellent 4	Very Good 3	Satisfactory 2	Needs Work 1	SCORE:
<b>Writing Quality</b>	There is a strong writing style and ability to express concepts learned. Excellent spelling, grammar, syntax, spelling, etc.	There is a good writing style and ability to express concepts learned. Very good grammar, syntax, spelling, etc.	There is a writing style that conveys meaning adequately. Some minor grammatical, syntax, and spelling errors	There is difficulty in expressing concepts. There is limited syntax. There are noticeable grammatical and spelling mistakes.	
<b>Content</b>	Clear and complete description of the activity is recorded. All major points are documented.	Very good description of the activity is recorded. Most major points are documented.	Good description of the activity is recorded. Some major points have been omitted.	Limited description of the activity is recorded. Very few major points are documented.	
<b>Insight and Understanding</b>	Definite insights into the implications of the activity are recorded. Awareness of complexity of issues and situations is present.	Some insight into the issue or situation is recorded. Some sense of complexity is present.	Insight is present from a more simplistic standpoint.	Only limited insight into the issue or situation is recorded.	
<b>Application</b>	Content of the activity is connected to the student's personal life and goals.	Content of the activity is connected to the field of agriculture.	Content of the activity is related to life in general.	Only limited connections are made between the content of the activity and the surrounding world.	
<b>Total Score:</b>					

**Comments:**

# What makes a good podcast?

When you listen to a podcast, or when you are making your own, think about these qualities of a well-done podcast. (N/A means Not Applicable--the question can't be answered or it does not pertain to the site you are viewing.)

Your name: \_\_\_\_\_ Date: \_\_\_\_\_

Title of podcast: \_\_\_\_\_

Feed URL (or URL): \_\_\_\_\_

Creator of podcast: \_\_\_\_\_



1. Did the podcast include content that was useful / relevant for your purpose?	YES	NO	N/A
2. Were the technical qualities (audio, slides, etc.) acceptable in the production?	YES	NO	N/A
3. Was a written transcript of the podcast available?	YES	NO	N/A
4. Was the podcast linked from a site which included subject tags?	YES	NO	N/A
5. Was the podcast linked from a site which included links to other resources?	YES	NO	N/A
6. Did the podcast adhere to the copyright guidelines in its use of music, pictures, etc.?	YES	NO	N/A
7. Was the length of the podcast appropriate for its content? (20 min. or less)?	YES	NO	N/A
8. Was the podcast part of a regularly scheduled series?	YES	NO	N/A
9. Did the subjects in the podcast have "personality" to keep you interested??	YES	NO	N/A
10. Did the podcast flow smoothly (introduction, content, summary)?	YES	NO	N/A
11. Was it obvious how to add the podcast feed to your aggregator? (RSS)	YES	NO	N/A
12. If the item was an enhanced podcast, did the use of slides enhance the content?	YES	NO	N/A
13. If the item was an enhanced podcast, was it available in various file formats to allow viewing on various hardware devices?	YES	NO	N/A
In your own words, describe the podcast you listened to and its attributes.			

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# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Poster Assessment Rubric

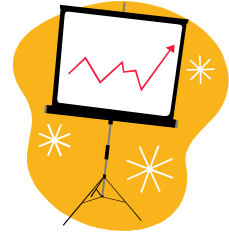


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Required Content</b>	The poster includes all required content elements as well as additional information.	All required content elements are included on the poster.	All but one of the required content elements are included on the poster.	Several required content elements were missing.	
<b>Labels</b>	All items of importance on the poster are clearly labeled with labels that are easy to read.	Almost all items of importance on the poster are clearly labeled with labels that are easy to read.	Many items of importance on the poster are clearly labeled with labels that are easy to read.	Labels are too small to read, or no important items were labeled.	
<b>Attractiveness</b>	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout, and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed.	
<b>Grammar</b>	There are no grammatical or mechanical mistakes on the poster.	There are one to two grammatical or mechanical mistakes on the poster.	There are three to four grammatical or mechanical mistakes on the poster.	There are more than four grammatical or mechanical mistakes on the poster.	
				<b>TOTAL</b>	

**Comments:**

# Presentation Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score
<b>Content</b>	Clear, appropriate, and correct	Mostly clear, appropriate, and correct	Somewhat confusing, incorrect, or flawed	Confusing, incorrect, or flawed	
<b>Clarity</b>	Logical, interesting sequence	Logical sequence	Unclear sequence	No sequence	
<b>Presentation</b>	Clear voice and precise pronunciation	Clear voice and mostly correct pronunciation	Low voice and incorrect pronunciation	Mumbling and incorrect pronunciation	
<b>Visual Aids</b>	Attractive, accurate, and grammatically correct	Adequate, mostly accurate, and few grammatical errors	Poorly planned, somewhat accurate, and some grammatical errors	Weak, inaccurate, and many grammatical errors	
<b>Length</b>	Appropriate length	Slightly too long or short	Moderately too long or short	Extremely too long or short	
<b>Eye-Contact</b>	Maintains eye contact, seldom looking at notes	Maintains eye contact most of time but frequently returns to notes	Occasionally uses eye contact but reads most of information	No eye contact because reading information	
				<b>TOTAL</b>	

**Comments:**

# Role-Play or Skit Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

**Comments:**

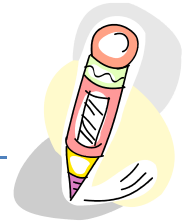


# Workplace Skills Weekly Checklist

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

Behavior Skill	Never	Rarely	Most of the Time	Always
<b>On Time and Prepared</b>				
1. Arrives to class on time				
2. Brings necessary materials				
3. Completes homework				
<b>Respects Peers</b>				
1. Respects others' property				
2. Listens to peers				
3. Responds appropriately to peers				
4. Respects others' opinions				
5. Refrains from abusive language				
<b>Respects Teachers/Staff</b>				
1. Follows directions				
2. Listens to teacher and staff				
3. Accepts responsibility for actions				
<b>Demonstrates Appropriate Character Traits</b>				
1. Demonstrates positive character traits (kindness, trustworthy, and honesty)				
2. Demonstrates productive character traits (patient, thorough, and hardworking)				
3. Demonstrates a level of concern for others				
<b>Demonstrates a Level of Concern for Learning</b>				
1. Remains on task				
2. Allows others to remain on task				

# Written Report Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

## Unit 2: Safety and Standard Precautions

**Competency 1:** Summarize safe practices, and predict potential hazards and ways to prevent injury or illness through safe work practices and by following health and safety policies and procedures. (DOK 2)<sup>HSF7</sup>

### Suggested Objectives

- a. Identify common safety hazards using Materials Safety Data Sheets (MSDSs), hazardous labeling, and safety signs, symbols, and labels. (DOK 1)
- b. Select environmental modifications to insure safe working conditions including methods of fire prevention, proper safety techniques, handling of hazardous chemicals, proper body mechanics and ergonomics, and good housekeeping. (DOK 2)
- c. Employ personal safety practices to manage a personal exposure incident in compliance with OSHA regulations. (DOK 2)
- d. Use emergency procedures and protocols to interpret the evacuation plan for the health-care setting, construct an emergency plan for a health-care setting in response to a natural disaster or other emergency, and follow the facility procedure when a fire is discovered. (DOK 3)

### Suggested Teaching Strategies

- As a hook, invite a first responder such as someone from the fire department to demonstrate and allow the students to practice using safety equipment. Have students role-play scenarios in which accidents occur. Or, have an industry speaker present to the class general safety procedures, the necessity of safety in the work environment, and his or her company's safety policy. Take students on a practice drill of the evacuation plan. Show students videos demonstrating examples of accidents in the workplace. Pre-assess knowledge of safety by having each student write a summary of the safety violations present in the videos. Lead the class to identify common hazards and develop safety policies and emergency procedures and protocols for the classroom based on industry policies. Discuss and demonstrate terms, rules, and procedures related to lab and industry safety. Explain to the students that since safety is so important, they will be evaluated regularly on safety. Explain the consequences of violating safety procedures. <sup>E1, E2, E3, E4, E5, E6</sup>
- Divide students into groups based on learning styles, and assign each group a guideline for personal and lab safety (i.e., clothing, jewelry, hair, eyes, and ears) or general lab conduct. Have each group role-play, create a multimedia presentation or a rap song, or write a story to discuss the proper and improper procedures related to the guideline. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Also, have the groups develop scenarios of hazards and accidents using popular and professional

publications and the Internet. Assign each group one of the following hazards or accidents: equipment, fires, or hazardous materials. Have each team read its scenario while the other teams compete to be the first to provide the proper safety measures that should have been used to prevent the hazardous situation or accident. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>

- Describe the components of a MSDS sheet. Have each student prepare a MSDS sheet for a chemical whose description you provide. <sup>E1, E2, E3, E4, E5, E6</sup>
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. NOTE: SAFETY IS TO BE TAUGHT AS AN ONGOING PART OF THE COURSE THROUGHOUT THE YEAR. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Evaluate each student on a written safety test for 100% accuracy.
- Observe each student daily to ensure that he or she abides by safety rules.
- Have students self-evaluate and peer-evaluate the guideline project.
- Use a rubric to evaluate the safety scenario development and presentation.
- Review the MSDS sheet completion for accuracy and neatness.

**Competency 2:** Apply standard precautions as described in the rules and regulations set forth by the Occupational Safety and Health Administration (OSHA). (DOK 2) <sup>HSF7</sup>

### Suggested Objectives

- Contrast medical and surgical asepsis. (DOK 2)
- Practice infection control procedures as well as appropriate cleaning, disinfecting, and sterilizing processes. (DOK 2)
- Demonstrate hand washing technique. (DOK 1)
- Use personal protective equipment as appropriate to the environment. (DOK 2)
- Demonstrate donning and removing clean gloves. (DOK 1)

### Suggested Teaching Strategies

- Ask students to describe movies or current events in which precautions against the spread of infectious diseases are emphasized. Show clips from movies or television shows where standard precautions are being used. Have students participate in a Glo Germ activity. Discuss the spread of disease throughout history and the work of various scientists (e.g., Pasteur,



Lister, and Salk). Discuss the economic impact of infectious disease and how the work of scientists has impacted people today. Discuss the work of epidemiologists and the role of math in infection control and reporting. Describe the rates of diseases such as AIDS in the United States and in other countries and methods to prevent the transmission of these diseases. E1, E2, E3, E4, E5, E6

- Discuss the differences between medical and surgical asepsis. Discuss common occupational hazards and regulations set forth by OSHA and other agencies. Define standard precaution, and emphasize that students will be evaluated for adhering to those rules throughout the course. Divide students into groups based on their learning styles, and have them use the Internet and other resources to determine precautions for specific infectious diseases and present their findings by transcribing an interview with a health care professional, teaching a lesson, or having a panel discussion. Have the students self-evaluate their own work and the work of the groups and peer-evaluate their classmates' work. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Have each student use the Internet, textbooks, and periodicals to conduct research on isolation procedures and disposal methods by compiling a training guide, giving a speech, or making a videotape. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Demonstrate and have students practice cleaning, disinfecting, and sterilizing processes; doing the hand-washing technique; using personal protective equipment as appropriate to the environment; and donning and removing clean gloves. Have students work as a group to prepare a lesson and present it using a multimedia program to students in elementary or middle school and add it to the electronic portfolio. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor each student for adherence to universal precaution rules and sequences (proper hand washing, use of protective equipment, and other safety measures) throughout the course.
- Evaluate student projects on precautions for specific infectious diseases for content, clarity, presentation, and group participation.
- Evaluate isolation procedures and the disposal methods project for content, grammar, and organization.
- Evaluate hand washing using a checklist.

- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

### ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation

### National Industry Standards

- HSF7 — Health care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.

### National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship
- T6 — Technology Operations and Concepts

# Suggested References

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*All hands on deck* [Video]. Retrieved November 29, 2007, from <http://www.brevis.com>

Janse, A. (2005). *The germ freak's guide to outwitting colds and flu*. Deerfield Beach, FL: Health Communications.

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Hand Washing Proficiency Checklist

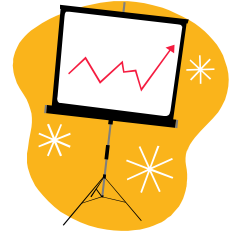


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

\_\_\_\_\_

- ~~\_\_\_\_\_ 1. The student used hot water.~~
- ~~\_\_\_\_\_ 2. The student moistened his or her hands with water and then applied soap.~~
- ~~\_\_\_\_\_ 3. The student washed closely around the fingernails.~~
- ~~\_\_\_\_\_ 4. The student rubbed his or her hands together for at least 20 seconds.~~
- ~~\_\_\_\_\_ 5. The student rinsed his or her hands thoroughly.~~
- ~~\_\_\_\_\_ 6. The student dried his or her hands properly.~~

# Presentation Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score
<b>Content</b>	Clear, appropriate, and correct	Mostly clear, appropriate, and correct	Somewhat confusing, incorrect, or flawed	Confusing, incorrect, or flawed	
<b>Clarity</b>	Logical, interesting sequence	Logical sequence	Unclear sequence	No sequence	
<b>Presentation</b>	Clear voice and precise pronunciation	Clear voice and mostly correct pronunciation	Low voice and incorrect pronunciation	Mumbling and incorrect pronunciation	
<b>Visual Aids</b>	Attractive, accurate, and grammatically correct	Adequate, mostly accurate, and few grammatical errors	Poorly planned, somewhat accurate, and some grammatical errors	Weak, inaccurate, and many grammatical errors	
<b>Length</b>	Appropriate length	Slightly too long or short	Moderately too long or short	Extremely too long or short	
<b>Eye-Contact</b>	Maintains eye contact, seldom looking at notes	Maintains eye contact most of time but frequently returns to notes	Occasionally uses eye contact but reads most of information	No eye contact because reading information	
				<b>TOTAL</b>	

**Comments:**

## Unit 3: Medical, Legal, and Ethical Responsibility

**Competency 1:** Demonstrate behavior that maintains the patient's rights according to the Patients' Bill of Rights. (DOK 2) <sup>HSF5, HSF6</sup>

### Suggested Objectives

- a. Value the client's independence and determination. (DOK 2)
- b. Provide patients assistance in participating in group activities. (DOK 2)
- c. Confirm patient's identity. (DOK 1)
- d. Maintain care and security of patient's personal possessions. (DOK 1)
- e. Provide care that ensures the patient is free from abuse, mistreatment, and neglect; report any instances of such treatment to appropriate personnel. (DOK 2)
- f. Discuss the use of restraints in accordance with current professional standards. (DOK 2)

### Suggested Teaching Strategies

- As a hook, show clips from the video *The Doctor* or another video in which a health care provider who acts inappropriately in practice faces a disease and sees health care from the viewpoint of a patient. Pre-assess students' knowledge by showing them an admission packet from a hospital and discussing what they know about the rights of patients. Have students debate if health care providers who have HIV/AIDS should be required to tell their patients. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3</sup>
- Discuss appropriate behaviors including independence and autonomy, assisting patients to participate in group activities, and personal possessions. Have a social worker discuss abuse, mistreatment, and neglect. Show a video clip from *House Season 1* (episode *DNR*) or another medical show in which a patient requests a DNR or other advanced directive but a health care provider ignores the request. Lead students in a discussion of the clip, and have students work together to develop a role-play in which a patient was treated inappropriately and present it to the class. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2</sup>
- Discuss the appropriate use of restraints. Use zip ties to attach students to desks (with their permission), and have them discuss their feelings when restrained and write a reflective essay using word processing software. <sup>E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T4, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.



- Use a rubric to evaluate role play for appropriateness.
- Use a rubric to assess reflection.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Assess the legal responsibilities, limitations, and implications of health care workers' actions within the health care delivery setting. (DOK 2)<sup>HSFS</sup>

### Suggested Objectives

- a. Differentiate legal responsibilities, limitations, and implications of actions; use problem-solving techniques when confronted with legal dilemmas or issues. (DOK 2)
- b. Compare and contrast behaviors and practices that could result in malpractice, liability, or negligence. (DOK 2)
- c. Defend policies related to documentation and record keeping. (DOK 2)
- d. Explain reasons for practice within licensure, certification, registration, and legislated scope of practice. (DOK 2)
- e. Evaluate the role of HIPAA, the Health Insurance Portability and Accountability Act. (DOK 2)

### Suggested Teaching Strategies

- Hook students by having them talk to a case manager/attorney about common torts and how to decrease them in the medical facility or by sharing news clips and video clips about past torts. Lead students to debate and role-play legal cases/torts. The student's role will be that of a hospital or medical professional, lawyer, or the patient; other students will act as jurors for the case while the instructor acts as the judge. Each student must identify the tort and state the tort's effect on the patient's rights or privacy. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3
- Have students identify ways to increase patient privacy and maintain patient rights and write a report or prepare a Podcast explaining these methods. Monitor students to ensure they maintain professionalism and follow legal policy during clinical tours/rotations. E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Assess the students as they identify the tort, give evidence for or against the case, and vote for or against the case based on evidence in the form of patient's rights or the need for privacy. Students will read the court case aloud, explain the case to the jury, identify the tort, and state one patient's right or patient's privacy that may have been harmed in the civil case.
- Use a rubric to evaluate the report or Podcast for content and appearance.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 3:** Analyze accepted ethical practices within the health care environment. (DOK 2) <sup>HSF6</sup>

### Suggested Objectives

- a. Differentiate between ethical and legal issues impacting health in such areas as confidentiality

and bioethics. (DOK 2)

- b. Plan methods to show professionalism, fairness, and respect when interacting with others. (DOK 2)
- c. Analyze the impact of cultural, social, and ethnic diversity. (DOK 2)
- d. Explain appropriate response to patient behavior. (DOK 2)
- e. Discuss careers in the ethics field. (DOK 1)

### Suggested Teaching Strategies

- As a hook, show students a video clip about cloning from United Streaming, such as *Gattica*, and have them debate the issue. Have students participate in an ethical issue debate or role-play based on current events or a television program. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5
- Discuss the difference between ethical and legal issues impacting health. Have students work cooperatively to research and then compare and contrast issues related to death and dying in various countries and develop a display, using appropriate software, showing similarities and differences. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Have students read *Frankenstein* and then debate whether genetic manipulation should be able to be used to make perfect humans or to clone humans. Use the HOSA guidelines for a debate. Also, discuss Hitler's trying to create the perfect human race. Show *QBVII* or another video about doctors' roles in the Holocaust. Discuss the elimination of genes such as those related to cystic fibrosis, alcoholism, and so forth. Have students make a Frankenstein model out of various materials and display it in the class as a "mascot" during the year. E1, E2, E3, E4, E5, E6, R1, R2, R3, R4, R5, CLS1, CLS2, CLS3, CLS4, CLS5
- Have students plan methods for showing professionalism, fairness, and respect and present them to the class. Have students role-play situations in which a patient acts inappropriately and the health care provider demonstrates the appropriate response. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5
- Have each student research a career in the ethics field and prepare a written report or Podcast. E1, E2, E3, E4, E5, E6, R1, R5, CLS2, CLS4, T1, T2, T3, T4, T5, T6
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.

- Evaluate display for content and appearance.
- Use a rubric to assess the report or Podcast.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

### ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R2 — Supporting Details
- R3 — Sequential, Comparative, and Cause-Effect Relationships
- R5 — Meaning of Words
- R6 — Generalizations and Conclusions
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

### National Industry Standards

- HSF5 — Health-care workers will understand the legal responsibilities, limitations, and implications of their actions within the health-care delivery setting.
- HSF6 — Health-care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health-care environment. They will perform quality health care delivery.

### National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship
- T6 — Technology Operations and Concepts

# Suggested References

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*Health law* (5th ed.). (2005). New York, NY: Aspen.

HIPAA. (n.d.). Retrieved November 26, 2007, from <http://www.hipaa.org>

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Role-Play or Skit Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

**Comments:**



# What makes a good podcast?

When you listen to a podcast, or when you are making your own, think about these qualities of a well-done podcast. (N/A means Not Applicable--the question can't be answered or it does not pertain to the site you are viewing.)

Your name: \_\_\_\_\_ Date: \_\_\_\_\_

Title of podcast: \_\_\_\_\_

Feed URL (or URL): \_\_\_\_\_

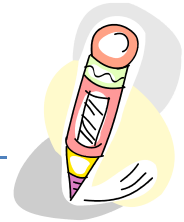
Creator of podcast: \_\_\_\_\_



1. Did the podcast include content that was useful / relevant for your purpose?	YES	NO	N/A
2. Were the technical qualities (audio, slides, etc.) acceptable in the production?	YES	NO	N/A
3. Was a written transcript of the podcast available?	YES	NO	N/A
4. Was the podcast linked from a site which included subject tags?	YES	NO	N/A
5. Was the podcast linked from a site which included links to other resources?	YES	NO	N/A
6. Did the podcast adhere to the copyright guidelines in its use of music, pictures, etc.?	YES	NO	N/A
7. Was the length of the podcast appropriate for its content? (20 min. or less)?	YES	NO	N/A
8. Was the podcast part of a regularly scheduled series?	YES	NO	N/A
9. Did the subjects in the podcast have "personality" to keep you interested??	YES	NO	N/A
10. Did the podcast flow smoothly (introduction, content, summary)?	YES	NO	N/A
11. Was it obvious how to add the podcast feed to your aggregator? (RSS)	YES	NO	N/A
12. If the item was an enhanced podcast, did the use of slides enhance the content?	YES	NO	N/A
13. If the item was an enhanced podcast, was it available in various file formats to allow viewing on various hardware devices?	YES	NO	N/A
In your own words, describe the podcast you listened to and its attributes.			

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# Written Report Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence.	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

## Unit 4: Introduction to Medical Terminology

*Note: Medical Terminology will be integrated throughout the Health Sciences I and II programs.*

**Competency 1:** Recognize the components of medical terminology. (DOK 1) <sup>HSF1, HSF2, AP2</sup>

## Suggested Objectives

- a. Define and divide medical terms into root words, prefixes, and suffixes. (DOK 1)
- b. Spell designated medical terms correctly. (DOK 1)
- c. Interpret common medical abbreviations and symbols including meanings and uses. (DOK 1)

## Suggested Teaching Strategies

- Hook students by asking them what types of terminology (e.g., text messaging terms, sports terms, video game terms, and others) they use each day. Lead them in a discussion of the importance of using the correct terminology in various situations. Pre-assess students' knowledge by having them try to define common medical terms. Discuss how medical word parts are combined to form medical terms, the definitions of commonly used medical terms, and some reference books commonly used among health professionals. Show the Dean Vaughn series. Have students discuss how medical terminology can damage the provider/patient relationship. Have students work in groups to create a podcast or Photo Story of medical terms with a jingle, rap, or other product such as photos that remind students of medical terms. E1, E2, E3, E4, E5, E6, R1, R5, S1, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Provide each student with a list of terms used in the field; have each student write the definitions of the terms on strips of paper using textbooks or the Internet. Divide students into two teams. Read the definition of a term from the strips of paper prepared by students, and have teams compete to identify the correct term. The first team to get the correct answer wins the point and so on until the game is finished. Alternately, students may be given a term and asked to provide the definition for further mastery. E1, E2, E3, E4, E5, E6, S1, CLS1, CLS2, CLS3, CLS4, CLS5
- Divide students into groups, and have them use the Internet or textbooks to research the development of the field, origination of terms, and the terms used in different countries throughout the world. Have students present their findings by developing a dictionary, writing and conducting a mock training session for new employees, or making a videotape or tape recording. E1, E2, E3, E4, E5, E6, R1, R5, S1, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

## Suggested Assessment Strategies

- Evaluate each student's definitions of terms for accuracy.
- Monitor class activity to ensure that all students participate.
- Evaluate the podcast or Photo Story for content and appearance.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Use medical terminology in order to interpret, transcribe, and communicate

information, data, and observations. (DOK 2) <sup>HSF1, HSF2, AP2</sup>

### Suggested Objectives

- a.—Demonstrate the use of medical terms and abbreviations in reading, speaking, interpreting, and writing medical records. (DOK 2)
- b.—Demonstrate the use of medical references. (DOK 2)

### Suggested Teaching Strategies

- Have students read a medical mystery or other type of medical book and create a poster using word processing software for text and visuals about the book that includes at least 10 medical terms. <sup>E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, CLS2, CLS4, T1, T2, T3, T4, T5, T6</sup>
- Give students information written using medical terminology, and have students look up the terms in a medical reference and then rewrite the information using common language that would be appropriate for nonmedical personnel. Each student will assume the role of a health-care worker who is working at a Good Samaritan Clinic in an underprivileged neighborhood and is in charge of providing teaching to patients that will include disease information, as well as discharge and care instructions to patients in the clinic. Students must be able to adjust vocabulary to discuss the patient's condition with the physician and health-care team and to discuss care and discharge instructions with the patient while ensuring that the patient understands. Have students prepare a typed handout to give to the patient that explains his or her disease and the treatment plans and present the handout to the instructor or another student who will play the part of the patient. <sup>E1, E2, E3, E4, E5, E6, S1, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. <sup>E1, E2, E3, E4, E5, E6, S1, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the poster for content and appearance using a rubric.
- Evaluate the handout to ensure that it includes a definition of the disease, other terms to which the disease might be referred, any diagnostic treatments or laboratory work required, and medications (include both generic and trade names) and instructions.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- S1 — Interpretation of Data
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.

## National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship
- T6 — Technology Operations and Concepts

# Suggested References

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Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

Vaughn, D. (2004). *Medical terminology* (2nd ed.). DCM Instructional Systems.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

## Unit 5: Organization, Covering, Support, Movement, and Protection

**Competency 1:** Identify the components of the body, and connect them with the interdependence of the body systems. (DOK 2) <sup>HSF1-AP2, AP3, AP4, AP5</sup>

### Suggested Objectives

- Describe the basic structures and functions of cells, tissues, organs, and systems as they relate to homeostasis. (DOK 2)
- Compare relationships among cells, tissues, organs, and systems. (DOK 2)
- Explain body planes, directional terms, quadrants, and cavities. (DOK 2)
- Analyze the interdependence of the body systems as they relate to wellness, disease, disorders, therapies, and care rehabilitation and how organs compensate for others during times of dysfunction. (DOK 2)

### Suggested Teaching Strategies

- Hook students by working with a culinary class to make cell pizza, pies, or cakes that represent the cellular structure and components. Or, have students view a cell model and then make their own cell models, participating in a class integration activity with a biology class. Show students slides displaying examples of various types of tissues. Pre-assess students' knowledge by asking them to discuss how knowledge of the cells, tissues, organs, and systems benefits the pursuit of a medical career. <sup>E1, E2, E3, E4, E5, E6, S1</sup>
- Discuss body planes, directional terms, quadrants, and cavities. Have students use Play Dough to make a person or animal and use a plastic knife to show the body planes, directions, quadrants, and cavities. Or, show dolls that have been cut or marked with Wiki sticks to show the planes, quadrants, and cavities. Have students draw and label a full size diagram of the body with planes and directional terms, quadrants, and cavities, as well as major organs. <sup>S1</sup>
- Discuss the basic structures, functions, and relationships of cells, tissues, organs, and systems as they relate to homeostasis. Have students prepare a mini-lesson on the normal functions of the human body; this should be a verbal presentation using PowerPoint and handouts and worksheets to accompany the presentation. The report must be no less than 10 minutes in length, include credible sources that are listed, and be at least one informative handout and at least one worksheet that students can complete on their own. <sup>E1, E2, E3, E4, E5, E6, S1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Guide students to complete free online courses related to biology, including cell concepts, developed by Massachusetts Institute of Technology (MIT) located at <http://ocw.mit.edu/OcwWeb/hs/intro-courses/introcourses/index.htm>. <sup>S1, T1, T2, T3, T4, T5, T6</sup>



- Have students develop a poster or presentation covering all systems. Have them play a game such as Family Feud about the systems and components. E1, E2, E3, E4, E5, E6, S1

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate mini-lessons for content and appearance.
- Use a rubric to assess poster or presentation.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Describe and apply knowledge related to the human integumentary system. (DOK 2) HSF1, HSF10, AP5

## Suggested Objectives

- a.—Interpret the basic structures and functions of the integumentary system. (DOK 1)
- b.—Perform related patient care procedures including bed-making and positioning. (DOK 2)
- c.—Demonstrate knowledge of medical terminology related to the anatomy of the integumentary system. (DOK 1)

## Suggested Teaching Strategies

- Hook students by allowing them to make food with layers (e.g., layered dips and cakes) to represent skin layers. You may also direct students to view Web sites with virtual body tours such as [www.visiblebody.com](http://www.visiblebody.com) or autopsy videos for all systems. Discuss the system; have students look at models. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. CLS1, CLS2, CLS3, CLS4, CLS5

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 3:** Describe and apply knowledge related to the human muscular and skeletal systems. (DOK 2) HSF1, HSF10, AP5

## Suggested Objectives

- a.—Interpret the basic structures and functions of the muscular system and types of muscle movement. (DOK 1)
- b.—Interpret the basic structures and functions of the skeletal system. (DOK 1)
- c.—Apply the principles of safety and body mechanics for positioning, transferring, turning, ambulating, and transporting patients in order to perform activities efficiently without injury to the patient or self; use appropriate equipment (e.g., stretcher, wheelchair, and

pneumatic lift) safely. (DOK 2)

- d. Demonstrate knowledge of medical terminology related to the anatomy of the skeletal system. (DOK 1)

### Suggested Teaching Strategies

- Take students to a gym, and have them lift weights and identify muscles affected. Or, have an athletic trainer or physical therapist illustrate various muscle movements. Have students prepare a commercial for weightlifting and/or exercise equipment and discuss the muscles being worked. Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. <sup>E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Show students pictures of body builders showing various muscles. Have students place duct tape over their major muscles of the body, and then ask them to move muscles that adduct, abduct, and so forth on certain parts of the body. Or, have students make T-shirts with the muscles outlined. Use meat such as beef or chicken to illustrate muscle fibers and connective tissue. <sup>S1, S2</sup>
- Use a disarticulated skeleton, and place bones on the students' desks each day. Have students identify the bones and their locations. Have students make clay models of bones and form a skeleton. Have students then add muscles of clay to the skeleton. To show students the effects of calcium on bones, add chicken bones to vinegar, and watch the leaching of calcium over time, forming "rubber" bones. <sup>S1, S2</sup>
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include videos in electronic portfolios. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment.

**Competency 4:** Describe and apply knowledge related to the human immune system. (DOK 2) <sup>HSF1, AP5</sup>

## Suggested Objectives

- a.—Interpret the basic structures and functions of the immune system. (DOK 1)
- b.—Identify methods to control the spread of pathogenic microorganisms. (DOK 2)
- c.—Contrast various types of immunities. (DOK 2)
- d.—Demonstrate knowledge of medical terminology related to the anatomy of the immune system. (DOK 1)

## Suggested Teaching Strategies

- Discuss the system; have students look at models. Have students draw and/or color diagrams of the system or work in teams using Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. <sup>E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Have students read the *Hot Zone* or watch a video such as *Ebola: The Plague Fighters* (Nova), *Osmosis Jones*, or *Outbreak* and discuss the spread of disease. Show *Confessions of a Germ* (Discovery Channel productions) or other videos about patients who have suffered from various diseases, and discuss methods to control the spread of the microorganisms with other students. <sup>E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Have students compare and contrast the types of immunity active with exposures to various elements (poison ivy, vaccines, and HIV) and work in teams to develop a graphic organizer. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate products for content and appearance.
- Assess appropriateness of graphic organizer.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 5:** Connect knowledge of organization, covering, support, movement, and protection systems to the impact of diseases and disorders. (DOK 2) <sup>HSF1, HSF9, AP5</sup>

## Suggested Objectives

- a. Analyze selected diseases/disorders including respective classification(s), causes, diagnoses, therapies, and care/rehabilitation such as the following: (DOK 2)
- *Integumentary*: skin cancer, melanoma, athlete's foot, dermatitis, eczema, impetigo, ring worm, psoriasis, warts, acne vulgaris, and burns
  - *Skeletal*: arthritis, bursitis, dislocation, osteomyelitis, osteoporosis, ruptured disc, abnormal spinal curvatures, and fractures
  - *Muscular*: muscular dystrophy, strain, sprain, fibromyalgia, myasthenia gravis, and muscle spasm
  - *Immune*: tonsillitis, lymphangitis, Hodgkin's disease, adenitis, HIV/AIDS, and splenomegaly
- b. Assess body system changes in light of diseases, disorders, and wellness. (DOK 2)

## Suggested Teaching Strategies

- Hook students by having them look at their skin for signs of skin cancer using inexpensive magnifying glasses, and then look at the skin of family members to assess for signs of skin cancer. Discuss related diseases and disorders; take students to tour facilities in which patients are treated, invite guest speakers to speak to the class about disease processes, and/or show pictures and videos of people with diseases/disorders. Have students work in groups to analyze case studies (using a Web site such as <http://www.discovermagazine.com> for case studies); research classifications, causes, diagnoses, therapies, and care/rehabilitation; and prepare and present a solution to the case study to the class using presentation software. Have students explain body system changes in light of the disease/disorder. Place pictures related to disorders on mannequins, and have students identify quadrants, cavities, and other directional terms. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate field trip participation using a rubric.
- Use a rubric to assess presentation.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.
- AP3 — Discuss the biochemical composition of the human body.
- AP4 — Explore the relationship of the cell to the more complex levels of organization within the body.
- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R2 — Supporting Details
- R3 — Sequential, Comparative, and Cause-Effect Relationships
- R5 — Meaning of Words
- R6 — Generalizations and Conclusions
- S1 — Interpretation of Data
- S2 — Scientific Investigation
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF9 — Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10 — Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

## National Educational Technology Standards

- T1 — Creativity and Innovation

- T2——Communication and Collaboration
- T3——Research and Information Fluency
- T4——Critical Thinking, Problem Solving, and Decision Making
- T5——Digital Citizenship
- T6——Technology Operations and Concepts

# Suggested References

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Clover, J. (2007). *Sports medicine essentials* (2nd ed.). Albany, NY: Delmar.

Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).



## Unit 6: Vital Organs, Intake, and Elimination

**Competency 1:** Describe and apply knowledge related to the human respiratory system. (DOK 2)<sup>HSF.1, HSF.10, AP.5</sup>

### Suggested Objectives

- a. Interpret the basic structures and functions. (DOK 1)
- b. Auscultate lung sounds. (DOK 2)
- c. Demonstrate knowledge of medical terminology related to the anatomy of the human respiratory system. (DOK 1)

### Suggested Teaching Strategies

- Hook students by having them listen to normal and abnormal sounds using a video or Web site (<http://www.stethographics.com/index.html>). Describe the appropriate placement of the stethoscope for listening to lung sounds, and have students listen to classmates' lung sounds. Pre-assess student knowledge by having them match basic structures to their functions. Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students build a model of the lungs (use balloons, clear plastic cups, soda bottles, straws, etc.). Have students create a blog or Wiki about the system on Blackboard.<sup>E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Add videos to electronic portfolio.<sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment.

**Competency 2:** Describe and apply knowledge related to the human circulatory system. (DOK 2)<sup>HSF.1, HSF.10, AP.5</sup>

## Suggested Objectives

- a.—Interpret the basic structures and functions. (DOK 1)
- b.—Perform related patient care procedures including taking vital signs, height, and weight and auscultating heart sounds. (DOK 2)
- c.—Demonstrate knowledge of medical terminology related to the anatomy of the human circulatory system. (DOK 1)

## Suggested Teaching Strategies

- Have students listen to normal and abnormal heart sounds using a video or Web site (<http://www.stethographics.com/index.html>). Describe the appropriate placement of the stethoscope for listening to heart sounds, and have students listen to classmates' heart sounds. Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students label parts of the heart on a model or specimen and draw a large heart on paper and walk through the blood flow through the heart. Have students use red and blue balloons to indicate if blood is oxygenated at various points in the body. Have students create a blog or Wiki about the system on Blackboard. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in electronic portfolios. CLS1, CLS2, CLS3, CLS4, CLS5

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment.

**Competency 3:** Qualify for or obtain American Heart Association (AHA) Healthcare Provider Cardiopulmonary Resuscitation (CPR) certification and First Aid Certification. (DOK 2) HSF1, HSF7, APS

## Suggested Objectives

- a.—Complete American Heart Association Healthcare Provider objectives. (DOK 2)

### Suggested Teaching Strategies

- Follow AHA guidelines. <sup>S1</sup>

### Suggested Assessment Strategies

- Observe to ensure that all students participate.
- Monitor student behavior to ensure professionalism.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 4:** Describe and apply knowledge related to the human digestive system. (DOK 2) <sup>HSF1, HSF10, AP5</sup>

### Suggested Objectives

- a. Interpret the basic structures and functions. (DOK 1)
- b. Perform related patient care procedures including assisting a patient with eating and hydration (including a patient with a disability). (DOK 2)
- c. Auscultate bowel sounds. (DOK 2)
- d. Demonstrate knowledge of medical terminology related to the anatomy of the human digestive system. (DOK 1)

### Suggested Teaching Strategies

- Have students listen to normal and abnormal bowel sounds using a video or Web site. Describe the appropriate placement of the stethoscope for listening to bowel sounds, and have students listen to classmates' bowel sounds. Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students draw a life-size body on paper, fill in the organs, and trace peristalsis. Or, use models to trace movement of food. Assign students roles as parts of the digestive system and someone as the bolus. Have the bolus move along the "system" as the appropriate "organs" squirt fluids. Have students create a blog or Wiki about the system on Blackboard. <sup>E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Have students practice feeding other students with simulated impairments (i.e., blindfolded). Video students performing skills, and allow students to critique each other.

Include in electronic portfolios. CLS1, CLS2, CLS3, CLS4, CLS5

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 5:** Describe and apply knowledge related to the human urinary system. (DOK 2) HSF1, HSF10, AP5

### Suggested Objectives

- a. Interpret the basic structures and functions. (DOK 1)
- b. Explain the importance of normal fluid and electrolyte functions and values. (DOK 2)
- c. Perform related patient care procedures including calculating intake and output measurements and converting them to metric equivalents. (DOK 2)
- d. Demonstrate knowledge of medical terminology related to the anatomy of the human urinary system. (DOK 1)

### Suggested Teaching Strategies

- As a hook, place a series of urine cups in the front of the room with water with various colors. Tell students the cups are full of urine. Use a urine color wheel (from a Web site), and have students use the wheel to determine the disorder. Then, tell students that, in the past, diabetes was diagnosed by taste, and place your tongue in the cup. (Of course, at that point, tell the students that it is really water.) Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Discuss the importance of normal fluid and electrolyte functions and values. Show students a video about poisoning and the effects on the body. Take students to a kidney care facility, and talk about the effects of various disorders on the function of the urinary system. Have students use medical math books to calculate intake and output measurements and convert them to metric equivalents. E1, E2, E3, E4, E5, E6, S1, M1, M3, M7, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in electronic portfolios. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment.

**Competency 6:** Connect knowledge of vital organs and intake and elimination systems to the impact of diseases and disorders. (DOK 2) <sup>HSF1, HSF9, AP5</sup>

### Suggested Objectives

- Analyze selected diseases/disorders including respective classification(s), causes, diagnoses, therapies, and care/rehabilitation such as the following: (DOK 2)
  - *Respiratory:* asthma, emphysema, bronchitis, COPD, epistaxis, influenza, laryngitis, lung cancer, pleurisy, pneumonia, rhinitis, sinusitis, tuberculosis, and upper respiratory infection
  - *Circulatory:* anemia, aneurism, atherosclerosis, arteriosclerosis, congestive heart failure, embolus, hemophilia, hypertension, leukemia, myocardial infarction, phlebitis, and varicose veins
  - *Digestive:* appendicitis, cholecystitis, cirrhosis, constipation, diarrhea, diverticulitis, gastroenteritis, hemorrhoids, hepatitis, hernia, pancreatitis, peritonitis, ulcer, and ulcerative colitis
  - *Urinary:* glomerulonephritis, cystitis, pyelonephritis, renal calculus, renal failure, uremia, urethritis, and incontinence
- Assess body system changes in light of diseases, disorders, and wellness. (DOK 2)

### Suggested Teaching Strategies

- Discuss related diseases and disorders, take students to tour facilities in which patients are treated, invite guest speakers to speak to the class about disease processes, and/or show pictures and videos of people with diseases/disorders. Have students work in groups to analyze case studies (using a Web site such as <http://www.discovermagazine.com> for case studies); research classifications, causes, diagnoses, therapies, and care/rehabilitation; and

prepare and present a solution to the case study to the class using presentation software. Have students explain body system changes in light of the disease/disorder. Place pictures related to disorders on mannequins, and have students identify quadrants, cavities, and other directional terms.

T6

- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities.

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate field trip participation using a rubric.
- Use a rubric to assess presentation.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate the major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- M1 — Basic Operations and Applications
- M3 — Numbers: Concepts and Properties
- M7 — Measurement
- R1 — Main Ideas and Author's Approach
- R2 — Supporting Details
- R3 — Sequential, Comparative, and Cause-Effect Relationships
- R5 — Meaning of Words
- R6 — Generalizations and Conclusions
- S1 — Interpretation of Data
- S2 — Scientific Investigation
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF7 — Health-care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.
- HSF9 — Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10 — Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

## National Educational Technology Standards

T1 — Creativity and Innovation

T2 — Communication and Collaboration

T3 — Research and Information Fluency

T4 — Critical Thinking, Problem Solving, and Decision Making

T5 — Digital Citizenship

T6 — Technology Operations and Concepts



# Suggested References

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Dugan, D. (2008). *Successful nursing assistant care* (2nd ed.). Albuquerque, NM: Harman.

Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

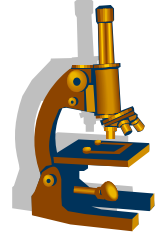
Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Dissection Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-Points	Meeting Success 2-Points	Experiencing Difficulty 1-Point	Score
Followed Instructions	Followed all of instructions given	Followed most of instructions given	Followed few of instructions given	
Safety	Followed all lab safety rules	Followed most lab safety rules	Followed few lab safety rules	
Productivity	Completed all dissections	Completed most dissections	Completed few dissections	
Cleanup	Put away all materials and cleaned area thoroughly	Put away most materials and cleaned area	Put away few materials and did not clean area	
<b>TOTAL</b>				

Comments:

# Field Trip Participation Checklist

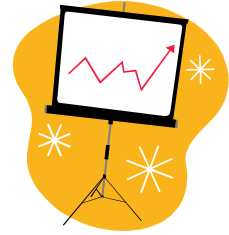
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NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

- \_\_\_\_\_ 1. The student arrived at the designated meeting place on time with all materials and supplies required for the field trip.
- \_\_\_\_\_ 2. The student observed all safety rules and policies while traveling to and participating in the field trip.
- \_\_\_\_\_ 3. The student demonstrated interest in the content of the field trip by paying attention to the exhibits and speakers, asking pertinent questions, and taking notes.
- \_\_\_\_\_ 4. The student exhibited a positive attitude toward the events and activities of the field trip.
- \_\_\_\_\_ 5. The student remained on task throughout the field trip.
- \_\_\_\_\_ 6. The student exhibited cooperative workplace skills with other students throughout the field trip.

# Presentation Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score
<b>Content</b>	Clear, appropriate, and correct	Mostly clear, appropriate, and correct	Somewhat confusing, incorrect, or flawed	Confusing, incorrect, or flawed	
<b>Clarity</b>	Logical, interesting sequence	Logical sequence	Unclear sequence	No sequence	
<b>Presentation</b>	Clear voice and precise pronunciation	Clear voice and mostly correct pronunciation	Low voice and incorrect pronunciation	Mumbling and incorrect pronunciation	
<b>Visual Aids</b>	Attractive, accurate, and grammatically correct	Adequate, mostly accurate, and few grammatical errors	Poorly planned, somewhat accurate, and some grammatical errors	Weak, inaccurate, and many grammatical errors	
<b>Length</b>	Appropriate length	Slightly too long or short	Moderately too long or short	Extremely too long or short	
<b>Eye-Contact</b>	Maintains eye contact, seldom looking at notes	Maintains eye contact most of time but frequently returns to notes	Occasionally uses eye contact but reads most of information	No eye contact because reading information	
				<b>TOTAL</b>	

**Comments:**

# Group Work Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-points	Meeting Success 2-points	Experiencing Difficulty 1-point	Score
Sharing	Shared ideas with others	Occasionally shared ideas with others	Seldom shared ideas with others	
Listening	Always listened to peers	Occasionally listened to peers	Ignored ideas of peers	
Respecting	Interacted with, encouraged, and supported ideas of others	Occasionally encouraged and supported others	Seldom encouraged and supported others	
Participating	Shared task equally with group members	Did most of the task	Did very little of the task	
<b>TOTAL</b>				

**Comments:**

# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Case Study Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4-Points	Accomplished 3-Points	Needs Improvement 2-Points	Unsatisfactory 1-Point	Score
<b>Comprehension</b>	Shows complete understanding of the issues and grasps implications beyond the immediate issue	Asks for more details to clarify understanding of the issue	Shows partial understanding of the issue but does not ask for clarification	Resists attempts to get clarification	
<b>Strategizing</b>	Develops realistic strategies that provide a satisfactory conclusion	Chooses appropriate strategies that may satisfy	Shows evidence of strategy that may or may not satisfy	Needs assistance to choose a strategy	
<b>Innovation</b>	Devises more than one resolution to the problem	Offers a solution	Offers a solution with a limited point of view	Shows some understanding of the problem	
<b>Communication</b>	Convincingly communicates resolution	Explains solution so others can understand	Conveys an opinion	Unsure of how to explain	
<b>TOTAL</b>					

**Comments:**



## Unit 7: Regulation, Coordination, and Reproduction

**Competency 1:** Describe and apply knowledge related to the human nervous and sensory systems. (DOK 2) <sup>HSF1, HSF10, AP5</sup>

### Suggested Objectives

- Interpret the basic structures and functions. (DOK 1)
- Perform related patient care procedures including a basic neurological exam (i.e., reflexes, level of consciousness, orientation, grip strength, and pupil dilation). (DOK 2)
- Discuss and observe vision and hearing testing. (DOK 2)

### Suggested Teaching Strategies

- Hook students by showing videos or discussing case studies of people with various disorders, having them try to rotate the foot one way and the hand the opposite way, or by demonstrating the effects of a concussion using an egg in a jar. Pre-assess students' knowledge by leading them in a discussion of the causes and treatments of the disorders. Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams to use Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. <sup>E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in electronic portfolios. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Describe and apply knowledge related to the human reproductive system. (DOK 2) <sup>HSF1, HSF10, AP5</sup>

### Suggested Objectives

- a.—Interpret the basic structures and functions. (DOK 1)
- b.—Perform related patient care procedures including breast and testicular exams. (DOK 2)

### Suggested Teaching Strategies

- Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams using Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in electronic portfolios. CLS1, CLS2, CLS3, CLS4, CLS5

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 3:** Describe and apply knowledge related to the human endocrine system. (DOK 2) HSF1, HSF10, AP5

### Suggested Objectives

- a.—Interpret the basic structures and functions. (DOK 1)
- b.—Discuss special considerations for diabetic care such as glucose screening and foot care. (DOK 2)

### Suggested Teaching Strategies

- Discuss the system; have students look at models and dissect organs. Have students draw and/or color diagrams of the system or work in teams using Photo Story, Movie Maker, or Puzzle Maker software to create products related to the system to present to the class. Have students create a blog or Wiki about the system on Blackboard. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in electronic portfolios. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate dissection using a rubric.
- Evaluate products for content and appearance.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment.

**Competency 4:** Connect knowledge of regulation, coordination, and reproduction systems to the impact of diseases and disorders. (DOK 2) <sup>HSF1, HSF9, APS</sup>

### Suggested Objectives

- Analyze selected diseases/disorders including respective classification(s), causes, diagnoses, therapies, and care/rehabilitation such as the following: (DOK 2)
  - *Nervous:* cerebral palsy, cerebrovascular accident (stroke), encephalitis, epilepsy, hydrocephalus, meningitis, multiple sclerosis, neuralgia, paralysis, Parkinson's disease, and shingles
  - *Reproductive:* epididymitis, orchitis, prostatic hypertrophy, testicular cancer, breast tumor, cancer of cervix/uterus, endometriosis, ovarian cancer, pelvic inflammatory disease, and premenstrual syndrome
  - *Endocrine:* acromegaly, gigantism, diabetes insipidus, dwarfism, goiter, hyperthyroidism, Graves' disease, hypothyroidism, hyperparathyroidism, hypoparathyroidism, Addison's disease, Cushing's syndrome, and diabetes mellitus
- Assess body system changes in light of diseases, disorders, and wellness. (DOK 2)

### Suggested Teaching Strategies

- As a hook, have students research different endocrine disorders and relate them to circus side shows (tall man or hairy woman) or television shows (*Little People, Big World*) and present the information with PowerPoint to health-care professionals who will judge the presentations. Discuss related diseases and disorders, take students to tour facilities in which patients are treated, invite guest speakers to speak to the class about disease processes, and/or show pictures and videos of people with diseases/disorders. Have students work in groups to analyze case studies (using a Web site such as <http://www.discovermagazine.com> for case studies); research classifications, causes, diagnoses, therapies, and

care/rehabilitation; and prepare and present a solution to the case study to the class using presentation software. Have students explain body system changes in light of the disease/disorder. Place pictures related to disorders on mannequins, and have students identify quadrants, cavities, and other directional terms. E1, E2, E3, E4, E5, E6, R1, R2, R3, R5, R6, S1, S2, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate field trip participation using a rubric.
- Use a rubric to assess presentation.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R2 — Supporting Details
- R3 — Sequential, Comparative, and Cause-Effect Relationships
- R5 — Meaning of Words
- R6 — Generalizations and Conclusions
- S1 — Interpretation of Data
- S2 — Scientific Investigation
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF9 — Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10 — Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

## National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making

T5 — Digital Citizenship  
T6 — Technology Operations and Concepts

# Suggested References

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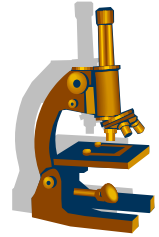
For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Dissection Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-Points	Meeting Success 2-Points	Experiencing Difficulty 1-Point	Score
Followed Instructions	Followed all of instructions given	Followed most of instructions given	Followed few of instructions given	
Safety	Followed all lab safety rules	Followed most lab safety rules	Followed few lab safety rules	
Productivity	Completed all dissections	Completed most dissections	Completed few dissections	
Cleanup	Put away all materials and cleaned area thoroughly	Put away most materials and cleaned area	Put away few materials and did not clean area	
<b>TOTAL</b>				

Comments:

# Field Trip Participation Checklist

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NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

- \_\_\_\_\_ 1. The student arrived at the designated meeting place on time with all materials and supplies required for the field trip.
- \_\_\_\_\_ 2. The student observed all safety rules and policies while traveling to and participating in the field trip.
- \_\_\_\_\_ 3. The student demonstrated interest in the content of the field trip by paying attention to the exhibits and speakers, asking pertinent questions, and taking notes.
- \_\_\_\_\_ 4. The student exhibited a positive attitude toward the events and activities of the field trip.
- \_\_\_\_\_ 5. The student remained on task throughout the field trip.
- \_\_\_\_\_ 6. The student exhibited cooperative workplace skills with other students throughout the field trip.

# Group Work Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-points	Meeting Success 2-points	Experiencing Difficulty 1-point	Score
Sharing	Shared ideas with others	Occasionally shared ideas with others	Seldom shared ideas with others	
Listening	Always listened to peers	Occasionally listened to peers	Ignored ideas of peers	
Respecting	Interacted with, encouraged, and supported ideas of others	Occasionally encouraged and supported others	Seldom encouraged and supported others	
Participating	Shared task equally with group members	Did most of the task	Did very little of the task	
<b>TOTAL</b>				

**Comments:**

# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Case Study Assessment Rubric

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4-Points	Accomplished 3-Points	Needs Improvement 2-Points	Unsatisfactory 1-Point	Score
Comprehension	Shows complete understanding of the issues and grasps implications beyond the immediate issue	Asks for more details to clarify understanding of the issue	Shows partial understanding of the issue but does not ask for clarification	Resists attempts to get clarification	
Strategizing	Develops realistic strategies that provide a satisfactory conclusion	Chooses appropriate strategies that may satisfy	Shows evidence of strategy that may or may not satisfy	Needs assistance to choose a strategy	
Innovation	Devises more than one resolution to the problem	Offers a solution	Offers a solution with a limited point of view	Shows some understanding of the problem	
Communication	Convincingly communicates resolution	Explains solution so others can understand	Conveys an opinion	Unsure of how to explain	
<b>TOTAL</b>					

**Comments:**

## Unit 8: Orientation, Safety, Asepsis, and Infection Control

**Competency 1:** Review student and course expectations including safety procedures and policies and school and clinical facility policies. (DOK 1) <sup>HSF2, HSF4, HSF11</sup>

### Suggested Objectives

- a. Review skills related to clinical rotation (e.g., bed making, vital signs, hand washing, and body mechanics). (DOK 2)
- b. Describe standard precautions, basic safety procedures, accident prevention methods, and disaster plans. (DOK 2)
- c. Discuss a safe and clean environment. (DOK 2)
- d. Follow state and facility guidelines, including dress requirements for clinical type experiences. (DOK 1)
- e. Discuss responsibilities of clinical rotation. (DOK 1)
- f. Discuss school district policies. (DOK 1)
- g. Pass a safety test with 100% proficiency (which will be kept on file). (DOK 2)

### Suggested Teaching Strategies

- Hook students by reviewing the electronic portfolios created by students during the first year. Pre-assess their knowledge by asking questions related to materials collected in the portfolio. Review skills and procedures necessary for the Health Sciences program. Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Have students begin an electronic portfolio of activities performed during the unit, and continue to add materials throughout the year. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to assess the portfolio.
- Use a rubric to assess the skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Review related body systems and disease implications, and demonstrate concepts and

procedures related to infection control. (DOK 2) HSF1, HSF7, HSF9, HSF10, AP1, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Define terms related to infection control and asepsis as well as common microorganisms. (DOK 1)
- b. Discuss the chain of infection. (DOK 2)
- c. Define general principles, purposes, and types of isolation. (DOK 1)
- d. Demonstrate how to don and remove isolation garments and equipment including sterile gloves. (DOK 1)
- e. Describe basic methods of sterilization and disinfection. (DOK 1)
- f. Discuss concurrent and terminal cleaning of a patient unit. (DOK 2)
- g. Demonstrate a sterile procedure maintaining a sterile field (e.g., catheterization, sterile dressing change, and trach care). (DOK 2)
- h. Describe basic techniques to prepare, wrap, and sterilize instruments. (DOK 1)
- i. Demonstrate a surgical scrub. (DOK 2)
- j. Interpret procedures for dealing with hazardous and infectious materials. (DOK 2)
- k. Discuss methods for medical waste disposal. (DOK 1)
- l. Discuss careers in epidemiology. (DOK 1)

### Suggested Teaching Strategies

- Have students write a musical play about yellow fever using *1793 Fever* or *The American Plague* and other research about Benjamin Rush, Clara Moss, and so forth. Have students act out the play, assuming the roles of mosquitoes, health care workers, victims, and so forth. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5
- Take students to the Center for Disease Control or a state health lab or animal lab. Take students to visit a research facility to view current research and then design and perform an experiment related to health. E1, E2, E3, E4, E5, E6, S1, S2, S3, CLS2, CLS4
- Have students work in groups to make a chain of infection from various materials. Have students explain the chain, break the chain, and explain what happens when the chain is broken. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5
- Have students research and make germs that replicate the shape of various microorganisms. Give germs a “business card” explaining characteristics, routes, and so forth using word

processing software. Create a “Wanted: Dead Only” poster with a scientific name, a made-up name, the number of people infected or killed annually, and the amount of health-care dollars spent treating infection. E1, E2, E3, E4, E5, E6, CLS2, CLS5, T1, T2, T3, T4, T5, T6

- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. (electronic portfolio) CLS1, CLS2, CLS3, CLS4, CLS5

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate experiment for appropriateness.
- Use a rubric to assess the “business card.”
- Use a rubric to assess the poster.
- Use a rubric to assess skill techniques.
- Assess students’ knowledge through an online assessment in Blackboard.



# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP1 — Utilize critical thinking and scientific problem solving in designing and performing biological research and experimentation.
- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.
- AP3 — Discuss the biochemical composition of the human body.
- AP4 — Explore the relationship of the cell to the more complex levels of organization within the body.
- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R5 — Meaning of Words
- S1 — Interpretation of Data
- S2 — Scientific Investigation
- S3 — Evaluation of Models, Inferences, and Experimental Results

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF4 — Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.
- HSF7 — Health-care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.
- HSF9 — Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10 — Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.

~~HSF11 Health care workers will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health care applications.~~

### **National Educational Technology Standards**

~~T1 Creativity and Innovation~~

~~T2 Communication and Collaboration~~

~~T3 Research and Information Fluency~~

~~T4 Critical Thinking, Problem Solving, and Decision Making~~

~~T5 Digital Citizenship~~

~~T6 Technology Operations and Concepts~~

# Suggested References

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DiSC. (2005). *Home of the original DiSC profile test*. Retrieved September 15, 2005, from <http://www.discprofile.com/>

Fleming, N. (2001). *Vark: A guide to learning styles*. Retrieved September 15, 2005, from <http://www.vark-learn.com/english/index.asp>

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Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**



# Germ Business Card Grading Sheet

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

Create a business card for your assigned germ using the following rubric. Be sure to complete the self and peer assessments before turning in your final product. Place scores in the blanks to the right of the criteria. (S=Self, P=Peer, T=Teacher)

		S	P	T
5 pts	Germ named using alliteration (ex. Polly Polio)			
10 pts	Catchy slogan for germ's company (ex. "Invisible but Deadly")			
10 pts	Mode of transmission (ex. Oral fecal contaminated water)			
10 pts	Five signs or symptoms of infection (ex. High fever)			
10 pts	Complete Web address of germ information			
10 pts	Creative design			
10 pts	Neatness, grammar, and spelling			
10 pts	Creative drawing of germ			
25 pts	Introduction of germ			
<b>TOTAL</b>				

# Poster Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Required Content</b>	The poster includes all required content elements as well as additional information.	All required content elements are included on the poster.	All but one of the required content elements are included on the poster.	Several required content elements were missing.	
<b>Labels</b>	All items of importance on the poster are clearly labeled with labels that are easy to read.	Almost all items of importance on the poster are clearly labeled with labels that are easy to read.	Many items of importance on the poster are clearly labeled with labels that are easy to read.	Labels are too small to read, or no important items were labeled.	
<b>Attractiveness</b>	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout, and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed.	
<b>Grammar</b>	There are no grammatical or mechanical mistakes on the poster.	There are one to two grammatical or mechanical mistakes on the poster.	There are three to four grammatical or mechanical mistakes on the poster.	There are more than four grammatical or mechanical mistakes on the poster.	
				<b>TOTAL</b>	

**Comments:**

# Group Work Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-points	Meeting Success 2-points	Experiencing Difficulty 1-point	Score
Sharing	Shared ideas with others	Occasionally shared ideas with others	Seldom shared ideas with others	
Listening	Always listened to peers	Occasionally listened to peers	Ignored ideas of peers	
Respecting	Interacted with, encouraged, and supported ideas of others	Occasionally encouraged and supported others	Seldom encouraged and supported others	
Participating	Shared task equally with group members	Did most of the task	Did very little of the task	
<b>TOTAL</b>				

**Comments:**



# Wanted: Dead Only Poster Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

Overview of Activity: Create a “Wanted: Dead Only” poster with your germ’s name, picture, charges against him or her, and the methods of execution by using Microsoft publisher (or by drawing and printing the information). The information must be accurate and based on your WHO or CDC research. Complete a self and peer assessment of your project before turning it in. (S=Self, P=Peer, T=Teacher)

	S	P	T
<b>10 pts</b>			
Germ’s scientific name and aliases (AKA) using alliteration			
<b>10 pts</b>			
Germ’s picture			
<b>10 pts</b>			
Charges brought against the germ (ex. kills 30,000 innocent people in the U.S. each year)			
<b>10 pts</b>			
Methods of execution when caught (ex. boiling, chemicals such as chlorine bleach, vaccines, antibiotics, or anti-virals)			
<b>10 pts</b>			
Bounty for eradication of the germ (health care dollars saved by preventing the infection, if known)			
<b>15 pts</b>			
Creativity of writing			
<b>10 pts</b>			
Grammar, spelling, and neatness			
<b>10 pts</b>			
Complete reference given using MLA or APA format (on back of the poster)			
<b>5 pts</b>			
Name of group offering the bounty (creative name for your group; ex. “Germ-Busters)			
<b>10 pts</b>			
Beauty and creativity of poster (style, originality, color, design, and neatness)			
			<b>TOTAL</b>

# Role-Play or Skit Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

Comments:

# Field Trip Participation Checklist

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NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

- \_\_\_\_\_ 1. The student arrived at the designated meeting place on time with all materials and supplies required for the field trip.
- \_\_\_\_\_ 2. The student observed all safety rules and policies while traveling to and participating in the field trip.
- \_\_\_\_\_ 3. The student demonstrated interest in the content of the field trip by paying attention to the exhibits and speakers, asking pertinent questions, and taking notes.
- \_\_\_\_\_ 4. The student exhibited a positive attitude toward the events and activities of the field trip.
- \_\_\_\_\_ 5. The student remained on task throughout the field trip.
- \_\_\_\_\_ 6. The student exhibited cooperative workplace skills with other students throughout the field trip.

## Unit 9: Growth and Development

**Competency 1:** Compare and contrast the stages of growth and development across the lifespan. (DOK 2) <sup>HSF1, AP5</sup>

### Suggested Objectives

- a. Compare and contrast physical, mental, emotional, and social development characteristics of each of Erikson's stages of development from infancy through late adulthood. (DOK 2)
- b. Discuss Maslow's Hierarchy of Human Needs. (DOK 2)

### Suggested Teaching Strategies

- Discuss Erikson's stages of development and Maslow's Hierarchy of Human Needs. Hook and pre-assess students by having them indicate people they know who are in each stage of development and connect characteristics to those people. Have students form a collage or box with pictures of people (or themselves) at various life stages, indicating characteristics of development for each and also what they would like to be in the future. <sup>E1, E2, E3, E4, E5, E6, CLS2, CLS5</sup>
- Have students role-play a particular life stage, interview people of different ages, or visit a day care to observe and assess development characteristics. Assign students a life stage, and have them role-play the appropriate characteristics of the life stage using various props such as a pebble in the shoe to simulate bone spurs, toothpaste smeared on safety glasses, fingers taped together to simulate arthritis, and so forth. Have students complete the Denver Developmental or SAMS Screening tests. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Have students list items that describe them, impact their lives, or they hate or love (are passionate about); draw silhouettes of students' faces, and then have them draw an artistic representation of the items on the head using bright colors. <sup>E1, E2, E3, E4, E5, E6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the collage or box for content and appearance.
- Use a rubric to assess appropriateness of role-play.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Apply concepts related to death and dying. (DOK 2) <sup>HSF1, HSF10, AP5</sup>

## Suggested Objectives

- a. Describe the five stages of grief, hospice care, advance directives, and organ donation. (DOK 1)
- b. Discuss care when death is imminent, and perform post-mortem care. (DOK 2)
- c. Discuss procedures to prepare the human body for a funeral. (DOK 2)
- d. Differentiate funeral planning, including how cultural beliefs impact funeral services. (DOK 2)

## Suggested Teaching Strategies

- Ask students to discuss the following: <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
  - How is the understanding of development or lack of development through the life stages used to better meet the needs of clients in health care?
  - How do the ethical issues surrounding the right to die affect individuals and their families?
  - How do unmet needs of clients make it harder for health care professionals to deliver care?
  - How are direct methods of satisfying human needs used?
  - How are indirect methods of satisfying human needs used?
  - How do different individuals move through the stages of death and dying?
- Tell students a story about a hospice client who died at a young age. Walk students through the emotional and physical journey of both the child and parents. Also walk them through the challenges faced as the nurse for the child over a 5-year period leading to his death. Present information in client case models. Use real client situations and problems. Lead students in class discussions related to client situations, and give examples of solutions for client situations. Students will meet in small groups to discuss, receive feedback, and revise projects prior to grading. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Have students participate in an activity as a hospice nursing supervisor/team leader to take an assigned list of items and determine what stage of grief the client is in and in what order he or she has traveled through the stages. Determine ways to assist client/family to reach the remainder of stages. Have students work in groups to write (using word processing software) an updated plan of care for this client using knowledge of the client's situation; students should determine which member or members of the hospice team should be primarily used to assist the client in reaching the stage of acceptance and how it should be accomplished based on the client's developmental level and life stage. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Have students take a living will and advance directive home and discuss the forms with their parents. Have students listen to a representative from an organ transplant organization talk

about organ donation. <sup>E1, E2, E3, E4, E5, E6</sup>

- Take students to a local funeral home to discuss preparation of a body for a funeral, and have students demonstrate postmortem care on a mannequin. <sup>E1, E2, E3, E4, E5, E6</sup>
- Have students work in groups to prepare and present a report on assigned cultural practices associated with funeral services. Take students to funeral homes from various cultures, or have them watch a video. Have them simulate postmortem care. Have students research burial customs from various cultures. Have students complete a death certificate. Students may read the book *Stiff*, which has information about the body after death. Take students to visit a cemetery, and discuss cremation. Have students plan a funeral and write an obituary using word processing software. <sup>E1, E2, E3, E4, E5, E6, R1, R5, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the care plan for content and appearance.
- Use a rubric to assess presentation.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 3:** Compare psychological outcomes related to growth and development. (DOK 2) <sup>HSF1, AP5</sup>

### Suggested Objectives

- a. Discuss cultural, social, and ethnic diversity and how they affect needs. (DOK 2)
- b. Discuss body image and role changes. (DOK 2)
- c. Explore mental health disorders such as chemical and substance abuse, suicide, and eating disorders. (DOK 2)
- d. Discuss dementia (Alzheimer's disease and others) and how it affects clients and techniques used in addressing individuals with dementia. (DOK 2)
- e. Examine the behavior of cognitively impaired patients, and discuss methods for communicating with them, appropriate response to behaviors, and methods of reducing the effects of cognitive impairments. (DOK 2)

### Suggested Teaching Strategies

- Discuss diversity, body image, and mental health disorders. Invite a guest speaker from an organization such as MADD, AA, or Partnership for a Healthy Mississippi or a police K9 unit to speak about chemical or substance abuse. Show a video about a person with anorexia or

other disorder or suicide; discuss what might lead someone to commit suicide. Have students role-play a suicide prevention scenario that includes preventive measures and warning signs. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>

- Have students tour a local facility that has Alzheimer's clients and discuss safety issues surrounding this disease or interview a person who has a family member with Alzheimer's disease. Have each student prepare a podcast based on the interview. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Assess participation in the field trip using a rubric.
- Use a rubric to evaluate the podcast for content and appearance.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 4:** Analyze the fundamentals of wellness and the prevention of disease processes. (DOK 2)

<sup>HSF1, HSF9, AP2, AP3, AP4, AP5</sup>

### Suggested Objectives

- a. Formulate plans for behaviors that promote health and wellness (e.g., preventive health screening and examinations, practices that promote the prevention of disease and injury, and evaluation of alternative health practices). (DOK 3)
- b. Critique the benefit of family interactions including utilizing the patient's family as a source of emotional support. (DOK 2)
- c. Discuss the aging process as it relates to health and wellness. (DOK 2)

### Suggested Teaching Strategies

- Discuss fundamentals of health and wellness, family interactions, and the aging process related to health and wellness. Have students develop a plan for behaviors that promotes health and wellness and prepares a wellness/safety poster and an exercise and eating plan. <sup>E1, E2, E3, E4, E5, E6</sup>
- Host a wellness and safety fair, and assess BMI, % body fat, glucose, seat belt use, and so forth. Or, assist with a body walk or a similar activity, and go to an elementary school to present information. Teach a skill (e.g., hand washing, basic first aid, or preventing spread of lice) to elementary students. <sup>E1, E2, E3, E4, E5, E6, S1, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Lead students in a discussion of what they have learned in this unit and where they feel they

need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate the poster for content and appearance using a rubric.
- Use a rubric to assess portfolio.
- Assess students' knowledge through an online assessment in Blackboard.



# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.
- AP3 — Discuss the biochemical composition of the human body.
- AP4 — Explore the relationship of the cell to the more complex levels of organization within the body.
- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R5 — Meaning of Words
- S1 — Interpretation of Data
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF9 — Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10 — Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

## National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship



# Suggested References

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For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Role-Play or Skit Assessment Rubric



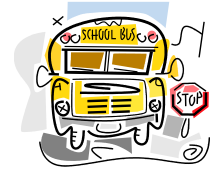
NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

**Comments:** \_\_\_\_\_

# Field Trip Participation Checklist

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NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

- \_\_\_\_\_ 1. The student arrived at the designated meeting place on time with all materials and supplies required for the field trip.
- \_\_\_\_\_ 2. The student observed all safety rules and policies while traveling to and participating in the field trip.
- \_\_\_\_\_ 3. The student demonstrated interest in the content of the field trip by paying attention to the exhibits and speakers, asking pertinent questions, and taking notes.
- \_\_\_\_\_ 4. The student exhibited a positive attitude toward the events and activities of the field trip.
- \_\_\_\_\_ 5. The student remained on task throughout the field trip.
- \_\_\_\_\_ 6. The student exhibited cooperative workplace skills with other students throughout the field trip.

# What makes a good podcast?

When you listen to a podcast, or when you are making your own, think about these qualities of a well-done podcast. (N/A means Not Applicable--the question can't be answered or it does not pertain to the site you are viewing.)

Your name: \_\_\_\_\_ Date: \_\_\_\_\_

Title of podcast: \_\_\_\_\_

Feed URL (or URL): \_\_\_\_\_

Creator of podcast: \_\_\_\_\_



1. Did the podcast include content that was useful / relevant for your purpose?	YES	NO	N/A
2. Were the technical qualities (audio, slides, etc.) acceptable in the production?	YES	NO	N/A
3. Was a written transcript of the podcast available?	YES	NO	N/A
4. Was the podcast linked from a site which included subject tags?	YES	NO	N/A
5. Was the podcast linked from a site which included links to other resources?	YES	NO	N/A
6. Did the podcast adhere to the copyright guidelines in its use of music, pictures, etc.?	YES	NO	N/A
7. Was the length of the podcast appropriate for its content? (20 min. or less)?	YES	NO	N/A
8. Was the podcast part of a regularly scheduled series?	YES	NO	N/A
9. Did the subjects in the podcast have "personality" to keep you interested??	YES	NO	N/A
10. Did the podcast flow smoothly (introduction, content, summary)?	YES	NO	N/A
11. Was it obvious how to add the podcast feed to your aggregator? (RSS)	YES	NO	N/A
12. If the item was an enhanced podcast, did the use of slides enhance the content?	YES	NO	N/A
13. If the item was an enhanced podcast, was it available in various file formats to allow viewing on various hardware devices?	YES	NO	N/A
In your own words, describe the podcast you listened to and its attributes.			

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# Poster Assessment Rubric

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Required Content</b>	The poster includes all required content elements as well as additional information.	All required content elements are included on the poster.	All but one of the required content elements are included on the poster.	Several required content elements were missing.	
<b>Labels</b>	All items of importance on the poster are clearly labeled with labels that are easy to read.	Almost all items of importance on the poster are clearly labeled with labels that are easy to read.	Many items of importance on the poster are clearly labeled with labels that are easy to read.	Labels are too small to read, or no important items were labeled.	
<b>Attractiveness</b>	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout, and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed.	
<b>Grammar</b>	There are no grammatical or mechanical mistakes on the poster.	There are one to two grammatical or mechanical mistakes on the poster.	There are three to four grammatical or mechanical mistakes on the poster.	There are more than four grammatical or mechanical mistakes on the poster.	
				<b>TOTAL</b>	

**Comments:**



# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Group Work Assessment Rubric

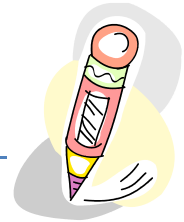


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-points	Meeting Success 2-points	Experiencing Difficulty 1-point	Score
Sharing	Shared ideas with others	Occasionally shared ideas with others	Seldom shared ideas with others	
Listening	Always listened to peers	Occasionally listened to peers	Ignored ideas of peers	
Respecting	Interacted with, encouraged, and supported ideas of others	Occasionally encouraged and supported others	Seldom encouraged and supported others	
Participating	Shared task equally with group members	Did most of the task	Did very little of the task	
<b>TOTAL</b>				

**Comments:**

# Written Report Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

## Unit 10: Direct Personal Care

**Competency 1:** Discuss the roles of members of the health-care team, and employ appropriate communication strategies in therapeutic care. (DOK 2) HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF7, HSF8, HSF9, HSF10, HSF11, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Discuss careers in the therapeutic services area such as nursing, veterinary science, optometry, physician specialties, paramedics, surgical technology, chiropractor, dentistry, athletic training, and mortician science. (DOK 1)
- b. Explain planned procedures to patients including goals, side effects, and coping strategies; use various strategies to respond to questions and concerns of patients. (DOK 2)
- c. Use written communication, develop clear written patient information and instructions, and keep written records as appropriate within facility policies and protocols. (DOK 2)
- d. Communicate patient information among team members allowing for feedback as needed. (DOK 2)

### Suggested Teaching Strategies

- Hook students by having someone in a therapeutic career speak to the class about his or her career. Pre-assess student knowledge of the therapeutic services by asking the students to list what they think people in these careers do and then compare their lists to the information provided by the speaker. Have students choose a career they are interested in and develop a career plan (where go to college, cost, job openings, salary, and job responsibilities) and begin an employment portfolio that will be developed throughout the year. Have students do a podcast, interviewing someone in their health-care career of interest. Have someone from the community observe presentations by students. Ask students if they are still interested in the career, and ask why or why not. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Discuss means of communication, and have students perform procedures and self-assess techniques. Introduce students to computer charting software. CLS1, CLS2, CLS3, CLS4, CLS5

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to assess the portfolio.
- Evaluate student communication procedures.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Review related body systems and disease implications, and perform therapeutic personal care skills. (DOK 2) HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF7, HSF8, HSF9, HSF10, HSF11, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Discuss patient care plans. (DOK 2)
- b. Take patient vital signs. (DOK 2)
- c. Perform or assist with patient hygiene including bathing (tub, shower, and sponge), dressing, applying elastic stockings, grooming, and oral care including dentures, nail care, and foot care. (DOK 2)
- d. Apply bandages, and change dressings. (DOK 2)
- e. Give a back rub. (DOK 2)
- f. Discuss the use of restraints, and use appropriately. (DOK 2)
- g. Perform or assist with patient elimination including ostomy, enema, bedpan, catheter, and perineal care. (DOK 3)
- h. Employ environmental techniques to promote rest, sleep, and comfort. (DOK 2)
- i. Demonstrate methods used for oxygen therapy. (DOK 2)
- j. Demonstrate range of motion exercises and indications for use. (DOK 2)
- k. Demonstrate the use of assistive devices (crutches, cane, walker, and gait belt) for activities of daily living and ambulation. (DOK 2)
- l. Apply hot, cold, and moist compresses. (DOK 2)
- m. Discuss concepts related to dentistry. (DOK 2)
- n. Discuss concepts related to veterinary medicine. (DOK 2)

### Suggested Teaching Strategies

- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. CLS1, CLS2, CLS3, CLS4, CLS5
- Have students review magazine articles or news reports about mistreatment/abuse/neglect of patients and discuss within a group the consequences of the actions. Discuss with students what is meant by patient care, how a lack of proper patient care might affect the patient, ways health care workers show respect when providing patient care, and how patient care procedures might vary among patients. Show students a video or demonstration outlining

patient care procedures and related regulations. Have students use the Internet, magazines, and books to research diseases/disorders and write/type a one-page report about diseases/disorders using appropriate terminology and anatomy and physiology concepts. <sup>E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS2, CLS5, T1, T2, T3, T4, T5, T6</sup>

- Review examples of care plans and ADL or flow charts; discuss components with the class. Have students research reasons for and methods of electronic charting. <sup>T1, T2, T3, T4, T5, T6</sup>
- Have students role-play and serve as health-care workers and provide care for an assigned “patient” with a certain disease/disorder. Each student will research information about the patient’s condition, develop an appropriate care plan for providing care while noting special procedures related to the patient’s condition, and provide the appropriate care. The care must reflect respect for the patient and meet the requirements outlined by state and national regulations. Have students track procedures using an ADL or flowchart and enter data into an electronic file. Students should revise the care plan based on self-assessment. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### **Suggested Assessment Strategies**

- Evaluate the care plan and ADL or flowchart to ensure it is neatly prepared and grammatically correct, that appropriate care procedures for the patient’s condition are performed, that procedures follow state and national regulations, and that respect is shown to the patient at all times.
- Check off on patient care procedures.
- Monitor student self-assessment of patient care.
- Use the Written Report Rubric to evaluate the research report on patient condition.

**Competency 3:** Recognize and report a patient's change in status. (DOK 2) HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF7, HSF8, HSF9, HSF10, HSF11, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Recognize and report changes related to the vital organs such as shortness of breath, rapid respiration, fever, coughs, chills, pains in chest, and blue color to lips. (DOK 2)
- b. Recognize and report changes related to the digestive system such as pain in the abdomen, nausea, and vomiting. (DOK 2)
- c. Recognize and report changes related to the urinary system such as blood or sediment in urine, difficulty urinating, frequent urination in small amounts, pain or burning during urination, and urine that has dark color or strong odor. (DOK 2)
- d. Recognize and report other changes such as drowsiness, excessive thirst, sweating, and pus. (DOK 2)

### Suggested Teaching Strategies

- Discuss recognizing and reporting changes in patient status. Use case studies with doctors' progress notes to demonstrate changes. Have students role play (know what problems a "patient" should exhibit and have student monitor) or use a dummy or smart dummy (vital signs or arrhythmia) and recognize and report changes. E1, E2, E3, E4, E5, E6, S1, CLS1, CLS2, CLS3, CLS4, CLS5
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to evaluate role-play for appropriateness.
- Use a rubric to assess portfolio.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 4:** Follow guidelines for collecting patient information. (DOK 2) HSF2, HSF4, HSF5, HSF6, HSF10, HSF11

### Suggested Objectives

- a. Review HIPAA guidelines. (DOK 1)
- b. Collect and format information using appropriate guidelines. (DOK 2)

c. Discuss the use of electronic records. (DOK 1)

d. Maintain confidentiality according to appropriate protocol. (DOK 2)

### **Suggested Teaching Strategies**

- Have students research the HIPAA Web site and summarize the information located there. Review communication skills, and obtain information from the patient. Have students complete case studies, including guidelines, in which they identify times when patient information was or was not collected, formatted, and recorded using appropriate guidelines and protocols. E1, E2, E3, E4, E5, E6, R1, R5, T1, T2, T3, T4, T5, T6

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate the case study for appropriateness.
- Use a rubric to assess the Web site summary.
- Assess students' knowledge through an online assessment in Blackboard.



# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

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- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.
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- E6 — Conventions of Punctuation
- S1 — Interpretation of Data
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF3 — Health-care workers will understand how their role fits into their department, their organization, and the overall health care environment. They will identify how key systems affect services they perform and quality of care.
- HSF4 — Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.
- HSF5 — Health-care workers will understand the legal responsibilities, limitations, and implications of their actions within the health-care delivery setting.
- HSF6 — Health-care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health-care environment. They will perform quality health-care delivery.

~~HSF7—Health-care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.~~

~~HSF8—Health-care workers will understand the roles and responsibilities of individual members as part of the health-care team, including their ability to promote the delivery of quality health care.~~

~~HSF9—Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.~~

~~HSF10—Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.~~

~~HSF11—Health-care workers will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health-care applications.~~

### **National Educational Technology Standards**

~~T1—Creativity and Innovation~~

~~T2—Communication and Collaboration~~

~~T3—Research and Information Fluency~~

~~T4—Critical Thinking, Problem Solving, and Decision Making~~

~~T5—Digital Citizenship~~

~~T6—Technology Operations and Concepts~~

# Suggested References

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Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

Mississippi Nurse Aide Candidate Handbook. (2007). Retrieved October 3, 2007,  
from <http://www.asisvcs.com/indhome.asp?CPCAT=0725NURSE>

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# Suggested Rubrics and Checklists

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# What makes a good podcast?

When you listen to a podcast, or when you are making your own, think about these qualities of a well-done podcast. (N/A means Not Applicable--the question can't be answered or it does not pertain to the site you are viewing.)

Your name: \_\_\_\_\_ Date: \_\_\_\_\_

Title of podcast: \_\_\_\_\_

Feed URL (or URL): \_\_\_\_\_

Creator of podcast: \_\_\_\_\_



1. Did the podcast include content that was useful / relevant for your purpose?	YES	NO	N/A
2. Were the technical qualities (audio, slides, etc.) acceptable in the production?	YES	NO	N/A
3. Was a written transcript of the podcast available?	YES	NO	N/A
4. Was the podcast linked from a site which included subject tags?	YES	NO	N/A
5. Was the podcast linked from a site which included links to other resources?	YES	NO	N/A
6. Did the podcast adhere to the copyright guidelines in its use of music, pictures, etc.?	YES	NO	N/A
7. Was the length of the podcast appropriate for its content? (20 min. or less)?	YES	NO	N/A
8. Was the podcast part of a regularly scheduled series?	YES	NO	N/A
9. Did the subjects in the podcast have "personality" to keep you interested??	YES	NO	N/A
10. Did the podcast flow smoothly (introduction, content, summary)?	YES	NO	N/A
11. Was it obvious how to add the podcast feed to your aggregator? (RSS)	YES	NO	N/A
12. If the item was an enhanced podcast, did the use of slides enhance the content?	YES	NO	N/A
13. If the item was an enhanced podcast, was it available in various file formats to allow viewing on various hardware devices?	YES	NO	N/A
In your own words, describe the podcast you listened to and its attributes.			

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# Portfolio Assessment Rubric

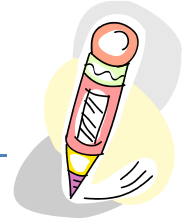


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Written Report Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

# Role-Play or Skit Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

Comments:



# Presentation Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score
<b>Content</b>	Clear, appropriate, and correct	Mostly clear, appropriate, and correct	Somewhat confusing, incorrect, or flawed	Confusing, incorrect, or flawed	
<b>Clarity</b>	Logical, interesting sequence	Logical sequence	Unclear sequence	No sequence	
<b>Presentation</b>	Clear voice and precise pronunciation	Clear voice and mostly correct pronunciation	Low voice and incorrect pronunciation	Mumbling and incorrect pronunciation	
<b>Visual Aids</b>	Attractive, accurate, and grammatically correct	Adequate, mostly accurate, and few grammatical errors	Poorly planned, somewhat accurate, and some grammatical errors	Weak, inaccurate, and many grammatical errors	
<b>Length</b>	Appropriate length	Slightly too long or short	Moderately too long or short	Extremely too long or short	
<b>Eye Contact</b>	Maintains eye contact, seldom looking at notes	Maintains eye contact most of time but frequently returns to notes	Occasionally uses eye contact but reads most of information	No eye contact because reading information	
				<b>TOTAL</b>	

**Comments:**

## Unit 11: Therapeutic Services

**Competency 1:** Review related body systems and disease implications, and explain procedures related to mental health care. (DOK 2) HSE9, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Discuss the role of play therapy, music therapy, art therapy, aroma therapy, dance therapy, recreation therapy, puppet therapy, pet therapy, physical therapy, occupational therapy, speech therapy, pharmacy, psychology, social work, respiratory therapy, and so forth. (DOK 2)
- b. Identify techniques of reality orientation. (DOK 2)
- c. Differentiate between psychotic and psycho-neurotic disorders. (DOK 2)

### Suggested Teaching Strategies

- Hook students by showing videos or discussing case studies of people with various disorders. Pre-assess student knowledge by leading them in a discussion of the causes and treatments of the disorders. Compare and contrast disorders using butcher paper. E1, E2, E3, E4, E5, E6, S1
- Show students *A Beautiful Mind* or other multiple personality videos, and lead them in a discussion about mental illness. Discuss types of reality orientation and various disorders. Have students research a type of therapy and prepare a written report using word processing software. E1, E2, E3, E4, E5, E6, S1, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate comparison for content and appearance.
- Use a rubric to assess the report.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Review related body systems and disease implications, and perform procedures related to sensory impairment. (DOK 2) HSE9, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Perform vision and hearing screening. (DOK 2)
- b. Identify methods necessary for the assistance and safety of the visually, hearing, and speech

impaired. (DOK 2)

c. Care for vision and hearing assistive devices as well as dental appliances. (DOK 2)

### Suggested Teaching Strategies

- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. CLS1, CLS2, CLS3, CLS4, CLS5
- Use simulations such as glasses covered in Vaseline, and have students choose “medicine” (candy); have students work together to develop an appropriate medication regime. CLS1, CLS2, CLS3, CLS4, CLS5

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to assess skill techniques.
- Observe simulations.
- Assess students’ knowledge through an online assessment in Blackboard.

**Competency 3:** Review related body systems and disease implications, and demonstrate procedures related to food and nutrition. (DOK 2) HSF9, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Discuss the food guide pyramid. (DOK 1)
- b. Describe basic therapeutic diets (i.e., clear liquid, full liquid, soft, bland, and regular), specialty diets (e.g., cardiac, diabetic, calorie restricted, high calorie, low sodium, renal, low fat, low cholesterol, high fiber, restricted residue, bland, and kosher), and examples of medical conditions that are treated with these diets. (DOK 2)
- c. Prepare a 24-hour menu for a therapeutic diet. (DOK 3)
- d. Discuss the principles of asepsis in food preparation. (DOK 2)
- e. Complete a menu requisition. (DOK 2)
- f. Deliver and retrieve food trays. (DOK 2)

### Suggested Teaching Strategies

- Discuss the food guide pyramid, types of diets, and food preparation and delivery. Discuss nutritional value of foods and drinks in vending machines and the serving sizes and amounts

in each package. Have students compare food labels, identifying the amounts of various nutrients present in each type of food. Have each student role play a vitamin or mineral and create a jingle or rap about the vitamin or mineral. <sup>E1, E2, E3, E4, E5, E6</sup>

- Have students analyze popular diets such as Atkins or South Beach and discuss what is wrong with diets. Also, look at Weight Watchers, NutriSystem, or other diets, and discuss why they are appropriate. Have students prepare a 24-hour menu on one therapeutic diet using nutritional books, restaurant nutritional guides, and Internet nutrition sites and computer software as resources. They should present the diet to the class as a dietitian would teach it to a newly diagnosed patient with the need for the particular therapeutic diet and bring samples of the food that is included in the diet to share with the class showing what one serving of the food looks like. <sup>E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in the electronic portfolios. <sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate presentation for content and appearance using a rubric.
- Use a rubric to evaluate role-play.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 4:** Review related body systems and disease implications, and discuss procedures related to reproduction. (DOK 2) <sup>HSF9, AP2, AP3, AP4, AP5</sup>

### Suggested Objectives

- a. Discuss sexually transmitted infections (STI) and their prevention. (DOK 2)

### Suggested Teaching Strategies

- Discuss sexually transmitted infections (STI) and their prevention. Have an STI investigator from the health department speak to the class, and lead the class in a discussion about the information presented. Have students choose an infection and write a report and do a podcast including the statistics, characteristics, and treatment. <sup>E1, E2, E3, E4, E5, E6, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the report for content and appearance using a rubric.
- Have students peer evaluate the podcasts.
- Assess students' knowledge through an online assessment.

**Competency 5:** Train patients in skills that incorporate principles of restorative care. (DOK 2) <sup>HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF7, HSF8, HSF9, HSF10, HSF11, AP2, AP3, AP4, AP5</sup>

### Suggested Objectives

- a. Train patients in self care according to their abilities. (DOK 2)
- b. Train patients to use assistive devices for transferring, ambulating, eating, and dressing. (DOK 2)
- c. Discuss bowel and bladder training. (DOK 2)
- d. Assist with the care and use of prosthetic and orthotic devices. (DOK 2)

### Suggested Teaching Strategies

- Discuss methods for training patients in skills that incorporate principles of restorative care, and take students to observe in a facility where restorative care is performed. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in the electronic portfolios. CLS1, CLS2, CLS3, CLS4, CLS5

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to assess participation in the field trip.
- Use a rubric to assess skill techniques.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 6:** Review related body systems and disease implications, and apply concepts related to pharmaceutical agents. (DOK 2) HSF1, HSF9, AP2, AP3, AP4, AP5

## Suggested Objectives

- a.—Contrast common drug classifications with actions using the PDR and nursing drug reference. This may include analgesic, anesthetic, antacid, antibiotic, anticholinergic, anticoagulant, anticonvulsive, antidepressant, antidiarrheal, antiemetic, antihistamine, antihypertensive, anti-inflammatory agent, antineoplastic agent, antipyretic, antitussive, bronchodilator, central nervous system depressant, central nervous system stimulant, coagulant, decongestant, desensitization agent, diuretic, emetic, hormones and hypoglycemics, hypnotic, laxative, sedative, sulfonamide, vaccines and immunizations, vasodilator, and vitamins and minerals. (DOK 2)
- b.—Determine the components of an authorized drug prescription. (DOK 2)
- c.—Calculate medication dosages for parenteral, oral, and IV medications. (DOK 2)

## Suggested Teaching Strategies

- Discuss common drug classifications and actions. Have students make a giant pill out of poster board that is cut to the appropriate shape and colored appropriately based on PDR. Have students list side effects, actions and uses, contraindications, and so forth on the pill and present the information to the class. E1, E2, E3, E4, E5, E6, S1
- Have students fill out mock drug prescriptions using medical terminology, calculate drug dosages, and participate in a mock pharmacy giving mock pills using candy. Or, prepare 10 stations with index cards with a case study and how much medicine to give a patient. Provide labeled bottles and IV bags, and have students calculate dosages. E1, E2, E3, E4, E5, E6, M1, M3, M7, CLS1, CLS2, CLS3, CLS4, CLS5

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the giant pill for appropriateness.
- Assess dosage calculation.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 7:** Evaluate the purposes of the treatment plan, and collaborate in planning procedures that support the goals for the patient. (DOK 3) HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF7, HSF8, HSF9, HSF10, HSF11, AP5

## Suggested Objectives

- a.—Create an appropriate treatment plan using a problem-solving model. (DOK 3)
- b.—Implement a treatment plan, evaluate priorities in order to organize work, use equipment and

instruments appropriately, and document actions according to facility protocol. (DOK 3)

### **Suggested Teaching Strategies**

- Discuss treatment plans and their development. Have students analyze a case study or care plan from a hospital and create an appropriate treatment plan. Have students role-play as a team the implementation of the plan and methods of documentation. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### **Suggested Assessment Strategies**

- Monitor class activity to ensure that all students participate.
- Evaluate the treatment plan for content and appearance.
- Use a rubric to evaluate role-play.
- Assess students' knowledge through an online assessment in Blackboard.



# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.
- AP3 — Discuss the biochemical composition of the human body.
- AP4 — Explore the relationship of the cell to the more complex levels of organization within the body.
- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- M1 — Basic Operations and Applications
- M3 — Numbers: Concepts and Properties
- M7 — Measurement
- R1 — Main Ideas and Author's Approach
- S1 — Interpretation of Data
- R5 — Meaning of Words
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF3 — Health-care workers will understand how their role fits into their department, their organization, and the overall health care environment. They will identify how key systems affect services they perform and quality of care.
- HSF4 — Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.

- HSF5—Health-care workers will understand the legal responsibilities, limitations, and implications of their actions within the health-care delivery setting.
- HSF6—Health-care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health-care environment. They will perform quality health-care delivery.
- HSF7—Health-care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.
- HSF8—Health-care workers will understand the roles and responsibilities of individual members as part of the health-care team, including their ability to promote the delivery of quality health care.
- HSF9—Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10—Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.
- HSF11—Health-care workers will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health-care applications.

### **National Educational Technology Standards**

- T1—Creativity and Innovation
- T2—Communication and Collaboration
- T3—Research and Information Fluency
- T4—Critical Thinking, Problem Solving, and Decision Making
- T5—Digital Citizenship
- T6—Technology Operations and Concepts

# Suggested References

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Dugan, D. (2008). *Successful nursing assistant care* (2nd ed.). Albuquerque, NM: Harman.

Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

Mississippi Nurse Aide Candidate Handbook. (2007). Retrieved October 3, 2007,  
from <http://www.asisvcs.com/indhome.asp?CPCAT=0725NURSE>

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# What makes a good podcast?

When you listen to a podcast, or when you are making your own, think about these qualities of a well-done podcast. (N/A means Not Applicable--the question can't be answered or it does not pertain to the site you are viewing.)

Your name: \_\_\_\_\_ Date: \_\_\_\_\_

Title of podcast: \_\_\_\_\_

Feed URL (or URL): \_\_\_\_\_

Creator of podcast: \_\_\_\_\_



1. Did the podcast include content that was useful / relevant for your purpose?	YES	NO	N/A
2. Were the technical qualities (audio, slides, etc.) acceptable in the production?	YES	NO	N/A
3. Was a written transcript of the podcast available?	YES	NO	N/A
4. Was the podcast linked from a site which included subject tags?	YES	NO	N/A
5. Was the podcast linked from a site which included links to other resources?	YES	NO	N/A
6. Did the podcast adhere to the copyright guidelines in its use of music, pictures, etc.?	YES	NO	N/A
7. Was the length of the podcast appropriate for its content? (20 min. or less)?	YES	NO	N/A
8. Was the podcast part of a regularly scheduled series?	YES	NO	N/A
9. Did the subjects in the podcast have "personality" to keep you interested??	YES	NO	N/A
10. Did the podcast flow smoothly (introduction, content, summary)?	YES	NO	N/A
11. Was it obvious how to add the podcast feed to your aggregator? (RSS)	YES	NO	N/A
12. If the item was an enhanced podcast, did the use of slides enhance the content?	YES	NO	N/A
13. If the item was an enhanced podcast, was it available in various file formats to allow viewing on various hardware devices?	YES	NO	N/A
In your own words, describe the podcast you listened to and its attributes.			

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# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Poster Assessment Rubric

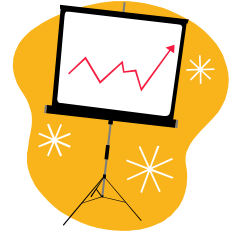


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Required Content</b>	The poster includes all required content elements as well as additional information.	All required content elements are included on the poster.	All but one of the required content elements are included on the poster.	Several required content elements were missing.	
<b>Labels</b>	All items of importance on the poster are clearly labeled with labels that are easy to read.	Almost all items of importance on the poster are clearly labeled with labels that are easy to read.	Many items of importance on the poster are clearly labeled with labels that are easy to read.	Labels are too small to read, or no important items were labeled.	
<b>Attractiveness</b>	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout, and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed.	
<b>Grammar</b>	There are no grammatical or mechanical mistakes on the poster.	There are one to two grammatical or mechanical mistakes on the poster.	There are three to four grammatical or mechanical mistakes on the poster.	There are more than four grammatical or mechanical mistakes on the poster.	
				<b>TOTAL</b>	

**Comments:**

# Presentation Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score
<b>Content</b>	Clear, appropriate, and correct	Mostly clear, appropriate, and correct	Somewhat confusing, incorrect, or flawed	Confusing, incorrect, or flawed	
<b>Clarity</b>	Logical, interesting sequence	Logical sequence	Unclear sequence	No sequence	
<b>Presentation</b>	Clear voice and precise pronunciation	Clear voice and mostly correct pronunciation	Low voice and incorrect pronunciation	Mumbling and incorrect pronunciation	
<b>Visual Aids</b>	Attractive, accurate, and grammatically correct	Adequate, mostly accurate, and few grammatical errors	Poorly planned, somewhat accurate, and some grammatical errors	Weak, inaccurate, and many grammatical errors	
<b>Length</b>	Appropriate length	Slightly too long or short	Moderately too long or short	Extremely too long or short	
<b>Eye-Contact</b>	Maintains eye contact, seldom looking at notes	Maintains eye contact most of time but frequently returns to notes	Occasionally uses eye contact but reads most of information	No eye contact because reading information	
				<b>TOTAL</b>	

**Comments:**



# Role-Play or Skit Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

**Comments:**

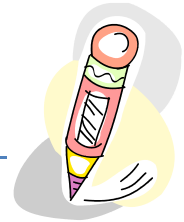
# Workplace Skills Weekly Checklist



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

Behavior Skill	Never	Rarely	Most of the Time	Always
<b>On Time and Prepared</b>				
1. Arrives to class on time				
2. Brings necessary materials				
3. Completes homework				
<b>Respects Peers</b>				
1. Respects others' property				
2. Listens to peers				
3. Responds appropriately to peers				
4. Respects others' opinions				
5. Refrains from abusive language				
<b>Respects Teachers/Staff</b>				
1. Follows directions				
2. Listens to teacher and staff				
3. Accepts responsibility for actions				
<b>Demonstrates Appropriate Character Traits</b>				
1. Demonstrates positive character traits (kindness, trustworthy, and honesty)				
2. Demonstrates productive character traits (patient, thorough, and hardworking)				
3. Demonstrates a level of concern for others				
<b>Demonstrates a Level of Concern for Learning</b>				
1. Remains on task				
2. Allows others to remain on task				

# Written Report Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

# Field Trip Participation Checklist

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NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

- \_\_\_\_\_ 1. The student arrived at the designated meeting place on time with all materials and supplies required for the field trip.
- \_\_\_\_\_ 2. The student observed all safety rules and policies while traveling to and participating in the field trip.
- \_\_\_\_\_ 3. The student demonstrated interest in the content of the field trip by paying attention to the exhibits and speakers, asking pertinent questions, and taking notes.
- \_\_\_\_\_ 4. The student exhibited a positive attitude toward the events and activities of the field trip.
- \_\_\_\_\_ 5. The student remained on task throughout the field trip.
- \_\_\_\_\_ 6. The student exhibited cooperative workplace skills with other students throughout the field trip.

# Case Study Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4-Points	Accomplished 3-Points	Needs Improvement 2-Points	Unsatisfactory 1-Point	Score
<b>Comprehension</b>	Shows complete understanding of the issues and grasps implications beyond the immediate issue	Asks for more details to clarify understanding of the issue	Shows partial understanding of the issue but does not ask for clarification	Resists attempts to get clarification	
<b>Strategizing</b>	Develops realistic strategies that provide a satisfactory conclusion	Chooses appropriate strategies that may satisfy	Shows evidence of strategy that may or may not satisfy	Needs assistance to choose a strategy	
<b>Innovation</b>	Devises more than one resolution to the problem	Offers a solution	Offers a solution with a limited point of view	Shows some understanding of the problem	
<b>Communication</b>	Convincingly communicates resolution	Explains solution so others can understand	Conveys an opinion	Unsure of how to explain	
<b>TOTAL</b>					

**Comments:**

# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

## Unit 12: Diagnostic Services

**Competency 1:** Review related body systems and disease implications, and explore medical imaging procedures and circumstances requiring use. (DOK 2) HSE1, HSE9, AP2, AP3, AP4, AP5

## Suggested Objectives

- a. Discuss careers in the medical imaging diagnostic services area. (DOK 1)
- b. Discuss echocardiography, fluoroscopy, magnetic resonance imagery, mammography, nuclear medicine, radiography, sonography, and tomography. (DOK 1)
- c. Discuss advancements in medical imagery. (DOK 1)
- d. Discuss hazards and safety measures associated with medical imaging. (DOK 2)
- e. Demonstrate basic radiological positioning (i.e., posterior anterior, anterior posterior, and lateral). (DOK 2)

## Suggested Teaching Strategies

- Hook students by showing videos or discussing case studies of people with various disorders, and pre-assess student knowledge by leading students in a discussion of the causes and treatments of the disorders. E1, E2, E3, E4, E5, E6
- Have students work in groups to research a career in medical imaging and present the information to the class using a podcast or Movie Maker. Visit the local community college to observe X-ray technology or related programs, or invite students from programs to speak to the class. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Discuss procedures in medical imaging diagnostic services as well as advancements in the field. Have students research hazards and safety measures that are appropriate and develop posters or brochures that could be used with patients to explain the concepts. Have students research current topics related to unnecessary scans and radiation exposure and participate in a debate about appropriate imaging procedures. E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Demonstrate proper skill techniques such as positioning and reading discarded X-rays. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. Include in the electronic portfolios. CLS1, CLS2, CLS3, CLS4, CLS5

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the presentation for content and appearance using a rubric.
- Use a rubric to assess posters or brochures.
- Assess students' knowledge through an online assessment in Blackboard.



**Competency 2:** Review related body systems and disease implications, and explore medical laboratory procedures and circumstances requiring use. (DOK 2) HSF1, HSF9, AP2, AP3, AP4, AP5

### Suggested Objectives

- a. Discuss careers in the medical laboratory diagnostic services area. (DOK 1)
- b. Describe methods of collecting specimens of urine, stool, sputum, blood, and emesis. (DOK 2)
- c. Identify basic laboratory tests, and perform basic laboratory procedures. (DOK 2)
- d. Identify common laboratory values such as hematocrit, hemoglobin, white blood cell count, sodium, potassium, blood urea nitrogen, creatinine, low density lipoprotein, high density lipoprotein, and glucose. (DOK 1)

### Suggested Teaching Strategies

- Have students research a career in medical laboratory services and present the information to the class using a podcast or Movie Maker. Visit a local community college to observe a medical laboratory technology program, or invite students from programs to speak to the class. E1, E2, E3, E4, E5, E6, R1, R5, CLS2, CLS5, T1, T2, T3, T4, T5, T6
- Have students perform simulated lab tests such as blood typing, cholesterol screening, urinalysis, blood smear, Gram staining, bacterial culture, growth and/or transfer, and phlebotomy. E1, E2, E3, E4, E5, E6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the presentation for content and appearance using a rubric.
- Use a rubric to assess participation in lab activity.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 3:** Review related body systems and disease implications, and describe major types of physical exams. (DOK 2) HSF1, HSF9, AP2, AP3, AP4, AP5

## Suggested Objectives

- a. Identify the equipment required for major types of physical exams. (DOK 1)
- b. Position for physical exams. (DOK 2)
- c. Describe assessment techniques used in a physical exam (i.e. observation, auscultation, percussion, and palpation). (DOK 1)

## Suggested Teaching Strategies

- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Video students performing skills, and allow students to critique each other. <sup>CLS1,</sup>  
<sub>CLS2, CLS3, CLS4, CLS5</sub>
- Discuss how to use equipment for an exam, lay out equipment, and have students choose appropriate equipment for various procedures. Have students role-play performing physical exams on mannequins or other students, perform body positioning for exams, and chart findings or results. <sub>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sub>

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to assess skill techniques.
- Use a rubric to evaluate role-play.
- Assess students' knowledge through an online assessment in Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP2 — Describe the basic organization of the body using the appropriate anatomical concepts.
- AP3 — Discuss the biochemical composition of the human body.
- AP4 — Explore the relationship of the cell to the more complex levels of organization within the body.
- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R5 — Meaning of Words
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF9 — Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.

## National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship
- T6 — Technology Operations and Concepts

# Suggested References

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Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

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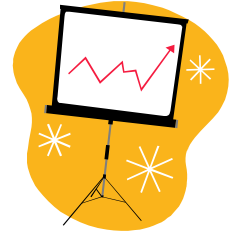
Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Presentation Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score
<b>Content</b>	Clear, appropriate, and correct	Mostly clear, appropriate, and correct	Somewhat confusing, incorrect, or flawed	Confusing, incorrect, or flawed	
<b>Clarity</b>	Logical, interesting sequence	Logical sequence	Unclear sequence	No sequence	
<b>Presentation</b>	Clear voice and precise pronunciation	Clear voice and mostly correct pronunciation	Low voice and incorrect pronunciation	Mumbling and incorrect pronunciation	
<b>Visual Aids</b>	Attractive, accurate, and grammatically correct	Adequate, mostly accurate, and few grammatical errors	Poorly planned, somewhat accurate, and some grammatical errors	Weak, inaccurate, and many grammatical errors	
<b>Length</b>	Appropriate length	Slightly too long or short	Moderately too long or short	Extremely too long or short	
<b>Eye-Contact</b>	Maintains eye contact, seldom looking at notes	Maintains eye contact most of time but frequently returns to notes	Occasionally uses eye contact but reads most of information	No eye contact because reading information	
				<b>TOTAL</b>	

**Comments:**

# Poster Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Required Content</b>	The poster includes all required content elements as well as additional information.	All required content elements are included on the poster.	All but one of the required content elements are included on the poster.	Several required content elements were missing.	
<b>Labels</b>	All items of importance on the poster are clearly labeled with labels that are easy to read.	Almost all items of importance on the poster are clearly labeled with labels that are easy to read.	Many items of importance on the poster are clearly labeled with labels that are easy to read.	Labels are too small to read, or no important items were labeled.	
<b>Attractiveness</b>	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout, and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed.	
<b>Grammar</b>	There are no grammatical or mechanical mistakes on the poster.	There are one to two grammatical or mechanical mistakes on the poster.	There are three to four grammatical or mechanical mistakes on the poster.	There are more than four grammatical or mechanical mistakes on the poster.	
				<b>TOTAL</b>	

**Comments:**



# Brochure Assessment Rubric

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

CATEGORY	20	18	16	14	Score
<b>Content—Accuracy</b>	All facts in the brochure are accurate.	90–99% of the facts in the brochure are accurate.	80–89% of the facts in the brochure are accurate.	Fewer than 80% of the facts in the brochure are accurate.	
<b>Spelling</b>	No spelling errors occur.	No more than three spelling errors occur.	No more than six spelling errors occur.	Several spelling errors occur and make meaning for the reader difficult.	
<b>Sources</b>	Careful and accurate records are kept to document the source of 95–100% of the facts and graphics in the brochure.	Careful and accurate records are kept to document the source of 85–94% of the facts and graphics in the brochure.	Careful and accurate records are kept to document the source of 75–84% of the facts and graphics in the brochure.	Sources are not documented accurately or are not kept on many facts and graphics.	
<b>Knowledge Gained</b>	All students in the group can accurately answer all questions related to facts in the brochure and to technical processes used to create the brochure.	All students in the group can accurately answer most questions related to facts in the brochure and to technical processes used to create the brochure.	Most students in the group can accurately answer most questions related to facts in the brochure and to technical processes used to create the brochure.	Several students in the group appear to have little knowledge about the facts or technical processes used in the brochure.	
<b>Attractiveness and Organization</b>	The brochure has exceptionally attractive formatting and well-organized	The brochure has attractive formatting and well-organized information.	The brochure has well-organized information.	The brochure’s formatting and organization of material are confusing to the reader.	



	information.				
					Total

**Comments:**

# What makes a good podcast?

When you listen to a podcast, or when you are making your own, think about these qualities of a well-done podcast. (N/A means Not Applicable--the question can't be answered or it does not pertain to the site you are viewing.)

Your name: \_\_\_\_\_ Date: \_\_\_\_\_

Title of podcast: \_\_\_\_\_

Feed URL (or URL): \_\_\_\_\_

Creator of podcast: \_\_\_\_\_



1. Did the podcast include content that was useful / relevant for your purpose?	YES	NO	N/A
2. Were the technical qualities (audio, slides, etc.) acceptable in the production?	YES	NO	N/A
3. Was a written transcript of the podcast available?	YES	NO	N/A
4. Was the podcast linked from a site which included subject tags?	YES	NO	N/A
5. Was the podcast linked from a site which included links to other resources?	YES	NO	N/A
6. Did the podcast adhere to the copyright guidelines in its use of music, pictures, etc.?	YES	NO	N/A
7. Was the length of the podcast appropriate for its content? (20 min. or less)?	YES	NO	N/A
8. Was the podcast part of a regularly scheduled series?	YES	NO	N/A
9. Did the subjects in the podcast have "personality" to keep you interested??	YES	NO	N/A
10. Did the podcast flow smoothly (introduction, content, summary)?	YES	NO	N/A
11. Was it obvious how to add the podcast feed to your aggregator? (RSS)	YES	NO	N/A
12. If the item was an enhanced podcast, did the use of slides enhance the content?	YES	NO	N/A
13. If the item was an enhanced podcast, was it available in various file formats to allow viewing on various hardware devices?	YES	NO	N/A
In your own words, describe the podcast you listened to and its attributes.			

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# Role-Play or Skit Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Average 2 Points	Needs Improvement 1 Point	Score
Accuracy	All information was accurate.	Almost all information was accurate.	Most information was accurate.	Very little information was accurate.	
Role	Excellent character development; student contributed in a significant manner.	Good character development; student contributed in a cooperative manner.	Fair character development; student may have contributed.	Little or no character development; student did not contribute much at all.	
Knowledge Gained	Can clearly explain several ways in which his or her character "saw" things differently than other characters and can explain why	Can clearly explain several ways in which his or her character "saw" things differently than other characters	Can clearly explain one way in which his or her character "saw" things differently than other characters	Cannot explain any way in which his or her character "saw" things differently than other characters	
Props	Used several props and showed considerable creativity	Used one or two appropriate props that made the presentation better	Used one or two props that made the presentation better	Used no props to make the presentation better	
Required Elements	Included more information than required	Included all required information	Included most required information	Included less information than required	
<b>TOTAL</b>					

**Comments:**

# Field Trip Participation Checklist

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NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

- \_\_\_\_\_ 1. The student arrived at the designated meeting place on time with all materials and supplies required for the field trip.
- \_\_\_\_\_ 2. The student observed all safety rules and policies while traveling to and participating in the field trip.
- \_\_\_\_\_ 3. The student demonstrated interest in the content of the field trip by paying attention to the exhibits and speakers, asking pertinent questions, and taking notes.
- \_\_\_\_\_ 4. The student exhibited a positive attitude toward the events and activities of the field trip.
- \_\_\_\_\_ 5. The student remained on task throughout the field trip.
- \_\_\_\_\_ 6. The student exhibited cooperative workplace skills with other students throughout the field trip.

# Group Work Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-points	Meeting Success 2-points	Experiencing Difficulty 1-point	Score
Sharing	Shared ideas with others	Occasionally shared ideas with others	Seldom shared ideas with others	
Listening	Always listened to peers	Occasionally listened to peers	Ignored ideas of peers	
Respecting	Interacted with, encouraged, and supported ideas of others	Occasionally encouraged and supported others	Seldom encouraged and supported others	
Participating	Shared task equally with group members	Did most of the task	Did very little of the task	
<b>TOTAL</b>				

**Comments:**

## Unit 13: Health Informatics

**Competency 1:** Discuss concepts related to health informatics. (DOK 2) HHSF1, HHSF2, HHSF3, HHSF4, HHSF5, HHSF6, HHSF8, HHSF10, HHSF11, AP5

### Suggested Objectives

- a. Discuss careers in the health informatics area such as administration, coding, transcription, health information, medical assisting, unit coordination, and health education. (DOK 1)
- b. Discuss admission and discharge. (DOK 2)
- c. Discuss the steps of the referral process. (DOK 2)

### Suggested Teaching Strategies

- Hook students by having someone in an informatics career speak to the class about his or her career. Pre-assess student knowledge of the informatics services by asking the students to list what they think people in these careers do and then compare their lists to the information provided by the speaker. Have students explore a Web site such as <http://www.healthinformationcareers.com>, the American Health Information Management Association <http://www.ahima.org>, and Healthcare Informatics Magazine <http://www.healthcare-informatics.com>. E1, E2, E3, E4, E5, T1, T2, T3, T4, T5, T6
- Discuss and have students complete admission and discharge forms. E1, E2, E3, E4, E5, E6
- Discuss the importance of following referral processes to ensure reimbursement; have students respond to questions about discussion. E1, E2, E3, E4, E5, E6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Check the list for appropriateness.
- Assess accuracy of forms.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Demonstrate procedures related to health informatics. (DOK 2) HHSF1, HHSF2, HHSF3, HHSF4, HHSF5, HHSF6, HHSF8, HHSF10, HHSF11, AP5

### Suggested Objectives

- a.—Use information and communication technology required within all career specialties. (DOK 2)
- b.—Utilize electronic charting. (DOK 2)
- c.—Show computer and Internet proficiency. (DOK 2)
- d.—Utilize spreadsheets. (DOK 2)
- e.—File documents correctly. (DOK 2)
- f.—Dictate and transcribe information. (DOK 2)
- g.—Utilize correct telephone etiquette and communication techniques. (DOK 2)

### Suggested Teaching Strategies

- Discuss procedures related to health informatics. Use the HOSA Web site or local facilities for forms, and work with students in the business technology program to complete procedures.—<sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Demonstrate proper skill techniques. Have students perform procedures and self-assess techniques. Have students role-play telephone etiquette (personal and professional) as well as other career skills (file, use spreadsheets, dictate, transcribe, and complete related forms such as job application and birth and death certificates). Have students evaluate peers' writing and oral communication.—<sup>CLS1, CLS2, CLS3, CLS4, CLS5</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Use a rubric to assess procedures.
- Monitor peer evaluation of communication.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 3:** Read, interpret, and extract information from medical documents, applying knowledge of medical terminology and codes. (DOK 2)—<sup>HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF8, HSF10, HSF11, AP5</sup>

### Suggested Objectives

- a.—Assemble appropriate, accurate information including proper codes to record charges for reimbursement. (DOK 2)
- b.—Assess and apply information for regulatory and legal purposes. (DOK 2)

### Suggested Teaching Strategies

- Have students work in groups to interpret doctors' orders from medical records (use forms from local hospital), listen to a tape recording of an oral report being given to the oncoming shift (listen to a real one from the hospital or develop one), and synthesize information from an oral report tape recording into useable notes. E1, E2, E3, E4, E5, E6, R1, R5, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Have students check orders and obtain permission using a fake hospital chart; have them read, perform, and then record information performing coding using a Web site or software. E1, E2, E3, E4, E5, E6, R1, R5, T1, T2, T3, T4, T5, T6
- Give fake records to students, and have them analyze and disaggregate components to determine if there is malpractice based on records. E1, E2, E3, E4, E5, E6, R1, R5

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate notes for content and appearance.
- Assess the coding activity.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 4:** Discuss the resources, routes, and flow of information within the health care system. (DOK 2) HSF1, HSF2, HSF3, HSF4, HSF5, HSF6, HSF8, HSF10, HSF11, AP5

### Suggested Objectives

- a. Discuss the information systems utilized by organizations. (DOK 2)

### Suggested Teaching Strategies

- Invite a guest speaker to talk about HIPAA and patient confidentiality. Trace a patient's information from admission to discharge in a system: who has access, where does it go, how many people look at information, confidentiality issues, and so forth. Have students work in pairs to research different information systems, interview someone in the informatics field about various systems, and summarize the results of the interview. E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.



- Evaluate the summary for content and appearance using a rubric.
- Use a rubric to assess portfolios.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 5:** Discuss the principles of quality assurance/performance improvement. (DOK 2) <sup>HSF2, HSF3, HSF8, HSF11</sup>

### Suggested Objectives

- Discuss procedural and personal evaluation. (DOK 2)
- Discuss quality assurance/performance improvement. (DOK 2)
- Describe reporting methods (written, oral, and electronic). (DOK 1)
- Discuss careers in risk management. (DOK 1)

### Suggested Teaching Strategies

- Invite a guest speaker from a community college, hospital, clinic, or other organization to discuss the importance of quality assurance and performance improvement. Have students summarize the speaker's comments. Discuss the importance of monitoring, the role of quality assurance throughout history, and the role of the Joint Accreditation Commission of Health Organizations. <sup>E1, E2, E3, E4, E5, E6, W1, W2, W3, W4, W5</sup>
- Discuss methods of evaluation, quality assurance/performance improvement, and reporting methods. Have students read scenarios with errors to find errors and discuss what to do. <sup>E1, E2, E3, E4, E5, E6, R1, R5, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Have students work in teams to research careers in risk management and write a poem about the careers. <sup>E1, E2, E3, E4, E5, E6, W1, W2, W4, W5, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student add to his or her electronic portfolio of activities. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate the summary for content and appearance using a rubric.
- Have students peer evaluate poems.
- Assess students' knowledge through an online assessment in Blackboard.



# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

- AP5 — Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

## ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- R1 — Main Ideas and Author's Approach
- R5 — Meaning of Words
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

## National Industry Standards

- HSF1 — Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF3 — Health-care workers will understand how their role fits into their department, their organization, and the overall health-care environment. They will identify how key systems affect services they perform and quality of care.
- HSF4 — Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.
- HSF5 — Health-care workers will understand the legal responsibilities, limitations, and implications of their actions within the health-care delivery setting.
- HSF6 — Health-care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health-care environment. They will perform quality health-care delivery.
- HSF7 — Health-care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.

- HSF8—Health care workers will understand the roles and responsibilities of individual members as part of the health care team, including their ability to promote the delivery of quality health care.
- HSF9—Health care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10—Health care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.
- HSF11—Health care workers will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health care applications.

### **National Educational Technology Standards**

- T1—Creativity and Innovation
- T2—Communication and Collaboration
- T3—Research and Information Fluency
- T4—Critical Thinking, Problem Solving, and Decision Making
- T5—Digital Citizenship
- T6—Technology Operations and Concepts

# Suggested References

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Ehrlich, A., & Schroder, C. L. (2004). *Introduction to medical terminology*. Albany, NY: Delmar.

Simmers, L. (2004). *Introduction to health science technology*. Albany, NY: Delmar.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

Thede, L. Q. (2001, September 30). Telehealth: Promise or Peril? Overview. *The Online Journal of Issues in Nursing*, 6(3). Retrieved September 26, 2007, from <http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume62001/Number3September30/TelehealthOverview.aspx>

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Written Report Assessment Rubric

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual Appeal						
Cover Page						
Table of Contents						
Letter of Introduction						
Letter of Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**





# Interview Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Needs Improvement 2 Points	Unacceptable 1 Point	Score
Body language Displays confidence					
Eye contact Maintains good eye contact with interviewer					
Introduction Provides a self- introduction					
Handshakes Extends hand and shakes firmly					
Dress Dressed appropriately for an interview, business attire					
Language Concise and grammatically correct					
Questions Asks appropriate questions, demonstrates a knowledge of the business					
Closure Responds appropriately					
<b>TOTAL</b>					

**Comments:**

# Group Work Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Highly Successful 3-points	Meeting Success 2-points	Experiencing Difficulty 1-point	Score
Sharing	Shared ideas with others	Occasionally shared ideas with others	Seldom shared ideas with others	
Listening	Always listened to peers	Occasionally listened to peers	Ignored ideas of peers	
Respecting	Interacted with, encouraged, and supported ideas of others	Occasionally encouraged and supported others	Seldom encouraged and supported others	
Participating	Shared task equally with group members	Did most of the task	Did very little of the task	
<b>TOTAL</b>				

**Comments:**

## Unit 14: Academic, Workplace, and Employment Skills

**Competency 1:** Demonstrate employment skills. (DOK 2) <sup>HSF2, HSF4</sup>

### Suggested Objectives

- a. Prepare a resume, complete a job application form, and demonstrate interviewing skills. (DOK 2)
- b. Discuss positive relations with clients and peers. (DOK 2)
- c. Describe appropriate resource management (time, money, etc.). (DOK 1)
- d. Write a letter of resignation. (DOK 2)

### Suggested Teaching Strategies

- Hook students by showing them examples of good and bad resumes, job applications, and interviewing skills. Pre-assess student knowledge by having them brainstorm which employment skills are most important and prepare a graphic organizer showing their importance. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5</sup>
- Have students use computer word processing software to complete a resume and letter of resignation and go online to complete a job application form. Have students add this to the career portfolio they began at the beginning of the year (which also includes attendance, transcripts, CPAS scores, and career info). Have students participate in a mock interview with employers in the community (such as hospital human resource personnel). Have employers write down which students they would have hired that day and why. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>
- Have students make a poster showing what to wear and what not to wear to a job interview. Make a book with photos of students on the day of interviews. Have students work through activities related to work ethics located at <http://www.gvtc.org/workethics.asp>. <sup>E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6</sup>

### Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Evaluate products for content and appearance.
- Use a rubric to assess the posters.
- Assess students' knowledge through an online assessment in Blackboard.

**Competency 2:** Demonstrate written communication skills. (DOK 2) <sup>HSF2</sup>

## Suggested Objectives

- a.—Report relevant information in order of occurrence. (DOK 2)
- b.—Report subjective information. (DOK 2)
- c.—Report objective information. (DOK 2)
- d.—Analyze communications for appropriate response, and provide feedback. (DOK 2)
- e.—Organize, write, and compile technical information and summaries. (DOK 3)

## Suggested Teaching Strategies

- As a hook, have students write the steps for making a peanut butter sandwich, and then try to make the sandwich based strictly on the written steps to emphasize the importance of clear writing. Discuss the importance of written communication, and use a scenario with a fake patient to identify subjective and objective information, and chart it. E1, E2, E3, E4, E5, E6
- Have students report relevant information, subjective information, and objective information for case studies and analyze communications for appropriateness. Have students assess each other and provide feedback. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5
- Have students read health articles from popular magazines or newspapers as well as health care journals and summarize the articles. Have students search Google Scholar, read an article, summarize it, and find various components such as a literature review, methods, results, and a discussion. E1, E2, E3, E4, E5, E6, R1, R5, W1, W2, W3, W4, W5, T1, T2, T3, T4, T5, T6
- Lead students in a discussion of what they have learned in this unit and where they feel they need more information. Have each student complete his or her electronic portfolio of activities and present his or her portfolio to a member of the health care community. E1, E2, E3, E4, E5, E6, CLS1, CLS2, CLS3, CLS4, CLS5, T1, T2, T3, T4, T5, T6

## Suggested Assessment Strategies

- Monitor class activity to ensure that all students participate.
- Observe case studies.
- Use a rubric to assess summary.
- Assess students' knowledge through an online assessment through Blackboard.

# Standards

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## 21st Century Skills Standards

- CLS1 — Flexibility and Adaptability
- CLS2 — Initiative and Self-Direction
- CLS3 — Social and Cross-Cultural Skills
- CLS4 — Productivity and Accountability
- CLS5 — Leadership and Responsibility

## MS Academic Standards

### ACT College Readiness Standards

- E1 — Topic Development in Terms of Purpose and Focus
- E2 — Organization, Unity, and Coherence
- E3 — Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 — Sentence Structure and Formation
- E5 — Conventions of Usage
- E6 — Conventions of Punctuation
- R1 — Main Ideas and Author's Approach
- R5 — Meaning of Words
- W1 — Expressing Judgments
- W2 — Focusing on the Topic
- W3 — Developing a Position
- W4 — Organizing Ideas
- W5 — Using Language

### National Industry Standards

- HSF2 — Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF4 — Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.

### National Educational Technology Standards

- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship
- T6 — Technology Operations and Concepts

# Suggested References

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Jones, A. (1998). *104 activities that build: Self-esteem, teamwork, communication, anger management, self-discovery, coping skills*. Richland, WA: Rec Room.

Predmore, S. R. (2005, March). Another positive for career and technical education: A good work ethic. *Techniques*, 80(3), 52–55.

Simmers, L. (2004). *Diversified health occupations* (6th ed.). Albany, NY: Delmar.

U.S. Department of Labor. (n.d.). Retrieved November 26, 2007, from <http://www.dol.gov/>

For additional references, activities, and Web resources, please refer to Health Sciences P.A.C.E. Web site: <http://www.rcu.blackboard.com> (available only to registered users).

# Suggested Rubrics and Checklists

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# Poster Assessment Rubric

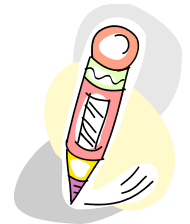


NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Required Content</b>	The poster includes all required content elements as well as additional information.	All required content elements are included on the poster.	All but one of the required content elements are included on the poster.	Several required content elements were missing.	
<b>Labels</b>	All items of importance on the poster are clearly labeled with labels that are easy to read.	Almost all items of importance on the poster are clearly labeled with labels that are easy to read.	Many items of importance on the poster are clearly labeled with labels that are easy to read.	Labels are too small to read, or no important items were labeled.	
<b>Attractiveness</b>	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout, and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed.	
<b>Grammar</b>	There are no grammatical or mechanical mistakes on the poster.	There are one to two grammatical or mechanical mistakes on the poster.	There are three to four grammatical or mechanical mistakes on the poster.	There are more than four grammatical or mechanical mistakes on the poster.	
				<b>TOTAL</b>	

**Comments:**

# Written Report Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Exemplary 4-Points	Accomplished 3-Points	Developing 2-Points	Beginning 1-Point	Score
<b>Content</b>	Clear thesis and focus that remain apparent	Thesis and focus that remain apparent	Addresses subject matter with minimal support	Does not focus on topic	
<b>Grammar</b>	Correct and effective use of grammar and mechanics	Occasional errors in use of grammar and mechanics	Problems in use of grammar and mechanics	Repeated errors in use of grammar and mechanics	
<b>Organization</b>	Ideas flow smoothly and logically with clarity and coherence	Logical order and appropriate sequencing of ideas with adequate transition	Some evidence of an organizational plan or strategy	Lacks organization	
<b>TOTAL</b>					

**Comments:**

# Portfolio Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 5-Points	Good 4-Points	Needs-Some Improvement 3-Points	Needs-Much Improvement 2-Points	Unsatisfactory 1-Point	Score
Visual-Appeal						
Cover-Page						
Table-of-Contents						
Letter-of-Introduction						
Letter-of-Recommendation						
Resume						
Content						
<b>TOTAL</b>						

**Comments:**

# Resume Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 25 Points	Well-Done 20 Points	Meets Standards 15 Points	Beginning 10 Points	No Evidence 0 Points	Score
<b>Format</b>	Resume contains name, address, objective, education, experience, and references. All words spelled correctly	Contains at least six of the criteria, no more than two spelling errors	Contains at least five of the criteria, no more than four spelling errors	Contains minimal information, more than four spelling errors	Assignment not submitted	
<b>Education</b>	Education includes all schools attended, graduation dates, diploma/degree awarded, and major field of study	Education includes three of the criteria	Education includes two of the criteria	Education includes one of the criteria	Assignment not submitted	
<b>Experience</b>	Experience includes internships, entry level jobs, and current position	Experience includes two of the criteria	Experience includes one of the criteria	Experience includes current position only	Assignment not submitted	
<b>Factual</b>	Contains factual names and dates, is believable	Contains fairly believable resume with factual names or dates	Resume has unrealistic dates or names	Resume is unrealistic and contains conflicting information	Assignment not submitted	
<b>TOTAL</b>						

**Comments:**

# Interview Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4 Points	Good 3 Points	Needs Improvement 2 Points	Unacceptable 1 Point	Score
Body language Displays confidence					
Eye contact Maintains good eye contact with interviewer					
Introduction Provides a self- introduction					
Handshakes Extends hand and shakes firmly					
Dress Dressed appropriately for an interview, business attire					
Language Concise and grammatically correct					
Questions Asks appropriate questions, demonstrates a knowledge of the business					
Closure Responds appropriately					
<b>TOTAL</b>					

**Comments:**

# Business Letter Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4-Points	Proficient 3-Points	Needs Improvement 2-points	Unsatisfactory 1-Point	Score
Layout/Design	Creatively designed, easily read, excellent business letter	Attractive, easy to read, good business letter	Appears busy or boring, difficult to read, needs improvement	Unattractive or inappropriate, very difficult to read, not acceptable	
Information, Style, Audience, and Tone	Accurate and complete information, very well written and presented	Well-written and interesting to read	Some information provided but is limited or inaccurate	Poorly written, inaccurate, or incomplete	
Accurate Parts	Complete with all required parts	Some elements may be missing	Most elements are missing or out of place	Proper form for a letter not used	
Grammar, Punctuation, and Wording	Excellent presentation, style, grammar, and punctuation	Fair presentation, style, grammar, and punctuation	Missing information, inaccurate punctuation and/or grammar	Poor grammar, punctuation, and wording	
Following Directions and Guidelines	Always on task, always followed directions	Followed directions with some guidance	Required a good bit of extra guidance	Did not follow directions and did not ask for extra help	
				Total	

Comments:

# Case Study Assessment Rubric



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ PERIOD: \_\_\_\_\_

	Excellent 4-Points	Accomplished 3-Points	Needs Improvement 2-Points	Unsatisfactory 1-Point	Score
<b>Comprehension</b>	Shows complete understanding of the issues and grasps implications beyond the immediate issue	Asks for more details to clarify understanding of the issue	Shows partial understanding of the issue but does not ask for clarification	Resists attempts to get clarification	
<b>Strategizing</b>	Develops realistic strategies that provide a satisfactory conclusion	Chooses appropriate strategies that may satisfy	Shows evidence of strategy that may or may not satisfy	Needs assistance to choose a strategy	
<b>Innovation</b>	Devises more than one resolution to the problem	Offers a solution	Offers a solution with a limited point of view	Shows some understanding of the problem	
<b>Communication</b>	Convincingly communicates resolution	Explains solution so others can understand	Conveys an opinion	Unsure of how to explain	
<b>TOTAL</b>					

**Comments:**

# Student Competency Profile for Health Sciences

**Student Name:** \_\_\_\_\_

This record is intended to serve as a method of noting student achievement of the competencies in each unit. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the course.

In the blank before each competency, place the date on which the student mastered the competency.

<b>Unit 1: Orientation and Career Exploration</b>	
	Describe the purpose of the course and related professional organizations.
	Introduce health-care careers, and interpret various roles in the health-care environment and how systems affect services performed and quality of care.
	Analyze the function of the health-care team and the ability to promote the delivery of quality health care.
	Introduce employability skills in order to enhance employment opportunities and job satisfaction; demonstrate key employability skills, and maintain and upgrade skills as needed.
	Use communication skills.
<b>Unit 2: Safety and Standard Precautions</b>	
	Summarize safe practices, and predict potential hazards and ways to prevent injury or illness through safe work practices and by following health and safety policies and procedures.
	Apply standard precautions as described in the rules and regulations set forth by the Occupational Safety and Health Administration (OSHA).
<b>Unit 3: Medical, Legal, and Ethical Responsibility</b>	
	Demonstrate behavior that maintains the patient's rights according to the Patients' Bill of Rights.
	Assess the legal responsibilities, limitations, and implications of health-care workers' actions within the health-care delivery setting.
	Analyze accepted ethical practices within the health-care environment.
<b>Unit 4: Introduction to Medical Terminology</b>	
	Recognize the components of medical terminology.
	Use medical terminology in order to interpret, transcribe, and communicate information, data, and observations.
<b>Unit 5: Organization, Covering, Support, Movement, and Protection</b>	
	Identify the components of the body, and connect them with the interdependence of the



	body systems.
	Describe and apply knowledge related to the human integumentary system.
	Describe and apply knowledge related to the human muscular and skeletal systems.
	Describe and apply knowledge related to the human immune system.
	Connect knowledge of organization, covering, support, movement, and protection systems to the impact of diseases and disorders.
<b>Unit 6: Vital Organs, Intake, and Elimination</b>	
	Describe and apply knowledge related to the human respiratory system.
	Describe and apply knowledge related to the human circulatory system.
	Qualify for or obtain American Heart Association (AHA) Healthcare Provider Cardiopulmonary Resuscitation (CPR) certification and First Aid Certification.
	Describe and apply knowledge related to the human digestive system.
	Describe and apply knowledge related to the human urinary system.
	Connect knowledge of vital organs and intake and elimination systems to the impact of diseases and disorders.
<b>Unit 7: Regulation, Coordination, and Reproduction</b>	
	Describe and apply knowledge related to the human nervous and sensory systems.
	Describe and apply knowledge related to the human reproductive system.
	Describe and apply knowledge related to the human endocrine system.
	Connect knowledge of regulation, coordination, and reproduction systems to the impact of diseases and disorders.
<b>Unit 8: Orientation, Safety, Asepsis, and Infection Control</b>	
	Review student and course expectations including safety procedures and policies and school and clinical facility policies.
	Review related body systems and disease implications, and demonstrate concepts and procedures related to infection control.
<b>Unit 9: Growth and Development</b>	
	Compare and contrast the stages of growth and development across the lifespan.
	Apply concepts related to death and dying.
	Compare psychological outcomes related to growth and development.
	Analyze the fundamentals of wellness and the prevention of disease processes.
<b>Unit 10: Direct Personal Care</b>	
	Discuss the roles of members of the health-care team, and employ appropriate communication strategies in therapeutic care.
	Review related body systems and disease implications, and perform therapeutic personal care skills.
	Recognize and report a patient's change in status.

	Follow guidelines for collecting patient information.
<b>Unit 11: Therapeutic Services</b>	
	Review related body systems and disease implications, and explain procedures related to mental health care.
	Review related body systems and disease implications, and perform procedures related to sensory impairment.
	Review related body systems and disease implications, and demonstrate procedures related to food and nutrition.
	Review related body systems and disease implications, and discuss procedures related to reproduction.
	Train patients in skills that incorporate principles of restorative care.
	Review related body systems and disease implications, and apply concepts related to pharmaceutical agents.
	Evaluate the purposes of the treatment plan, and collaborate in planning procedures that support the goals for the patient.
<b>Unit 12: Diagnostic Services</b>	
	Review related body systems and disease implications, and explore medical imaging procedures and circumstances requiring use.
	Review related body systems and disease implications, and explore medical laboratory procedures and circumstances requiring use.
	Review related body systems and disease implications, and describe major types of physical exams.
<b>Unit 13: Health Informatics</b>	
	Discuss concepts related to health informatics.
	Demonstrate procedures related to health informatics.
	Read, interpret, and extract information from medical documents, applying knowledge of medical terminology and codes.
	Discuss the resources, routes, and flow of information within the health care system.
<b>Unit 14: Academic, Workplace, and Employment Skills</b>	
	Demonstrate employment skills.

# Recommended Tools and Equipment

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## ~~CAPITALIZED~~

- ~~1. Student laptop or desktop computer (laptop or desktop (15 per classroom))~~
- ~~2. Wireless access point (for laptop configuration only (1 per classroom))~~
- ~~3. Laptop mobile storage cart (for laptop configuration only (1 per classroom))~~
- ~~4. 48-port 10/100 Base T managed switch with gigabit capability (for desktop configuration only (1 per classroom))~~
- ~~5. Teacher portable computer with port replicator/docking station (1 per classroom)~~
- ~~6. LCD projector with installation of mount (1 per classroom)~~
- ~~7. Interactive board~~
- ~~8. Microscope projection system or dual microscope (1 per program)~~
- ~~9. Networked color laser printer (1 per classroom)~~
- ~~10. Networked black and white laser printer (1 per classroom)~~
- ~~11. Network connectivity~~
- ~~12. Cat 5e or 6 patch cables to match cabling type (20 per classroom)~~
- ~~13. Surge protectors (8 per classroom)~~
- ~~14. Wireless presentation remote (1 per classroom)~~
- ~~15. Digital Web cam (2 per classroom)~~
- ~~16. Networked document flatbed scanner (1 per classroom)~~
- ~~17. Headphones with microphone (16 per classroom)~~
- ~~18. Digital camera (6 per classroom)~~
- ~~19. Digital video camera with tripod (1 per classroom)~~
- ~~20. Voting system (set of 25 devices (1 per classroom))~~
- ~~21. Electronic charting software (1 per computer)~~
- ~~22. Office productivity software: Microsoft Office 2007 (16 per classroom)~~
- ~~23. Concept mapping software: Inspiration (16 per classroom)~~

24. ~~Symantec Ghost Solution Suite, SID Utility (16 per classroom)~~
25. ~~Deep Freeze Enterprise Edition or equivalent (16 per classroom)~~
26. ~~Lab/student management software (16 per classroom)~~
27. ~~Antivirus software (16 per classroom)~~
28. ~~Teacher computer workstation (1 per classroom)~~
29. ~~Printer stand (2 per classroom)~~
30. ~~Multimedia cabinet with lock (1 per classroom)~~
31. ~~Bookcase (OPTIONAL 1 per classroom)~~
32. ~~Student work tables (OPTIONAL maximum of 4)~~
33. ~~Dean Vaughn Medical Terminology DVD program~~
34. ~~Teacher's resource kit: Diversified Health Occupations~~
35. ~~Electronic Classroom Manager: Diversified Health Occupations~~
36. ~~Medical assisting video series~~
37. ~~Practice Kit for Medical Front Office Skills (16 per classroom)~~
38. ~~Arm, blood pressure (4 per classroom) \*\*Need an additional 3—should already have 1~~
39. ~~Autoclave, table top (1 per classroom)~~
40. ~~Bed, electric with side rails (2 per classroom) \*\*Need 1 more—should have 1~~
41. ~~Bed, manual—high-low with side rails (1 per classroom)~~
42. ~~CPR, heads, adult (1 per 2 students) \*\*Number needed changed from 1 per classroom~~
43. ~~Dental head and mount (1 per classroom)~~
44. ~~Dryer (1 per classroom)~~
45. ~~EKG machine (1 per program)~~
46. ~~Mannequin, hospital training (1 per bed)~~
47. ~~Mannequin, trauma (1 per classroom)~~
48. ~~Mannequin, weighted (1 per classroom)~~

49. Pneumatic lift (1 per classroom)
50. Skeleton, life-size adult (1 per classroom)
51. Skeleton, complete disarticulated (1 per classroom)
52. Stretcher (1 per classroom)
53. Cart, AV (1 per classroom)
54. Table, exam (1 per classroom)
55. Team responder lights (1 per classroom)
56. Taping table (treatment) (1 per classroom)
57. Torso, human (1 per classroom)
58. TV, 35 in. minimum (1 per classroom)
59. Washer (1 per classroom)
60. Wheelchair with foot rest, folding (2 per classroom)\*\*Quantity required changed from 1-2 per classroom
61. Audiometer (1 per classroom)
62. Vital signs monitor on stand (Blood pressure, temperature, pulse rate, pulse oxygen) (1 per classroom)
63. Models, varied (1 type per classroom) ex. Tooth Heart
64. Ophthalmoscope/otoscope combo (2 per class)
65. Heart and lung sound adult simulator
66. Medication cart
67. AED training system (Little Anne) (1 per program)
68. EMT causality stimulation kit
69. Forensic wound simulation kit
70. Electronic teaching stethoscope
71. Small refind
72. Male catheterization simulator

73.— Female catheterization simulator

### **NON-CAPITALIZED ITEMS**

- 1.— AED trainer (2 per program)\*\*Should have 1; additional 1 needed
- 2.— Bags, hamper
- 3.— Bandages, triangular
- 4.— Basin, bath
- 5.— Basin, emesis
- 6.— Bath, sitz
- 7.— Bedpan, fracture
- 8.— Bedpan, regular
- 9.— Blood pressure cuffs (1 per 2 students)
- 10.— Cabinet, file lateral with lock (3 per classroom)
- 11.— Cabinet, bed side (1 per bed)
- 12.— Cane (1 per classroom)
- 13.— Cases, pillow
- 14.— Chair, commode (1 per classroom)
- 15.— Charts, anatomy (1 per classroom)
- 16.— Chart, snellen eye (1 per classroom)
- 17.— Chart, tripod, A&P (1 per classroom)
- 18.— CPR, dog (1 per classroom)
- 19.— CPR, heads, baby (1 per classroom)
- 20.— Crutches
- 21.— Cups, drinking
- 22.— Curtain, privacy, ceiling or wall mount
- 23.— Dish, soap
- 24.— Dispenser, glove

- 25.—Dispenser, soap wall mounted
- 26.—Dispenser, paper towel
- 27.—First aid kit
- 28.—Forceps, crile hemostatic, 5½ in.
- 29.—Forceps, jac
- 30.—Forceps, mosquito
- 31.—Forceps, thumb
- 32.—Forceps, tissue
- 33.—Forceps, utility
- 34.—Goggles
- 35.—Gowns, hospital
- 36.—Hammer, percussion
- 37.—Hemostat, curved
- 38.—Hemostat, straight
- 39.—Holder, needle
- 40.—Ishihara Color Vision Chart
- 41.—Mannequin, new born baby
- 42.—Mannequin, adult choking (1 per classroom)
- 43.—Mattress for hospital bed
- 44.—Microhematocrit centrifuge
- 45.—Testicle model, self exam model (Small) (1 per classroom)
- 46.—Breast model, self exam model (Small) (1 per classroom)
- 47.—Model, circulatory system (1 per classroom)
- 48.—Model, digestive (1 per classroom)
- 49.—Model, ear (1 per classroom)

50. Model, eye (1 per classroom)
51. Model, heart (1 per classroom)
52. Model, integumentary (1 per classroom)
53. Model, nervous system (1 per classroom)
54. Model, respiratory system (1 per classroom)
55. Model, urinary (1 per classroom)
56. Penlight, battery operated
57. Pillows, standard (3 per bed)
58. Pitcher, graduated
59. Pitcher, water
60. Plastic pillow case cover
61. Hospital bedspreads
62. Red biohazard waste cans
63. Specimen bowel (nun's hat)
64. Plates, non-disposables
65. Restraint, jacket
66. Restraint, wrist
67. Scale, physicians (1 infant and 1 adult)
68. Scissors, bandage
69. Scissors, suture 5½ in.
70. Scissors, iris 4 5½ in.
71. Scissors, mayo dissecting 5½ in.
72. Sheets
73. Mattress covers, fitted
74. Sphygmomanometer, aneroid



- 75.— Sphygmomanometer, mercurial
- 76.— Sphygmomanometer, wall mounted (1 per bed) (automated)
- 77.— Splints, 18 in.
- 78.— Splints, 36 in.
- 79.— Sam's splint—assortment
- 80.— Spreads
- 81.— Stand, IV
- 82.— Stethoscope 22 in.
- 83.— Stethoscope 22 in. teacher training (1 per 3 students) —
- 84.— Stool, bedside step
- 85.— Thermometer, bath
- 86.— Thermometers, clinical glass (mercury free)
- 87.— Thermometer, digital (1 per 10 students)
- 88.— Thermometer, tympanic (1 per classroom)
- 89.— Electronic thermometer
- 90.— Timer
- 91.— Tooth model with brush (1 per classroom)
- 92.— Towels
- 93.— Trapeze bar
- 94.— Tray, food
- 95.— Tray, instrument
- 96.— Tuning fork
- 97.— Urinal (male and female)
- 98.— Utensils, feeding
- 99.— Walker

- ~~100. Washcloths~~
- ~~101. Dental instrument kit (1 per classroom) (what HOSA uses)~~
- ~~102. Microscope (1 per 3 students)~~
- ~~103. Table, overbed, rolling (1 per bed)~~
- ~~104. VCR/DVD, combination (1 per classroom)~~
- ~~105. Upper body vest restraint~~
- ~~106. Waist roll belt~~
- ~~107. Ambulation gait belt with hand holds~~
- ~~108. Gait belts~~

# Appendix A: 21st Century Skills Standards<sup>2</sup>

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~~CLS1 — Flexibility and Adaptability~~

~~CLS2 — Initiative and Self-Direction~~

~~CLS3 — Social and Cross-Cultural Skills~~

~~CLS4 — Productivity and Accountability~~

~~CLS5 — Leadership and Responsibility~~

Today's life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills.

## CS 1 — Flexibility and Adaptability

- Adapting to varied roles and responsibilities
- Working effectively in a climate of ambiguity and changing priorities

## CS 2 — Initiative and Self-Direction

- Monitoring one's own understanding and learning needs
- Going beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrating initiative to advance skill levels toward a professional level
- Defining, prioritizing, and completing tasks without direct oversight
- Utilizing time efficiently and managing workload
- Demonstrating commitment to learning as a lifelong process

## CS 3 — Social and Cross-Cultural Skills

- Working appropriately and productively with others
- Leveraging the collective intelligence of groups when appropriate
- Bridging cultural differences and using differing perspectives to increase innovation and the quality of work

## CS 4 — Productivity and Accountability

- Setting and meeting high standards and goals for delivering quality work on time

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<sup>2</sup> *21st century skills* (n.d.). Washington, DC: Partnership for 21st Century Skills.

- Demonstrating diligence and a positive work ethic (e.g., being punctual and reliable)

**CS 5 — Leadership and Responsibility**

- Using interpersonal and problem-solving skills to influence and guide others toward a goal
- Leveraging strengths of others to accomplish a common goal
- Demonstrating integrity and ethical behavior
- Acting responsibly with the interests of the larger community in mind

# Appendix B: Mississippi Academic Standards

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## **Anatomy and Physiology**

- AP1—Utilize critical thinking and scientific problem solving in designing and performing biological research and experimentation.
- AP2—Describe the basic organization of the body using the appropriate anatomical concepts.
- AP3—Discuss the biochemical composition of the human body.
- AP4—Explore the relationship of the cell to the more complex levels of organization within the body.
- AP5—Identify the structure and function of the human body systems, explore the interactions among the systems, and investigate major disorders/diseases associated with each.

# Appendix C: ACT College Readiness Standards

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## English

### **E1—Topic Development in Terms of Purpose and Focus**

- Identify the basic purpose or role of a specified phrase or sentence.
- Delete a clause or sentence because it is obviously irrelevant to the essay.
- Identify the central idea or main topic of a straightforward piece of writing.
- Determine relevancy when presented with a variety of sentence-level details.
- Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal.
- Delete material primarily because it disturbs the flow and development of the paragraph.
- Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement.
- Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence or to determine the need to delete plausible but irrelevant material.
- Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation.
- Determine whether a complex essay has accomplished a specific purpose.
- Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay.

### **E2—Organization, Unity, and Coherence**

- Use conjunctive adverbs or phrases to show time relationship in simple narrative essays (e.g., then, this time, etc.).
- Select the most logical place to add a sentence in a paragraph.
- Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., first, afterward, and in response).
- Decide the most logical place to add a sentence in an essay.
- Add a sentence that introduces a simple paragraph.
- Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., therefore, however, and in addition).

- Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic.
- Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward.
- Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs.
- Rearrange sentences to improve the logic and coherence of a complex paragraph.
- Add a sentence to introduce or conclude a fairly complex paragraph.
- Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay.

### **E3 Word Choice in Terms of Style, Tone, Clarity, and Economy**

- Revise sentences to correct awkward and confusing arrangements of sentence elements.
- Revise vague nouns and pronouns that create obvious logic problems.
- Delete obviously synonymous and wordy material in a sentence.
- Revise expressions that deviate from the style of an essay.
- Delete redundant material when information is repeated in different parts of speech (e.g., alarmingly startled).
- Use the word or phrase most consistent with the style and tone of a fairly straightforward essay.
- Determine the clearest and most logical conjunction to link clauses.
- Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence.
- Identify and correct ambiguous pronoun references.
- Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay.
- Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., “an aesthetic viewpoint” versus “the outlook of an aesthetic viewpoint”).
- Correct vague and wordy or clumsy and confusing writing containing sophisticated language.
- Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole.

#### **E4 Sentence Structure and Formation**

- Use conjunctions or punctuation to join simple clauses.
- Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences.
- Determine the need for punctuation and conjunctions to avoid awkward sounding sentence fragments and fused sentences.
- Decide the appropriate verb tense and voice by considering the meaning of the entire sentence.
- Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, or dangling or misplaced modifiers).
- Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems.
- Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence.
- Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs.
- Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole.
- Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses.

#### **E5 Conventions of Usage**

- Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives.
- Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject verb and pronoun antecedent agreement, and which preposition to use in simple contexts.
- Recognize and use the appropriate word in frequently confused pairs such as there and their, past and passed, and led and lead.
- Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., long for and appeal to).



- Ensure that a verb agrees with its subject when there is some text between the two.
- Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences.
- Identify the correct past and past participle forms of irregular and infrequently used verbs and form present perfect verbs by using have rather than of.
- Correctly use reflexive pronouns, the possessive pronouns its and your, and the relative pronouns who and whom.
- Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject-verb order is inverted or when the subject is an indefinite pronoun).
- Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas.
- Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb.

#### **E6 Conventions of Punctuation**

- Delete commas that create basic sense problems (e.g., between verb and direct object).
- Provide appropriate punctuation in straightforward situations (e.g., items in a series).
- Delete commas that disturb the sentence flow (e.g., between modifier and modified element).
- Use commas to set off simple parenthetical phrases.
- Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause).
- Use punctuation to set off complex parenthetical phrases.
- Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by and).
- Use apostrophes to indicate simple possessive nouns.
- Recognize inappropriate uses of colons and semicolons.
- Use commas to set off a nonessential/nonrestrictive appositive or clause.
- Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical).

- Use an apostrophe to show possession, especially with irregular plural nouns.
- Use a semicolon to indicate a relationship between closely related independent clauses.
- Use a colon to introduce an example or an elaboration.

## **Math**

### **M1 Basic Operations and Applications**

- Perform one-operation computation with whole numbers and decimals.
- Solve problems in one or two steps using whole numbers.
- Perform common conversions (e.g., inches to feet or hours to minutes).
- Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent.
- Solve some routine two-step arithmetic problems.
- Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average.
- Solve multi-step arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour).
- Solve word problems containing several rates, proportions, or percentages.
- Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings).

### **M2 Probability, Statistics, and Data Analysis**

- Calculate the average of a list of positive whole numbers.
- Perform a single computation using information from a table or chart.
- Calculate the average of a list of numbers.
- Calculate the average, given the number of data values and the sum of the data values.
- Read tables and graphs.
- Perform computations on data from tables and graphs.

- Use the relationship between the probability of an event and the probability of its complement.
- Calculate the missing data value, given the average and all data values but one.
- Translate from one representation of data to another (e.g., a bar graph to a circle graph).
- Determine the probability of a simple event.
- Exhibit knowledge of simple counting techniques.\*
- Calculate the average, given the frequency counts of all the data values.
- Manipulate data from tables and graphs.
- Compute straightforward probabilities for common situations.
- Use Venn diagrams in counting.\*
- Calculate or use a weighted average.
- Interpret and use information from figures, tables, and graphs.
- Apply counting techniques.
- Compute a probability when the event and/or sample space is not given or obvious.
- Distinguish between mean, median, and mode for a list of numbers.
- Analyze and draw conclusions based on information from figures, tables, and graphs.
- Exhibit knowledge of conditional and joint probability.

### **M3 Numbers: Concepts and Properties**

- Recognize equivalent fractions and fractions in lowest terms.
- Recognize one-digit factors of a number.
- Identify a digit's place value.
- Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor.
- Find and use the least common multiple.
- Order fractions.
- Work with numerical factors.

- Work with scientific notation.
- Work with squares and square roots of numbers.
- Work problems involving positive integer exponents.\*
- Work with cubes and cube roots of numbers.\*
- Determine when an expression is undefined.\*
- Exhibit some knowledge of the complex numbers.†
- Apply number properties involving prime factorization.
- Apply number properties involving even/odd numbers and factors/multiples.
- Apply number properties involving positive/negative numbers.
- Apply rules of exponents.
- Multiply two complex numbers.†
- Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers.
- Exhibit knowledge of logarithms and geometric sequences.
- Apply properties of complex numbers.

#### **M4 Expressions, Equations, and Inequalities**

- Exhibit knowledge of basic expressions (e.g., identify an expression for a total as  $b + g$ ).
- Solve equations in the form  $x + a = b$ , where  $a$  and  $b$  are whole numbers or decimals.
- Substitute whole numbers for unknown quantities to evaluate expressions.
- Solve one-step equations having integer or decimal answers.
- Combine like terms (e.g.,  $2x + 5x$ ).
- Evaluate algebraic expressions by substituting integers for unknown quantities.
- Add and subtract simple algebraic expressions.
- Solve routine first-degree equations.
- Perform straightforward word-to-symbol translations.

- Multiply two binomials.\*
- Solve real world problems using first degree equations.
- Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions).
- Identify solutions to simple quadratic equations.
- Add, subtract, and multiply polynomials.\*
- Factor simple quadratics (e.g., the difference of squares and perfect square trinomials).\*
- Solve first-degree inequalities that do not require reversing the inequality sign.\*
- Manipulate expressions and equations.
- Write expressions, equations, and inequalities for common algebra settings.
- Solve linear inequalities that require reversing the inequality sign.
- Solve absolute value equations.
- Solve quadratic equations.
- Find solutions to systems of linear equations.
- Write expressions that require planning and/or manipulating to accurately model a situation.
- Write equations and inequalities that require planning, manipulating, and/or solving.
- Solve simple absolute value inequalities.

#### **M5 Graphical Representations**

- Identify the location of a point with a positive coordinate on the number line.
- Locate points on the number line and in the first quadrant.
- Locate points in the coordinate plane.
- Comprehend the concept of length on the number line.\*
- Exhibit knowledge of slope.\*
- Identify the graph of a linear inequality on the number line.\*
- Determine the slope of a line from points or equations.\*

- Match linear graphs with their equations.\*
- Find the midpoint of a line segment.\*
- Interpret and use information from graphs in the coordinate plane.
- Match number line graphs with solution sets of linear inequalities.
- Use the distance formula.
- Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point.
- Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle).†
- Match number line graphs with solution sets of simple quadratic inequalities.
- Identify characteristics of graphs based on a set of conditions or on a general equation such as  $y = ax^2 + c$ .
- Solve problems integrating multiple algebraic and/or geometric concepts.
- Analyze and draw conclusions based on information from graphs in the coordinate plane.

#### **M6 Properties of Plane Figures**

- Exhibit some knowledge of the angles associated with parallel lines.
- Find the measure of an angle using properties of parallel lines.
- Exhibit knowledge of basic angle properties and special sums of angle measures (e.g.,  $90^\circ$ ,  $180^\circ$ , and  $360^\circ$ ).
- Use several angle properties to find an unknown angle measure.
- Recognize Pythagorean triples.\*
- Use properties of isosceles triangles.\*
- Apply properties of  $30^\circ$ - $60^\circ$ - $90^\circ$ ,  $45^\circ$ - $45^\circ$ - $90^\circ$ , similar, and congruent triangles.
- Use the Pythagorean Theorem.
- Draw conclusions based on a set of conditions.
- Solve multi-step geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas.

- Use relationships among angles, arcs, and distances in a circle.

### **M7 Measurement**

- Estimate or calculate the length of a line segment based on other lengths given on a geometric figure.
- Compute the perimeter of polygons when all side lengths are given.
- Compute the area of rectangles when whole number dimensions are given.
- Compute the area and perimeter of triangles and rectangles in simple problems.
- Use geometric formulas when all necessary information is given.
- Compute the area of triangles and rectangles when one or more additional simple steps are required.
- Compute the area and circumference of circles after identifying necessary information.
- Compute the perimeter of simple composite geometric figures with unknown side lengths.\*
- Use relationships involving area, perimeter, and volume of geometric figures to compute another measure.
- Use scale factors to determine the magnitude of a size change.
- Compute the area of composite geometric figures when planning or visualization is required.

### **M8 Functions**

- Evaluate quadratic functions, expressed in function notation, at integer values.
- Evaluate polynomial functions, expressed in function notation, at integer values.†
- Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths.†
- Evaluate composite functions at integer values.†
- Apply basic trigonometric ratios to solve right triangle problems.†
- Write an expression for the composite of two simple functions.†
- Use trigonometric concepts and basic identities to solve problems.†
- Exhibit knowledge of unit circle trigonometry.†

- Match graphs of basic trigonometric functions with their equations.

**Notes:**

- Students who score in the 1–12 range are most likely beginning to develop the knowledge and skills assessed in the other ranges.
- Standards followed by an asterisk (\*) apply to the PLAN and ACT Mathematics Tests only.
- Standards followed by a dagger (†) apply to the ACT Mathematics Test only.

**Reading**

**R1 Main Ideas and Author’s Approach**

- Recognize a clear intent of an author or narrator in uncomplicated literary narratives.
- Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives.
- Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives.
- Understand the overall approach taken by an author or narrator (e.g., point of view and kinds of evidence used) in uncomplicated passages.
- Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages.
- Infer the main idea or purpose of straightforward paragraphs in more challenging passages.
- Summarize basic events and ideas in more challenging passages.
- Understand the overall approach taken by an author or narrator (e.g., point of view and kinds of evidence used) in more challenging passages.
- Infer the main idea or purpose of more challenging passages or their paragraphs.
- Summarize events and ideas in virtually any passage.
- Understand the overall approach taken by an author or narrator (e.g., point of view and kinds of evidence used) in virtually any passage.
- Identify clear main ideas or purposes of complex passages or their paragraphs.

**R2 Supporting Details**

- Locate basic facts (e.g., names, dates, and events) clearly stated in a passage.



- Locate simple details at the sentence and paragraph level in uncomplicated passages.
- Recognize a clear function of a part of an uncomplicated passage.
- Locate important details in uncomplicated passages.
- Make simple inferences about how details are used in passages.
- Locate important details in more challenging passages.
- Locate and interpret minor or subtly stated details in uncomplicated passages.
- Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages.
- Locate and interpret minor or subtly stated details in more challenging passages.
- Use details from different sections of some complex informational passages to support a specific point or argument.
- Locate and interpret details in complex passages.
- Understand the function of a part of a passage when the function is subtle or complex.

### **R3 Sequential, Comparative, and Cause–Effect Relationships**

- Determine when (e.g., first, last, before, and after) or if an event occurred in uncomplicated passages.
- Recognize clear cause–effect relationships described within a single sentence in a passage.
- Identify relationships between main characters in uncomplicated literary narratives.
- Recognize clear cause–effect relationships within a single paragraph in uncomplicated literary narratives.
- Order simple sequences of events in uncomplicated literary narratives.
- Identify clear relationships between people, ideas, and so on in uncomplicated passages.
- Identify clear cause–effect relationships in uncomplicated passages.
- Order sequences of events in uncomplicated passages.
- Understand relationships between people, ideas, and so on in uncomplicated passages.
- Identify clear relationships between characters, ideas, and so on in more challenging literary narratives.

- Understand implied or subtly stated cause–effect relationships in uncomplicated passages.
- Identify clear cause–effect relationships in more challenging passages.
- Order sequences of events in more challenging passages.
- Understand the dynamics between people, ideas, and so on in more challenging passages.
- Understand implied or subtly stated cause–effect relationships in more challenging passages.
- Order sequences of events in complex passages.
- Understand the subtleties in relationships between people, ideas, and so on in virtually any passage.
- Understand implied, subtle, or complex cause–effect relationships in virtually any passage.

#### **R5—Meaning of Words**

- Understand the implication of a familiar word or phrase and of simple descriptive language.
- Use context to understand basic figurative language.
- Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages.
- Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages.
- Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages.
- Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts.
- Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage.

#### **R6—Generalizations and Conclusions**

- Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives.
- Draw simple generalizations and conclusions about people, ideas, and so on in uncomplicated passages.

- Draw generalizations and conclusions about people, ideas, and so on in uncomplicated passages.
- Draw simple generalizations and conclusions using details that support the main points of more challenging passages.
- Draw subtle generalizations and conclusions about characters, ideas, and so on in uncomplicated literary narratives.
- Draw generalizations and conclusions about people, ideas, and so on in more challenging passages.
- Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so on.
- Draw complex or subtle generalizations and conclusions about people, ideas, and so on, often by synthesizing information from different portions of the passage.
- Understand and generalize about portions of a complex literary narrative.

## Science

### S1—Interpretation of Data

- Select a single piece of data (numerical or non-numerical) from a simple data presentation (e.g., a table or graph with two or three variables; a food web diagram).
- Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, and axis labels).
- Select two or more pieces of data from a simple data presentation.
- Understand basic scientific terminology.
- Find basic information in a brief body of text.
- Determine how the value of one variable changes as the value of another variable changes in a simple data presentation.
- Select data from a complex data presentation (e.g., a table or graph with more than three variables; a phase diagram).
- Compare or combine data from a simple data presentation (e.g., order or sum data from a table).
- Translate information into a table, graph, or diagram.

- Compare or combine data from two or more simple data presentations (e.g., categorize data from a table using a scale from another table).
- Compare or combine data from a complex data presentation.
- Interpolate between data points in a table or graph.
- Determine how the value of one variable changes as the value of another variable changes in a complex data presentation.
- Identify and/or use a simple (e.g., linear) mathematical relationship between data.
- Analyze given information when presented with new, simple information.
- Compare or combine data from a simple data presentation with data from a complex data presentation.
- Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data.
- Extrapolate from data points in a table or graph.
- Compare or combine data from two or more complex data presentations.
- Analyze given information when presented with new, complex information.

## **S2—Scientific Investigation**

- Understand the methods and tools used in a simple experiment.
- Understand the methods and tools used in a moderately complex experiment.
- Understand a simple experimental design.
- Identify a control in an experiment.
- Identify similarities and differences between experiments.
- Understand the methods and tools used in a complex experiment.
- Understand a complex experimental design.
- Predict the results of an additional trial or measurement in an experiment.
- Determine the experimental conditions that would produce specified results.
- Determine the hypothesis for an experiment.
- Identify an alternate method for testing a hypothesis.

- Understand precision and accuracy issues.
- Predict how modifying the design or methods of an experiment will affect results.
- Identify an additional trial or experiment that could be performed to enhance or evaluate experimental results.

### **S3 Evaluation of Models, Inferences, and Experimental Results**

- Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model.
- Identify key issues or assumptions in a model.
- Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models.
- Determine whether given information supports or contradicts a simple hypothesis or conclusion and why.
- Identify strengths and weaknesses in one or more models.
- Identify similarities and differences between models.
- Determine which model(s) is(are) supported or weakened by new information.
- Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion.
- Select a complex hypothesis, prediction, or conclusion that is supported by a data presentation or model.
- Determine whether new information supports or weakens a model and why.
- Use new information to make a prediction based on a model.
- Select a complex hypothesis, prediction, or conclusion that is supported by two or more data presentations or models.
- Determine whether given information supports or contradicts a complex hypothesis or conclusion and why.

## **Writing**

### **W1 Expressing Judgments**

- Show a little understanding of the persuasive purpose of the task, but neglect to take or to maintain a position on the issue in the prompt.
- Show limited recognition of the complexity of the issue in the prompt.
- Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt but not maintaining that position.
- Show a little recognition of the complexity of the issue in the prompt by acknowledging, but only briefly describing, a counterargument to the writer's position.
- Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt.
- Show some recognition of the complexity of the issue in the prompt by doing the following:
  - Acknowledging counterarguments to the writer's position
  - Providing some response to counter arguments to the writer's position
- Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion.
- Show recognition of the complexity of the issue in the prompt by doing the following:
  - Partially evaluating implications and/or complications of the issue
  - Posing and partially responding to counter arguments to the writer's position
- Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion.
- Show understanding of the complexity of the issue in the prompt by doing the following:
  - Examining different perspectives
  - Evaluating implications or complications of the issue
  - Posing and fully discussing counter arguments to the writer's position

### **W2 Focusing on the Topic**

- Maintain a focus on the general topic in the prompt through most of the essay.
- Maintain a focus on the general topic in the prompt throughout the essay.
- Maintain a focus on the general topic in the prompt throughout the essay, and attempt a focus on the specific issue in the prompt.

- Present a thesis that establishes focus on the topic.
- Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay.
- Present a thesis that establishes a focus on the writer's position on the issue.
- Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay.
- Present a critical thesis that clearly establishes the focus on the writer's position on the issue.

### **W3 Developing a Position**

- Offer a little development, with one or two ideas; if examples are given, they are general and may not be clearly relevant; resort often to merely repeating ideas.
- Show little or no movement between general and specific ideas and examples.
- Offer a limited development of ideas using a few general examples; resort sometimes to merely repeating ideas.
- Show little movement between general and specific ideas and examples.
- Develop ideas by using some specific reasons, details, and examples.
- Show some movement between general and specific ideas and examples.
- Develop most ideas fully, using some specific and relevant reasons, details, and examples.
- Show clear movement between general and specific ideas and examples.
- Develop several ideas fully, using specific and relevant reasons, details, and examples.
- Show effective movement between general and specific ideas and examples.

### **W4 Organizing Ideas**

- Provide a discernible organization with some logical grouping of ideas in parts of the essay.
- Use a few simple and obvious transitions.
- Present a discernible, though minimally developed, introduction and conclusion.
- Provide a simple organization with logical grouping of ideas in parts of the essay.
- Use some simple and obvious transitional words, though they may at times be inappropriate or misleading.

- Present a discernible, though underdeveloped, introduction and conclusion.
- Provide an adequate but simple organization with logical grouping of ideas in parts of the essay but with little evidence of logical progression of ideas.
- Use some simple and obvious, but appropriate, transitional words and phrases.
- Present a discernible introduction and conclusion with a little development.
- Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas.
- Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas.
- Present a somewhat developed introduction and conclusion.
- Provide unity and coherence throughout the essay, often with a logical progression of ideas.
- Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas.
- Present a well developed introduction and conclusion.

#### **W5 Using Language**

- Show limited control of language by doing the following:
  - Correctly employing some of the conventions of standard English grammar, usage, and mechanics but with distracting errors that sometimes significantly impede understanding
  - Using simple vocabulary
  - Using simple sentence structure
  - Correctly employing some of the conventions of standard English grammar, usage, and mechanics but with distracting errors that sometimes impede understanding
  - Using simple but appropriate vocabulary
  - Using a little sentence variety, though most sentences are simple in structure
  - Correctly employing many of the conventions of standard English grammar, usage, and mechanics but with some distracting errors that may occasionally impede understanding
  - Using appropriate vocabulary



- Using some varied kinds of sentence structures to vary pace
- Correctly employing most conventions of standard English grammar, usage, and mechanics with a few distracting errors but none that impede understanding
- Using some precise and varied vocabulary
- Using several kinds of sentence structures to vary pace and to support meaning
- Correctly employing most conventions of standard English grammar, usage, and mechanics, with just a few, if any, errors
- Using precise and varied vocabulary
- Using a variety of kinds of sentence structures to vary pace and to support meaning

# Appendix D: National Industry Standards

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## Industry Standards

- HSF1—Health-care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their roles.
- HSF2—Health-care workers will know the various methods of giving and obtaining information. They will communicate effectively, both orally and in writing.
- HSF3—Health-care workers will understand how their role fits into their department, their organization, and the overall health care environment. They will identify how key systems affect services they perform and quality of care.
- HSF4—Health-care workers will understand how employability skills enhance their employment opportunities and job satisfaction. They will demonstrate key employability skills and will maintain and upgrade skills, as needed.
- HSF5—Health-care workers will understand the legal responsibilities, limitations, and implications of their actions within the health care delivery setting.
- HSF6—Health-care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health care environment. They will perform quality health-care delivery.
- HSF7—Health-care workers will understand the existing and potential hazards to clients, co-workers, and self. They will prevent injury or illness through safe work practices and follow health and safety policies and procedures.
- HSF8—Health-care workers will understand the roles and responsibilities of individual members as part of the health care team, including their ability to promote the delivery of quality health care.
- HSF9—Health-care workers will understand the fundamentals of wellness and the prevention of disease processes. They will practice preventive health behaviors among the clients.
- HSF10—Health-care workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.
- HSF11—Health-care workers will use information technology applications required within all career specialties. They will demonstrate use as appropriate to health-care applications.

# Appendix E: National Educational Technology Standards for Students<sup>3</sup>

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- T1 — Creativity and Innovation
- T2 — Communication and Collaboration
- T3 — Research and Information Fluency
- T4 — Critical Thinking, Problem Solving, and Decision Making
- T5 — Digital Citizenship
- T6 — Technology Operations and Concepts

## T1 — Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students do the following:

- a. — Apply existing knowledge to generate new ideas, products, or processes.
- b. — Create original works as a means of personal or group expression.
- c. — Use models and simulations to explore complex systems and issues.
- d. — Identify trends and forecast possibilities.

## T2 — Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students do the following:

- a. — Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- b. — Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- c. — Develop cultural understanding and global awareness by engaging with learners of other cultures.
- d. — Contribute to project teams to produce original works or solve problems.

## T3 — Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information. Students do the following:

- a. — Plan strategies to guide inquiry.
- b. — Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- c. — Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- d. — Process data and report results.

## T4 — Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve

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<sup>3</sup> International Society for Technology in Education. (2000). *National educational technology standards for students (NETS)*. Retrieved February 27, 2008, from <http://www.iste.org/>

problems, and make informed decisions using appropriate digital tools and resources. Students do the following:

- a. Identify and define authentic problems and significant questions for investigation.
- b. Plan and manage activities to develop a solution or complete a project.
- c. Collect and analyze data to identify solutions and/or make informed decisions.
- d. Use multiple processes and diverse perspectives to explore alternative solutions.

T5—Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students do the following:

- a. Advocate and practice safe, legal, and responsible use of information and technology.
- b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- c. Demonstrate personal responsibility for lifelong learning.
- d. Exhibit leadership for digital citizenship.

T6—Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students do the following:

- a. Understand and use technology systems.
- b. Select and use applications effectively and productively.
- c. Troubleshoot systems and applications.
- d. Transfer current knowledge to learning of new technologies.