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Part 92: Middle School Pathway

Technology Foundations

Technology Foundations

Mississippi Department of Education

Program Course Code: 99.2307

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Table of Contents

Acknowledgments 4
Standards 5
Preface 6
Technology Foundations Executive Summary 7
Course Outline 9
Technology Foundations Research Synopsis 10
Professional Organizations 15
Using this Document 16
Unit 1: Orientation and Ethics 17
Unit 2: Internet Tools in the Classroom 21
Unit 3: Computing Fundamentals 26
Unit 4: Windows and Operating Systems 31
Unit 5: Keyboarding 34
Unit 6: Word Processing/Desktop Publishing 38
Unit 7: Multimedia Presentations 43
Unit 8: Spreadsheet Applications 47
Unit 9: Social Media 51
Unit 10: Career Exploration (incorporate throughout course) 55
Student Competency Profile 58
Appendix A: Activities and Rubrics 60
Appendix B: Glossary 85
Appendix C: 21st Century Skills 98
Appendix D: Common Core Standards 101
Appendix E: National Educational Technology Standards for Students (NETS-S) 108

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Mr. Charles McClelland, Vice Chair
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Mr. Howell "Hal" N. Gage
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Standards

Standards are superscripted in each unit and are referenced in the appendices. Standards in the *Technology Foundations Curriculum Framework and Supporting Materials* are based on the following:

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
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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.

Preface

Secondary Career and 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).

Technology Foundations Executive Summary

Program Description

Technology Foundations is a technology-rich curriculum that prepares students to function in the 21st Century environment. This course is designed to provide foundational skills in all relevant areas of technology, including keyboarding, operating systems, word processing, spreadsheets, desktop publishing, multimedia presentations, and social networking. The course also focuses on self- and career development by encouraging students to create a program of study that maps out their high school and postsecondary education.

Technology Foundations is built upon the Common Core Standards, 21st Century Skills, and the National Educational Technology Standards for Students (NETS-S). Upon successful completion of the course, students will have been exposed to the latest technology and will be able to make informed decisions on how to ethically interact both online and off.

Upon successful completion of Technology Foundations, students will receive one (1) Carnegie unit to be applied toward the Business and Technology graduation requirement.

Student Prerequisites

Students enrolled in Technology Foundations should be classified as eighth-grade students. Any exception to this rule should be discussed with the Mississippi Department of Education.

Licensure Requirements

This is an "add-on" endorsement that may be earned only by persons who hold a currently valid five-year standard Mississippi Educator License with endorsement in any subject area (academic or occupational).

A #984 endorsement allows a person to teach the following course:
992307 Technology Foundations
This endorsement requires the following:

1. Applicant must hold a currently valid five-year standard Mississippi Educator License.
2. Applicant must validate technology competency by attaining the established minimum score or higher on an assessment approved by the Mississippi Department of Education (MDE). The assessment must be directly related to technology competency required by the grade level and subject matter being taught. Approved assessment for this license is IC3.
3. Applicant must successfully complete a certification for online learning workshop, module, or course that is approved by the MDE.
4. Applicant must demonstrate keyboarding skill with proper technique and with speed of a total of 30 net words per minute (minimum) using the touch method.
5. Applicant must successfully complete the Technology Foundations certification workshop, module, or course that is approved by the MDE.

Note: If the applicant meets all requirements listed above, that applicant will be issued an endorsement supplemental to their existing five-year license. If the applicant does not meet all requirements, the applicant will be issued an emergency endorsement, and all requirements for the supplemental endorsement must be satisfied prior to the renewal date of the standard license.

Professional Learning

The professional learning itinerary for the middle school or individual pathways can be found at the RCU's website (http://www.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 Outline

Unit Number	Unit Name	Hours
1	Orientation and Ethics	5
2	Internet Tools in the Classroom	5
3	Computing Fundamentals	5
4	Windows and Operating Systems	5
5	Keyboarding	30
6	Word Processing/Desktop Publishing	30
7	Multimedia Presentations	10
8	Spreadsheet Applications	25
9	Social Media	10
10	Career Exploration	10
Total		135

Technology Foundations Research Synopsis

Introduction

Technology Foundations is a course that is intended to be an update and revision of the current Computer Discovery curriculum in the state of Mississippi. The development of the Technology Foundations curriculum is the result of research collected from existing Computer Discovery teachers and administrators. Identifying the needs of all students and teachers concerning technology was prominent among the topics discussed. It was discovered that students need to be exposed to up-to-date technology and be physically and ethically prepared to function in the 21st century. The Technology Foundations curriculum seeks to meet these needs for the students of Mississippi.

Research Design

A mixed-methods approach was used when conducting the research for the development of Technology Foundations. The quantitative data was analyzed to find similarities and/or differences among the responses to the surveys, as well as to see if the different stakeholders had similar or differing views on the topics covered. The qualitative data was derived from existing, public documents and examined for the needs of the workforce, employability expectations, and for possible curriculum content.

Sampling

Data used was collected from survey responses from secondary administrators and instructors. There were 35 respondents of the possible 100 active programs.

Data Analysis

The following results are from a survey sent to Tech Prep districts who offer Computer Discovery in their schools:

Computers: The existing Computer Discovery classrooms have various numbers of computers per class. Of the 35 who responded, there was an indication that the districts have up to 50 computers (in two labs) in the Computer Discovery classroom down to eight computers per room. Of the 35 respondents, 100% are connected to the Internet.

Operating Systems: In the Computer Discovery classrooms, the breakdown of computer operating systems is as follows: Windows 95/NT – 1 classroom; Windows 98 – 7 classrooms; Windows 2000/ME – 1 classroom; Windows XP – 25 classrooms; Windows Vista – 2 classrooms; Windows 7 – 0 classrooms. Seventy-five percent (75%) of the districts who responded are running Windows XP or higher.

Application Software: Application software used by Computer Discovery teachers was also surveyed. Of the 27 respondents, 74% are running Microsoft Office 2003 or higher. Microsoft Works and Microsoft Office 2007 had seven users each. Microsoft Office 2000 and Microsoft Office 97 each had five and two users, respectively.

Lab Efficiency: When asked to rate the working order of the equipment in the Computer Discovery classroom, on a scale of 1 to 5, with 5 being perfect working order, the average response was 3.14. When asked to rate the success of the Computer Discovery program, the average response was 3.97. Of the 35 respondents, 75% of them are greatly pleased with the success and functionality of their Computer Discovery programs.

Needs of the Future Workforce

Currently, there are approximately 67,000 jobs that require technical computer training in Mississippi. Nationally, there are approximately 12,500,000 of these jobs with a potential 12-13% increase in the next 10 years. The earnings for these positions range from approximately $12.00/hr to $23.00/hr in Mississippi and from $16.00/hr to $33.00/hr nationally.

Job Description	2010 Jobs	2019 Jobs	Change	% Change	2011 Median Hourly Wage	National 2010	National 2019	National % Change	2011 National Median Hourly Earnings
Business operations specialists	21,531	25,634	4,103	19%	$19.12	4,560,679	5,237,504	15%	$25.80
Computer specialists	11,798	14,034	2,236	19%	$22.00	3,675,063	4,223,623	15%	$32.79
Secretaries and administrative assistants	36,322	38,938	2,616	7%	$12.48	4,195,442	4,499,188	7%	$16.37
Total	66,651	78,606	8,955	13%	$16.16	12,431,183	13,960,316	12%	$24.71

Source: EMSI Complete Employment - 2011.3

Perkins IV Requirements

The Technology Foundations curriculum will meet Perkins IV requirements of high-skill, high-wage, and/or high-demand occupations, offering students a program of study, including secondary, postsecondary, and/or IHL courses that will prepare them for occupations in this field. Additionally, the Technology Foundations curriculum is integrated with Common Core academic standards and 21st Century Skills.

Curriculum Content

Summary of Standards

The standards to be included in the Technology Foundations curriculum are the 21st Century Skills, the National Educational Technology Standards for Students (NETS-S), and the Common Core standards. Combining these standards to create this document will result in highly skilled, well-rounded students who are prepared to enter secondary education with the technology and career planning skills necessary.

Academic Infusion

The Technology Foundations curriculum is not only a technology course. Students in this course will research and analyze collected data to make educated decisions about relevant topics. Students will be required to think critically and work together in groups to finalize documents and assignments.

There is also a considerable amount of writing in this curriculum. Students will be required to communicate effectively in the classroom and in the workplace. The Technology Foundations curriculum provides multiple opportunities to enhance these academic skills. Aligning the curriculum to the Common Core standards ensures that students will be practicing these necessary skills that will be helpful to them in all subject areas. In addition, the curriculum prepares students for the 21st-century workforce by incorporating the 21st Century Literacy Skills. The students will be exposed to all elements of 21st-century learning: information, culture, visual, and media.

Professional Preparation

Teacher Competence

Teachers of the Technology Foundations curriculum must prove themselves competent by holding a bachelor's degree or higher in education or another MDE-approved field and by completing the licensure requirements. Evaluators will rely heavily on the applicant's background, work history, and training performance to assess competency.

Assessment

At the current time, there is no statewide assessment for the Technology Foundations curriculum.

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 Technology Foundations curriculum includes teaching strategies that incorporate current, state-of-the-art technology. Each classroom is proposed to house at least 20 desktop student computers and one teacher desktop or laptop. It is suggested that each classroom be equipped with an interactive white board and projector, intensifying the interaction between students and teachers during class. Teachers are encouraged to make use of the latest online communication tools such as wikis, blogs, and podcasts. They are also encouraged to teach using the content delivery system Blackboard, which introduces students to education in an online environment and places the responsibility of learning on 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. To better reach all students, the Technology Foundations curriculum is written to include several instructional methods by using the Understanding by Design (UbD) approach. This method of instruction design leads students to a deeper understanding of course material and provides multiple opportunities for students to succeed in different ways. Students will be assessed with reading response; wiki, blog, and discussion board posts; reports; and other methods. Many activities are graded by rubrics that allow students to choose the type of product they will produce. By providing various teaching and assessment strategies, students with various learning styles can succeed.

Career and Technical Education Student Organizations

There are several student organizations for middle school students that would be relevant to this curriculum. Teachers are encouraged to charter one of these organizations if one is not already available to students. The suggested organizations for this course are Future Business Leaders of America (FBLA), SkillsUSA, and

Technology Student Association (TSA). Contact information for these organizations is listed under "Professional Organizations" in this document.

Conclusions

Based on the information above, the Technology Foundations curriculum will be filled with opportunities to teach and learn using technology. Other widely-used teaching strategies such as cooperative learning, problem-based learning, and demonstration will also be included. These will help to prepare students for the hands-on instruction they will likely received upon entering the workforce. Since many of the instructors make use of the rubrics and teaching and assessment strategies, they will continue to be included in the curriculum document. Additionally, since many of the instructors rely on collaboration amongst their colleagues, a P.A.C.E site has been created for the Technology Foundations instructors to share ideas and lesson plans. The curriculum document will be updated regularly to reflect current standards.

Professional Organizations

Future Business Leaders of America-Phi Beta Lambda, Inc.
1912 Association Drive
Reston, VA 20191-1591
800.325.2946
http://www.fbla-pbl.org/

SkillsUSA
14001 SkillsUSA Way
Leesburg, VA 20176
703.777.8810
http://www.skillsusa.org/

Technology Student Association
1914 Association Drive
Reston, VA 20191-1540
888.860.9010
http://www.tsaweb.org/

Using this Document

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 75–80% of the time in the course.

Competencies and Suggested Performance Indicators
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 performance indicators 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 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 the needs and abilities of students and on available resources.

Unit 1: Orientation and Ethics

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Identify school policies, program policies, and procedures related to Technology Foundations.
- Adhere to safety measures in relation to the technology in the lab.
- Learn appropriate safety measures in relation to various aspects of technology.
- Complete various inventories to help identify interpersonal skills used in the classroom and workforce.

Essential Questions

- Why is Internet restriction software available and important?
- Why is safety important in a computer lab?
- How are ethics relevant in today's society?

Vocabulary

Identify and review the unit vocabulary.

Access Controls
Antivirus Software
Authorized Access
Authorized Use
Boot Sector
Computer Ethics
Computer Virus
Cyber Ethics
Cybercrime
Decryption
Encryption
Ethics
EULA
File Virus
Hacker
Learning Style
Network
Password
Personality
PIN
Piracy
Privacy
Rescue Disk
Site License
Software License
Trojan Horse
Unauthorized Access/Use
Username
Worm

Suggested Learning Experiences

Competency 1: Identify course expectations, school policies, program policies, and safety procedures related to Technology Foundations. DOK1, CS3, CS5, CS14		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Identify course expectations, school policies, program policies, and safety procedures related to Technology Foundations. CCR1, CCR7, T2, T3, T5	a. Using the school handbook, read and go over school policies and procedures in relation to Technology Foundations. Students will sign and return the Internet Policy according to the student handbook after the class discussion. Create PowerPoint presentation of lab rules and regulations and safety guidelines in regard to Technology Foundations. Create and administer a test and/or quiz on course expectations, school policies, program policies, and safety procedures with a 100% passing requirement.	a. Group Discussion Teacher-Created Test and/or Quiz
b. Describe the operating procedures for the equipment utilized in the course. CCR1, CCR7, T2, T3, T5	b. Discuss the acceptable use policy in regard to computer networks according to the student handbook. Discuss the location of equipment in the lab. Discuss the role of the teacher and student in relation to equipment repair and/or troubleshooting in the lab.	b. Teacher Observation and Group Discussion

Competency 2: Explore personality development and the classroom environment in relation to interpersonal skills, others, and the world of work. DOK1, CS3, CS8, CS14		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Identify forces that shape personality development and learning styles, including personality traits, heredity, and environment. CCR1, CCR7, CCL3, T1, T2, T3, T5	a. Have students complete an online survey that will identify their learning style. Example: http://www.scholastic.com/familymatters/parentguides/middleschool/quiz_learningstyles/index.htm. Students may also take a free test similar to the Myers-Briggs Personality Type test at http://www.humanmetrics.com/cgi-win/JTypes1.htm or http://www.41q.com/. Using the results of this test, discuss personality differences and how individuals with different personality types have to adjust to them in order to work together. Link this working relationship to the classroom. Optional: Personality Activity (located in Appendix A)	a. Graded Activity and Teacher Observation
b. Report on how personality traits affect teamwork and leadership skills. CCW4, CCW5, CCW6, CCSL4, T1, T2, T3	b. After discussion of varying and often conflicting personality differences, have students research how different personalities work together. There is evidence to report, however, that student speculation and opinion could be viable topics of discussion as well. The	b. Report Rubric

	students should report their findings.	

Competency 3: Understand the ethical, cultural, and societal issues related to technology. DOK2, CS1, CS3, CS8, CS14, CS16		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Discuss ethics in relation to computer and technology usage. CCSL1, CCSL3, T2, T4, T5	a. Discuss with students proper ethical behavior that should be used in the classroom. Extend this thinking to their personal use of computers and the Internet. Be sure to include the topics of hacking, piracy, cybercrime, cyberbullying, etc. References: http://www.educationworld.com/a_tech/tech/tech055.shtml, http://www.cybercitizenship.org/.	a. Teacher-Created Quiz on Cyber Ethics.
b. Discuss ethics in the educational environment. CCSL1, CCSL3, T2, T4, T5	b. Students should be aware of expectations not only of students, but of all people involved in the education profession. Reference http://www.nea.org/home/30442.htm to read what the National Education Association considers proper ethics for educational professionals. Discuss how this affects students in the classroom. Have students compare and contrast the roles of students against the roles of educational professionals in terms of ethics.	b. Report Rubric or Journal Rubric
c. Discuss ethics in the occupational environment. CCSL1, CCSL3, T2, T4, T5	c. Have students research high-profile ethics concerns in the news (e.g., ENRON, Martha Stewart, News of the World, etc.). The students should evaluate one situation and discuss all of the unethical behavior they can identify. Students should offer suggestions for how these situations could have been handled better if proper ethics were followed. Students should create a report and/or present findings to the class.	c. Report Rubric or Presentation Rubric

Performance Task

Performance Task Title

No performance task necessary for orientation units.

Attachments for Performance Task

None

Unit Resources

Books:

Strike, K. A., & Ternasky, P. L. (1993). *Ethics for professionals in education: perspectives for preparation and practice*. New York, NY: Teachers College Press.

Web sites:

An education in ethics. (n.d.). *Santa Clara University - Welcome*. Retrieved August 22, 2011, from http://www.scu.edu/ethics/publications/iie/v10n1/education.html

Education world: Proper internet use tools for teaching cyber ethics. (2011, July 14). *Education World: The Educator's Best Friend*. Retrieved August 22, 2011, from http://www.educationworld.com/a_tech/tech/tech055.shtml

The cyber citizen partnership. (n.d.). *Cyber Citizen*. Retrieved August 22, 2011, from http://www.cybercitizenship.org/

Unit 2: Internet Tools in the Classroom

Understandings and Goals

Enduring Understandings
In this unit, the student will learn that:

- Netiquette and internet safety should be used in and out of school for the protection of users and equipment.
- Acceptable use policies are designed for the protection of each party using the network.
- Information on the internet should be verified for accuracy and purpose.
- Online communication methods are varied and constantly evolving and emerging.
- Online communication can be used for personal research, for social networking, and as an educational medium between student and teacher.

Essential Questions

- Who controls what is posted on the Internet?
- What is the purpose of acceptable use policies?
- What kind of negative things can happen through the Internet?
- How were things done differently before the Internet?
- What new developments do you think will happen in the future via the Internet?

Vocabulary

Identify and review the unit vocabulary.

Address Bar
Attachment
Back
Browser
Domain
Download
E-mail
Favorites or Bookmarks
Forward
History
Home
Homepage
Hyperlink
Hypertext
Internet
IP Address
Print
Refresh/Reload
Search Box
Search Engine
Stop
Tab
URL
Window
World Wide Web

Suggested Learning Experiences

Competency 1: Demonstrate proficiency in telecommunication applications. DOK2, CS3, CS8, CS9, CS11, CS13, CS16		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Review "appropriate use" policies related to telecommunications. CCR1, CCR2, T2, T3, T5	a. Using the school handbook, read and discuss school district policies and procedures emphasizing what individual or group is being protected by each rule. Engage the students in a teacher-led conversation and/or debate about the pros and cons of district, school, and classroom rules and procedures. Create and issue a quiz about the rules and regulations with a 100% passing requirement.	a. Graded Quiz (Have students and parents sign and return a copy of the district appropriate use policy.)
b. Identify different types of information sources on the Internet. CCR1, CCR2, T3, T4, T5, T6	b. Engage the students in a teacher-led conversation about different types of information sources found on the internet including facts, opinions, interpretation, and statistics. Guide the conversation to include situations in which each type of information should be used as sources. Have students work individually, in small groups, or in a large group to fill in a chart matching various research situations to the given types of sources. This can be done by way of paper, multimedia software, or wiki.	b. Teacher Observation or Graded Quiz
c. Discuss and use web browsing applications. CCSL1, CCSL3, T2, T3, T6	c. Have students to complete a teacher made scavenger hunt sheet including definitions and buttons associated with web-browsing applications. Students can use the following page: http://www.teachingideas.co.uk/welcome/browsers/page1.htm	c. Teacher Observation or Graded Quiz
d. Search the Internet for reliable information. CCR1, CCR2, CCR8, CCW8, T3, T4, T5, T6	d. Outline the CARS checklist (Credibility, Accuracy, Reasonableness, Support) via a multimedia presentation or website (e.g., McGraw-Hill Higher Education or Evaluating Internet Research Sources). Have the class discuss and evaluate a variety of websites based on the following: 1. Credibility: Is the author highly qualified on the given topic; does he or she provide quality evidence to support his or her stance? 2. Accuracy: Is the information based on current, comprehensive, and detailed fact? 3. Reasonableness: Is the information based on objective and balanced truth, or is there a hidden agenda that reflects a distorted version of the truth? 4. Support: Are there documented sources listed, or are there at least two outside sources to corroborate the information stated?	d. Group Participation Rubric

	Have students work in groups to summarize one of the items on the checklist including three to five tips for each. Have students post them on large paper to be posted in class as reference material.	
e. Introduce students to the Blackboard website rcu.blackboard.com. T2, T5, T6	e. Guide students through the basics of Blackboard as it will be used in class. Emphasize organization of the class site, logging in and out, and properly submitting assignments.	e. Graded Hotspot Quiz and Teacher Observation

Competency 2: Interact with others using various telecommunication methods. DOK3, CS3, CS8, CS9, CS11, CS14		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Explore online communication methods (e-mail, chat rooms, wikis, blogs, online classroom, etc.) CCSL1, CCSL3, CCW6, T1, T2, T3, T5, T6	a. Use a multimedia presentation to show examples of various online communication methods. Have students to create an e-mail account; add friends to address book; and compose, open, organize and delete e-mails. Have students to attach a class assignment and submit it to the teacher via e-mail. Model for students how to use the calendar feature of the e-mail account.	a. Teacher Observation
b. Demonstrate appropriate behavior in the online arena. CCSL1, CCSL3, CCW6, T1, T2, T3, T5, T6	b. Have students use the Internet to research netiquette. Have students create a "Netiquette Fact Sheet" to use while interacting with peers, experts, and other audiences. Have students take part in a discussion board and/or a wiki via Blackboard (if available). Emphasize using complete sentences, correct English, and constructive criticism only. Note: If desired, set up a classroom account at www.edmodo.com, a social networking site for students, teachers, and parents. It looks and feels like Facebook, but can be used for educational purposes.	b. Group Participation Rubric

Performance Task

Appropriate Use Skit

An "appropriate use" policy rule was broken, and a resulting conference is taking place between the student, parent(s), and school official(s). Students will work in groups of three to five to act out the conference. The skit should:

1. Describe the given incident.
2. State the rule that was broken and name the document(s) where the rule is stated.
3. Name the party that is protected by the rule (student, teacher, school, district, etc.) and state how they are protected.
4. Describe how the incident could have been handled to prevent the rule infraction.

Attachments for Performance Task

Appropriate Use Skit Rubric (Appendix A)

Unit Resources

Journals:

Mock, K. (2001). The use of internet tools to supplement communication in the classroom. *Journal of Computing Sciences in Colleges*, *17*(2), 14-21.

Web sites:

The CARS checklist (credibility, accuracy, reasonableness, support). (2003). *Student Success*. Retrieved August 22, 2011, from http://highered.mcgraw-hill.com/sites/0079876543/student_view0/research_center-999/research_papers30/conducting_web-based_research.html

Evaluating internet research sources. (n.d.). *VirtualSalt*. Retrieved August 22, 2011, from http://www.virtualsalt.com/evalu8it.htm

Welcome to the web: Web browsers. (n.d.). *Teaching Ideas - Free Lesson Ideas, Plans, Activities and Resources for Use in the Primary Classroom.* Retrieved August 22, 2011, from http://www.teachingideas.co.uk/welcome/browsers/page1.htm

A glossary of terms related to web browsers. (n.d.). *Web Browsers: About Web Browsers*. Retrieved August 22, 2011, from http://browsers.about.com/od/webbrowserglossary/A_Glossary_Of_Terms_Related_To_Web_Browsers.htm

Learn at RCU. (n.d.). *Learn at RCU*. Retrieved August 22, 2011, from http://rcu.blackboard.com

Unit 3: Computing Fundamentals

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Identify and recognize the essential parts of a computer system.
- Discover what to look for when purchasing a computer system.

Essential Questions

- What do you need to know before you purchase a computer system?
- What happens if essential computer system elements are missing?

Vocabulary

Identify and review the unit vocabulary.

Application Software
CD
CD-R
CD-RW
CPU
Motherboard
Disk Drives
Hard Drive
Hardware
Keyboard
Monitor
Mouse
Operating System Software
Printer
RAM
ROM
Software
USB
Webcam

Suggested Learning Experiences

Competency 1: Demonstrate understanding of technology systems. DOK2, CS1, CS7, CS11		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Identify obsolete, current, and emerging technologies. CCR1, CCR2, CCW7, CCW8, CCW9, T3, T4, T6	a. Using the Internet, a teacher-created slide show, magazines, or other media, show students pictures of past and present technologies. Discuss how and why some of them have become obsolete. Lead the discussion into emerging technologies and speculations of future technologies. Have students write a blog or journal entry about technology they used in the past that is no longer relevant.	a. Large Group Discussion Journal Rubric
b. Demonstrate knowledge of computer hardware. T6	b. Show students a presentation about the different parts of a computer. Using a desktop computer, students should be able to identify parts such as monitor, printer, mouse, tower, speakers, scanner, webcam, keyboard, and so forth. Allow students to go to the Internet to http://www.gcflearnfree.org/computerbasics and watch the video entitled "How to Set up a Computer." Have students demonstrate setting up a typical desktop computer. (On this site, there are several other valuable tools teachers can use to teach computer basics.)	b. Teacher-Created Test Observe for Proficiency and/or Teacher-Created Checklist
c. Demonstrate knowledge of computer software. T6	c. Discuss the difference between operating system software and application software. Discuss and demonstrate different examples of each. Have students identify file extensions for software that will be used in the classroom. If students have a computer system at home, have them list the software installed on their machines. Have students identify the operating system on their machine(s) at home. Discuss.	c. Teacher-Created Test
d. Troubleshoot common hardware and software problems. CCSL2, T2, T4, T6	d. Define and discuss *troubleshooting*. Visit the website http://www.gcflearnfree.org/computerbasics/13 which discusses some troubleshooting techniques. Show students the website http://www.computerhope.com/basic.htm to assist with troubleshooting tips. Discuss the Bios Beep codes and what they mean with students. http://www.computerhope.com/beep.htm	d. Class Discussion and/or Journal Entry

	Demonstrate how to remove various parts inside the tower, such as memory, disk drives, and so forth, from the motherboard to help detect common hardware problems based on the beep codes. If available, allow students to disassemble and reassemble a desktop computer.	

Competency 2: Demonstrate knowledge of computers and technology when purchasing equipment. DOK3, CS2, CS7, CS9, CS11, CS12, CS13		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Identify factors that apply when purchasing computer equipment. CCR1, CCR2, CCSL2, T3, T4	a. Using a teacher-created multimedia presentation, discuss hard drive size, speed, processor, and memory amounts with students to assist them in what to look for when purchasing a computer. Include discussion on how to best meet the needs of the individual consumers.	a. Teacher Observation
b. Demonstrate understanding of computer equipment by successfully "purchasing" a computer system. CCSL1, CCSL2, CCSL4, T2, T4, T5	b. Read the article "Four things to know before you buy a computer" at http://www.gcflearnfree.org/computerbasics/article/171. Allow students to bring in local sale papers and newspapers as well as search stores online with advertisements on various computer systems and discuss which is the best buy and why. Group students and have them find a reasonable computer for several different needs (to be determined by the teacher: engineer, student, music enthusiast, etc.) As a group, students will present their "best buy" to the class.	b. Presentation Rubric

Performance Task

Let's Buy a Computer!

During this project, you will go through the steps of purchasing a computer without actually buying one. Here are the specs:

You are a computer enthusiast of some sort (your choice). Decide what your needs are and decide what kind of computer you are going to buy. You will need to consider your needs (music, gaming, etc.) and end up with a complete computer system (i.e., monitor, CPU, printer). Then, go to computer resale websites, such as Dell.com, Apple.com, or another similar site, and build the computer you want. It may turn out that exactly what you want comes in a package. If not, add or delete the features you do not want. Print out all the specs of the computer you wish to buy, as well as the page where you would fill in credit card information. You will be judged on the content, detail, accuracy, design, and appeal of your final product. You have $2800.00—GO!

Attachments for Performance Task

Project Rubric

Unit Resources

Books:

Shelly, G. B., Vermaat, M., & Quasney, J. J. (2011). Discovering computers: Living in a digital world: Fundamentals (2011 ed.). Boston, MA: Course Technology Cengage Learning.

Web sites:

Basic computer troubleshooting steps. (n.d.). *Computer Ope's Free Computer Help*. Retrieved August 23, 2011, from http://www.computerhope.com/basic.htm

Computer basics: What are some troubleshooting techniques? (n.d.). *Free Online Learning*. Retrieved August 23, 2011, from http://www.gcflearnfree.org/computerbasics/13

Computer POST and beep codes. (n.d.). *Computer Hope's Free Computer Help*. Retrieved August 23, 2011, from http://www.computerhope.com/beep.htm

Free computer basics tutorial. (n.d.). *Free Online Learning*. Retrieved August 23, 2011, from http://www.gcflearnfree.org/computerbasics

Markham, K. P. (n.d.). GCFLearnFree.org: Buying a computer. *Free Online Learning*. Retrieved August 23, 2011, from http://www.gcflearnfree.org/computerbasics/article/171

Unit 4: Windows and Operating Systems

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Learn to manipulate and multitask using Windows and its menu bars.
- Describe the differences between operating systems such as Windows XP, Vista 7, Unix.
- Create a folder hierarchy within Windows.

Essential Questions

- Why is an operating system in a computer necessary?
- Why is appropriate file management important?

Vocabulary

Identify and review the unit vocabulary.

Address Bar
ALT + F4
ALT + Tab
Chevron
Close
Control Menu Icon
Maximize/Restore
Minimize
Ruler
Sizing handle
Title Bar
Vertical and Horizontal Scroll Bars

Suggested Learning Experiences

Competency 1: Discover various operating systems. DOK1, CS9, CS10, CS11		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Identify current operating systems. CCSL2, T3, T6	a. Have students complete the tutorials on http://www.gcflearnfree.org/windows. Once they have completed the tutorials, have students research and compare/contrast other operating systems. Students should discuss why Windows is the most popular. Have students identify the operating system they have on their desktop, netbook, or laptop at home and report to class the next day. Students will create a chart from their findings of the class.	a. Group Participation Rubric
b. Create and manipulate a folder hierarchy. T6	b. Have students create a folder with their name. After students have completed documents in various application software programs, have them create a folder within their folder for the various application software programs they have used (e.g., create folders for Word documents, spreadsheet documents, database documents, PowerPoint documents, images, etc.). Provide students with notes on file management. Have students use the "print screen" feature to take a picture of their hierarchy to print and turn in.	b. Graded Assignment
c. Demonstrate proficiency using the operating system in your lab. T6	c. Students will log in and out of the network. Students will demonstrate opening and closing programs and/or windows within the operating system using the menu bar, keyboard shortcuts, and close function. Allow students to go to the Operating System Tutorial which is located under the Accessories in Windows.	c. Teacher Observation

Performance Task

Performance Task Title

No performance task necessary.

Attachments for Performance Task

None

Unit Resources

Books:

Shelly, G. B., Freund, S. M., & Enger, R. E. (2011). Microsoft Windows 7 introductory. Boston, MA: Course Technology.

Web sites:

Free Windows Tutorials. (n.d.). *Free Online Learning*. Retrieved August 23, 2011, from http://www.gcflearnfree.org/windows

Unit 5: Keyboarding

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Demonstrate proper hand, finger, and body position when using a keyboard.
- Use correct fingers reaches from home row to top and bottom row keys.
- Achieve 30 net words a minute (NWAM) by the end of the year.

Essential Questions

- Why is keyboarding correctly so important?
- What kinds of jobs use keyboarding skills? What kinds of jobs do not use keyboarding skills? What is the difference?

Vocabulary

Identify and review the unit vocabulary.

Accuracy
Arrow Keys
Backspace Key
Caps Lock
Centering
Cursor
Default
Delete Key
Document
Editing
Enter
Error
ESC Key
Function Keys
GWAM (Gross Words a Minute)
Home Row Keys
Key
Keyboard
Letter Keys
Numeric Keypad
Proofreading
QWERTY Keyboard
Rate
Return
Shift Keys
Space Bar
Tab
Technique
Word Wrap

Suggested Learning Experiences

Competency 1: Perform keyboarding applications. DOK2, CS8, CS9, CS10, CS11, CS13		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Demonstrate proper hand, finger, and body position when using a keyboard (ongoing). T2, T6	a. Model for and teach students the proper body posture for effective keyboarding. Students should have the following posture: • Sit straight up in chair • Back straight • Feet flat on the floor • Arms parallel with the keyboard • Wrists low but off keyboard • Fingers curved and upright • Eyes focused on copy **<u>Important Notes:</u>** Refer to the fingers as such: index (L1/R1), middle (L2/R2), ring (L3/R3), pinky (L4/R4) and thumb (RT). Teach up to four letters per class meeting using oral instruction and/or keyboarding textbook. Use keyboarding software to supplement instruction. **Space ONCE after all punctuation marks.** Numeric keyboarding and numeric keypad instruction should only take place if time allows. To calculate NWAM, subtract errors from GWAM (GWAM-errors=NWAM). You should spend no more than six weeks on keyboarding *instruction*. Continue to have students perform timed writings throughout the school year. Students should strive for 30 NWAM by the end of the school year. _____ Correctly key by touch dictation exercises, conditioning practices, software exercises, and three-minute timed writings with a goal of a minimum of 30 NWAM by the end of the year. Print lesson reports and timed writings for speed and accuracy. If available, have students type a lesson from a textbook on a manual typewriter and then write an essay on whether they like the typewriter or computer keyboard better and why.	a. Technique Grader Keyboarding Grading Scale Report Rubric

b. Use correct finger reaches on home row and from home row to top and bottom row keys (ongoing). T2, T6	b. Discuss the correct placement of body and fingers when typing. Use videos from the internet or software program to show the students correct placement. Monitor students as they type for a technique grade. Use keyboard covers (optional) to help students with correct finger placement. Use keyboarding games and online keyboarding games to reinforce keyboarding skills.	b. Teacher Observation Student Contest using the Games
c. Perform touch typing by keying words, sentences, and paragraphs (ongoing). CCL1, CCL2, CCL3, T2, T6	c. Use drill practice (typing from copy) to continually increase accuracy and WAM. Print timed test reports for speed and accuracy.	c. Keyboarding Grading Scale

Performance Task

Performance Task Title

Ongoing timed writings to improve speed throughout the entire course—no specific performance task necessary.

Attachments for Performance Task

None

Unit Resources

Books:

Hoggatt, J., & Shank, J. A. (2009). *Applied computer keyboarding: Use with MicroType software* (6th ed.). Australia: South-Western Cengage Learning.

Hoggatt, J., Shank, J. A., & Barksdale, K. (2010). *Century 21 jr.: Input technologies & computer applications* (2nd ed.). Cincinnati, OH: South-Western.

Web sites:

Endsley, M. (n.d.). Ms. Endsley's Class - Keyboarding Games. Ms. Endsley's Class - Home. Retrieved September 1, 2011, from http://www.msendsleysclass.com/kbgames.htm

CTE/Keyboarding lesson plan search results. (n.d.). Utah Education Network. Retrieved September 1, 2011, from http://www.uen.org/Lessonplan/LPview?core=1214

Unit 6: Word Processing/Desktop Publishing

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Use basic word processing commands to create, format, and edit documents.
- Identify common on-screen elements of a word processing applications.
- Perform common editing and formatting functions.
- Perform basic desktop publishing applications.

Essential Questions

- Why is word processing so important?
- What kinds of jobs use word processing skills?
- How can word processing make your life easier?
- Why is it important to follow appropriate desktop publishing guidelines?

Vocabulary

Identify and review the unit vocabulary.

Alignment
Bold
Buffer
Bullet
Clip Art
Clipboard
Copy
Crop
Cut
Default
Delete
Desktop Publishing
Enter
Find
Font
Format
Gutter
Handles
I-Beam
Import
Insert
Italics
Justification
Layout
Margin
Masthead
Orphan
Paste
Replace
Ruler
Sans Serif
Save As
Serif
Spacebar
Spacing
Spell Checker
Tab
Type (Font) Size
Underline
White Space
Widow
Word Wrap

Suggested Learning Experiences

Competency 1: Perform basic word processing applications. DOK2, CS6, CS8, CS9, CS10, CS11		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Demonstrate ability to create, format, and edit word processing documents. CCW6, CCSL4, CCSL5, CCSL6, CCL1, CCL2, T1, T2, T3, T4, T5, T6	a. Demonstrate and explain the word processing screen (window) to include menu bar and toolbars. Provide students with guided practice activities. Use web sites such as http://webster.commnet.edu/writing/symbols.htm to review editing and proofreading skills with students. Provide students with integrated activities to compose, format, and edit documents, including but not limited to the following: Commands: delete, insert, cursor movement, bold, italics, underline, cut, copy, paste, drag and drop, and so forth. Text and document formatting: line margins, page orientation, justification, headers and footers, line spacing, tabs, page breaks, sections breaks, creating and formatting tables, text styles, diagrams, organizational charts, and so forth. Editing and proofreading procedures: find and replace, grammar check, spell check, show/hide marks, and so forth.	a. Monitor Performance on Student Practice
b. Demonstrate proficiency in operating classroom word processing software. CCW6, CCSL4, CCSL5, CCSL6, CCL1, CCL2, T1, T2, T3, T4, T5, T6	b. Students should show teacher that they can manipulate and function within the classroom word processing software.	b. Teacher-Created Checklist

Competency 2: Apply word processing applications. DOK2, CS1, CS6, CS8, CS9, CS10, CS11, CS15		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Investigate reports written in APA format. CCR1, CCR2, CCW6, CCSL4, CCSL5, CCSL6, CCL1, CCL2, T1, T2, T3, T4, T5, T6	a. Use the Internet to research the formatting for APA style. Use the discussion board or wiki tool in Blackboard to discuss reasons to have set formatting for reports.	a. Journal Rubric
b. Conduct research for a paper written in APA format. CCR1, CCR2, CCW6, CCSL4, CCSL5, CCSL6, CCL1, CCL2, T1, T2, T3, T4, T5, T6	b. Use Internet and library to find sources pertaining to a topic of choice by students.	b. Teacher Observation

c. Cite references in APA format. CCW6, CCW8, T1, T2, T3, T5, T6	c. Use the Internet to research types of formatting for books, magazines, web sites, etc. in APA style. Have students locate reference pages in books or magazines and discuss what type of formatting they used to cite the references (APA or otherwise). Students will correctly format a list of references from their research using the word processing program. (After they have been taught the correct way to cite, show them sites such as http://www.bibme.org/ or the References section of MS Word 2007 or higher that cite references for you.	c. Teacher Observation Report Rubric (graded with report)
d. Create research paper in APA format. CCR1, CCR2, CCW6, CCW8, CCSL4, CCSL5, CCSL6, CCL1, CCL2, T1, T2, T3, T4, T5, T6	d. Using a teacher-created research paper, have the students format the following: Cover page, body of work, and references. When students know how to properly format a paper, they should use their own research from a topic of choice to create a properly formatted research paper. For cross-disciplinary integration, work with Language Arts/History teacher to create research paper.	d. Report Rubric

Competency 3: Perform desktop publishing applications. DOK2, CS1, CS6, CS8, CS9, CS10, CS11, CS15		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Distinguish between high-quality and low-quality desktop publishing documents. (flyers, newsletters, brochures, etc.) CCR1, CCR2, T3, T4, T5, T6	a. Discuss and define desktop publishing (DTP) terminology. Have students investigate online and/or teacher-selected well executed and poorly done desktop publishing documents. Point out to students what makes a high-quality desktop publishing document. Have students choose between several sets of desktop publishing documents, citing why one is of better quality than the other. <u>Important Notes:</u> Ground rules for desktop publishing: Use one space after punctuation, do not use double-hard returns, limit fonts, employ appropriate text alignment, limit use of centered text, balance line length, limit use of all capital letters, use typographical punctuation, use frames wisely, limit use of clip art, use more white space. Do not use more than four fonts in any one publication. For additional tips, visit http://www.frillios-pizza.com/FrilliosPizza/DTP_Tips_and_Guidelines.htm.	a. Teacher Observation and/or Graded Assignment
b. Create and manipulate basic desktop publishing features (lines, shapes, clip art, SmartArt, columns, tables,	b. Students should use blank word processing documents to practice using lines, shapes, clip art, SmartArt, etc. Have students create something personal using at least four different DTP tools (sign for bedroom door, door hanger, greeting card, etc.). <u>or</u>	b. Project Rubric

textboxes, etc.). T1, T6	Have students create a table, research a state, and place pictures, clipart, etc. that represent the state. The students will need to crop/resize the graphics to fit in the table.	
c. Manipulate graphics and objects by moving, sizing, grouping, and changing order and/or color. T1, T6	c. Have students use all they have learned to create a cover for a magazine using Word. The magazine can be about them or anything else they choose. They should follow all DTP rules and make it visually appealing. Print on color printer, if available.	c. Project Rubric

Competency 4: Apply desktop publishing applications. DOK2, CS1, CS6, CS8, CS9, CS10, CS11, CS15		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Create effective desktop publishing documents (flyers, newsletters, brochures, etc.). CCSL4, CCSL5, CCSL6, T1, T2, T6	a. Students should apply all they have learned about DTP to create an effective document. Students may choose to create a flyer, a newsletter, 3-column autobiography, or a brochure to showcase their DTP skills.	a. Project Rubric

Performance Task

Dining Menu!

You are the manager for a new themed restaurant. You must create a dining menu for your customers that lets people know what you have to offer but also entertains them by reflecting your restaurant's theme. Using the basic menu provided, you must use only the items listed, come up with creative names and descriptions for the food items. (For example, if I used a golf theme, I might have the Driver Burger with Tees as the creative name and "Half pound hamburger loaded with tomato, pickles, onions, and our special green sauce. Served with tasty curly fries." as the description.) You can "enhance" an item (specify toppings, special sauce, etc.). The menu may use black and two other colors. No additional colors may be used. No entire page shading may be used. Be sure to use borders for enhancement. The menus may be printed in color or on colored paper. Your menu will be graded based on originality, creativity, and accuracy.

Attachments for Performance Task

Dining Menu Project

Dining Menu Rubric

Unit Resources

Books:

Publication manual of the American Psychological Association (6. ed.). (2010). Washington, DC: American Psychological Association.

Shelly, G. B., Vermaat, M., & Enger, R. E. (2011). *Microsoft office 2010: Introductory*. Boston, MA: Course Technology.

Web sites:

BibMe: Fast & easy bibliography maker. (n.d.). BibMe: Fast & Easy Bibliography Maker. Retrieved September 1, 2011, from http://www.bibme.org/

Frillio's pizza desktop publishing simulation. (n.d.). Frillio's Pizza Desktop Publishing Simulation - Business Education Publishing. Retrieved September 1, 2011, from http://www.frilliospizza.com/FrilliosPizza/DTP_Tips_and_Guidelines.htm

Proofreading symbols and abbreviations. (n.d.). Capital Community College - Hartford CT - Home Page. Retrieved September 1, 2011, from http://webster.commnet.edu/writing/symbols.htm

Unit 7: Multimedia Presentations

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Understand what multimedia presentations are.
- Use different types of multimedia presentation programs.
- Understand the terminology associated with multimedia presentations.
- Understand the importance of presentation standards associated with making presentations.
- Understand and apply multimedia presentations to other academic area.

Essential Questions

- What are multimedia presentations?
- Why are multimedia presentations important?
- What are some different types of multimedia presentation programs?
- What are some different ways in which students may apply multimedia presentations to other academic subject areas?
- How are multimedia presentation skills important to the workforce?
- What are some careers that use multimedia presentations skills?

Vocabulary

Identify and review the unit vocabulary.

Animations
Articulation
Audience
Background
Body Language
Chat
Clips
Color Scheme
Content
Diagram
Effect
Eye Contact
File Extensions
Flip Chart
Handouts
Import Files
Key Point
Knowledge of Subject
Narration
Multimedia
Overlay
Presentation
Slides
Sound Effects
Story Board
Tile
Transition
Views
Visual Aid

Suggested Learning Experiences

Competency 1: Demonstrate basic multimedia presentation applications. DOK2, CS9, CS10, CS11		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Investigate the different types of available multimedia software. CCR1, CCR2, T3, T6	a. Use presentation equipment to define multimedia presentation and to introduce terminology associated with multimedia presentation. Introduce students to some different types of presentation software, such as PowerPoint, Movie Maker, Prezi, and so forth.	a. Vocabulary Quiz
b. Identify basic features of multimedia software. T3, T6	b. Display and describe the basic features of multimedia software programs, such as creating slides, animations, slide transitions, sound effects, and so forth. Have students label a screen shot of all relevant features.	b. Graded Assignment
c. Distinguish between effective and ineffective presentation methods and features. CCSL2, CCSL3, T4, T6	c. Research and review effective presentation tips and strategies utilizing search engines and other website resources to determine effective multimedia presentation strategies. Have students either create a one-page report on effective versus ineffective multimedia presentations or create a grossly ineffective multimedia presentation, present it, and point out all of its faults.	c. Report Rubric or Presentation Rubric
d. Demonstrate proficiency using basic features of multimedia software. CCSL4, CCSL5, CCSL6, T1, T2, T6	d. Students should be able to correctly identify and execute basic commands in multimedia software. Observe their work and check off each skill they can accomplish.	d. Teacher-Created Checklist

Competency 2: Create a multimedia presentation. DOK3, CS6, CS7, CS8, CS9, CS10, CS11, CS13, CS15		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Use presentation features to create a complex multimedia presentation. CCSL1, CCSL2, CCSL3, CCSL4, CCSL5, CCSL6, T1, T2, T3, T4, T5, T6	a. Plan, create, edit, and format a presentation using one of the presentation programs presented in this unit.	a. Presentation Rubric
b. Present a multimedia presentation. CCSL1, CCSL2, CCSL3, CCSL4, CCSL5, CCSL6, T1, T2, T3, T4, T5, T6	b. Utilizing presentation standards reviewed throughout the unit, present a PowerPoint presentation to class. Use wireless presenters if available.	b. Presentation Rubric

Performance Task

Performance Task Title

Your Technology Foundations class has been asked by the principal to create a presentation on bullying (or another topic) for the school. You are a technology student in the Technology Foundations class that has been charged with creating this presentation for elementary students. Create a multimedia presentation for a school presentation on bullying and the effects of bullying on the school community. Your presentation should include elements such as transitions, music, animations, video, and/or any other relevant elements. It will be presented to the faculty and students at your area elementary school. You need to work with the other members of your class in teams to research and create a multimedia presentation. Include a visual aid or skit/video animation for your presentation that will be presented for elementary students in your school district. You will be judged by your content, detail, accuracy, clarity, design, and overall appeal.

Attachments for Performance Task

Project Rubric

Unit Resources

Books:

Shelly, G. B., & Sebok, S. L. (2011). Microsoft PowerPoint 2010: Complete. Boston, MA: Course Technology.

Journals:

Robinson, C. C., & Hullinger, H. (2008). New benchmarks in higher education: Student engagement in online learning. *The Journal of Education for Business*, *84*(2), 101-109. doi: 10.3200/JOEB.84.2.101-109.

Web sites:

Prezi. (n.d.). *Prezi: The zooming presentation editor*. Retrieved September 02, 2011, from http://www.prezi.com

Unit 8: Spreadsheet Applications

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Learn the basic skills and terms needed to effectively use spreadsheets.
- Explore how spreadsheet software can be used to simplify and organize tasks in school, home and various career settings.
- Learn to use the help, glossary, and demo features of software for basic problem solving and to search for tools needed for specific spreadsheet projects.

Essential Questions

- What skills and terms are essential for using spreadsheets in any setting?
- How were multistep calculations, large amounts of data, and detailed lists organized, calculated, and updated before the use of spreadsheet software?

Vocabulary

Identify and review the unit vocabulary.

Activate
Active Cell
Active Sheet
Argument
Autoformat
Axis
Border
Cell
Cell Reference
Chart Area
Chart Sheet
Column
Column Heading
Comparison Criteria
Comparison Operator
Conditional Format
Constant
Criteria
Data Label
Data Marker
Data Points
Data Series
Data Source
Database
Default Startup Workbook
Dependents
Embedded Chart
Excel Table
Expression
External Data
External Data Range
External Reference
Fill Handle
Filter
Font
Formula
Formula Bar
Formula Palette
Function (Office Excel)
Grid
Gridlines in Charts
Item
Justify
Legend
Locked Field or Record
Merged Cell
Microsoft Office Excel
Moving Border
Name Box
Operand
Operator
Page Break
Page Break Preview
Paste Area
Plot Area
Print Area
Print Titles
Range
Range Reference
Read-Only
Refresh
Relative Reference
Remote Reference
Row Heading
Rows
Scroll Lock
Select
Select All Button
Shared Workbook
Sheet Tab
Sort Order
Spreadsheet
Template
Text Box
Tick Marks
Title
Value Axis
Workbook
Worksheet
Workspace File
Wrap

Suggested Learning Experiences

Competency 1: Perform spreadsheet applications. DOK2, CS7, CS9, CS10, CS11		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Explore spreadsheet software purpose and functions (mail merge, database functionalities, budgets, fundraising, etc.). T3, T6	a. Use teacher-created screen capture videos, spreadsheet templates and Excel Help Demos to demonstrate and discuss various purposes and functions of spreadsheet software at home, school, and the workplace. Resource: Mail merge tutorial video http://www.youtube.com/watch?v=3ylYITE0ayU	a. Teacher Observation and/or Graded Quiz
b. Identify vocabulary and key features related to spreadsheets. CCR1, CCR2, T3, T6	b. Use presentation equipment to introduce terminology, buttons, and functions of spreadsheet software. Model for students how to use the hover feature of Excel 2007, which gives details of each button when the mouse hovers over it. Have students label screen captured images of each Tab of the Excel Ribbon. Have students to use the Excel Help Glossary to define terms. Use games such as "I have. . . Who has" or online games to practice vocabulary before testing. Note: If your classroom has cinder block walls, you can make one wall look like a spreadsheet.	b. Teacher Observation, Graded Quiz, and/or Hotspot test.
c. Use basic spreadsheet formulas, functions and commands (sort, filter, edit, format, insert, delete, circle graphs, pie graphs, line graphs, etc.). T4, T6	c. Have students complete performance exercises that require them to use basic spreadsheet formulas, functions, and commands as directed. Teach addition, subtraction, multiplication, and division formulas. Teach functions such as Sum, Max, Min, Count, Average, Round, and so forth. Use teacher-made screen captured videos of performance exercises to assist struggling students.	c. Teacher-Created Checklist

Competency 2: Apply spreadsheet applications. DOK2, CS2, CS6, CS7, CS9, CS10, CS11, CS15		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Discuss how spreadsheets are used in everyday life. CCSL1, CCSL2, CCSL3, T2, T6	a. Use Socratic questioning to discuss with the class how spreadsheets are used in everyday life and the benefit of computerized spreadsheets over paper spreadsheets.	a. Discussion Rubric
b. Brainstorm scenarios where spreadsheets would be beneficial. CCSL1, CCSL2, CCSL3, T2, T6	b. Split students into small groups and assign each group an occupation or scenario in which a spreadsheet could be used to simplify or organize a desired task. Have students to brainstorm in small groups how spreadsheets are used to simplify the given occupation or scenario. Have each group present their results to the class and use Socratic questioning to continue the brainstorming with the class.	b. Group Participation Rubric

c. Create and manipulate a spreadsheet in meaningful situations. [T1, T2, T4, T5, T6]	c. Have students to create a spreadsheet based on a student's mock grades. The spreadsheet should determine the student's current average and predict what scores would be needed on a final exam in order to increase or decrease one letter grade.	c. Gradebook Activity Rubric

Performance Task

Performance Task Title

In this activity, you will each set up and run your own business—a lemonade stand. You will make all the business decisions about materials, costs, and how to make the lemonade. You will run the lemonade stand, record your data, and then analyze how much money you made or lost.

Attachments for Performance Task

Lemonade Stand Performance Task
Lemonade Stand Data Collection Sheet (http://download.microsoft.com/download/d/7/8/d78cc600-8ff5-431e-a1a0-11a4238b548d/DataCollectionSheet.xls)
Lemonade Stand Daily Guide
Performance Task Rubric (Located in Appendix A)

Unit Resources

Books:

Shelly, G. B., & Quasney, J. J. (2011). *Microsoft Office Excel 2010: complete*. Boston, MA: Course Technology, Cengage Learning.

Web sites:

Agnew, S., Archer, P., Fulgham, F., Huddleston, B., La Foe, T., & Tomlinson, J. (2009, May 12). Mail merge in Microsoft Office Word 2007. *YouTube - Broadcast Yourself*. Retrieved September 07, 2011, from http://www.youtube.com/watch?v=3ylYITE0ayU

Calculating profits from selling virtual lemonade. (n.d.). *Calculating Profits from Selling Virtual Lemonade*. Retrieved September 2, 2011, from http://www.microsoft.com/education/en-us/teachers/plans/Pages/calculating_profits.aspx

Microsoft Excel: quick tips and tricks. (n.d.). *Microsoft at Work*. Retrieved September 2, 2011, from http://www.microsoft.com/atwork/skills/tipsexcel.aspx.

Unit 9: Social Media

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Understand social networking and how to use it properly.
- Explore online behaviors and discuss their consequences.
- Discuss and create solutions for dealing with a cyberbullying situation.
- Investigate the pros and cons of social media.

Essential Questions

- Why is social media so important?
- What ways can you use social media in school?
- Why is important to follow Internet safety rules?
- Why do people cyberbully?

Vocabulary

Identify and review the unit vocabulary.

Application
Blog
Facebook
Forum
MySpace
Podcast
Smartphone
Social Media
Twitter
Web 2.0
Wiki

Suggested Learning Experiences

Competency 1: Investigate the history of social media. DOK1, CS1, CS3, CS6, CS7, CS8, CS9, CS10, CS11, CS14, CS16		
Suggested Performance Indicators	**Suggested Teaching Strategies** **Most will be done with PowerPoint since most schools block social media Web sites.*	**Suggested Assessment Strategies**
a. Discover how social media evolved in our society. CCR1, CCR2, T3	a. Use the Internet and screen shots to research and show how different social media sites started. (Facebook, Twitter, MySpace, etc.) Students can use multimedia software to present their information. *Be sure to acknowledge age restrictions on these sites.	a. Presentation Rubric
b. Investigate the different types of social media (Facebook, Twitter, Google+, texting, With, MyYearbook, MySpace, etc.). CCR1, CCR2, T3	b. Create a WebQuest for students to gather details about the different types of social media. They should investigate the rise and possible fall of the media, why it succeeded or failed, and the pros and cons of each of them. It would be interesting to hear the students' opinions of which they believe is the best.	b. Graded WebQuest
c. Discuss the pros and cons of social media. CCSL1, CCSL2, CCSL3, T2, T4, T5, T6	c. Students can break in to two groups to make lists of the pros and cons. Then discuss. Students can discuss the pros and cons of having access to social networking in school and what it would take to change this.	c. Discussion Rubric
d. Discuss safety precautions and security settings available on social media. CCSL1, CCSL2, CCSL3, T2, T4, T5, T6	d. Use a PowerPoint and "screen shots" of Facebookand other social media sites to show how to set security settings. Define "friend" in terms of social media. How many you should have, who should they be, and who you can trust. Internet Rules: Students create posters with their "version" of Internet rules. Cyberbullying: Have students role-play bullying face-to-face. Then discuss how it is done in social media. Create a list of tips to help teens avoid cyberbullying situations.	d. Project Rubric

Competency 2: Evaluate the effects of social media on society. DOK2, CS1, CS3, CS6, CS7, CS8, CS9, CS10, CS11, CS14, CS16		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Investigate either a positive or a negative effect of social media. CCR1, CCR2, T3, T5	a. Have the students brainstorm what they think are positive and negative effects of social media. Use the Internet to research the positive and negative effects of social media.	a. Teacher Observation
b. Report on how social media has positively and/or negatively affected society. CCSL4, CCSL5, CCSL6, CCW6, T1, T2, T3, T4,	b. Students can create a multimedia presentation discussing the positive or negative effects on society. If students find positive ways social media can be used in schools, they may write research-based business	b. Presentation Rubric

T5, T6	letters to the school board, IT directors, or principals on how social media can be used in schools.	

Performance Task

Performance Task Title

None

Attachments for Performance Task

None

Unit Resources

Journals:

Murray, C. (2008). Schools and social networking: Fear or education. *Synergy*, *6*(1), 8-12.

Web sites:

100 ways you should be using Facebook in your classroom. (n.d.). *Online College.org: The Top Accredited Online Colleges*. Retrieved September 02, 2011, from http://www.onlinecollege.org/2009/10/20/100-ways-you-should-be-using-facebook-in-your-classroom/

50 reasons to invite Facebook into your classroom. (n.d.). *MindShift. KQED.* Retrieved September 02, 2011, from http://mindshift.kqed.org/2011/08/50-reasons-to-invite-facebook-into-your-classroom/

Common sense with Phineas and Ferb. (n.d.). *ABC Cable Networks*. Retrieved September 02, 2011, from http://tv.disney.go.com/disneychannel/commonsense/

Edmodo: Secure Social Learning Network for Teachers and Students. (n.d.). Retrieved September 02, 2011, from http://www.edmodo.com

Fisher, M. (2011). The new at risk student: AsCD EDge blog post. *ASCD EDge*. Retrieved September 02, 2011, from http://edge.ascd.org/_The-New-AT-RISK-Student/blog/4960063/127586.html

Lesson plans and student activity sheets. (n.d.). *CyberSmart! Student Curriculum*. Retrieved September 02, 2011, from http://cybersmartcurriculum.org/cyberbullying/lessons/

NSTeens: Making Safer Online Choices. (n.d.). Retrieved September 02, 2011, from http://www.nsteens.org/videos/cyberbullying/

Social Networking ProCon.org. (n.d.). Retrieved September 02, 2011, from http://socialnetworking.procon.org/

Unit 10: Career Exploration (incorporate throughout course)

Understandings and Goals

Enduring Understandings
In this unit, the student will:

- Understand the 16 national career clusters.
- Identify themselves with one or more of the 16 national career clusters.

Essential Questions

- What types of jobs are available for me?
- What training is necessary for the job I think I am best suited for?
- How can I prepare now for the job I want in the future?

Vocabulary

Identify and review the unit vocabulary.

Career
Career Cluster
Certificates
Education
IHL (Institutes of Higher Learning)
Postsecondary Education
Salary
Secondary Education
Skills
Training
Wage
Workforce

Suggested Learning Experiences

Competency 1: Explore careers in the 16 national career clusters. DOK1, CS1, CS2, CS3, CS4, CS5, CS6, CS7, CS8, CS9, CS10, CS11, CS12, CS13, CS14, CS15, CS16		
Suggested Performance Indicators	**Suggested Teaching Strategies**	**Suggested Assessment Strategies**
a. Investigate the 16 national career clusters. CCR1, CCR2, T3, T4	a. Visit the following site to investigate the 16 National Career Clusters: http://www.careertech.org/career-clusters/glance/clusters.html Students should explore all, but choose one that they believe they are interested in to report on. The students should either create a written report or a multimedia presentation to present their findings to the class. (Be sure that all 16 career clusters are represented so that all students understand all 16.)	a. Report Rubric and Presentation Rubric
b. Use *Choices Explorer* and *Choices Planner* to complete the 8th Grade Guideway. (Can also complete 7th Grade Guideway if incomplete.) T2, T3, T4, T5, T6	b. Bridges login: https://access.bridges.com/auth/login.do?sponsor=2 Please see the following information about setting up your professional account with Mississippi Bridges: "The PAAK (Professional Account Access Key) allows educators to create an account for both the products, Mississippi Choices Explorer and Choices Planner. This allows you administrative rights to view students' portfolios, reports, and more. You may call the 1-800-281-1168 Customer Service number and request their PAAK code for your school. Free online webinars and tutorials, on-site workshops, effective curriculum integration and more are available at http://www.bridges.com/training. The product tutorials there are very useful in getting started."	b. Completed Guideway
c. Create program of study based on career interests and strengths. T1, T2, T3, T4, T5, T6	c. Have students research colleges that offer programs in the field that they have determined they will go into. Based on this research, students should fill out a program of study that maps out all of the courses they will take in their four years of high school in order to prepare for the career they have chosen.	c. Complete Program of Study

Performance Task

Performance Task Title

No performance task necessary.

Unit Resources

Web sites:

Bridges transitions: Product training options. (n.d.). *Bridges Transitions - Online Education Planning, Career Exploration, and High School/College Test Prep Resources*. Retrieved September 02, 2011, from http://www.bridges.com/training

16 Career clusters. (n.d.). *CTE - Career Technical Education: CTE Online*. Retrieved September 02, 2011, from http://www.careertech.org/career-clusters/glance/clusters.html

XAP Corporations Login. (n.d.). Retrieved September 02, 2011, from https://access.bridges.com/auth/login.do?sponsor=2

Student Competency Profile

Student's Name: _____

This record is intended to serve as a method of noting a student's 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.

Unit 1: Orientation and Ethics		
	1.	Identify course expectations, school policies, program policies, and safety procedures related to Technology Foundations. DOK1, CS3, CS5, CS14
	2.	Explore personality development and the classroom environment in relation to interpersonal skills, others, and the world of work. DOK1, CS3, CS8, CS14
	3.	Understand the ethical, cultural, and societal issues related to technology. DOK2, CS1, CS3, CS8, CS14, CS16
Unit 2: Internet Tools in the Classroom		
	1.	Demonstrate proficiency in telecommunication applications. DOK2, CS3, CS8, CS9, CS11, CS13, CS16
	2.	Interact with others using various telecommunication methods. DOK3, CS3, CS8, CS9, CS11, CS14
Unit 3: Computing Fundamentals		
	1.	Demonstrate understanding of technology systems. DOK2, CS1, CS7, CS11
	2.	Demonstrate knowledge of computers and technology when purchasing equipment. DOK3, CS2, CS7, CS9, CS11, CS12, CS13
Unit 4: Windows and Operating Systems		
	1.	Discover various operating systems. DOK1, CS9, CS10, CS11
Unit 5: Keyboarding		
	1.	Perform keyboarding applications. DOK2, CS8, CS9, CS10, CS11, CS13
Unit 6: Word Processing/Desktop Publishing		
	1.	Perform basic word processing applications. DOK2, CS6, CS8, CS9, CS10, CS11
	2.	Apply word processing applications. DOK2, CS1, CS6, CS8, CS9, CS10, CS11, CS15
	3.	Perform desktop publishing applications. DOK2, CS1, CS6, CS8, CS9, CS10, CS11, CS15
	4.	Apply desktop publishing applications. DOK2, CS1, CS6, CS8, CS9, CS10, CS11, CS15
Unit 7: Multimedia Presentations		
	1.	Demonstrate basic multimedia presentation applications. DOK2, CS9, CS10, CS11
	2.	Create a multimedia presentation. DOK3, CS6, CS7, CS8, CS9, CS10, CS11, CS13, CS15
Unit 8: Spreadsheet Applications		
	1.	Perform spreadsheet applications. DOK2, CS7, CS9, CS10, CS11
	2.	Apply spreadsheet applications. DOK2, CS2, CS6, CS7, CS9, CS10, CS11, CS15

Unit 9: Social Media		
	1.	Investigate the history of social media. DOK1, CS1, CS3, CS6, CS7, CS8, CS9, CS10, CS11, CS14, CS16
	2.	Evaluate the effects of social media on society. DOK2, CS1, CS3, CS6, CS7, CS8, CS9, CS10, CS11, CS14, CS16
Unit 10: Career Exploration (incorporate throughout course)		
	1.	Explore careers in the 16 national career clusters. DOK1, CS1, CS2, CS3, CS4, CS5, CS6, CS7, CS8, CS9, CS10, CS11, CS12, CS13, CS14, CS15, CS16

Appendix A: Activities and Rubrics

Alphabetized list of activities and rubrics follows.

Appropriate Use Skit Rubric

Student's Name_____

Date_____

	25 Excellent	22 Good	20 Average	18 Poor	15 Failing	Score
1. Describe the given incident.	Clearly described incident sequentially as given with no missing details.	Incident completely described, but lacks clarity or not sequential.	Incident described with minor details missing.	Incident is described with major details missing.	Did not describe the incident at all	
2. State the rule(s) broken, and name the document(s) where the rule is located.	Correct rule stated clearly, and the correct location of the rule given.	Correct rule stated unclearly, and the correct location of the rule given.	Correct rule stated, but location of the rule not stated correctly.	The rule stated does not apply to the given incident.	Did not state a rule broken.	
3. Name the party that is protected by the rule (student, teacher, school, district, etc.) and how they are protected.	Named all parties protected by the rule and clearly described how they are protected.	Named all parties protected by the rule but unclearly described how they are protected.	Named all parties protected by the rule but did not describe how they are protected.	Named some but not all parties protected by the rule.	Did not name any party being protected.	
4. Describe how the incident could have been handled to prevent the rule infraction.	Clearly and sequentially described how the incident could be realistically handled to avoid infraction.	Described how the incident could be realistically handled to avoid infraction with lack of clarity or sequential order.	Described how the incident could be realistically handled to avoid infraction with little or no clarity or sequential order.	Unrealistically described how the incident could be handled to avoid infraction.	Did not describe how the incident could have been avoided.	
					Total	

Teacher Comments: _____

_____

_____

_____

_____

_____

Dining Menu Project

Student's Name_____

Date_____

You are the manager for a new themed restaurant. You must create a dining menu for your customers that lets people know what you have to offer but also entertains them by reflecting your restaurant's theme. Using the basic menu provided, you must use only the items listed and come up with creative names and descriptions for the food items. (For example, if I used a golf theme, I might have the Driver Burger with Tees as the creative name and "Half pound hamburger loaded with tomato, pickles, onions, and our special green sauce. Served with tasty curly fries." as the description.) You can "enhance" an item (specify toppings, special sauce, etc.). The menu may use black and two other colors. No additional colors may be used. No entire page shading may be used. Be sure to use borders for enhancement. The menus may be printed in color or on colored paper. Your menu will be graded based on originality, creativity, and accuracy.

Appetizers

Cheese Sticks $2.75
Toasted Ravioli $3.00
Potato Skins $3.00
Hot Wings $3.50

Soups and Salads

Regular Tossed Salad $2.75
Caesar Salad $3.25
Grilled Chicken Salad $3.75
Shrimp Salad $4.50
Baked Potato Soup $1.75
Chicken Noodle Soup $1.75
Chili $2.00

Sandwiches

Pork Barbecue Sandwich and Chips $4.00
Beef Barbecue Sandwich and Chips $4.15
Hamburger and French Fries $4.50
Chicken and French Fries $5.50
Hoagie Sandwich $3.75

Entrees

(Meal comes with choice of french fries, baked potato, mashed potato, or rice; choice of cole slaw or mixed vegetables; and bread.)
8 oz. Sirloin Steak $7.50
10 oz. Ribeye Steak $8.00
12 oz. T-bone Steak $9.50
16 oz. New York Strip Steak $10.50
8 oz. Grilled Chicken Breast $8.00
Fried Chicken Strips $7.50
Country Fried Steak $7.50
Fried Shrimp Dinner $7.50

Desserts
Cheesecake (plain) $2.00
Cheesecake (w/topping) $2.50
Apple Pie $2.75
Fudge Brownie $2.75
Ice Cream Sundae $2.50

Beverages
Coke, Diet Coke, Sprite, Mr. Pibb, Minute Maid Orange $1.25 (unlimited refills)
Tea and Lemonade $1.25 (unlimited refills)
Coffee $1.00 (unlimited refills)

Dining Menu Rubric

Name of Restaurant: _____

Slogan: _____

Manager: _____

Required ⬇ Areas ⬇	*Oh, Great Job!* *10 points*	*Pretty Good Stuff* *8-9 points*	*Better Be More Careful!* *0-7 points*
Organization	Menu is divided into sections and sections are labeled and stand out.	Menu is divided into sections, but items may be difficult to locate.	Menu is not divided into appropriate sections.
Features	Advanced features are used: drop shadow, reverse text, page border, dot leaders, appropriate fonts, font formatting, use of two colors and black, etc.	Only a few advanced features are used; more would have contributed to the overall design and/or theme.	Very few advanced features are used
Content	All menu items are listed, and creative names and descriptions are used.	Minor content issues, such as a description or two that are not "good enough," exist, but the majority is okay.	Some menu items have been left out, no descriptions are used, or descriptions are not adequate. Other items are added or prices are wrong.
Graphics	A page border is used, good clear graphics are used, and graphics complement menu in a balanced way.	Good graphics are used but may not be placed well or may be overused or underused.	Graphics are of low quality, do not match each other, or do not contribute to theme. No page border is used.
Grammar/ Spelling	No problems. Looks great!	Some minor errors in spelling or word use.	Major errors or several minor errors which detract from the finished product.
Originality/ Creativity	Menu looks unique, name of restaurant is original, theme is worked into all aspects of the menu, and menu looks appealing; slogan is located on menu.	Minor errors with regard to theme, but overall pretty good stuff.	Menu looks gaudy, copied, or very plain and shows little creativity or planning.
Professionalism	Menu looks "real."	Menu looks okay, but some areas need a little improvement.	Menu does not look professional or looks more like a flyer or newsletter than a dining menu.

Comments:

- Before turning in your final copy, have two peers check your menu and provide feedback on the drafts. Then, turn in a black and white copy to me for general feedback on layout and theme.
- This sheet must be turned in when you turn in your final color copy. Points will be deducted for projects without a grade sheet!

FINAL GRADE:_____

Discussion Rubric

Student's Name_____

Date_____

	5	4	3	2	1	Score
Quality of Comments	Contains timely and appropriate comments that are thoughtful and reflective; responds respectfully to other student's remarks, and provokes questions and comments from the group.	Volunteers comments, most of which are appropriate and reflect some thoughtfulness; leads to other questions or remarks from student and/or others.	Volunteers comments but lacks depth,;may or may not lead to other questions from students.	Struggles but participates; occasionally offers a comment when directly questioned, but may simply restate questions or points previously raised. May add nothing new to the discussion or provoke no responses or question.	Does not participate and/or only makes negative or disruptive remarks; comments are inappropriate or off topic.	
Resource/Document Reference	Makes clear reference to text being discussed and connects it to to other texts or reference points from previous readings and discussions.	Has done the reading with some thoroughness, but may lack some detail or critical insight.	Has done the reading; lacks thoroughness of understanding or insight.	Has not read the entire text and cannot sustain any reference to it in the course of discussion.	Unable to refer to text for evidence or support of remarks.	
Active Listening	Posture, demeanor, and behavior clearly demonstrate respect and attentiveness to others.	Listens to others most of the time, but does not stay focused on other's comments (too busy formulating own) or loses continuity of discussion. Shows consistency in responding to the comments of others.	Listens to others some of the time, but does not stay focused on other's comments (too busy formulating own) or loses continuity of discussion. Shows some consistency in responding to the comments of others.	Drifts in and out of discussion, listening to some remarks while clearly missing or ignoring others.	Disrespectful of others when they are speaking; behavior indicates total non-involvement with group or discussion	
Total						

Grade Book Activity Rubric

Student's Name_____

Date_____

	25 Excellent	22 Good	20 Average	18 Poor	15 Failing	Score
1. Data input	All of the numerical data was input accurately with no misspelled words in the text.	All of the numerical data was input accurately, but with minor misspelled words in the text.	Small amount of numerical data was missing or incorrect, or major mistakes found in text.	Much of the data was missing or incorrect.	Several items of numerical data was missing or incorrect.	
2. Appropriate use of Alignment formatting	Correctly used all of the following with no mistakes: Merge and Center, Wrap Text, Orientation, and Vertical and Horizontal Alignment.	Correctly used all of the following with minor mistakes: Merge and Center, Wrap Text, Orientation, and Vertical and Horizontal Alignment.	Correctly used three of the following: Merge and Center, Wrap Text, Orientation, and Vertical and Horizontal Alignment.	Correctly used two of the following: Merge and Center, Wrap Text, Orientation, and Vertical and Horizontal Alignment.	Did not effectively use more than one of the following: Merge and Center, Wrap Text, Orientation, and Vertical and Horizontal Alignment.	
3. Appropriate use of Font formatting	Correctly used all of the following with no mistakes: Font Size, Font Color, Bold Font, Fill Color, and Cell Border.	Correctly used all of the following with minor mistakes: Font Size, Font Color, Bold Font, Fill Color, and Cell Border.	Correctly used three of the following: Font Size, Font Color, Bold Font, Fill Color, and Cell Border.	Correctly used two of the following: Font Size, Font Color, Bold Font, Fill Color, and Cell Border.	Did not effectively use more than one of the following: Font Size, Font Color, Bold Font, Fill Color, and Cell Border.	
4. Appropriate use of Functions and formulas.	Student found the correct average of categories and used an appropriate formula to find average before exam and final average.	Student found the correct average of categories but failed to find formula for either average before exam or final average.	Student found the correct average of categories, but failed to find average before exam and final average.	Student did not use formulas or functions but did type correct answers into the cells.	Did not give an answer at all.	
					Total	

Group Participation Rubric

Student's Name_____

Date_____

Project Title:

	1 point	2 points	3 points	4 points	Total
Group Discussions	Rarely contributed to discussions of the group	Contributed good effort to discussions of the group	Contributed great effort to discussions of the group	Contributed exceptional effort to discussions of the group	
On-Task Behavior	Exhibited on-task behavior inconsistently	Exhibited on-task behavior some of the time	Exhibited on-task behavior most of the time	Exhibited on-task behavior consistently	
Helping Others	Did not assist other group members	Seldom assisted other group members	Occasionally assisted other group members	Assisted other group members	
Listening	Ignored ideas of group members	Seldom listened to ideas of group members	Occasionally listened to ideas of group members	Always listened to ideas of group members	
				Total Score	

Journal Rubric

Student's Name_____

Date_____

Use this rubric to assess students' abilities to complete the journal activities assigned for this lesson. Share this assessment with students prior to completing the journal-writing lessons, so they will understand how they will be assessed. You can also use the rubric as a basis for discussion and feedback with each student.

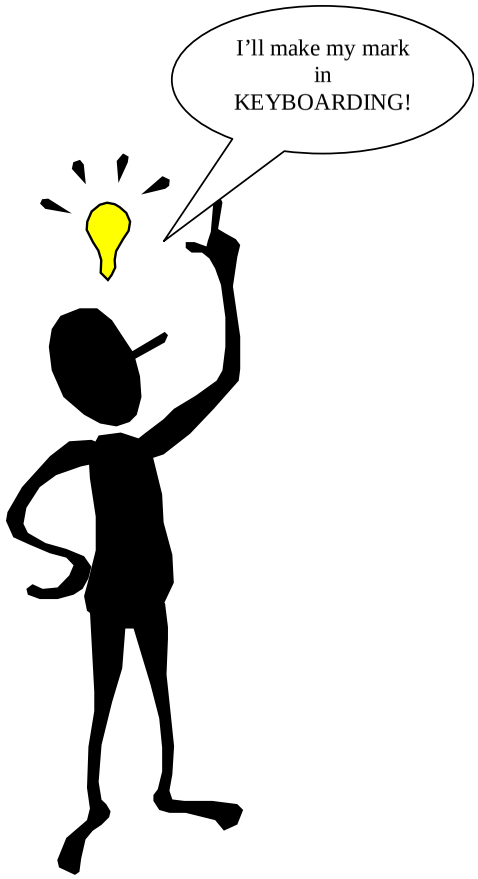
1. The student writes journal responses in complete sentences. _____
2. The student writes five or more sentences to answer questions. _____
3. The student responds to questions by self-questioning, retelling, predicting, or assuming the role of a character. _____
4. The student's experiences and opinions are clear. _____
5. The student works with a peer to share journal responses and to develop a combined response when requested. _____

TOTAL: _____

EXCELLENT (4)	VERY GOOD (3)	FAIR (2)	POOR (1)
The student completes the task with no major errors. The student demonstrates a full understanding of the concepts.	The student completes the task with only a few major errors and some minor errors. The student demonstrates a strong understanding of the concepts.	The student completes the task with some major errors and many minor errors. The student has difficulty understanding the concepts.	The student fails to complete the task. The student does not understand the concepts.

Teacher Comments:

Technology Foundations



Fourth Nine Weeks

SKILLBUILDING

Skillbuilding for Speed Lessons A-T
Due:
Skillbuilding for Accuracy Lessons A-T
Due:

Keyboarding Grading Scale (Part 1)

NWAM	4th 9 WKS %
1	20%
2	25%
3	30%
4	35%
5	40%
6	45%
7	50%
8	55%
9	60%
10	62%
11	64%
12	68%
13	70%
14	74%
15	76%
16	79%
17	81%
18	83%
19	85%
20	87%
21	89%
22	91%
23	93%
24	94%
25	95%
26	96%
27	97%
28	98%
29	99%
30	100%

Keyboarding Grading Scale (Part 2)

First Nine Weeks		Second Nine Weeks		Third Nine Weeks	
NWAM	1st 9 WKS %	NWAM	2nd 9 WKS %	NWAM	3rd 9 WKS %
1	50%	1	35%	1	27%
2	55%	2	40%	2	32%
3	60%	3	45%	3	37%
4	65%	4	50%	4	42%
5	70%	5	55%	5	47%
6	75%	6	60%	6	52%
7	80%	7	65%	7	57%
8	83%	8	70%	8	63%
9	85%	9	71%	9	67%
10	88%	10	73%	10	70%
11	89%	11	76%	11	72%
12	90%	12	80%	12	75%
13	94%	13	84%	13	77%
14	96%	14	88%	14	79%
15	98%	15	92%	15	80%
16	100%	16	95%	16	81%
17	100%	17	98%	17	82%
18	100%	18	100%	18	86%
19	100%	19	100%	19	88%
20	100%	20	100%	20	90%
21	100%	21	100%	21	92%
22	100%	22	100%	22	94%
23	100%	23	100%	23	96%
24	100%	24	100%	24	98%
25	100%	25	100%	25	100%
26	100%	26	100%	26	100%
27	100%	27	100%	27	100%
28	100%	28	100%	28	100%
29	100%	29	100%	29	100%
30	100%	30	100%	30	100%

Lemonade Stand Daily Guide

Day 1 Secret Recipe!

1. Go to http://coolmath-games.com/lemonade/index.html to play the Lemonade game and take detailed notes about what the customers think of your lemonade. Change the recipe until you are completely proud of your product. Once you choose your recipe, you will be using it for the duration of the project.
2. Take notes about the other trends in the game.
   - Do the prices stay the same each day for various products?
   - How does the weather affect sales?
   - What happens to the products that you do not use?
   - Did you ever run out of any products?
3. Keep all of your notes for making future decisions!

Day 2-3 Setting the Price!

1. Log on to:
   http://www.microsoft.com/education/en-us/teachers/plans/Pages/calculating_profits.aspx
2. Down load the *Excel data collection sheet*, from the bottom of the green rectangle.
3. Now you are going to enter your secret lemonade recipe that you developed on day one. You will input the recipe in cells I5, J5, and K5, but pay attention to what is asked for in K5. The recipe in the game asks for ice cubes per cup, but the data collections sheet asks for ice per pitcher. **We are going to estimate that there are 20 cups per pitcher**. So multiply the number of ice cubes listed in your recipe times 20, and list it in J5.
4. Now you are going to copy the data that you entered on row five down through row 14. This data will not change for the 10 days that you play the game.
5. Name Sheet 1, Daily Sales Data.
6. Name Sheet 2, Cost per Cup.
7. Log on to the game again at http://coolmath-games.com/lemonade/index.html.
8. Go to the store to get all three prices for each of the items. You will enter the data on the Cost per Cup Sheet as shown. The cost per item found in column C is found by dividing the cost per pack in column B, by the items per pack in column A.
9. To figure the cost to produce one cup of lemonade, we must find the amount of each item used in each cup and multiply that by the unit cost of each item. Because there are three different prices for each item and each of those prices change daily, we can only come up with estimates. We will estimate the most expensive and least expensive cost per cup of lemonade to establish a cost range. Here is how:

	A	B	C
1	Unit Cost		
2	Cups		
3	Cups per pack	Cost per pack	Cost per cup
4	25	$ 0.80	$ 0.0320
5	50	$ 1.50	$ 0.0300
6	100	$ 50.00	$ 0.5000
7	Lemons		
8	Lemons per pack	Cost per pack	Cost per lemon
9	10	$ 0.94	$ 0.0940
10	30	$ 2.20	$ 0.0733
11	75	$ 4.15	$ 0.0553
12	Sugar		
13	Cups per pack	Cost per pack	Cost per Cup
14	8	$ 0.69	$ 0.0863
15	20	$ 1.54	$ 0.0770
16	48	$ 3.40	$ 0.0708
17	Ice		
18	Cubes per pack	Cost per pack	Cost per Cube
19	100	$ 0.88	$ 0.0088
20	250	$ 2.02	$ 0.0081
21	500	$ 3.55	$ 0.0071

	Recipe					
	Item	Amount per pitcher	Amount/Cup	Cost Per Unit	Cost Per Cup	
Upper Limit of Expenses	Cups	20	1	$ 0.0320	$ 0.03200	
	Lemons	5	0.25	$ 0.0940	$ 0.02350	
	Cups of Sugar	10	0.5	$ 0.0863	$ 0.04315	
	ice cubes	240	12	$ 0.0088	$ 0.10560	
					$ 0.20425	Total Cost per Cup of Lemonade
	Item	Amount per pitcher	Amount/Cup	Cost Per Unit	Cost Per Cup	
Lower Limit of Expenses	Cups	20	1	$ 0.0300	$ 0.03000	
	Lemons	20	1	$ 0.0553	$ 0.05530	
	Sugar	5c	0.25	$ 0.0708	$ 0.01770	
	ice cubes	240	12	$ 0.0071	$ 0.08520	
					$ 0.18820	Total Cost per Cup of Lemonade

- Amount per pitcher – Everyone must use 20 cups per pitcher, and the rest comes from your recipe listed on Sheet 1.
- Amount /Cup – Divide the amount per pitcher data by 20 because we estimate that there are about 20 cups per pitcher of lemonade.
- Cost per Unit – Use the most expensive or least expensive unit cost found in Step 8 for each item (most expensive for Upper Limit of Expenses and least expensive for Lower Limit of Expenses).
- Cost Per Cup – Multiply the amount/cup times the cost per unit.
- Total Cost per Cup of Lemonade – Find the sum of Cost per Cup column.

10. Now that you have estimated the price range for producing one cup of lemonade, you can make an informed decision about the price you will charge. What is the lowest price you can charge, even on a rainy day, without losing money on each cup sold? Keep this in mind when setting your sale price each day.
11. Save your work!

Day 4 Running the Business!

1. Open the Data Collection Sheet to Sheet 1, Daily Sales Data, and preview the data that you will be saving at the end of each day of sales.
2. Log into the game and use the recipe you developed on Day 1 to make as much money as you can. You may want to review your Day 1 notes about weather and unused materials before you start the game.
3. Play the game for 10 days and record your data for each day.
4. Once you have recorded all the data from Day 10, click the Bankrupt button and record the End of Season Report data.
5. Save your work.

Day 5 Evaluating the Business!

1. Open the Data Collection Sheet.
2. Complete one of the tasks below. Answer all of the given questions in a Word document.

- Add Conditional Formatting Data Bars to the data under Popularity. Do the data bars show a trend in popularity? If so, describe the trend. What does this trend mean for the future of the lemonade business if it continues? Add a different color of Conditional Formatting Data Bars to the data under Customer Satisfaction. Do the trends in customer satisfaction match the trends in popularity each day? Why or why not? What is the difference in these pieces of data?
- Insert a new column to the right of the potential customer column, and add the heading "Percent of Potential Customers Served." Use the Total Cups Sold and the Potential Customers data to figure the percentage of potential customers served for each day. Filter the data in ascending or descending order based on the percentage of potential customers served and determine which column of data correlates most with the data in Percent of Potential Customers. Explain why.
- Create a Scatter Plot that compares daily High Temperature to Total Cups Sold. Add a title and label each axis. Write a paragraph describing the trend shown in the chart.

Lemonade Stand Performance Task

(obtained from http://www.microsoft.com/education/en-us/teachers/plans/Pages/calculating_profits.aspx)

Student's Name_____

Date_____

Objectives

- Students will employ technology in the development of strategies for solving problems in the real world.
- Students will understand the basic concept of profits and losses.

Learning outcomes

- Students will purchase ingredients for making lemonade.
- Students will determine the cost to produce one cup of lemonade.
- Students will assess weather forecasts and customer behavior patterns to determine how much lemonade to make each day.
- Students will use an Office Excel spreadsheet to collect data and record outcomes.
- Students will write a report reflecting on their data and the outcomes.

Lesson procedure

Introduction

When you run your own business, you have to make a lot of important decisions based on math. You have to calculate how many supplies to buy, analyze the data you collect from your sales figures every day, and make decisions about the future based on the conclusions you draw from your information.

In this activity, you will each set up and run your own business—a lemonade stand. You will make all the business decisions about materials, costs, and how to make the lemonade. You will run the lemonade stand, record your data, and then analyze how much money you made or lost.

Remember that even if the lemonade you sell tastes really good, you may not always sell a lot. Sometimes the weather affects how much lemonade people purchase. You will get to see a weather forecast, but remember that weather forecasts are not always accurate.

Before you start playing, you will read directions that will show you how to start and operate your lemonade stand. As you run your business, you will use an Office Excel data collection spreadsheet to record your decisions, your data, and your outcomes. When the game is over, you will write a report about the reasons you made a profit or the reasons you did not.

Student activities

Follow the steps below to guide your students through this lesson plan. See student guide link at right.

- Step 1: "Run your lemonade stand and record your data."
- Step 2: "Analyze your profits and losses."

Lesson extension activities

- Ask students to use one of the charts in Office Excel to help them visualize and analyze their data.
- Ask students to write a strategy handbook for running a successful lemonade stand.
- Ask students to create an ad campaign to attract more customers to their business.

Conclusion

Assess students on their data collection and their final reflection. They should use mathematical terms and draw conclusions by reviewing their data.

Calculating profits from selling lemonade

Student guide

In this activity, you will each set up and run your own business—a lemonade stand. You will make all the business decisions about materials, costs, and how to make the lemonade. You will run the lemonade stand, record your data, and then analyze how much money you made or lost.

Step 1
Run your lemonade stand and record your data
Read all the directions in this Student Guide carefully before you begin.
On the Internet, go to the Web site: http://www.coolmath-games.com/lemonade/. Read the Introduction and make sure you understand the decisions you will have to make about pricing, quality control, inventory control, purchasing supplies, and weather to run your stand.
Open the Office Excel data collection sheet your teacher has saved to your classroom computer. You will use this spreadsheet to record the decisions you make about how to run your lemonade stand, the data you collect, and the outcomes of your game. Name the spreadsheet (include your name in the spreadsheet name) and save it.
Before you begin collecting your data, you might want to experiment with how the lemonade stand runs for a few days. This will give you an idea of how the decisions you make affect how much lemonade you sell each day. You can click the **Help** button at any time for advice on how to buy supplies, adjust the lemonade recipe, and so on.
When you are ready to stop experimenting and start collecting data, click the **Bankrupt**! button to see your results.
Once you have seen the results of your experiment, start the game over and start recording your decisions and data.

In your Office Excel spreadsheet, record:
- All of the decisions you are making (about supplies, quality control, and so on)
- Your results

Run your stand and record your data for 7, 14, or 30 days.
- Make sure that you record all the data for each day.
- Make sure that you record the decisions you made each day as well as the results.

After the final day, click the **Bankrupt!** button to see your final results. Did you make a profit?

Save your Office Excel spreadsheet.

Step 2
Analyze your profits and losses

Open a new Microsoft Office Word document. Write the answers to the following questions, and be sure to use mathematical terms in your answers:
- How did you do? Do you think your lemonade stand was successful?
- List several reasons why you made a profit or why you did not make a profit.
- What did you learn from playing the game?
- Look over your data. Do you see any patterns?
- What advice would you give to someone who wants to be successful at playing this game?

Save your Office Word document.

Lemonade Stand Performance Task Rubric

Student's Name_____

Date_____

	25 Excellent	22 Good	20 Average	18 Poor	15 Failing	Score
1. Approximating the unit cost of each item	The cost per item is accurately figured for each item at each quantity given using a formula, and appropriate formatting is used to display data.	The cost per item is accurately figured for each item at each quantity given, but no formula was used; appropriate formatting is used to display data.	The cost per item is accurately figured for each item at each quantity given using a formula, but appropriate formatting was not used to display data.	The cost per item is accurately figured for each item at each quantity given, but no formula was used; appropriate formatting was not used to display data.	The cost per item was not accurately figured.	
2. Approximating the cost of producing 1 cup of lemonade	The cost of producing one cup of lemonade is accurately figured for the upper and lower limits of expenses using formulas, and appropriate formatting is used to display data.	The cost of producing one cup of lemonade is accurately figured for the upper and lower limits of expenses, but no formulas were used; appropriate formatting is used to display data.	The cost of producing one cup of lemonade is accurately figured for the upper and lower limits of expenses using formulas, but appropriate formatting was not used to display data.	The cost of producing one cup of lemonade is accurately figured for the upper and lower limits of expenses, but no formulas were used; appropriate formatting was not used to display data.	The cost of producing one cup of lemonade was not accurately figured.	
3. Running the business and collecting daily sales data	All daily data is presented consistently, the recipe is the same each day, and the end of season report is complete.	Daily data is presented with minor inconsistencies or less than four missing items, the recipe is the same each day, and the end of season report is complete.	Daily data is presented with major inconsistencies or four to six missing items, the recipe is the same each day, and the end of season report is complete.	Daily data is presented inconsistently, the recipe is the same each day, and the end of season report is not complete.	All daily data is presented inconsistently, the recipe is not the same each day, and the end of season report is not complete.	
4. Evaluating and analyzing the business data	The data is manipulated and formatted appropriately to show links between two separate pieces of data, and the questions are answered completely in a manner that shows deep understanding of how the pieces of data are linked.	The data is manipulated and formatted appropriately to show links between two separate pieces of data, and the questions are answered completely, but in a manner that shows only an understanding of the individual pieces of data.	The data is manipulated and formatted appropriately to show links between two separate pieces of data, but the questions are answered without complete thoughts.	The data is manipulated and formatted appropriately to show links between two separate pieces of data, but no attempt is made to answer the questions.	The correct data is chosen, but it is not manipulated or formatted properly to show a link between the two separate pieces of data.	
					Total	

Personality Activity

Student's Name_____

Date_____

Instructions:

1. Open Internet Explorer.

2. Enter the URL www.41q.com in the address bar.

3. Read the instructions under the question box. You will click to select your answer. If you do not understand what the question is asking, use the Help button that is at the right of the Start Over button.

4. When you have answered all questions, minimize Internet Explorer.

5. Open Microsoft Word.

6. Minimize Word.

7. Restore the Personality test in Internet Explorer.

8. Highlight your results through the number line, right click and choose Copy.

9. Restore Word.

10. Right Click and Paste your results.

To add your name to the document:

1. Click View from the Menu Bar.
2. Select Headers and Footers.
3. Enter your first and last name, Tab to center, and enter "41Questions"
4. Close the Header/Footer Box.

To Save the Document:

1. Go to File, and select Save As:
2. Save in will change to Stu_01 of fs1.
3. The filename will be 41questions_your first initial last name.

11. Print the document.

Close Internet Explorer and Microsoft Word.

Presentation Rubric

Student's Name_____

Date_____

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score Obtained
Content	Addressed all assignment components	Addressed all but one assignment component	Omitted two assignment components	Omitted more than two assignment components	
Detail	Fully addressed all assignment components	Fully addressed most assignment components	Partially addressed most assignment components	Partially addressed few assignment components	
Accuracy	No grammatical, typographical, spelling, or punctuation errors	One to two grammatical, typographical, spelling, or punctuation errors	three to five grammatical, typographical, spelling, or punctuation errors	More than five grammatical, typographical, spelling, or punctuation errors	
Clarity	Logical, orderly sequence	Somewhat logical sequence	Confusing sequence	No evidence of order or sequence	
Design	Excellent design selection and usage	Adequate design selection or one or two design errors	Inadequate design selection or three to five design errors	Poor design selection or more than five design errors	
Appeal	Very appealing; excellent use of animation, transitions, sound, etc.	Somewhat appealing; adequate use of animation, transitions, sound, etc.	Not very appealing; limited use of animation, transitions, sound, etc.	Not appealing; very limited or no use of animation, transitions, sound, etc.	
				Score	

Teacher Comments:

Program of Study

Name _____

MSIS ID _____

School/College/University _____

Career Pathway:

This Pathway can serve as a guide, along with other career planning materials. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This should be customized with course titles and appropriate district and high school graduation requirements. Refer to the latest version of the approved courses for the secondary schools of Mississippi at the MDE's Web site. *www.mde.k12.ms.us/acad/id/curriculum/Revised%20SY2011-2012%20Approved%20Courses%20Manual%20complete.pdf*

LEVELS	GRADE	English/ Language Arts	Math	Science	Social Studies/ Sciences	Other Required Courses Electives	Pathway Related Electives	
	Interest Inventory Administered and Pathway Selected for all Learners						CTE	SECONDARY
SECONDARY	7							
	8							
	9							
	10							
	11							
	College Placement Assessments-Academic/Career Advisement Provided							
	12							
	Articulation/Dual Credit Transcripted-Postsecondary courses may be taken/moved to the secondary level for articulation/dual credit purposes.							
POSTSECONDARY	Year 13						Continue courses pertinent to the pathway selected.	
	Year1 4							
	Year 15	Continue courses in the area of specialization.						
	Year 16						**NOTE: To view postsecondary CTE articulation:** ***www.sbcjc.cc.ms.us/pdfs/ct/StatewideArtManual2010.pdf***	

DRAFT : 8/25/2011

Project Rubric

Student's Name_____

Date_____

	Exemplary 4 points	Accomplished 3 points	Developing 2 points	Beginning 1 point	Score Obtained
Content	Addressed all assignment components	Addressed all but one assignment component	Omitted two assignment components	Omitted more than two assignment components	
Detail	Fully addressed all assignment components	Fully addressed most assignment components	Partially addressed most assignment components	Partially addressed few assignment components	
Accuracy	No grammatical, typographical, spelling, or punctuation errors	One or two grammatical, typographical, spelling, or punctuation errors	Three to five grammatical, typographical, spelling, or punctuation errors	More than five grammatical, typographical, spelling, or punctuation errors	
Design	Excellent design selection and usage	Adequate design selection or one or two design errors	Inadequate design selection or three to five design errors	Poor design selection or more than five design errors	
Appeal	Very appealing; excellent use of animation, transitions, sound, etc.	Somewhat appealing; adequate use of animation, transitions, sound, etc.	Not very appealing; limited use of animation, transitions, sound, etc.	Not appealing; very limited or no use of animation, transitions, sound, etc.	
				Score	

Teacher Comments:

Report Rubric

Student's Name_____

Date_____

	EXEMPLARY (4)	ACCOMPLISHED (3)	DEVELOPING (2)	BEGINNING (1)	SCORE
Topic	Directly relevant	Somewhat relevant	Remotely related	Totally unrelated	
Organization	Good organization; events are logically ordered; sharp sense of beginning and end	Organized; events are somewhat jumpy	Some organization; events jump around; start and end are unclear	Not organized; events make no sense	
Quality of Information	Supporting details specific to subject	Some details do not support the subject	Details are somewhat sketchy	Unable to find specific details	
Grammar and Spelling	All grammar and spelling are correct	Only one or two errors	More than two errors	Very frequent grammar and/or spelling errors	
Interest Level	Vocabulary is varied; supporting details are vivid	Vocabulary is varied; supporting details need work	Vocabulary is constant; details lack "color"	Needs descriptive words	
Neatness	Word processed or typed; clean and neatly bound in a report cover; illustrations provided	Legible writing; well-formed characters; clean and neatly bound in a report cover; illustrations provided	Legible writing; some ill-formed letters; print too small or too large; papers stapled together	Illegible writing; loose pages	
Timeliness	Report handed in on time	Up to two days late	Up to one week late	Report handed in more than one week late	
				Total	

Teacher Comments:

Technique Grader

Student's Name_____

Date_____

_____Sitting in relaxed position

_____Feet flat on the floor

_____Wrists low, but off keyboard

_____Wrists are far enough away from body

_____Fingers curved and upright

_____Strikes each key with proper finger

_____Quick-snap strokes with immediate return

_____Strikes space bar quickly with right thumb

_____Returns quickly with pinky without lifting other fingers

_____Keeps eyes on the screen

_____/10 TOTAL

_____ GRADE

Appendix B: Glossary

Unit 1

Access Controls: a system which enables an authority to control access to areas and resources in a given physical facility or computer-based information system

Antivirus Software: software used to prevent, detect, and remove malware, including computer viruses, worms, and Trojan horses

Authorized Access: policy definition phase where users are granted permission to use computer hardware and/or software

Authorized Use: Use of information that is expressly allowed under a licensing agreement

Boot Sector: a portion of a hard disk, floppy disk, or similar data storage device that contains code for booting programs (usually, but not necessarily, operating systems) stored in other parts of the disk

Computer Ethics: a branch of practical philosophy which deals with how computing professionals should make decisions regarding professional and social conduct

Computer Virus: a software program capable of reproducing itself and usually capable of causing great harm to files or other programs on the same computer

Cyber Ethics: a broad philosophical concept that goes beyond simple right and wrong and looks towards creating safe and healthy online environments

Cybercrime: any crime that involves a computer and a network, where the computers may or may not have played an instrumental part in the commission of a crime

Decryption: the activity of making clear or converting from code into plain text

Encryption: the activity of converting data or information into code

Ethics: moral principles that govern a person's or group's behavior

EULA (End User License Agreement): A software license agreement is a contract between the "licensor" and purchaser of the right to use software

Hacker: a person who uses computers to gain unauthorized access to data

Learning Style: one of several approaches or ways of learning that are presumed to allow an individual to learn best

Network: a number of interconnected computers, machines, or operations

Password: a string of characters that allows access to a computer, interface, or system

Personality: the combination of characteristics or qualities that form an individual's distinctive character

PIN (Personal Identification Number): a number allocated to an individual and used to validate electronic transactions

Piracy: the unauthorized use or reproduction of another's work

Privacy: the ability to control information one reveals about oneself over the Internet and the ability to control who can access that information

Rescue Disk: a disk that is used to salvage data from damaged, failed, corrupted, or inaccessible secondary storage media when it cannot be accessed normally

Site License: a type of software license and a legal agreement that allows users to run the software package simultaneously

Software License: a legal instrument governing the usage or redistribution of software

Trojan Horse: a program designed to breach the security of a computer system while ostensibly performing some innocuous function

Unauthorized Access/Use: viewing private accounts, messages, files or resources when one has not been given permission from the owner to do so

Username: an identification used by a person with access to a computer network

Worm: a self-replicating program able to propagate itself across a network, typically having a detrimental effect

Unit 2

Address Bar: normally located near the top of your web browser window; displays the Web address (or URL) of the page you are currently viewing and contains an edit field where you enter the Web address that you are trying to reach

Attachment: a file sent "attached" to an e-mail message; may be a picture, text file, audio, video, or executable program. Attachments should be checked for viruses with virus detection software.

Back Button: aends your browser to the last page that you viewed.

Browser: a software program with a graphical user interface that is used to access the World Wide Web. Browsers include Internet Explorer, Firefox, Netscape, and Opera, to name a few.

Domain: the part of an internet address naming convention that consists of a sequence of characters separated by dots. The original five domain abbreviations (last three characters in URL or address) are .edu (Educational institutions), .com (Commercial businesses), .gov (U.S. government), .mil (The U.S. military), .org (Other organizations), and .net (Network/Internet Service Providers).

Download: the process of transferring files from another computer to another via a modem or local network.

E-mail (electronic mail): the process of sending messages via a computer network. Most e-mail software programs use IMAP (Internet Message Access Protocol) to send and receive e-mail from and to an e-mail server.

Favorites or Bookmarks: a listing in your browser that displays websites that have been saved for future visits

Forward Button: available only after using the Back button; will send browser forward one page.

History: a record of Web pages that you have visited in the past. Most web browsers allow you to view and manage your history from within the browser itself.

Home Button: will send the browser directly to the designated homepage

Homepage: the web page that opens up when you start your browser, or the “opening” Web page of a Web site.

Hyperlink: hypertext which, when clicked, connects you to another web page. The web page can be on the same site or a different site.

Hypertext: text on an HTML document that has been organized to provide links between other elements of the same document or other documents on the Web. Selecting a hypertext link (usually by clicking the mouse pointer on the text itself) will display the linked information.

Internet: the vast collection of interconnected networks that all use the TCP/IP protocols and that evolved from the ARPANET of the late 1960s and early 1970s—a worldwide network of computer networks.

IP address: a computer’s unique Internet address, which usually looks like this: 128.223.142.14. Most computers also have a “domain name” assigned to them, which represents cryptic IP addresses with easier-to-remember words.

Print Button: will let you print the Web page that you are currently viewing

Refresh/Reload Button: forces the browser to download the latest copy of the page or to restart the downloading process

Ribbon: the area at the top of an application window that houses all of the tools that can be used in that application

Search Box: located at the top of most browsers; allows you to search the internet by typing in keywords and pressing Enter

Search Engine: provides the ability for users to search the Web by typing in a search terms. Results can include pages, documents, or images.

Stop Button: will stop the browser during the process of downloading a page

Tab: an area on the ribbon that houses a related set of tools that can be used in a particular application

URL (Uniform Resource Locator): the address for a specific file (page or site) on the Web

Window: a section of a display screen that can be created for viewing information from another part of a file or from another file

World Wide Web (WWW or the Web): the interactive portion of the Internet, an information protocol that is used to send and receive information. Information on the Web includes multimedia (movies, pictures, sounds, etc.), hypertext (links to other internet resources), or text (documents, files, etc.).

Unit 3

Application Software: computer software designed to help the user to perform singular or multiple related specific tasks.

CD (Compact Disc): a small plastic disc on which music or other digital information is stored and from which the information can be read using reflected laser light

CD-R (Compact Disc, Recordable): a compact disc on which you can write only once and thereafter is read-only memory

CD-RW (Compact Disc, Rewritable): a compact disc format that allows repeated recording on a disc

CPU (Central Processing Unit): the computer chip primarily responsible for executing instructions

Disk Drives: a device that allows a computer to read from and write to computer disks

Hard Drive: a high-capacity, self-contained storage device containing a read–write mechanism plus one or more hard disks inside a sealed unit

Hardware: the machines, wiring, and other physical components of a computer or other electronic system

Keyboard: a panel of keys that operates a computer or typewriter

Monitor: a television-like object that displays images generated by a computer

Motherboard: a printed circuit board containing the principal components of a microcomputer or other device with connectors into which other circuit boards can be slotted.

Mouse: a small hand-held device that is dragged across a flat surface to move the cursor on a computer screen, typically having buttons that are pressed to control computer functions

Operating System Software: software, consisting of programs and data, that runs on computers, manages computer hardware resources, and provides common services for execution of various application software

Printer: a machine, especially one linked to a computer, for printing text or pictures onto paper

RAM (Random Access Memory): the most common computer memory which can be used by programs to perform necessary tasks while the computer is on

ROM (Read-Only Memory): memory whose contents can be accessed and read but cannot be changed

Software: the programs and other operating information used by a computer

USB (Universal Serial Bus): a connection technology for attaching peripheral devices to a computer, providing fast data exchange

Webcam: a video camera that inputs to a computer connected to the Internet so that its images can be seen by Internet users

Unit 4

Address Bar: a widget in a Web browser that either reflects the current URL or accepts typing-in a target URL

ALT + F4: shortcut key for nearly all Windows operating systems to close the active window or application

ALT + Tab: the common name for a keyboard shortcut on Microsoft Windows used for switching between top-level windows without using the mouse; also called “Task Switcher”

Chevron: reveal drop-down menus, provide access to editing tools, etc.

Close: make a data file inaccessible after use so that it is securely stored until required again

Control Menu Icon: button to press to display a list of commonly used Microsoft Windows menus

Maximize/Restore: button to press to make a window fit the contents of the screen; when pressed again, the window will go back to its original size.

Minimize: causes a window to disappear without closing the program or file or discarding any data

Ruler: measurement aids found along two edges of the layout display window

Sizing Handle: adjustment handles are the small boxes appearing on the corners and edges of a "selected control" that let you change the size and shape of the control

Title Bar: a horizontal bar at the top of a window, bearing the name of the program and typically the name of the currently active document

Vertical/Horizontal Scroll Bars: a long thin section at the edge of a computer display by which material can be scrolled using a mouse

Unit 5

Accuracy: degree of freedom from errors measured from zero; usually expressed as one error, two errors, and so forth

Arrow Keys: keys on a keyboard that move the cursor left, right, up or down

Backspace Key: moves the cursor to the left one space at a time

Caps Lock: key on the keyboard that is used to key all capital letters without holding the shift key

Centering: placing text so that half of the text is on each side of the center point

Cursor: lighted point on a display screen where the next character of space can be entered

Default: preset condition in software that controls margin, line spacing, and tab settings. Operators may override default settings.

Delete Key: a key used to erase characters once they are highlighted

Document: text, especially formatted, such as a numbered list, memo, letter, report, outline, title page, or reference page

Editing: arranging, changing, and correcting existing text; editing includes proofreading but is not limited to it.

Enter: ends a line or paragraph

Error: any misstroke of a key; also any variation between source copy and displayed or printed copy; departure from acceptable format.

ESC key: key on the keyboard that is used to exit a program

Function Keys: set of keys (F1, F2, etc.) used alone or with Shift, Ctrl, and Alt keys to issue software commands

GWAM (Gross Words a Minute): measure of the rate of keying speed; GWAM = total standard five-stroke words keyed divided by the time required to key those words

Home Row Keys: the keys A S D F J K L; designated as the keys from which all keystrokes are made

Key: to strike buttons for printing or displaying copy; also called “enter,” “keyboard,” “input,” and “type”

Keyboard: arrangement of keys on a device attached to a computer or typewriter; also the act of keying or typing

Letter Keys: keys on the keyboard which contain the letters of the alphabet

Numeric Keypad: arrangement of figure keys and special keys, such as +, -, and =, on the right side of most keyboards; used for keying all number copy

Proofreading: process of comparing copy on a display screen or paper to the original copy and correcting (or marking for correction) errors; one of the editing steps

QWERTY Keyboard: the most common keyboard arrangement, named for the first letters across the top row

Rate: speed of doing a task; see gross words a minute (GWAM) and net-production rate a minute (N-PRAM)

Return: software feature that moves the cursor to the left margin of the next line; inserted automatically (soft) when text exceeds the line length, and inserted manually (hard) to force software to begin a new line

Shift Keys: keys that make occasional capital letters or allow you to get the character on the top of a key

Space Bar: key on the keyboard that spaces the cursor forward one space at a time and produces a blank space when pressed

Tab: causes the cursor (or print point) to skip across the display screen (or paper) to a place set by the operator or the default tab settings

Technique: keyboard operator’s form or keying style

Word Wrap: text automatically moves to the next line when it reaches the right margin

Unit 6

Alignment: the arrangement of text and images on a page

Bold: the type format in which the letter is made to appear extra thick and dark

Buffer: portion of computer memory that temporarily holds data

Bullet: a character or symbol used to itemize lists or emphasize points

Clip Art: collection of ready-made drawings and illustrations available in different topics

Clipboard: a temporary storage area that holds text and graphics

Copy: to duplicate data or text

Crop: the act of “cutting” part of a graphic image

Cut: removing text from one location in a document with the intention of inserting it at another

Default: a preset condition of the software that the software uses if no other option is selected

Delete: to remove an item or value from a document

Desktop Publishing: the ability to make the printed word more attractive using the computer and specialized software

Enter: key that, when pressed, moves the text insertion point to the start of the next line

Find: command that initiates a search for a specific item in a document

Font: a print typeface or style of characters displayed on the screen or printed to paper

Format: to put selected text or an entire document into a given form; the form itself

Gutter: the white space between columns

Handles: the “dots” surrounding a selected object indicating that it is in edit mode

I-Beam: indicates current position where text will be inserted or corrections can be made

Import: the process of bringing text or graphics into an application from another source

Insert: to place characters in between existing characters

Italics: text format in which characters take on a slanted appearance

Justification: the placement of text relative to the margins

Layout: the overall appearance of a publication

Margin: border on the left, right, top, or bottom of a document

Masthead: the information included in the top portion of a newsletter

Orphan: a single line of a paragraph which appears at the top of a page or column

Paste: the process of returning text or graphics to the page after they have been cut or copied

Replace: a command that exchanges one word or symbol for another

Ruler: graphic device from which a user can set tabs and margins and perform other functions

Sans Serif: plain font, without hooks or lines, used for headlines

Save As: command that stores the document currently in memory to disk under a new name

Serif: font that adds hooks or lines to the shape of the letter

Spacebar: oblong key at the bottom of a keyboard which, when pressed, adds a space at the text insertion point

Spacing: distance between characters, lines, fields, or cells in a document

Spell Checker: word processing option that checks a document for spelling errors and offers correcting alternatives

Tab: key that, when pressed, moves the text insertion point to a different place in the current line

Type (Font) Size: height of a text character measured in points or pixels

Underline: text format in which selected text is underlined

White Space: the blank space between text and graphics on a page

Widow: a single line of a paragraph which appears at the bottom of a page or column

Word Wrap: a word processing feature in which text is automatically continued from one line of the text to the next

Unit 7

Animations: visual effects, such as graphics, titles or bullet points, applied to individual items on the slide

Articulation: the formation of clear and distinct sounds in speech

Audience: the people giving or likely to give attention to something

Background: the area or scenery behind the main object of contemplation, especially when perceived as a framework for it

Body Language: the process of communicating nonverbally through conscious or unconscious gestures and movements

Chat: any kind of communication over the Internet; primarily meant to refer to direct one-on-one chat or text-based group chat

Clips: a short sequence taken from a movie or broadcast

Color Scheme: a planned combination of colors for a presentation

Content: information made available by a Web site or other electronic medium

Diagram: a simplified drawing showing the appearance, structure, or workings of something; a schematic representation

Effect: an impression produced in the mind of a person

Eye Contact: a meeting of the eyes between two people that expresses meaningful nonverbal communication

File Extensions: a group of letters occurring after a period in a file name, indicating the purpose or contents of the file

Flip Chart: a large pad of paper bound so that each page can be turned over at the top to reveal the next

Handouts: a worksheet, leaflet, or pamphlet that is given out (usually by hand) for a certain use

Import Files: to transfer (as files or data) from one format to another usually within a new file

Key Point: important facts or pieces of information which must be included in a presentation

Knowledge of Subject Narration: being aware of all topics in a presentation so that your audience fully understands your points

Multimedia: using more than one medium of expression or communication

Overlay: a graphical computer display that can be superimposed on another

Presentation: a demonstration or display of a product or idea

Slides: single pages of a presentation

Sound Effects: sound other than speech or music made artificially for use in a presentation

Story Board: graphic organizers such as a series of illustrations or images displayed in sequence for the purpose of previsualizing a motion picture, animation, motion graphic or interactive media sequence, including Web site interactivity

Tile: arrange (two or more windows) on a computer screen so that they do not overlap

Transition: the visual movements as one slide changes to another

Views: the visual appearances or images of something when looked at in a particular way

Visual Aid: an item of illustrative matter, such as a film, slide, or model, designed to supplement written or spoken information so that it can be understood more easily

Unit 8

Activate: to make a chart sheet or worksheet the active, or selected, sheet. The sheet that you activate determines which tabs are displayed. To activate a sheet, click the tab for the sheet in the workbook.

Active cell: the selected cell in which data is entered when you begin typing. Only one cell is active at a time. The active cell is bounded by a heavy border.

Active sheet: the sheet that you're working on in a workbook. The name on the tab of the active sheet is bold.

Argument: the values that a function uses to perform operations or calculations. The type of argument a function uses is specific to the function. Common arguments that are used within functions include numbers, text, cell references, and names.

Autoformat: a built-in collection of cell formats (such as font size, patterns, and alignment) that you can apply to a range of data. Excel determines the levels of summary and detail in the selected range and applies the formats accordingly.

Axis: a line bordering the chart plot area used as a frame of reference for measurement. The y-axis is usually the vertical axis and contains data. The x-axis is usually the horizontal axis and contains categories.

Border: a decorative line that can be applied to worksheet cells or objects, such as charts, pictures, or text boxes. Borders distinguish, emphasize, or group items

Cell: a box formed by the intersection of a row and column in a worksheet or a table, in which you enter information

Cell Reference: the set of coordinates that a cell occupies on a worksheet. For example, the reference of the cell that appears at the intersection of column B and row 3 is B3.

Chart Area: the entire chart and all its elements.

Chart Sheet: a sheet in a workbook that contains only a chart. A chart sheet is beneficial when you want to view a chart or a PivotChart report separately from worksheet data or a PivotTable report.

Column: appear vertically and are identified by letters at the top of the worksheet window

Column Heading: the lettered or numbered gray area at the top of each column. Click the column heading to select an entire column. To increase or decrease the width of a column, drag the line to the right of the column heading.

Comparison Criteria: a set of search conditions that is used to find data. Comparison criteria can be a series of characters that you want to match, such as "Northwind Traders," or an expression, such as ">300."

Comparison Operator: a sign that is used in comparison criteria to compare two values. The six standards are = (equal to), > (greater than), < (less than), >= (greater than or equal to), <= (less than or equal to), and <> (not equal to).

Conditional Format: a format, such as cell shading or font color, that Excel automatically applies to cells if a specified condition is true

Constant: a value that is not calculated. For example, the number 210 and the text "Quarterly Earnings" are constants. An expression, or a value resulting from an expression, is not a constant.

Criteria: conditions you specify to limit which records are included in the result set of a query. For example, the following criterion selects records for which the value for the Order Amount field is greater than 30,000: Order Amount > 30000.

Data Label: a label that provides additional information about a data marker, which represents a single data point or value that originates from a datasheet cell

Data Marker: a bar, area, dot, slice, or other symbol in a chart that represents a single data point or value that originates from a datasheet cell. Related data markers in a chart constitute a data series.

Data Points: individual values that are plotted in a chart. Related data points make up a data series. Data points are represented by bars, columns, lines, slices, dots, and other shapes. These shapes are called data markers.

Data Series: related data points that are plotted in a chart. Each data series in a chart has a unique color or pattern and is represented in the chart legend. You can plot one or more data series in a chart. Pie charts have only one data series.

Data Source: a stored set of "source" information used to connect to a database. A data source can include the name and location of the database server, the name of the database driver, and information that the database needs when you log on.

Database: a collection of data related to a particular subject or purpose. Within a database, information about a particular entity, such as an employee or order, is categorized into tables, records, and fields.

Default Startup Workbook: the new, unsaved workbook that is displayed when you start Excel. The default startup workbook is displayed only if you have not included other workbooks in the XLStart folder.

Dependents: cells that contain formulas that refer to other cells. For example, if cell D10 contains the formula =B5, cell D10 is a dependent of cell B5.

Embedded Chart: a chart that is placed on a worksheet rather than on a separate chart sheet. Embedded charts are beneficial when you want to view or print a chart or a PivotChart report with its source data or other information in a worksheet.

Excel Table: formerly known as an Excel list; allows you to create, format, and expand an Excel table to organize the data on your worksheet.

Expression: a combination of operators, field names, functions, literals, and constants that evaluates to a single value. Expressions can specify criteria (such as Order Amount>10000) or perform calculations on field values (such as Price*Quantity).

External Data: data that is stored outside of Excel. Examples include databases created using Access, dBASE, SQL Server, or a Web server.

External Data Range: a range of data that is brought into a worksheet but that originates outside of Excel, such as in a database or text file. In Excel, you can format the data or use it in calculations as you would any other data.

External Reference: a reference to a cell or range on a sheet in another Excel workbook, or a reference to a defined name in another workbook.

Fill Handle: the small black square in the lower-right corner of the selection. When you point to the fill handle, the pointer changes to a black cross.

Filter: to display only the rows in a list that satisfy the conditions you specify. You use the autofilter command to display rows that match one or more specific values, calculated values, or conditions.

Font: a graphic design applied to all numerals, symbols, and alphabetic characters; also called “type” or “typeface.” Arial and Courier New are examples of fonts. Fonts usually come in different sizes, such as 10 point, and various styles, such as bold.

Formula: a sequence of values, cell references, names, functions, or operators in a cell that together produce a new value. A formula always begins with an equal sign (=).

Formula bar: a bar at the top of the Excel window that you use to enter or edit values or formulas in cells or charts; displays the constant value or formula stored in the active cell

Formula Palette: a tool that helps you create or edit a formula and also provides information about functions and their arguments

Function (Office Excel): a prewritten formula that takes a value or values, performs an operation, and returns a value or values. Use functions to simplify and shorten formulas on a worksheet, especially those that perform lengthy or complex calculations.

Grid: a set of intersecting lines used to align objects.

Gridlines in Charts: lines you can add to a chart that make it easier to view and evaluate data. Gridlines extend from the tick marks on an axis across the plot area.

Item: a subcategory of a field in PivotTable and PivotChart reports. For instance, the field "Month" could have items such as "January," "February," and so on.

Justify: to adjust horizontal spacing so that text is aligned evenly along both the left and right margins. Justifying text creates a smooth edge on both sides.

Legend: a box that identifies the patterns or colors that are assigned to the data series or categories in a chart

Locked Field or Record: The condition of a record, field, or other object in a database that permits it to be viewed but not changed (read-only) in Query

Merged Cell: a single cell that is created by combining two or more selected cells. The cell reference for a merged cell is the upper-left cell in the original selected range.

Microsoft Office Excel: the spreadsheet program in Microsoft Office

Moving Border: an animated border that appears around a worksheet range that has been cut or copied. To cancel a moving border, press ESC.

Name Box: box at left end of the formula bar that identifies the selected cell, chart item, or drawing object. To name a cell or range, type the name in the Name box and press ENTER. To move to and select a named cell, click its name in the Name box.

Operand: items on either side of an operator in a formula. In Excel, operands can be values, cell references, names, labels, and functions.

Operator: a sign or symbol that specifies the type of calculation to perform within an expression. There are mathematical, comparison, logical, and reference operators.

Page break: divider that breaks a worksheet into separate pages for printing. Excel inserts automatic page breaks based on the paper size, margin settings, scaling options, and the positions of any manual page breaks that you insert.

Page Break Preview: worksheet view that displays the areas to be printed and the locations of page breaks. The area to be printed is displayed in white, automatic page breaks appear as dashed lines, and manual page breaks appear as solid lines.

Paste Area: the target destination for data that has been cut or copied by using the Office Clipboard.

Plot Area: in a 2-D chart, the area bounded by the axes, including all data series; in a 3-D chart, the area bounded by the axes, including the data series, category names, tick-mark labels, and axis titles

Print Area: one or more ranges of cells that you designate to print when you do not want to print the entire worksheet. If a worksheet includes a print area, only the print area is printed.

Print Titles: row or column labels that are printed at the top of or on the left side of every page on a printed worksheet

Range: two or more cells on a sheet; a group of selected cells. The cells in a range can be adjacent or nonadjacent.

Range Reference: identifies the range, which is the cell in its upper-left corner and the cell in its lower-right corner, separated by a colon (e.g., A3:C5)

Read-Only: a setting that allows a file to be read or copied but not changed or saved

Refresh (external data range) : to update data from an external data source. Each time you refresh data, you see the most recent version of the information in the database, including any changes that were made to the data.

Relative Reference: in a formula, the address of a cell based on the relative position of the cell that contains the formula and the cell referred to. If you copy the formula, the reference automatically adjusts. A relative reference takes the form A1.

Remote Reference: a reference to data stored in a document from another program

Rows: appear horizontally and are identified by numbers on the left side of the worksheet window

Row Heading: the numbered gray area to the left of each row. Click the row heading to select an entire row. To increase or decrease the height of a row, drag the line below the row heading

Scroll Lock: allows the arrow keys to scroll the active sheet rather than make a different cell active. To turn scroll lock off or on, press the SCROLL LOCK key.

Select: to highlight a cell or range of cells on a worksheet. The selected cells will be affected by the next command or action.

Select All button: the gray rectangle in the upper-left corner of a datasheet where the row and column headings meet. Click this button to select all cells on a datasheet.

Shared Workbook: a workbook set up to allow multiple users on a network to view and make changes at the same time. Each user who saves the workbook sees the changes made by other users.

Sheet Tab: where the name of each worksheet appears

Sort Order: a way to arrange data based on value or data type. You can sort data alphabetically, numerically, or by date. Sort orders use an ascending (1 to 9, A to Z) or descending (9 to 1, Z to A) order.

Spreadsheet: a grid of rows and columns in which you enter text, numbers, and the results of calculations

Template: a workbook that you create and use as the basis for other similar workbooks. You can create templates for workbooks and worksheets. The default template for workbooks is called Book.xlt. The default template for worksheets is called Sheet.xlt.

Text Box: a rectangular object on a worksheet or chart in which you can type text

Tick Marks and Tick-Mark Labels: tick marks are small lines of measurement, similar to divisions on a ruler, that intersect an axis. Tick-mark labels identify the categories, values, or series in the chart.

Title: descriptive text that is automatically aligned to an axis or centered at the top of a chart

Value Axis: a chart axis that displays scaled numerical values.

Workbook: a spreadsheet program file that you create in Excel. A workbook contains worksheets of rows and columns in which you can enter and calculate data.

Worksheet: a computerized spreadsheet; the primary document that you use in Excel to store and work with data; also called a “spreadsheet.” A worksheet consists of cells that are organized into columns and rows; a worksheet is always stored in a workbook.

Workspace File: a file that saves display information about open workbooks so that you can later resume work with the same window sizes, print areas, screen magnification, and display settings. A workspace file does not contain the workbooks themselves.

Wrap: in text, to break a line of text automatically on reaching a margin or object and continue the text on a new line

Unit 9

Application: (also referred to as an "App") a program that is accessed via Web browser over the Internet. Many apps are available for purchase in a mobile format for smart phones and devices.

Blog: a Web site, maintained by an individual or group, with commentary, descriptions of events, or other media such as graphics or video. "Blog" can also be used as a verb, meaning to maintain or add content to a blog.

Facebook: a free-access social networking website that is operated and privately owned by Facebook, Inc. Users can join networks organized by city, workplace, school, and region to connect and interact with other people. People can also add friends and send them messages, as well as update their personal profiles to notify friends about themselves.

Forum: an online equivalent of a bulletin board. People participating in an online forum can build bonds around certain topics or areas of interest.

MySpace: a social networking Web site with an interactive, user-submitted network of friends, personal profiles, blogs, groups, photos, music, and videos

Podcast: a digital audio or visual file that can be downloaded to a computer or mobile device. Usually podcasts are in serial form, with a consistent host or format. Podcasts are not limited to Apple's iPod or iPhone and can be downloaded using a variety of free multimedia programs, including iTunes, Windows Media Player and Winamp.

Smartphone: any cell phone that has the ability to connect to the Internet. Some examples include the iPhone, Blackberry and Droid.

Social Media: used to describe various websites or other forms of technology where people can connect and interact with one another and share information

Twitter: a free social networking and microblogging service that enables its users to send and read other users' updates known as "tweets." Tweets are text-based posts of up to 140 characters in length which are displayed on the user's profile page and delivered to other users (known as "followers") who have subscribed to them. Web 2.0: a perceived second generation of Web development and design that facilitates communication, secure information sharing, interoperability, and collaboration on the Internet. Web 2.0 concepts have led to the development and evolution of Web-based communities and applications, such as social-networking sites, video-sharing sites, wikis, and blogs.

Wiki: a collection of Web pages designed to enable anyone with access to contribute or modify content. The best example is Wikipedia.

Unit 10

Career: an occupation undertaken for a significant period of a person's life and with opportunities for progress

Career Cluster: a concept that provides students with a context for studying traditional academics and learning the skills specific to a career and provides U.S. schools with a structure for organizing or restructuring curriculum, offering classes composed around a common theme, such as interest

Certificates: a document serving as evidence or as written testimony, as of status, qualifications, privileges, or the truth of something

Education: information about or training in a particular field or subject

IHL (Institutions of Higher Learning): refers to an institution beyond the high school level, such as academies, universities, colleges, seminaries, institutes of technology, and certain other collegiate-level institutions, such as vocational schools, trade schools, and career colleges, that award academic degrees or professional certifications.

Postsecondary Education: tertiary education, also referred to as third stage, third level, and post-secondary education, is the educational level following the completion of a school providing a secondary education, such as a high school, secondary school, university-preparatory school, or gymnasium.

Salary: a fixed regular payment, typically paid on a monthly or biweekly basis but often expressed as an annual sum, made by an employer to an employee.

Secondary Education: education beyond the elementary grades; provided by a high school or college preparatory school

Skills: particular abilities to perform tasks well

Training: the action of teaching a person a particular skill or type of behavior

Wage: A fixed regular payment, typically paid on a daily or weekly basis, made by an employer to an employee, usually a manual or unskilled worker.

Workforce: the people engaged in or available for work, either in a country or area or in a particular company or industry

Appendix C: 21st Century Skills[1]

21st Century Crosswalk for Technology Foundations											
	Units	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
21st Century Standards											
CS1		X		X			X			X	X
CS2				X					X		X
CS3		X	X							X	X
CS4											X
CS5		X									X
CS6							X	X	X	X	X
CS7				X				X	X	X	X
CS8		X	X			X	X	X		X	X
CS9			X	X	X	X	X	X	X	X	X
CS10					X	X	X	X	X	X	X
CS11			X	X	X	X	X	X	X	X	X
CS12				X							X
CS13			X	X		X		X			X
CS14		X	X							X	X
CS15							X	X	X		X
CS16		X	X							X	X

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

[1] *21st century skills.* (n.d.). Washington, DC: Partnership for 21st Century Skills.

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, resource consumption rate, etc.).
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 D: Common Core Standards

Common Core Crosswalk for Technology Foundations

	Units	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
Common Core Standards											
CCR1		X	X	X			X	X	X	X	X
CCR2			X	X			X	X	X	X	X
CCR3											
CCR4											
CCR5											
CCR6											
CCR7		X									
CCR8			X								
CCR9											
CCR10											
CCW1											
CCW2											
CCW3											
CCW4		X									
CCW5		X									
CCW6		X	X				X			X	
CCW7				X							
CCW8			X	X			X				
CCW9				X							
CCW10											
CCSL1		X	X	X				X	X	X	
CCSL2				X	X			X	X	X	
CCSL3		X	X					X	X	X	
CCSL4		X		X			X	X		X	
CCSL5							X	X		X	
CCSL6							X	X		X	
CCL1						X	X				
CCL2						X	X				
CCL3		X				X					
CCL4											
CCL5											
CCL6											

English Language Arts (6-12)

College and Career Readiness Anchor Standards for *Reading*

Key Ideas and Details

CCR1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCR2: Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

CCR3: Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

Craft and Structure

CCR4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

CCR5: Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

CCR6: Assess how point of view or purpose shapes the content and style of a text.

Integration of Knowledge and Ideas

CCR7: Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.

CCR8: Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

CCR9: Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

Range of Reading and Level of Text Complexity

CCR10: Read and comprehend complex literary and informational texts independently and proficiently. Mathematics (High School)

College and Career Readiness Anchor Standards for *Writing*

Text Types and Purposes

CCW1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.

CCW2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

CCW3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

Production and Distribution of Writing

CCW4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCW5: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

CCW6: Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Research to Build and Present Knowledge

CCW7: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

CCW8: Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

CCW9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

Range of Writing

CCW10: 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

CCSL1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

CCSL2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSL3: Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Presentation of Knowledge and Ideas

CCSL4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

CCSL5: Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

CCSL6: Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

College and Career Readiness Anchor Standards for *Language*

Conventions of Standard English

CCL1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCL2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Knowledge of Language

CCL3: 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.

Vocabulary Acquisition and Use

CCL4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

CCL5: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCL6: Acquire and use accurately a range of 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.

Mathematics (High School)

Number and Quantity

The Real Number System

CCM1: Extend the properties of exponents to rational exponents.

CCM2: Use properties of rational and irrational numbers.

Quantities

CCM3: Reason quantitatively and use units to solve problems.

The Complex Number System

CCM4: Perform arithmetic operations with complex numbers.

CCM5: Represent complex numbers and their operations on the complex plane.

CCM6: Use complex numbers in polynomial identities and equations.

Vector and Matrix Quantities

CCM7: Represent and model with vector quantities.

CCM8: Perform operations on vectors.

CCM9: Perform operations on matrices and use matrices in applications.

Algebra

Interpret the structure of expressions

CCM10: Write expressions in equivalent forms to solve problems.

Arithmetic with Polynomials and Rational Expressions

CCM11: Perform arithmetic operations on polynomials.

CCM12: Understand the relationship between zeros and factors of polynomials.

CCM13: Use polynomial identities to solve problems.

CCM14: Rewrite rational expressions.

Creating Equations

CCM15: Create equations that describe numbers or relationships.

Reasoning with Equations and Inequalities

CCM16: Understand solving equations as a process of reasoning, and explain the reasoning.

CCM17: Solve equations and inequalities in one variable.

CCM18: Solve systems of equations.

CCM19: Represent and solve equations and inequalities graphically.

Functions

CCM20: Understand the concept of a function and use function notation.

CCM21: Interpret functions that arise in applications in terms of the context.

CCM22: Analyze functions using different representations.

Building Functions

CCM23: Build a function that models a relationship between two quantities.

CCM24: Build new functions from existing functions.

Linear, Quadratic, and Exponential Models

CCM25: Construct and compare linear, quadratic, and exponential models, and solve problems.

CCM26: Interpret expressions for functions in terms of the situation they model.

Trigonometric Functions

CCM27: Extend the domain of trigonometric functions using the unit circle.

CCM28: Model periodic phenomena with trigonometric functions.

CCM29: Prove and apply trigonometric identities.

Geometry

CCM30: Experiment with transformations in the plane.

CCM31: Understand congruence in terms of rigid motions.

CCM32: Prove geometric theorems.

CCM33: Make geometric constructions.

Similarity, Right Triangles, and Trigonometry

CCM34: Understand similarity in terms of similarity transformations.

CCM35: Prove theorems involving similarity.

CCM36: Define trigonometric ratios and solve problems involving right triangles.

CCM37: Apply trigonometry to general triangles.

Circles

CCM38: Understand and apply theorems about circles.

CCM39: Find arc lengths and areas of sectors of circles.

Expressing Geometric Properties with Equations

CCM40: Translate between the geometric description and the equation for a conic section.

CCM41: Use coordinates to prove simple geometric theorems algebraically.

Geometric Measurement and Dimension

CCM42: Explain volume formulas, and use them to solve problems.

CCM43: Visualize relationships between two-dimensional and three-dimensional objects.

Modeling with Geometry

CCM44: Apply geometric concepts in modeling situations.

Statistics and Probability

CCM45: Summarize, represent, and interpret data on a single count or measurement variable.

CCM46: Summarize, represent, and interpret data on two categorical and quantitative variables.

CCM47: Interpret linear models.

Making Inferences and Justifying Conclusions

CCM48: Understand and evaluate random processes underlying statistical experiments.

CCM49: Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

Conditional Probability and the Rules of Probability

CCM50: Understand independence and conditional probability and use them to interpret data.

CCM51: Use the rules of probability to compute probabilities of compound events in a uniform probability model.

Using Probability to Make Decisions

CCM52: Calculate expected values and use them to solve problems.

CCM53: Use probability to evaluate outcomes of decisions.

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

NETS Crosswalk for Technology Foundations											
	Course	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
NETS Standards											
T1		x	x				x	x	x		x
T2		x	x	x		x	x	x	x	x	x
T3		x	x	x	x		x	x	x	x	x
T4		x	x	x			x	x	x	x	x
T5		x	x	x			x	x	x	x	x
T6			x	x	x	x	x	x	x	x	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.