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Part 51: Arts Audio Video Technology and Communications, Career Pathway

Digital Media Technology

Digital Media Technology

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Ordering Information

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



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Finally, standards in the *Digital Media Technology Curriculum Framework and Supporting Materials* are based on the following:

Adobe Certified Associate (ACA) Learning Objectives

These objectives prepare users to obtain the ACA certification that validates entry-level skills needed to plan, design, build, and maintain effective communications by using different forms of digital media. Reprinted with permission from *Adobe Systems Incorporated*. © 2008 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, and Dreamweaver is/are either a registered trademark(s) or a trademark(s) of Adobe Systems Incorporated in the United States and/or other countries.

Applied Academic Credit Benchmarks

Mississippi Department of Education 2007 Mississippi Mathematics Framework Revised

21st Century Skills and Information and Communication Technologies Literacy Standards

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

National Educational Technology Standards for Students

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ACT College Readiness Standards



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

Preface

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

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



Digital Media Technology Executive Summary

Program Description

This program is designed for students who wish to develop, design, and implement projects in the fast growing field of digital media. The program emphasizes the techniques and tools used in digital media and the creative design or content of such media. Both theoretical learning and activity-based learning are provided for students who wish to develop and enhance their competencies and skills. The course focuses on the basic areas of computer graphics, multimedia, and animation. Exposure to state-of-the-art equipment is given through advice by experts from industry. The comprehensive project component provides practical experience toward developing a portfolio of work.

Industry Certification

Research with Mississippi industry suggests that this curriculum should be written to the Adobe Certified Associate Certification. This exam assesses the foundation of digital communication skills students need to create effective communication using digital media tools. This certification was developed after a group of industries met with educators to design the entry-level skill industry standards for Web communication, rich media communication, and visual communication. Additionally, the Final Cut Pro 6.0 is the recognized industry software for video production. The Final Cut Express 4.0 software is a more inexpensive software package that has the same interface as Final Cut Pro 6.0. It is recommended that this curriculum meets the Final Cut Pro Level 1 Certification.

Assessment

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

Student Prerequisites

An eligible student will have completed the ninth grade and will have an overall B average. Prior to being enrolled in the course, a behavior reference must be obtained from an academic technology teacher.

Proposed Applied Academic Credit

The academic credit is still pending for this curriculum.

Licensure Requirements

The 987 licensure is needed to teach the Digital Media Technology program. The requirements for the 987 licensure endorsement are listed below:

987– Digital Media
Technology

1. Applicants with associate’s degrees must have at least 2 years of verifiable occupational experience in the past 10 years. Experience must be appropriate to the subject to be taught.
2. Applicants with bachelor’s or higher degrees must have at least 1 year of verifiable occupational experience in the past 10 years. Experience must be appropriate to the subject to be taught.
3. Applicant must enroll immediately in the Vocational Instructor Preparation (VIP) or the Redesign Education Program (REP).
4. Applicant must complete the individualized professional development plan (PDP) requirements of the VIP or REP prior to the expiration date of the three-year vocational license.
5. Applicants must possess a Final Cut Pro Level 1 Certification.
6. Applicants must possess an Adobe Certified Associate Certification in each of the following areas: Web Communication, Rich Media Communication, and Visual Communication.
7. Applicants must successfully complete an MDE-approved computer literacy certification exam.
8. Applicants must successfully complete certification for an online learning workshop, module, or course that is approved by the MDE.
9. Applicants must successfully complete a Digital Media Technology certification workshop, module, or course that is approved by the MDE.

Note: If an applicant meets all requirements listed above, that applicant will be issued a 987 endorsement—a 5-year license. If an applicant does not meet **all** requirements, the applicant will be issued a 3-year endorsement license, and all requirements stated above must be satisfied prior to the ending date of that license.

Professional Learning

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

Course Outlines

This curriculum framework allows for local school districts to meet student needs and scheduling demands. The first option groups units into four one-Carnegie-unit courses. The second option groups units into two two-Carnegie-unit courses. A discussion of each option is listed below.

Introduction to Photography and Graphic Design and Web Design and Media Rich Content courses introduce students to the principles and skills associated with graphic and print production and Web site development as it is related to meeting the needs of clients and producing graphic design products. Video Production and the Directed Individual Project courses concentrate on video production, a directed individual project, and portfolio finalization. These courses must be taken in sequential order.

Option 1

By following this course of study for Digital Media Technology, the students will progress through a series of four one-credit courses that should be completed in the following sequence:

1. Introduction to Photography and Graphic Design (Course Code: 994102)
2. Web Design and Media Rich Content (Course Code: 994103)
3. Video Production (Course Code: 994104)
4. Directed Individual Project (Course Code: 994105)

Course Description: Introduction to Photography and Graphic Design includes the foundation skills necessary in the digital media industry. Content such as safety, ethical issues and production, photography, graphic design, and print production will be offered to students. This is a one-Carnegie-unit course.

Course Description: Web Design and Media Rich Content emphasizes real-world, hands-on practice. Content related to Web design, building a basic client Web site, media rich content for Web design, and planning a digital narrative and creating a script will be offered to students. This one-Carnegie-unit course should only be taken after students successfully pass Introduction to Photography and Graphic Design (Course Code: 994102).

Course Description: Video Production focuses on career opportunities in audio and video technology, production systems, production process, and video and audio production. This one-Carnegie-unit course should only be taken after students successfully pass Web Design and Media Rich Content (Course Code: 994103).

Course Description: The Directed Individual Project is a culminating course that gives students the opportunity to produce a final video project that incorporates the skill and knowledge learned in the Video Production course, giving the students the chance to showcase what they have learned and accomplished. Upon the completion of this course, the students will have also put the finishing touches on a digital portfolio that is cumulative of their work throughout all semesters of Digital Media Technology. This is a one-Carnegie-unit course and should be taken after students successfully pass Introduction to Photography and Graphic Design (Course Code: 994102), Web Design and Media Rich Content (Course Code: 994103), and Video Production (Course Code: 994104).

Introduction to Photography and Graphic Design (One Carnegie Unit) - Course Code: 994102

| Unit | Title | Hours |
|------|---------------------------------------|-------|
| 1 | Introduction, Safety, and Orientation | 10 |
| 2 | Ethical Content and Production | 20 |
| 3 | Photography | 25 |
| 4 | Graphic Design and Print Production | 85 |
| | | 140 |

Web Design and Media Rich Content (One Carnegie Unit) - Course Code: 994103

| Unit | Title | Hours |
|------|--|-------|
| 5 | Introduction to Web Design | 30 |
| 6 | Building a Basic Client Web Site | 20 |
| 7 | Media Rich Content for Web Design | 55 |
| 8 | Planning a Digital Narrative and Creating a Script | 35 |
| | | 140 |

Video Production (One Carnegie Unit) - Course Code: 994104

| Unit | Title | Hours |
|------|---|-------|
| 9 | Creating a Rough Cut | 10 |
| 10 | Refining a Rough Cut | 35 |
| 11 | Customizing and Capturing Footage | 25 |
| 12 | Completing the Cut | 35 |
| 13 | Adding Effects and Finishing Video Projects | 35 |
| | | 140 |

Directed Individual Project (One Carnegie Unit-Portfolio) - Course Code: 994105

| Unit | Title | Hours |
|------|-----------------------------------|-------|
| 14 | Developing Movie Ideas | 15 |
| 15 | Storyboarding a Movie | 15 |
| 16 | Producing a Movie | 15 |
| 17 | Lighting Elements in a Movie | 15 |
| 18 | Working with Audio in Movies | 15 |
| 19 | Creating the Perfect Camera Frame | 15 |
| 20 | Documentary Movies | 15 |
| 21 | Post-Production | 35 |
| | | 140 |

Option 2

Course Description: Digital Media Technology I encompasses the foundation skills necessary in the digital media industry. Content such as safety, ethical issues and production, photography, graphic design, and print production will be offered to students. The Web Design and Media Rich Content portion of the course emphasizes real-world, hands-on practice. Content related to Web design, building a basic client Web site, media rich content for Web design, and planning a digital narrative and creating a script will be offered to students. Students will receive two Carnegie units upon completion of the course.

Course Description: Digital Media Technology II focuses on the process of video production and editing as well as career opportunities in audio and video technology. Another component of the course is the Directed Individual Project that is a culminating assignment that gives students the opportunity to produce a final video project that incorporates the skill and knowledge learned throughout the course, giving the students the chance to showcase what they have learned and accomplished. Also upon completion of this course, the students will have also put the finishing touches on a digital portfolio that is cumulative of their work throughout their study of Digital Media Technology.

Digital Media Technology I (Two Carnegie Unit) - Course Code: 994100

| Unit | Title | Hours |
|------|---------------------------------------|-------|
| 1 | Introduction, Safety, and Orientation | 10 |
| 2 | Ethical Content and Production | 20 |
| 3 | Photography | 25 |
| 4 | Graphic Design and Print Production | 85 |

| | | | |
|---|--|--|-----|
| 5 | | Introduction to Web Design | 30 |
| 6 | | Building a Basic Client Web Site | 20 |
| 7 | | Media Rich Content for Web Design | 55 |
| 8 | | Planning a Digital Narrative and Creating a Script | 35 |
| | | | 280 |

Digital Media Technology II (Two Carnegie Unit) - Course Code: 994101

| Unit | Title | Hours |
|------|---|-------|
| 9 | Creating a Rough Cut | 10 |
| 10 | Refining a Rough Cut | 35 |
| 11 | Customizing and Capturing Footage | 25 |
| 12 | Completing the Cut | 35 |
| 13 | Adding Effects and Finishing Video Projects | 35 |
| 14 | Developing Movie Ideas (Portfolio Entry) | 15 |
| 15 | Storyboarding a Movie (Portfolio Entry) | 15 |
| 16 | Producing a Movie (Portfolio Entry) | 15 |
| 17 | Lighting Elements in a Movie (Portfolio Entry) | 15 |
| 18 | Working with Audio in Movies (Portfolio Entry) | 15 |
| 19 | Creating the Perfect Camera Frame (Portfolio Entry) | 15 |
| 20 | Documentary Movies (Portfolio Entry) | 15 |
| 21 | Post-Production (Portfolio Entry) | 35 |
| | | 280 |

Blueprint

You will find the blueprint that corresponds to this document at: <http://redesign.rcu.msstate.edu/curriculum/>.

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 Objectives

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

Suggested Teaching Strategies

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

Suggested Assessment Strategies

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

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

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

References

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

Digital Media Technology I

Unit 1: Introduction, Safety, and Orientation

Competency 1: Identify course expectations, school policies, program policies, and safety procedures related to Digital Media Technology (DMT). DOK 1, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Policies, expectations, and safety procedures are essential elements for any endeavor.

Suggested Essential Questions

1. What would it be like without rules, policies, and safety procedures?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|---|
| a. Identify course expectations, school policies, and program policies related to Digital Media Technology (DMT). (DOK 1) <small>E1, E2, R1, R2, R4, R5</small> | a. Prepare a multimedia presentation to preview the school’s handbook, the technology acceptable use policy, and safety procedures for classrooms and building level. <small>E1, E4, E6, T2, T4</small> Have students use a Venn diagram to compare and contrast course, school, and program policies to employee expectations. Have students summarize the comparison in a blog entry. | a. Conduct a Jeopardy game show to test students’ knowledge of course expectations, school policies, learning styles, and program policies related to DMT. <small>T1, T4, W4, W5</small> Use the Blog Rubric to evaluate student Venn diagram comparison. |
| b. Apply safety procedures in the computer classroom and lab. (DOK 2) <small>S2, W1, W2, W4, W5</small> | b. Discuss lab and equipment safety procedures to include fire extinguishers, clothing, electrical, and jewelry. Pre-assess student knowledge of workplace safety by asking students to describe potential computer-related health problems and workplace safety issues. <small>T1</small> | b. Assess each student’s safety knowledge with a unit test administered via the Blackboard Learning System, and file the completed test for documentation. Each student must score 100% accuracy before being allowed to participate in lab activities. |

Competency 2: Explore personality development, leadership, and teamwork in relation to the classroom environment, interpersonal skills, and others. DOK 1, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Personality, teamwork, and leadership abilities are integral components for creating a healthy learning community.

Suggested Essential Questions

1. How can you create a harmonious work environment that includes a diverse group of different personality types and skill levels?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| <p>a. Identify potential influences that shape the personality development including personality traits, heredity, and environment. (DOK 1) E2, E3, E4</p> | <p>a. Show students a learning style video found at http://www.teachertube.com (Title: <i>Just Say Yes!</i>) (Multiple Learning Styles). Have students take a learning styles inventory (http://www.vark-learn.com) to determine student learning styles. Explain to students that it is important to know they learn. Have students divide into groups based on learning styles. Have each group create a collage using magazines and bulletin board/poster paper that explains its learning style.</p> | <p>a. Evaluate the learning style collage based on content and creativity.</p> <p>Use information from this inventory throughout the year when assigning group work. Have students summarize the information from the learning style and personality inventory in a blog entry titled "How I learn best...."</p> |
| <p>b. Develop a report on how personality traits affect teamwork and leadership skills. (DOK 2)</p> | <p>b. Discuss the importance of understanding different personalities. T2, T4, R4, W1</p> | <p>b. Analyze short scenarios of cooperative and noncooperative group members. T1, T2, E1, E2, R3, R4, W4</p> |
| <p>c. Identify forces that shape personality development including personality traits, heredity, and environment. (DOK 1)</p> | <p>c. Discuss role-play learning styles to effectively work in a team setting.</p> | <p>c. Use the Role-Play or Skit Rubric to evaluate student work.</p> |
| <p>d. Develop effective leadership, decision-making, and communication skills. (DOK 2)</p> | <p>d. Discuss the qualities of an effective leader, and identify opportunities available through student organizations and in the local community that develop leadership skills. T2, T3, E1, R5, S1</p> <p>Have students identify and interview five community leaders and ask each leader, "Why do you think you are an effective leader?" Have students bring those traits to the next class meeting. Make an overall list of characteristics. Have each student set a goal and work toward improving his or her personal leadership. W1, W2, W3, W4</p> | <p>d. Use a rubric to grade a summary report of matching leaders and opportunities in the community to develop leadership skills.</p> |

Standards

21st Century Learning Standards

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

National Educational Technology Standards for Students

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

ACT College Readiness Standards

- E1 Topic Development in Terms of Purpose and Focus
- E2 Organization, Unity, and Coherence
- E3 Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 Sentence Structure and Formation
- E6 Conventions of Punctuation
- R1 Main Ideas and Author’s Approach
- R2 Supporting Details
- R3 Sequential, Comparative, and Cause–Effect Relationships
- R4 Meaning of Words
- R5 Generalizations and Conclusions
- S1 Interpretation of Data
- S2 Scientific Investigation
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W3 Developing a Position
- W4 Organizing Ideas
- W5 Using Language

References

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What do employers expect from me? [Poster]. (Available from TechPrep Office, Mississippi Department of Education, P.O. Box 771, Jackson, MS 39205)

For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Suggested Rubrics and Checklists



Name: _____

Date: _____

Period: _____

Computer Lab Safety Test

Directions: In the space provided, write the word "True" if the statement is true and "False" if the statement is false.

1. _____ Never bang on the keys; always use a light touch on the keyboard to keep the keys operating properly.
2. _____ Save the document you are working on often.
3. _____ Remove diskettes when the disk drive light is on.
4. _____ Never attempt to work on a computer or go inside the computer while it is on; you could get shocked.
5. _____ When connecting cables to the computer, make sure the cables are plugged in the outlets before attaching them to the computer.
6. _____ All power cords should be secured from traffic areas.
7. _____ To make sure your computer operates properly, make sure you have appropriate temperature and humidity levels.
8. _____ Do not use the computer during a storm.
9. _____ Spray your computer with household cleanser to keep it clean.
10. _____ Canned air can be used to clean your computer keyboard.
11. _____ Opening an e-mail attachment could download a virus into your computer system.
12. _____ Spilling liquids on your computer will not hurt it.
13. _____ You should remove the computer cover monthly to clean inside.
14. _____ Surge protectors can help guard against lightning but may not be complete protection.
15. _____ Downloading from Internet sites could expose your computer to dangerous viruses.
16. _____ Keeping your computer dust free can help it last longer.

17. _____ Your mouse should never need cleaning.
18. _____ It will not hurt to eat a peanut butter and jelly sandwich while using the computer.
19. _____ Install one computer program, and then test your computer for problems before installing another computer program.
20. _____ If a computer system is grounded, it is all right to use it during an electrical storm.



Name: _____

Date: _____

Period: _____

Jeopardy PowerPoint Rubric

| | Exemplary 4 Points | Accomplished 3 Points | Developing 2 Points | Beginning 1 Point | Score |
|-------------------------|---|---|--|---|--------------|
| Knowledge Gained | All students in the group could easily and correctly state several facts about the topic used for the game without looking at class notes. | All students in the group could easily and correctly state one to two facts about the topic used for the game without looking at class notes. | Most students in the group could easily and correctly state one to two facts about the topic used for the game without looking at class notes. | Several students in the group could not correctly state facts about the topic used for the game without looking at class notes. | |
| Rules | Rules were written clearly enough that all could easily participate. | Rules were written, but one part of the game needed slightly more explanation. | Rules were written, but people had some difficulty figuring out the game. | The rules were not written. | |
| Cooperative Work | The group worked well together with all members contributing significant amounts of quality work. | The group generally worked well together with all members contributing some quality work. | The group worked fairly well together with all members contributing some work. | The group often did not work well together, and the game appeared to be the work of only one or two students in the group. | |
| Creativity | The group put a lot of thought into making the game interesting and fun to play as shown by creative questions, game pieces, and/or a game board. | The group put some thought into making the game interesting and fun to play by using textures, fancy writing, and/or interesting characters. | The group tried to make the game interesting and fun, but some of the things made it harder to understand/enjoy the game. | Little thought was put into making the game interesting or fun. | |
| Total Score | | | | | |

Scale:

- 13–16 A Excellent
- 9–12 B Good
- 5–8 C Needs Some Improvement
- 2–4 D Needs Much Improvement
- 0–1 F Not Appropriate

TOTAL = _____

Comments:



Name: _____

Date: _____

Period: _____

Computer Lab Safety Rubric

| | Exemplary 4 Points | Accomplished 3 Points | Developing 2 Points | Beginning 1 Point | Score |
|---|---|---|---|--|--------------|
| Drawings/Diagrams | Diagrams are labeled neatly and accurately. | Diagrams are included and are labeled neatly and accurately. | Diagrams are included and are labeled. | Needed diagrams are missing OR are missing important labels. | |
| Spelling, Punctuation, and Grammar | One or fewer errors in spelling, punctuation, and grammar | Two or three errors in spelling, punctuation, and grammar | Four errors in spelling, punctuation, and grammar | More than four errors in spelling, punctuation, and grammar | |
| Lab Procedures | Procedures are listed in clear steps. Each step is numbered and is a complete sentence. | Procedures are listed in a logical order, but steps are not numbered and/or are not in complete sentences. | Procedures are listed but are not in a logical order or are difficult to follow. | Procedures are not accurately listed. | |
| Data | Professional looking and accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled. | Accurate representation of the data in tables and/or graphs. Graphs and tables are labeled and titled. | Accurate representations of the data are in written form, but no graphs or tables are presented. | Data are not shown or are inaccurate. | |
| Safety | Attention to relevant safety procedures are listed and pose no safety threat to any individual. | Attention to relevant safety procedures is generally noted and poses no safety threat to any individual, but one safety procedure needs to be reviewed. | Attention to relevant safety procedures is generally noted and poses no safety threat to any individual, but several safety procedures need to be reviewed. | Attention to relevant safety procedures is ignored, and/or some aspect of the lab poses a threat to the safety of the student or others. | |
| Total Score | | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Reading – Analyzing Information: Personality Profiles

| | Exemplary 4 Points | Accomplished 3 Points | Developing 2 Points | Beginning 1 Point | Score |
|---|---|---|---|---|--------------|
| Identifies important information | Student lists all the main points of the personality profile without having the personality profile in front of him or her. | Student lists all the main points but uses the personality profile for reference. | Student lists all but one of the main points, using the personality profile for reference. He or she does not highlight any unimportant points. | The student cannot decipher important information with accuracy. | |
| Identifies details | Student recalls several details for each main point without referring to the personality profile. | Student recalls several details for each main point but needs to refer to the personality profile occasionally. | Student is able to locate most of the details when looking at the personality profile. | Student cannot locate details with accuracy. | |
| Summarization | Student uses only one to three sentences to describe clearly what the personality profile is about. | Student uses several sentences to accurately describe what the personality profile is about. | Student summarizes most of the personality profile accurately but has some slight misunderstanding. | Student has great difficulty summarizing the personality profile. | |
| Total Score | | | | | |

Scale:

- 10–12 A Excellent
- 7–9 B Good
- 4–6 C Needs Some Improvement
- 1–3 D Needs Much Improvement
- 0 F Not Appropriate

TOTAL = _____

Comments:



Name: _____

Date: _____

Period: _____

Reading – Analyzing Information: Scenario

| | Exemplary 4 Points | Accomplished 3 Points | Developing 2 Points | Beginning 1 Point | Score |
|---|---|--|--|--|--------------|
| Identifies important information | Student lists all the main points of the scenario without having the scenario in front of him or her. | Student lists all the main points but uses the scenario for reference. | Student lists all but one of the main points, using the scenario for reference. He or she does not highlight any unimportant points. | Student cannot decipher important information with accuracy. | |
| Identifies details | Student recalls several details for each main point without referring to the scenario. | Student recalls several details for each main point but needs to refer to the scenario occasionally. | Student is able to locate most of the details when looking at the scenario. | Student cannot locate details with accuracy. | |
| Summarization | Student uses only one to three sentences to describe clearly what the scenario is about. | Student uses several sentences to accurately describe what the scenario is about. | Student summarizes most of the scenario accurately but has some slight misunderstanding. | Student has great difficulty summarizing the scenario. | |
| Total Score | | | | | |

Scale:

- 10–12 A Excellent
- 7–9 B Good
- 4–6 C Needs Some Improvement
- 1–3 D Needs Much Improvement
- 0 F Not Appropriate

TOTAL = _____

Comments:



Name: _____

Date: _____

Period: _____

Role-Play or Skit Rubric

| | Excellent 4 Points | Good 3 Points | Needs Some Improvement 2 Points | Needs Much Improvement 1 Point | Score |
|---|-----------------------|------------------|---------------------------------------|--------------------------------------|-------|
| Relates to audience | | | | | |
| Provides a fluent rendition of scenario | | | | | |
| Role-plays scenario with feeling and expression | | | | | |
| Varies intonation | | | | | |
| Presents characters appropriately | | | | | |
| Gives the scenario its full range | | | | | |
| Breaches easily identified | | | | | |
| Total Score | | | | | |

Scale:

- 24–28 A Excellent
- 19–23 B Good
- 14–18 C Needs Some Improvement
- 9–13 D Needs Much Improvement
- 0–12 F Not Appropriate

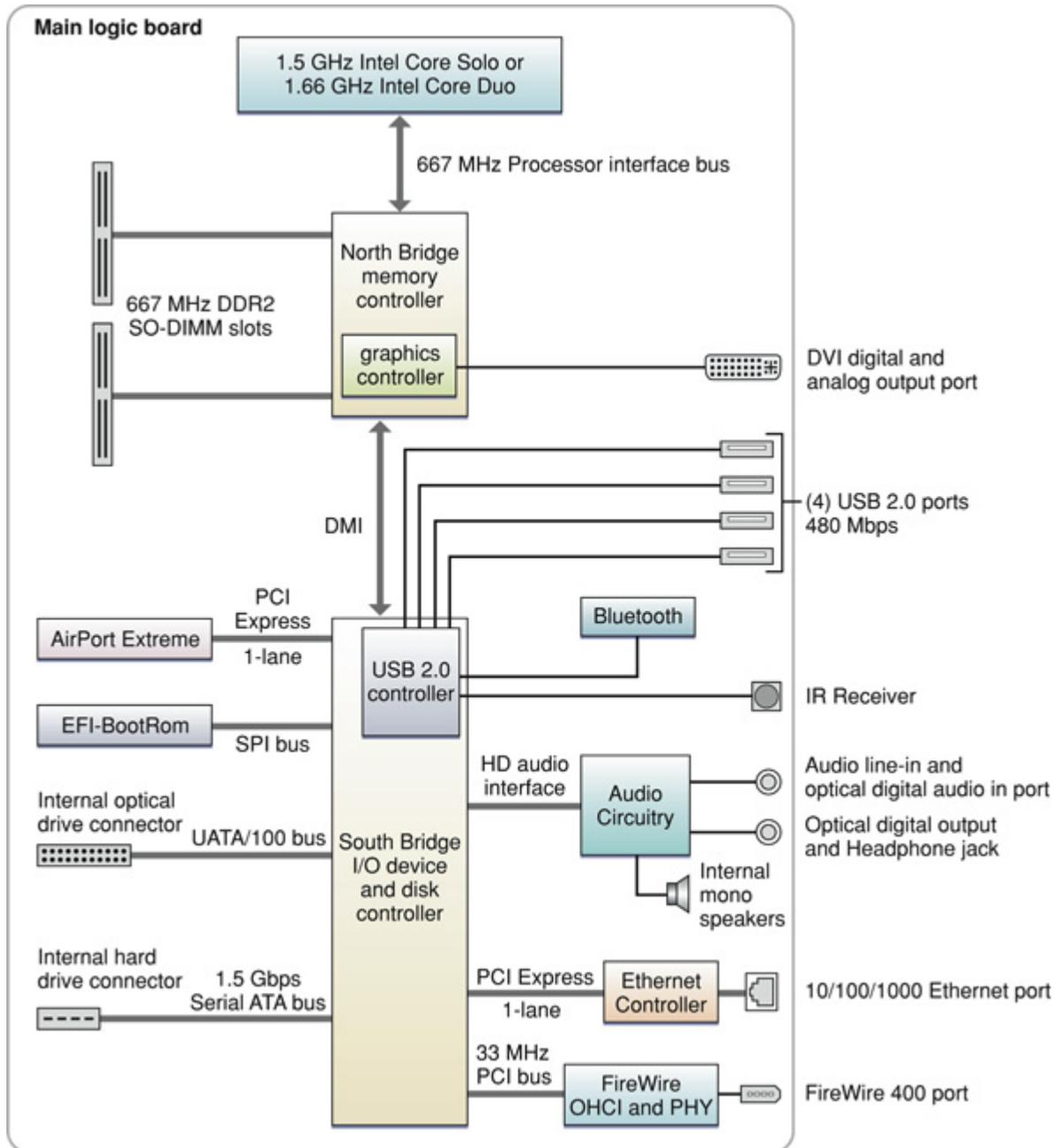
TOTAL = _____

Comments:



Name: _____
Date: _____
Period: _____

Diagram of an Apple Computer



Digital Media Technology I

Unit 2: Ethical Content and Production

Competency 1: Research copyright rules, regulations, and issues related to graphics and images produced by others and original work, and adhere to those rules and regulations when developing work. ^{DOK 2,}
CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Students will understand the issues that relate to copyright guidelines and violations.

Suggested Essential Questions

1. Why is copyright important?
2. Why should individuals be aware of the various copyright violations and predict the consequences?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| <p>a. Define terms related to copyright rules, regulations, and issues related to graphics and images produced by others and original work. (DOK 1) ^{E4, E5, E6, W1, W2, W3, W4, W5}</p> | <p>a. Use a multimedia presentation to discuss the terms related to copyrighting, and use the “vocabulary word maps” teaching strategy to help students grasp the terms. Additionally, have students create a dictionary that describes and has a picture of each vocabulary word. ^{CS1, CS2, CS4, E1, E2, E4, W2, W3}</p> <p>Vocabulary words may include the following:</p> <ul style="list-style-type: none"> • Fair use • Statute of limitations • Shareware • Freeware • Infringement • Model release • Patent • Trademark • Trade secret • Public domain • Peer to peer (P2P) • File sharing • Hacker • Intellectual property • License agreement | <p>a. Assess each student’s copyrighting/ethical knowledge with an electronic test administered through the Blackboard learning system. ^{CS2, CS5, E1, E2, E4, W2, W3, T1, T2, T3}</p> |
| <p>b. Research copyright laws related to graphics, images, and other original work. (DOK 2)</p> | <p>b. Display graphics, images, songs, and other original work samples, and use the “four corners” teaching strategy, and discuss the ethical dilemmas as they pertain to copyrighting and artist creativity.</p> <p>Have students research the problems of illegal downloading, copyright laws, and news articles</p> | <p>b. Observe students for active participation in choosing a corner and contributing to the group discussion.</p> <p>Assess for completion and participation.</p> |

| | | |
|--|--|---|
| | about copyrighting violations. Have students take key points from approximately five Web sites. Lead the discussion, and post responses via Blogger or a discussion board. | |
| c. Give examples of copyright violations related to trademark, symbols, length of time, and public domain. (DOK 2) | <p>c. Have students review the CyberBee flash Web site on copyright regulations (www.cyberbee.com/cb_copyright.swf).</p> <p>Have students complete “Ethics: A WebQuest” (http://www.aacps.org/aacps/boe/INSTR/CURR/COMED/HSWebQuest/EthicsQuest/index.htm) about copyright laws.</p> <p>Provide students with case studies involving copyright violation related to trademark, symbols, length of time, and public domain. Have students work in teams to analyze the case studies analyzing and developing ways to prevent breaking copyright rules and regulations. T1, T2, T3</p> | <p>c. After group discussion, go through the questions posed on the Web site, and have students answer the questions on paper to be graded for correctness.</p> <p>Evaluate students using the rubric(s) provided in the WebQuest.</p> <p>Evaluate case studies involving copyright violation related to trademark, symbols, length of time, and public domain for correctness.</p> |
| d. Prepare images and video for Web and print that meet copyright guidelines. (DOK 2) | <p>d. Discuss the points from “The Learning Page—Getting Started” (www.loc.gov). Demonstrate to students how to get permission and give credit to an author for his or her work.</p> <p>Explain how to search for legal use clip art, graphics, and songs.</p> <p>Have students create a PhotoStory with graphics and songs from the Internet.</p> | <p>d. Observe students’ searching methods and permission requests.</p> <p>Evaluate student PhotoStory projects showing mastery of preparing images for video for Web and print that meet copyright guidelines for correctness, creativity, and format.</p> |

Competency 2: Research online content, and evaluate content bias, currency, and source. DOK 1, CS3, CS4, C5

Suggested Enduring Understandings

1. When researching information, especially online, it is necessary to look for clarity, currency, and relevancy.

Suggested Essential Questions

1. What are some ways to research?
2. How are the terms *clarity*, *currency*, and *relevancy* essential to researching?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|---|
| a. Determine how to search for information online. (DOK 1) ^{W1, W2, W3, W4, W5} | <p>a. Review information on the Web site “Checklist for Evaluating Web Sites,” and give students an opportunity to view the evaluation checklist (http://www.lib.umd.edu/guides/webcheck.html).</p> <p>Review teacher-selected Web sites on clarity, currency, and relevancy, and evaluate them using the Web Page Evaluation Form at</p> | <p>a. Evaluate the questionnaire worksheet and record in the grade book.</p> <p>Evaluate the Web site reviews for</p> |

| | | |
|---|---|---|
| | www.ncsu.edu/midlink/tutorial/www.eval.html . | completion. |
| | Review Web page techniques and strategies for searching on the Web. Have student groups create a brief PowerPoint on the Web page techniques and strategies that could be used to present to non-DMT students. | Evaluate the PowerPoint slide show with a rubric. |
| b. Correlate information with multiple sources. (DOK 2) ^{R3, W1} | b. Read and discuss the articles “Wikipedia Founder Discourages Academic Use of His Creation Wikipedia” and “Americans Use Multiple Research Sources.” Have students critique the articles and present the different points of view on researching using Blogger. | b. Review each article critique on the blog with the Article Critique Rubric . |

Competency 3: Define and abide by the journalistic code of ethics. ^{DOK 2, CS2, CS3, CS4}

Suggested Enduring Understandings

1. In journalism, certain standards of ethics must be examined and applied locally and/or federally.

Suggested Essential Questions

1. Journalists must abide by certain codes of ethics. Why is this necessary to this profession?
2. Who makes up this code, and who decides what should or should not be followed?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| a. Define terms related to the journalistic code of ethics. (DOK 1) ^{T4, W5} | <p>a. Create a Jeopardy game based on journalistic terms.</p> <p>Examine the “Handbook of Journalism” Web page, and have students brainstorm and discuss the points from the article in small groups. Have a group spokesperson report the group consensus to the group.</p> <p>Review codes of ethics from various organizations. Help students learn to write codes of ethics, policies, and/or standards for the workplace. ^{CS3, CS4, T1, T2, T3, T4, T5, T6}</p> <p>Vocabulary words may include the following:</p> <ul style="list-style-type: none"> • News council • Media bias • Sensationalism • Double standard • Censorship • Freedom of the press • Propaganda • Editorial • Paparazzi | <p>a. Evaluate student knowledge of terms with a vocabulary test.</p> <p>Evaluate the student discussion with a Peer Evaluation Checklist to assess participation.</p> <p>Assess the codes of ethics for completion and student participation.</p> |

| | | |
|--|---|---|
| <p>b. Identify the similarities and differences between news and advertisement. (DOK 2) ^{S1, R5}</p> | <p>b. Discuss and locate examples of news and advertisement articles and clips, and discuss the similarities and differences. Have students create a chart that compares and contrasts the two.</p> | <p>b. Grade student charts based on content, creativity, and clarity using the Compare and Contrast Chart Rubric.</p> |
| <p>c. Compare and contrast news and opinions, and determine the benefits and dangers of reporting non-biased information. (DOK 2)</p> | <p>c. Give students a current topic or news event, and have them research the event and determine whether the information given is factual or based on opinion. Students should prepare a written response. ^{W1, W2, W3, W4, W5}</p> | <p>c. Evaluate students' written response. Assess for correctness. ^{CS2, CS4}</p> |
| <p>d. Demonstrate the ability to avoid conflicts of interest, bribery, and knowledge of personal political and economic interests. (DOK 3)</p> | <p>d. Create a PowerPoint slide show explaining the point of conflicts of interest, bribery, personal political and economic interests, competing points of view, time frame for news stories, censorship, confidentiality, anonymous sources, proper use of sound bites and quotes, libel and slander, privacy rights, and the principle of harm limitation.</p> <p>Have a guest speaker from the local newspaper talk to students on the aforementioned topics. Have students summarize what was discussed from the speaker's presentation.</p> | <p>d. Assess student knowledge of the PowerPoint slide show content with a written test.</p> <p>Evaluate student summaries using a rubric.</p> |
| <p>e. Maintain confidentiality of sources, and avoid anonymous sources when possible. (DOK 1)</p> | <p>e. Lead a discussion of the article "Should Reporters Give Up a Confidential Source?" Have students debate whether some or all sources should remain confidential. ^{CS3, CS4, T2, T3}</p> <p>Provide students with copies of the transcript "Reporter's Privilege," and assign them to read it for homework prior to class.</p> <p>During the first class period, discuss the journalistic issues involved in this situation.</p> <p>Assign students roles to play in a mock trial of these reporters. Provide students with copies of the case history below prior to assigning roles.</p> | <p>e. Observe students' debate, and use a checklist to evaluate.</p> <p>Use a performance-based evaluation/checklist for the role-playing activity.</p> |
| <p>f. Demonstrate proper use of pictures, sound bites, and quotations. (DOK 2)</p> | <p>f. Have students work in teams of two to three to research the proper use of pictures, sound bites, and quotations. Have students find an article related to each topic. Have students create a wiki defining, discussing, showing an example of proper use, and showing an example of improper use.</p> | <p>f. Evaluate student wikis related to the proper use of pictures, sound bites, and quotations for content, format, and creativity.</p> |
| <p>g. Discuss plagiarism and the consequences of</p> | <p>g. Guide students through the "Plagiarism Court" Flash tutorial.</p> | <p>g. Evaluate students with a written or oral</p> |

| | | |
|---|--|---|
| <p>plagiarizing. (DOK 1)</p> | <p>Have students complete the module “The Consequences of Plagiarism.”</p> | <p>test based on the “Plagiarism Court” tutorial.</p> <p>Evaluate students on the response to the pieces in the module with a questionnaire.</p> |
| <p>h. Demonstrate standards for factual reporting. (DOK 2)</p> | <p>h. Review the guide “Reading Newspapers: Factual Reporting,” and guide the students through the discussion with the corresponding questions that follow the guide.</p> | <p>h. Evaluate students with a written test on the guide.</p> |
| <p>i. Demonstrate an understanding of libel and slander, privacy rights, and a publisher’s obligation to defend a reporter against any libel suit filed against him or her. (DOK 2)</p> | <p>i. Divide students into three groups. Assign each group one of the following topics:</p> <ul style="list-style-type: none"> • Liable and slander • Privacy rights • Publisher’s obligation to defend a reporter against any libel suit filed against him or her <p>Have each group research and create a presentation on its topic. The presentation must teach the topic to classmates and include samples and scenarios of violations. Additionally, the group should lead a class discussion of what should have happened for each violation.</p> | <p>i. Have students create a one-page report that summarizes their understanding of liable and slander, privacy rights, and the publisher’s obligation to defend a reporter against any libel suit filed against him or her. Evaluate the one-page report for content, grammar, and format. Have students peer review before turning in the final product. After evaluating the report, have students correct their reports and post to their Blackboard electronic portfolios.</p> |
| <p>j. Describe the principle of harm limitation. (DOK 1)</p> | <p>j. Have the following quote posted on the Blackboard announcements section: <i>“Every news organization has only its credibility and reputation to rely on.”</i> – Tony Burman, editor in chief of CBS News</p> <p>Use the following questions to facilitate conversation:</p> <ul style="list-style-type: none"> • What does Mr. Burman mean by this quote? • What does this quote mean to you? • How could a news organization lose its credibility? • What would happen if a news organization loses its credibility? | <p>j. Give students made-up scenarios of news stories that involve details such as names of minor children, crime victims’ names, and so forth. Have students create a news article or script for a news report that gives the audience information related to the story without violating the principle of harm</p> |

Have students go to Wikipedia and search for the principles of harm limitation. Explain that the principles of harm limitation involve the withholding of certain details from reports such as the names of minor children, crime victims' names, or information not materially related to particular news reports whose release might, for example, harm someone's reputation. Have students search through newspapers and online news reports to find examples of where the author/reporter kept or violated the principles of harm limitation. Have students create a poster collage with examples.

Standards

21st Century Learning Standards

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

National Educational Technology Standards for Students

- 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

ACT College Readiness Standards

- E1 Topic Development in Terms of Purpose and Focus
- E2 Organization, Unity, and Coherence
- E3 Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 Sentence Structure and Formation
- E5 Conventions of Usage
- E6 Conventions of Punctuation
- R3 Sequential, Comparative, and Cause–Effect Relationships
- R5 Generalizations and Conclusions
- S1 Interpretation of Data
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W3 Developing a Position
- W4 Organizing Ideas
- W5 Using Language

References

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Levine, R. (2007). *Educational units and lesson plans*. Retrieved August 1, 2008, from www.coollessons.org

Madison Metropolitan School District. (2003). *Library of student recommended sites*. Retrieved August 10, 2008, from www.madison.k12.wi.us/tnl/detectives

The Quality Information Checklist. (2000). *Here are eight ways of checking information on Web sites*. Retrieved August 10, 2008, from <http://www.quick.org.uk/menu.htm>

For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Suggested Rubrics and Checklists



Name: _____

Date: _____

Period: _____

Article Critique Rubric

| | 5 Points | 4 Points | 3 Points | 2 Points | 1 Point | Score |
|-------------------------|--|--|---|--|---|-------|
| Grammar | Spelling, sentence formation, and paragraphing are 100% correct. | Few spelling and sentence errors. Paragraphs are correct. | Few spelling and sentence errors and no paragraph errors | Some spelling errors and incomplete sentences; no paragraph errors | Some spelling errors and incomplete sentences; no more than one paragraph error | |
| Content | Article content is summarized in a clear manner and can be easily understood and followed. | Article content is summarized in a clear manner. Thoughts can be understood and followed. | Article content is summarized in a somewhat clear manner. There are some questions about interpretation of the article. | Summarized article content is in vague terms; while somewhat cohesive, there are a few questions about summary of the article. | Summarized article content is in vague terms and is not cohesive; there are many questions about interpretation of the article. | |
| Content Accuracy | All content throughout the presentation is accurate. There are no factual errors. | Most of the content is accurate, but there is one piece of information that might be inaccurate. | The content is generally accurate, but one piece of information is clearly flawed or inaccurate. | Content is typically confusing or contains more than one factual error. | Content contains multiple factual errors and does not relate to the assigned topic. | |
| Total Score | | | | | | |



Name: _____

Date: _____

Period: _____

Compare and Contrast Chart Rubric

| | 5 Points | 4 Points | 3 Points | 2 Points | 1 Point | Score |
|-----------------------------|---|--|---|---|---|-------|
| Factual Content | All facts are reported correctly. | One or two mistakes are made in reporting the cultural information. | Three or four factual mistakes are made in reporting the cultural information. | Five or six factual mistakes are made in reporting the cultural information. | Over seven mistakes are made in reporting the cultural information. | |
| Spelling and Grammar | No spelling or grammar mistakes are made. | One or two grammatical or spelling mistakes are made. | Three or four grammatical or spelling mistakes are made. | Five or six grammatical or spelling mistakes are made. | Over seven grammatical or spelling mistakes are made. | |
| Overall Appearance | The appearance of the chart is appealing and pleasing to the eye. A great deal of effort is spent on the overall presentation of the project. | The project is appealing to the eye, but there seems to be some lack of effort in the overall presentation of the project. | The project does not stand out among others, but it fulfills the minimum requirement. Student put little effort into the project. | The overall appearance is sloppy and unappealing to the eye. Student put little or no effort in making the project presentable. | Student put no effort into the appearance of the project, and the project is completely unappealing to the eye. | |
| Total Score | | | | | | |



Name: _____

Date: _____

Period: _____

Peer Evaluation Rubric

| | 3 Points | 2 Points | 1 Point | Score |
|--|--|---|---|--------------|
| Preparedness | Group member had read and understood the assigned articles. | Group member had partially read and understood the assigned articles. | Group member had not read the assigned articles. | |
| Participation | Group member had many ideas to share with the group and participated fully in the discussion. | Group member participated intermittently. | Group member had minimal to no participation in the group discussion. | |
| Overall Contribution to the Group | Group member was an active leader and participated in the group assignment from start to finish. | Group member intermittently provided assistance to the group. | Group member did not contribute to the group activity. | |
| Total Score | | | | |

Digital Media Technology I

Unit 3: Photography

Competency 1: Demonstrate proficiency in the setup, operation, and troubleshooting of a graphic design computer. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Proficiency in the setup and maintenance of an operating system and application software is essential to understanding and avoiding future problems.

Suggested Essential Questions

1. How do you know if you are having hardware or software problems?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|--|
| a. Demonstrate proficiency in the setup and maintenance of a graphic computer system. (DOK 2) <small>W1, S1, S2, S3, M5</small> | a. Use a multimedia presentation to discuss the setup and maintenance of a graphic computer system. <small>E1, E2, R3, W4, W5, S1, S3, M2, M5</small> | a. Administer a diagram test. |
| b. Manipulate a window by using application software functions and keyboard shortcuts. (DOK 1) | b. Use presentation equipment to demonstrate window applications and keyboard shortcuts. | b. Conduct an observation check for understanding. <small>W1, W4, W5, T4, T6</small> |
| c. Demonstrate knowledge of an electronic file management system and folder management. (DOK 2) <small>T1, T2, T3, T4, T5, T6</small> | c. Use presentation equipment to demonstrate the operation of setting up files and folders. <small>T4, T5, E2, R2, R3</small> | c. Conduct an observation check for understanding. |

Competency 2: Explain photography and graphic design elements. DOK 1, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Professional images are so perfect looking. How do I make my images look professional?

Suggested Essential Questions

1. How are images analyzed?
2. How are images enhanced to make them look more professional?
3. How are imperfections in images corrected?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|----------------------------------|--|---------------------------------|
| a. Identify safety and | a. Discuss proper handling and safety rules when | a. Evaluate student |

proper use of equipment related to photography. (DOK 1)
R5, W1, S1

using a digital camera. Do training with students one on one to ensure that they understand how to handle the camera. M1, M2, S1, S3

comprehension with a safety checklist of the dos and don'ts.
W4, W1, W5, S1 T2, T4, T6

Review the dos and don'ts of digital camera care.
T1, T2, T4, T6, W4, W5, S1

Do...

- Regularly clean the camera.
- Lens care: To take care of the lens, make sure that you never, ever touch it directly with your fingers and that you put on the lens cap when not shooting pictures.
- Handle all moving parts of the camera with care.
- Turn off the camera before removing or disconnecting the power source or a cable or removing the battery or memory card.
- Keep your camera dry and free from condensation.
- Store your camera correctly if it is not going to be used for a long time.
 - When storing your digital camera, you need to keep it away from magnets of any form. Magnets will affect the circuitry of your digital camera and should not be placed near it.
 - Another point to note is to use silica gel to combat condensation. Many electronic products come with silica gel capsules. Keep these, and put them in your digital camera storage box. It will prevent condensation.
 - Batteries can have corrosive leaks over time. Therefore, the batteries of the camera should also be removed if you intend to store the camera away for a long time.
 - Store your digital camera in a **cool, dry place** away from windows, furnaces, and damp basements.

Don't...

- Subject your camera to knocks, vibration, magnetic fields, smoke, water, steam, sand, or chemicals.
- Store or use your camera in humid, dusty, or dirty places.
- Subject your camera to extreme hot or cold temperatures.
- Place your camera in direct sunlight for prolonged times or in a car when it is hot.
- Scratch the camera with hard or sharp objects.
- Drop your camera in water. It may be damaged beyond repair.
- Use canned air. Most consumer digital cameras are not airtight, and canned air may blow dust

into the inside of the lens.

b. Identify the basic components of a digital camera and photography-related terms. (DOK 1) ^{R5, W5, T2, T4, T6}

b. Show students the different parts of a digital camera, and allow for discussion on how cameras are similar and how they are different. ^{W4, W5, S1, S2, S3, T4, T6}

Vocabulary terms may include the following:

- Shutter release
- Program settings
- Battery compartment
- Zoom ring
- Focusing ring
- Focal length
- Aperture
- Shutter speed
- ISO rating
- Framing
- Emphasis
- Angle of view
- Balance
- Rule of thirds
- Close-ups
- Tone and sharpness
- Arrangement
- Portrait
- Landscape
- Lens
- Zoom lens
- Depth of field
- Autofocus
- Resolution
- Pixel
- Megapixel
- White balance
- Camera body
- LCD display
- Viewfinder
- Memory card
- SD card
- Flash (camera flash)
- Filter
- Tripod
- Batteries
- File compression
- Macro
- Aperture
- Shutter speed
- ISO rating

b. Give a written test to assess DOK for terms, phrases, and functions as they pertain to the given competency. ^{R5, W1, W5, T4, T6}

Provide a checklist to determine DOK of camera parts, camera similarities, differences, and basic functions. ^{T4, T6}

Competency 3: Complete a photography project that meets the needs of an audience. DOK 2, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. It is important to know how to take photographs that are professional in their composition and meet the needs of the client.

Suggested Essential Questions

1. What techniques do professional photographers use?
2. How are computers used to make professional photographs and pictures?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|---|
| <p>a. Explore image composition and elements of visual design through photography. (DOK 2) <i>AVC1, AVC2, AVC4, AVC5</i></p> | <p>a. Have students download their images, and compare them to your examples. Use this comparison to continue the discussion of image composition. <i>AVC1, AVC2, AVC3, T1, T2, T3, T4, T5, T6</i></p> | <p>a. Give a performance-based assessment that shows knowledge of composition and elements of visual design.</p> |
| <p>b. Distinguish file type per job needed. (DOK 1)</p> | <p>b. Incorporate a variety of image files types into a collage of images. <i>AVC1, AVC2, AVC3</i></p> <p>Discuss with students the differences file types make in relation to storage (i.e., file card, media card, and selection).</p> <p>Discuss with students the different applications, advantages, and disadvantages of saving files in the various formats.</p> <p>File types may include the following:</p> <ul style="list-style-type: none"> • Raw • Jpeg (two types) • Gif • Tiff • Bitmap • PDF • PSD | <p>b. Give a written test to assess DOK for terms, phrases, and functions as they pertain to the given competency.</p> <p>Teacher observation</p> <p>Give students scenarios to determine which file format would be the best suited for the application.</p> |
| <p>c. Use digital cameras to learn the basics of photography. (DOK 2) <i>T4</i></p> | <p>c. Illustrate basic digital camera skills such as how to operate the camera and save and download files. <i>T4, T6</i></p> | <p>c. Give a performance-based assessment on how to take a picture and how to transfer that image to the computer. <i>AVC1, AVC2, AVC3, AVC4, AVC5</i></p> |
| <p>d. Identify and produce portrait photographs, art photographs (objects in the</p> | <p>d. Have students experiment with taking portrait photographs, art photographs, and landscape photographs. Lead an open discussion among the students relative to the different elements and</p> | <p>d. Have students observe examples of portrait, art, and landscape photos.</p> |

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| classroom), and landscape photographs. (DOK 2) | applications of the different types of photos. | Students will determine photo type and note it on an answer sheet to be submitted for grading. |
| e. Use photo manipulation to investigate the potential of color enhancement and retouching. (DOK 2) | e. Instruct students to retake their photographs, trying to improve on their initial efforts by applying their knowledge of image composition and elements of visual design. Viewing the photograph via photo enhancing software, let them experiment on photo enhancing software and determine the most satisfactory image according to brightness, contrast, and color. | e. Have students demonstrate mastery by using a performance-based checklist. |
| f. Compare and contrast the advantages of manipulating a saved copy of an image in various formats. (DOK 3) | f. Translate the “I do, we do, you do” method. | f. Have students save manipulated photos to a student folder for grading. <small>AVC1, AVC2, AVC3, AVC4, AVC5, T4, T6</small> |

Competency 4: Use photo editing software to create and edit a product for a customer. DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Photo editing software can be a powerful business tool when used appropriately.

Suggested Essential Questions

1. What types of software are available to enhance images?
2. How can I combine digital camera effects with the photo editing software most effectively in order to achieve my client’s needs?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|--|--|
| a. Identify terminology related to the photo editing software. (DOK 1) <small>W1, W5</small> | a. Have students perform the activities outlined in the <i>Adobe Photoshop CS3 Classroom in a Book</i> excerpt “Getting to Know the Work Area.” <small>T2, T3, T4, T5, T6</small> Terms may include the following: <ul style="list-style-type: none"> • Layers • Mask • Filters • Sharpening • Noise • Toolbox tools selection • Cloning | a. Use a rubric to assess collage, images, and other performance-based work. <small>T1, T4, T6</small> |
| b. Demonstrate how to open and save an image from a digital | b. Have students perform the activities outlined in “Adobe Guide: How to Scan Images.” <small>AVC1, AVC2, AVC3, AVC4, AVC5</small> | b. Allow peers to evaluate other classmates’ work and |

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| <p>camera and an image from a scanner in photo editing software. (DOK 2)</p> | | <p>assign a grade.</p> |
| <p>c. Apply the following tools of photo editing software (DOK 2):</p> <ul style="list-style-type: none"> • Histogram • Levels • Curves • Brightness • Auto color correction • Clone stamp • Lasso • Magic wand • Crop • Image • Canvas size • Transform | <p>c. Discuss and demonstrate the following techniques to help students make their pictures the best they can be for their collages:</p> <ul style="list-style-type: none"> • Assessing color: Use the histogram to determine whether to use the levels, curves, and brightness sliders to adjust color in a photograph. • Adjusting color: Use the auto color-correction tools. • Retouching: Use the Clone Stamp to remove unwanted elements, use the Spot Healing Brush to touch up small areas, or use the Red Eye tool to remove red eye. • Selecting: Use selection tools such as the Lasso and Magic Wand tools to correct a blemish, or use selection tools to select a certain element of an image to copy and paste into a collage. • Cropping and straightening: Use the Crop tool to remove unwanted elements of a photograph. • Resizing: Use the Image and Canvas Size tools to adjust the size of the image. • Resolution: Use Resolution Check to prepare the collage for printing on the designated size of paper. (Minimum for printing for 8-in. by 10-in. is 1600x1200 pixels.) • Experimenting: Experiment and keep track of your changes by using the History palette, and remove unwanted steps with the Undo palette. • Merging photos: Use Photomerge to create panoramic images. • Transforming photos: Use Transform tools to scale, rotate, or skew a selection. <p>Note: Emphasize to students the importance of using editing and manipulation tools thoughtfully so they do not change the original intent of the photographs. Explain that being able to make changes means they should be careful about what they are creating. <small>AVC1, AVC2, AVC3, AVC4, AVC5</small></p> | <p>c. Give a written test to assess DOK for terms, phrases, and functions as they pertain to the given competency. <small>W1, W2, W4, W5</small></p> |
| <p>d. Determine proper resolution for printing an 8-in. by 10-in. photograph on the designated size of paper using photo editing software. (DOK</p> | <p>d. Utilizing the “I do, we do, you do” method, first demonstrate the process of determining proper resolution of a specific photo for a given paper size; next, work through the process along with the students; finally, have them repeat the process on their own.</p> | <p>d. Have students save an image to a student folder on the desktop or network drive. The teacher will evaluate for accuracy. <small>AVC4, AVC5</small></p> |

2)

e. Use Photomerge to create panoramic images. (DOK 3)

e. Demonstrate the process of stringing photos together.

e. Have students string together a minimum of three photos into a panorama. Evaluate for accuracy and appearance.

Standards

National Industry Standards

- AVC 1 Setting project requirements
- AVC 2 Identifying design elements when preparing images
- AVC 3 Understanding Adobe Photoshop CS4
- AVC 4 Manipulating images using Adobe Photoshop CS4
- AVC 5 Publishing digital images using Adobe Photoshop CS4

21st Century Learning Standards

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

National Educational Technology Standards for Students

- 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

ACT College Readiness Standards

- E1 Topic Development in Terms of Purpose and Focus
- E2 Organization, Unity, and Coherence
- M1 Basic Operations and Applications
- M2 Probability, Statistics, and Data Analysis
- M5 Graphical Representations
- R2 Supporting Details
- R3 Sequential, Comparative, and Cause–Effect Relationships
- R5 Generalizations and Conclusions
- S1 Interpretation of Data
- S2 Scientific Investigation
- S3 Evaluation of Models, Inferences, and Experimental Results
- W1 Expressing Judgments
- W4 Organizing Ideas
- W5 Using Language

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Adobe Systems, Inc. (2008). *Adobe design center*. Retrieved September 15, 2008, from <http://www.adobe.com/products/tips/photoshop.html>

Kodak. (n.d.). *Tips and projects center*. Retrieved September 15, 2005, from http://www.kodak.com/eknec/PageQuerier.jhtml?pq-path=2/3/38&pq-locale=en_US

Mundi Design Studios. (2001). *Mundi design studios*. Retrieved September 15, 2005, from <http://www.studiomundi.com/>

For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Digital Media Technology I

Unit 4: Graphic Design and Print Production

Competency 1: Apply color theory and design principles. DOK 2, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. It is important for students to learn to follow through with a project for a client from the onset to the delivery of the final product.

Suggested Essential Questions

1. What kind of projects can students anticipate in the workplace?
2. How can students combine color theory and design principles knowledge with the delivery of a project to a client?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|--|---|
| <p>a. Discuss the types of design principles, and have students define design principle terms. (DOK 1) <small>R4, R5</small></p> | <p>a. Explore color theory and design through planning and creating a project for clients. <small>W1, W5</small></p> <p>Show students examples of print-, Web-, and video-based logos, and identify visual cues and design principles in the logos and how the designs reach the organization’s target audience and meet the goals of the company.</p> <p>Terms may include the following:</p> <ul style="list-style-type: none"> • Emphasis/contrast (focal point) • Proximity/groupings • Balance • Alignment • Harmony/proportion • White space • Repetition • Color • Brightness: The quantity of light reaching the viewer’s eye • Contrast and the color wheel • Using color in design • RBG and CMYK differences • Color management: Ensuring that viewers see the same color across different devices | <p>a. Students will define the terms listed on the Design Principles Worksheet. As each topic is introduced, students will complete worksheets.</p> <p>Written test to assess knowledge of terms and design principles</p> |
| <p>b. Understand the importance of color management, and explain why color variations occur between devices. (DOK 2) <small>AVC1, AVC2, AVC3, AVC4</small></p> | <p>b. Describe solutions to help students create consistency across devices:</p> <ul style="list-style-type: none"> • Causes of color variation • Monitor profiles • Input device profiles • Output device profiles • Manage color by using color settings • Soft-proof to prevent color variation from | <p>b. Give students variations of color-based problems. Grade performance-based work on the basis of appropriate solutions to the problem.</p> |

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| | <p>screen to print</p> <ul style="list-style-type: none"> • Manage color when printing <p>Students will select the person, group, or organization they will create their logo for and brainstorm a set of words and goals that best describes that person, group, or organization. They should sketch concepts on paper and record their initial goals in the Review and Redesign Worksheet. <small>AVC1, AVC2, AVC3, AVC4</small></p> | <p>Students will record their initial goals for the logo design in the Review and Redesign Worksheet.</p> |
| <p>c. Demonstrate use of selection, drawing, and painting tools in appropriate graphic design software. (DOK 2)</p> | <p>c. Use the guides <i>How to Use Drawing Tools</i>, <i>How to Draw Shapes</i>, and <i>Bitmap and Vector Images</i> to introduce drawing and image-editing tools such as the Line, Shape, Eraser, and Paint tools. <small>IM5, IM6</small></p> | <p>c. Teacher observation for accuracy</p> |
| <p>d. Discuss possible canvas sizes for logos, and demonstrate the options that can be altered. (DOK 2)</p> | <p>d. Using the <i>How to Create a New Document</i> guide, introduce how to create a new document in the graphic software and explain the options they can alter. Group students, and have them create a graphic on different sizes of canvases, varying the color mode, background color, and resolution. Have open discussion to critique the products.</p> <p>Options may include the following:</p> <ul style="list-style-type: none"> • Document size • Resolution • Color mode (CMYK, RGB, grayscale, etc.) • Background color • Guides • Rulers | <p>d. Students will observe graphics created and manipulated by the teacher. The students will explain any changes that could be made to enhance or improve the graphic.</p> |
| <p>e. Understand and incorporate image-optimization (vector and bitmap) strategies and file formats. (DOK 2)</p> | <p>e. Discuss the differences between vector and bitmap graphics. <small>AVC2, AVC3, AVC4</small></p> <p>Assign a project that will allow students time to investigate vector graphics and bitmap graphics.</p> <p>Discuss image optimization and the importance of file formats to include the following:</p> <ul style="list-style-type: none"> • The difference between printed and on-screen images (inches vs. pixels, size variation, scaling vs. resampling, and ink dots vs. RGB values) • File formats (GIF, JPEG, TIFF, EPS, and PDF) • Image resolution (pixels vs. inches, ppi and dpi for printing, pixels for the Web, and line screen frequency for commercial printing) • Preserving image quality when manipulating images | <p>e. Teacher-created test consisting of scenarios in which the students will decide which format, vector, or bitmap is most suitable.</p> <p>Students should demonstrate vector graphics versus bitmap graphics as a result of their research for a grade.</p> |

- Broadcast standards for video (such as NTSC and HDTV) to help select the appropriate TV image preset
- Avoiding thin lines (thinner than two pixels) because interlacing can create flicker when the image is displayed in video
- Using the NTSC Colors filter when working with color for video use because saturated or bright colors can cause bleeding when displayed in video

Guide: *How to Generate Different File Formats*

f. Identify aspects of redesign and its importance in the design process. (DOK 1)
T1, T2, T3, T4, T6

f. Define *review* and *redesign*. Explore what *redesign* means for student work and why it might be a useful step in the overall design process. Develop class definitions, and discuss possible steps or questions that will help in redesigning a product. Include the following categories for review:

- Meeting initial focus, purpose, and audience
- Changing focus, purpose, or audience
- Applying good design principles

Students will individually review their own projects against their initial goals and intended design principles and redesign as necessary. Explain to students that they need to prepare multiple versions of their logos for use in color and in black-and-white printed documents as well as for use on the Web and in videos.

Students will present three logos to the class to include the following in their presentations:

- Their design decisions in creating each logo and their rationale for preparing the images for each medium (Web, print, video), including the file type, size, and resolution for each version and situation
- Explanations of any changes they made during the review and redesign stage
- What they learned in the project and what they want to learn next

f. Completion of worksheet related to redesign

Review and Redesign of Logos Worksheet: Students will review their own logos against their initial goals and intended design principles. ^{AVC2}

A project rubric will be used to evaluate whether or not all components are present and to what degree in the student presentation.

Competency 2: Understand typography and layout design. ^{DOK 1}

Suggested Enduring Understandings

1. It is important for students to learn to follow through with a project for a client from the onset to the delivery of the final product.

Suggested Essential Questions

1. What kind of projects can students anticipate in the workplace?
2. How can students combine typography and layout design knowledge with the delivery of a project to a client?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| <p>a. Understand typography concepts for use in planning and designing in graphic design. (DOK 1)</p> | <p>a. Review the definition and application of typography concepts. Typography concepts may include the following: ^{R1, R3, R4, R5}</p> <ul style="list-style-type: none"> • Serifs • Kerning • Tracking or letter spacing • Leading • Baseline shift • Word spacing • Type size • Readability • Hierarchy • Fonts • Rule of thirds (optical center) • Alignment | <p>a. Test students on typography concepts and typography terms. ^{W1, W4, W5, R5}</p> |
| <p>b. Discuss how tone, audience, and purpose impact design and readability. (DOK 1) ^{E2, E3, T4, AVC1}</p> | <p>b. Have students begin to plan and design a business card for a client. Include questions such as the following:</p> <ul style="list-style-type: none"> • What information needs to be on the card? • What do you want to communicate about yourself or the organization? • Who is the intended audience? • What impact do you want the business cards to have when they are handed out? • What is the most important information to be conveyed? • How does your audience impact the font family you will use? <p>Students will sketch business cards and identify content for the card and any additional graphics elements they intend to include.</p> <p>Apply typography and layout design concepts to identify possible fonts and colors. Use the review and redesign process for the business card project.</p> | <p>b. Analyzing Business Cards Worksheet</p> <p>Grade performance-based work for a sketch of the business card.</p> <p>Review and Redesign of Business Cards Worksheet</p> |
| <p>c. Explore resizing and cropping images. (DOK 1) ^{AVC4}</p> | <p>c. Use graphic software to resize and crop images to fit within constraints of a printed business card.</p> <p>Review the Adobe guide <i>How to Resize and Crop Images</i>. Have students measure size of logos and other graphic elements used in sample business cards to get a sense of general size possibilities.</p> | <p>c. Grade a performance-based assignment in which students illustrate resizing and cropping images as well as using filters.</p> |

Demonstrate how to use filters in graphic software. Utilize Adobe Guide: *How to Use Filters*

d. Demonstrate layout in graphic software. (DOK 2)

d. Demonstrate how to set up a document, create text, and use the grids and rulers in graphic software (InDesign).

d. Teacher observation of student performance

Utilize Adobe Guide: *How to Set Up a Document*
Guide: *How to Use Text*
Guide: *How to Use the Ruler, Grid, Guides, and the Align Panel*^{M5, M7}

e. Demonstrate importing files into graphic software. (DOK 2)

e. Import graphics elements and logos into business card layouts.

e. **Business Card Project Rubric**

Prepare business cards for print in graphic software, and print.

Reference Adobe Guide: *How to Prepare Files for Print*

Demonstrate how to create a PDF slide show, and introduce the following project (Guide: *How to Create a PDF Presentation*):^{T6}

Assign students to small groups, and instruct them to select one business card design and create three redesign versions of each for the following scenarios:^{M7, T1, T4}

- Serious
- Creative
- Entertaining

Allow students to create the three business cards.

Instruct each group to prepare a presentation that will include a PDF slide show of their three business cards in which they will explain and identify the design elements they changed to redesign and change the tone of their original cards.

Groups will present their PDF slideshows.

Competency 3: Apply design principles and techniques in the creation of an advertisement.

DOK 3, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. It is important for students to learn to follow through with a project for a client from the onset to the delivery of the final product.

Suggested Essential Questions

1. What kind of projects can students anticipate in the workplace?
2. How can students combine design principles and techniques with the delivery of a project to a client?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|--|
| <p>a. Understand design principles and techniques for use in planning, designing, and producing an advertisement. (DOK 3) ^{AVC1}</p> | <p>a. Discuss design principles and techniques used in the following areas:</p> <ul style="list-style-type: none"> • Layout • Colors and graphics • Typography • Tone <p>Introduce an advertisement project with information about the client organization:</p> <ul style="list-style-type: none"> • Name of organization • Its missions and goals • Product or service provided by the organization and explanation of how it works • Background and history • Why the organization wants an advertising team | <p>a. Graded test on design principle terms</p> <p>Analyzing Advertisements Worksheet</p> |
| <p>b. Introduce aspects of project management and how to work with clients. (DOK 2)</p> | <p>b. Discuss project phases, and ask students to organize the planning of their tasks within the project phases. Instruct each group to begin to create a project plan (completed after the client interview) that takes into account the following:</p> <ul style="list-style-type: none"> • Define. • Design. • Build. • Deliver: Print delivery, Web delivery, and video delivery. <p>Discuss the kind of information about the client’s goals and target audience design teams need from a client.</p> <p>Have design teams meet to discuss interview questions and other questions they feel might be necessary to build their understanding of their client’s needs.</p> <p>Design teams should interview their clients, take notes, and gather information identified as needed; review recommendations made by the</p> | <p>b. Introduce scenarios, and have students role-play to illustrate how to work with clients. Have each student team member play his or her part. Assess student performance.</p> <p>Quiz students on identifying and naming project phases and providing explanations of each phase.</p> <p>Students will complete the Project Plan Worksheet; review for completion.</p> <p>Grade students’ list of interview questions to</p> |

client; and complete project plans incorporating their conclusions from client interviews.

their clients.

Topics can include the following:

- Identifying roles—especially the person who serves as the liaison between the client and the group
- Identifying the necessary project steps
- Creating a time line with specific deliverables and due dates
- Understanding and clarifying client expectations
- Communication and dialog with a client (e-mail, Web conferencing, and other online collaborative tools to review design with their client)

**Client Interview
Advertisement
Worksheet**

c. Plan and design an advertisement. (DOK 3) ^{W1, W2, W3, W4, W5}

- c. Plan for advertisements:
- Sketch layout ideas.
 - Take photographs of relevant products, people in action, or other services related to the advertisement. ^{AVCS}
 - Identify any needed assets. (Remind students that they need permission from any person they photograph for use in the advertisement or for visualizing the equipment with clients.)

c. Require sketches/plans be turned in for a grade.

Allow peers to evaluate the three concept ideas and assign a grade.

Instruct groups to create three concept ideas for the advertisement using graphic software. Instruct groups to convert their comps to PDF format and meet with the client to explain their designs. Each group should have its own notetaker to gather all comments. Review the Guide: *How to Create Layer Comps*.

Assess final products to determine if changes were made per the client feedback.

Review the process of redesigning, and instruct students to review and revise their advertisements according to client feedback. Instruct them to resubmit one or two comps (depending on the client's wishes) and continue this cycle until the client approves a single comp.

d. Build an advertisement. (DOK 3) ^{E2, W1}

- d. Create a draft design of the advertisement identifying it as the first version with a watermark. Demonstrate how to use opacity and fill to create a watermark in graphic software. Review the Guide: *How to Add a Watermark to Images*.

d. Grade the draft design and the students' ability to add the watermark as instructed, how they use text and objects, and graphic frames.

Demonstrate how to work with text and place objects on a page in graphic software (InDesign) and how to export elements from one design software program to another.

Observe to determine mastery of text and object placement and

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| | <p>Review the following: Guide: <i>How to Work with Text Frames</i> Guide: <i>How to Combine Graphics Frames and Text Frames</i> Guide: <i>How to Place Images on a Page</i> Guide: <i>How to Work with Graphics Frames</i></p> | manipulation |
| <p>e. Understand the process of reviewing and redesigning an advertisement. (DOK 3)</p> | <p>e. Discuss the purpose of a focus group and general tips for conducting one. Include the following: ^{WS}</p> <ul style="list-style-type: none"> • Defining the objectives: Determine what they want to learn about their advertisement. • Planning the session: Identify the best time of day, determine the best representative audience to select, plan refreshments, choose the number of members, create an agenda, create questions, determine how to display the advertisement, plan for recording the session, choose a leader and notetakers for the session, and choose any thank-you gifts for participants. • Facilitating the session: Make introductions, identify the goal of the session, explain the recording if applicable, ask questions, provide summaries of participant answers for clarification purposes, include all participants, and close the session. • After the session: Make sure the session was recorded, write down any additional notes or observations, debrief with fellow team members, and create a summary document. <p>Each group will plan its focus group session by using the guidelines above to learn how the advertisement is perceived and how to improve it.</p> <p>Each group will gather potential target audience members and coordinate and run a focus group, using its plans. (Students can pose as the audience but need to research the expected needs and expectations they represent to accurately inform the design.)</p> <p>Each group will redesign and revise its advertisement as necessary from the focus group findings. Students will create a final advertisement and remove the watermark and prepare the advertisement for the delivery specs of the client and also in the following situations to illustrate graphics in different media:</p> <ul style="list-style-type: none"> • Print version for a professional printer • Web version for a Web or Flash designer • Video version to be used by a producer as a preamble section of a movie | <p>e. Allow peers to serve as audience members and evaluate the team’s work.</p> <p>Advertisement Project Rubric</p> <p>Students will complete a self-evaluation and group evaluation form; assess for completion.</p> |

(Review file format and exporting, best file formats for the Web, commercial printing, and PowerPoint/Word.)

Students should present the final advertisement to the client and explain design decisions, including focus group feedback.

Discuss each group’s project process and results. Topics could include the following: ^{T2, T3, T4, T6}

- Design process and decisions, including the various iterations and stages of the advertisement
- Experience of working with a client and final client presentation
- Experience of conducting a focus group
- Experience of working within a group, creating a project plan, and using project management strategies
- Explanation of how the review and redesign cycle strengthened the final product
- Identification of any additional lessons learned

Competency 4: Utilize advanced image manipulation and page layout to create a brochure. DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

Suggested Essential Questions

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| <ol style="list-style-type: none"> 1. Informing with a brochure can be quick and cost-effective. Students can enhance their design and technical skills by creating a brochure using advanced image manipulation. | <ol style="list-style-type: none"> 1. How can students enhance their design and technical skills? 2. How can students inform the client about a product, service, or location? |
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| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| <p>a. Demonstrate advanced image manipulation techniques. (DOK 2)</p> | <p>a. Review the following:</p> <ul style="list-style-type: none"> • Photoshop guide: How to use gradient maps • Photoshop guide: How to use advanced color techniques • Photoshop guide: How to use the Vanishing Point filter • Photoshop guide: How to blend, feather, and smooth <p>Introduce students to the goals of a creating a brochure: ^{E1, E2, E3, E4, W4}</p> <ul style="list-style-type: none"> • To create and build a trifold brochure for a client • Use color management, filters, and retouching tools to create a graphics element. • Conduct a client review of the brochure project. • Write a short reflection on the process of creating the brochure. | <p>a. Students will complete the Client Interview: Brochure Worksheet.</p> <p>Performance-based assessment of students’ advanced image manipulation techniques project</p> <p>Review and Redesign of Brochure Worksheet</p> |

Share examples of trifold brochures, and discuss the following with students:

- Use of trifold layout with six panels and tips for constructing a trifold such as the following:
 - The first panel, or cover, should be attention-grabbing, like an advertisement.
 - The second, third, and fourth panels (inside of the brochure) should contain the bulk of the content. Headlines, graphics, images, and content can spread across all three interior panels, not just each individual panel.
 - The fifth panel is usually a good place for customer testimonials or endorsements.
 - The sixth panel is a good place for a call to action: A statement that tells the audience members what they should or need to do.
- Purpose of the brochure: Is it clear and effective?
- Graphics: Make sure they are compelling.
- Design principles: Use white space, typography, and color effectively.
- Cost of printing: How is it affected by color choice?
- Content: Is it well written, copyedited, succinct, and to the point?

Techniques may include the following:

- Gradient maps
- Advanced color techniques
- Vanishing Point filter
- Blending, feathering, and smoothing

b. Demonstrate advanced layout techniques. (DOK 2)

b. Advanced techniques may include the following:

- Using frames and layers
- Creating placeholder text
- Creating text effects and wrapping text
- Creating shapes and borders

Using the “I do, we do, you do” method, demonstrate the following in InDesign:

- InDesign guide: How to work with layers
- InDesign guide: How to use placeholder text
- InDesign guide: How to apply effects to text
- InDesign guide: How to wrap text around objects
- InDesign guide: How to use character and paragraph styles

Have students create a rough prototype and plan a focus group session to test the brochure focus and content appropriateness with the target audience. Have students synthesize feedback from focus groups to incorporate into their brochures.

b. Students create a self-test.

Project Rubric

Graded reflection paper

In preparation for the client interview, discuss information the teams need from their clients about the clients' goals and target audience of the brochure. Have each design team discuss the interview questions and add other questions it feels might be necessary to build understanding of the client's needs.

Have students meet with clients to interview them. From the results of their interviews, have students create a project plan. Remind students to plan contingencies based on their past experience with clients. These contingencies might include the following:

- Adding more time for review cycles
- Limiting the number of review cycles
- Identifying where scope should be limited if certain milestones are not met
- Agreeing upon paper type, color, and cost for the final product

Have students create three design comps for their client, using Photoshop, and present these comps in PDF format. In addition to the PDF comps, explain that the students must research paper choices and costs and present options to the client to gain approval of paper type and budget.

Have students engage in review and redesign cycles with their clients as in the previous project until a final design is agreed on.

Advise the students to have a debriefing session with their client for reviewing the final brochure and discussing their experiences. Some areas you might have students focus on include the following:

- Communication: Considering the different methods of communication, which was the most effective? Was there enough communication during the project cycle? In what ways were communication challenges resolved? What are ways communication with clients should change (or not) the next time a project is started?
 - Deliverables: Was there a schedule of deliverables established? Did the client receive the expected deliverables on time? Were the deliverables the quality they expected? Were they in the expected format? Can the client suggest ways to improve the process of delivering materials?
 - Feedback: Did the client feel he or she was given enough time and consideration for feedback? Did
-

- the design team consider the client’s feedback?
How could the feedback process be improved?
- Final product: Does the final product address the target audience? Is the final brochure what the client expected? Why or why not?

After the process and product have been reviewed with the client, partner the student groups, and have students hold a peer review session in which each student group presents its brochure. Review the peer review process:

- When presenting the group’s work for peer review, state the purpose, audience, and goals of the document, and point out any concerns.
- After being presented work by a designer, the reviewing group’s first response should be to reiterate the purpose, audience, and goals as group members understand it.
- After the designing group’s purpose, audience, and goals are clear, ask questions of the designing group, make comments, and offer suggestions.
- To conclude, the designing group will summarize the suggestions and offer a plan for revision.

Guide: Peer review (from Project 5) ^{E1, W1, W4, W5}

Instruct students to write a one- to two-page reflection paper about the process of creating their product, identifying areas for improvement for their product and process. Encourage students to reflect on how they employed design, project management, and technical skills they have learned in this and previous projects and what they learned from the client debriefing. Encourage students to reflect on what skills and techniques they want to learn next to further their knowledge of design and print production.

Competency 5: Create a newsletter layout with advanced editing. ^{DOK 3}

| Suggested Enduring Understandings | Suggested Essential Questions |
|--|--|
| <ol style="list-style-type: none"> 1. Newsletters are publications that are distributed on a regular basis to target a particular audience who share a common interest. | <ol style="list-style-type: none"> 1. How can students use their teamwork abilities to create? 2. What software enables students to combine a theme, purpose, and content with design, layout, and graphic elements to produce a newsletter? |

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| <ol style="list-style-type: none"> a. Identify standard newsletter publishing practices, and cite | <ol style="list-style-type: none"> a. Discuss the goals associated with creating a newsletter. | |

sources. (DOK 1)^{WS}

For each example, discuss its purpose and audience. Have students identify the theme of the newsletter and analyze the design techniques used to integrate that theme across the newsletter content to meet the audience and purpose.

Understand the basics of Illustrator.

Show students examples of newsletters; include examples from businesses, schools, and community-based organizations.

Note: You might want to gather some examples of newsletters to share with students.

-
- b. Examine newsletters to identify the following elements: (DOK 1)^{E1, E2}
- Nameplate
 - Content (and number of articles or entries)
 - Table of contents
 - Masthead
 - Titles and headers
 - Page numbers
 - Bylines
 - Continuation lines
 - Pull quotes
 - End signs
 - Photos/illustrations
 - Mailing panels

- b. Introduce the guidelines for the newsletters. Guidelines might include the following:
- Length should be three to four pages.
 - Include the various elements of a newsletter (nameplate, masthead, pull quotes, etc.).
 - Include three to four distinct sections.
 - Include two to three articles.
 - Include three to four photographs.
 - Create a three- or four-column layout.
 - Create a comp for review and one for redesign.
 - If appropriate, include the advertisement from Project 4.
 - Apply copyright and fair use guidelines for any applicable content or assets.
 - Follow the journalist code of ethics in the creation of newsletter content.

b. **Project Plan Worksheet**

Note: You might want to ask students to create the newsletter for a particular organization in the school or community. Additionally, you might make a guideline that one version of the newsletter must have a mailing panel and another version should be e-mailed.

As students view the newsletters, also discuss the journalistic code of ethics and the following concepts:

- Truth: Journalists should be honest in gathering, reporting, and interpreting information.
- Accountability: Journalists are accountable to their audience and colleagues.
- Fairness: Journalists should present the news impartially and fairly, clearly representing various perspectives in a story.
- Harm and safety: Journalists should treat

sources, subjects, and colleagues with respect. They should assess any potential danger they risk for themselves, sources, subjects, or colleagues in getting a story.

Note: For more information, review the Web sites in the background resources section on the journalistic code of ethics.

c. Discuss the concept of working as a team and roles in newsletter production. (DOK 2) ^{T2}

c. Form student teams of two or three people. Where possible, mix members with different strengths, such as visual design or technical skill. Some roles to cover include the following:

- Editors
- Writers
- Photographers
- Designers

Note: Explain to students that they are responsible for managing the tasks that fall under their assigned role; however, all students will do work across the roles. Because this is a class simulation, students will use the roles to help them manage the project better. You can combine or split roles as necessary to accommodate the number of members on a team.

Allow teams time to distribute roles and brainstorm the theme, purpose, audience, and goals for their newsletter.

Note: If students are creating the newsletter for an organization, have them interview their clients to ascertain the goals, audience, and purpose and to brainstorm an appropriate theme. Have them alter questions from their previous client interviews and adapt them to this project. If it is difficult to find clients, you can use the ideas in the client scenarios section of the extension activities to help you create client profiles.

Explain that because newsletters are created multiple times, streamlining the production process is helpful. Discuss the advantages of the following:

- Creating and working with reusable assets (layout elements, images, graphics, illustrations, etc.)
 - Creating and implementing a style guide with lists of fonts, colors, heading styles, and so on for their newsletter (especially helpful for
-

consistency and in passing knowledge on to new workers).

- Creating and using templates for their newsletter

Have students create an initial project plan, assigning task managers and due dates for major milestones. They will build out more details when their design is approved.

Allow teams time to sketch two different designs, on paper, of their newsletter elements (including the nameplate) and sections, identifying which elements will be reusable and maintaining consistency across pages to improve readability for front and internal pages. Conduct a team review and redesign cycle of their layout sketches as they prepare to create the design comps in Photoshop.

Allow time for teams to use their sketches to create two design comps in Photoshop and review these with their client. Engage in review and redesign cycles until an approved look is reached.

Note: If students are not working with a client, you or other student groups could serve as the clients.

Based on their approved designs, have students build a mock prototype in InDesign. Explain that students should use placeholder text for headers and articles and use graphic frames with short descriptions as placeholders for images and graphic elements.

Have students test the prototype with potential users of the newsletter. Some items to review and gather feedback for include the following: ^{S1,}
_{S2}

- Consistency across pages
- Reusable elements
- Hierarchy of information
- Readability of chosen fonts
- Use of white space and rule of thirds
- Alignment of content and graphic elements

Allow teams time to implement any changes to the overall layout and design based on feedback.

d. Design, build, and review a newsletter. (DOK 3) ^{W4,}

d. Now that the students have their layout design, explain that they need to brainstorm the scope of

d. **Project Plan Worksheet**

their newsletter, including number of pages, number of sections, number and content of articles, number and content of photographs, templates, and style guide. Have teams update their project plans to include details they can now start tracking.

Have teams review and get approval for their final scope with you to be sure it is appropriate and doable.

Explain that although Photoshop is an excellent program for manipulating images and can be used to create bitmap graphics, Adobe Illustrator is superior for creating vector-based graphics and images. Explain that students will learn to use Illustrator to create the nameplate for the newsletter. Introduce students to the Illustrator interface.

Adobe Illustrator CS3 Classroom in a Book
excerpt: Getting to Know the Work Area

Note: You might want students to review the bitmap and vector images guide from Project 2.

Explain that students will use their nameplate sketch to create the newsletter nameplate in Illustrator. Using the “I do, we do, you do” method, demonstrate how to use the drawing tools.^{M5}

Illustrator guide: How to draw with Illustrator

Allow teams time to create their newsletter nameplates.

Explain that because they learned about the advantages of creating and using reusable images and templates, they will now learn to implement these techniques by using InDesign. Using the “I do, we do, you do” method, demonstrate how to use the library and create templates.

InDesign guide: How to reuse objects with libraries

InDesign guide: How to use document templates

As student teams build their layout templates, they might need to use one or more of the following advanced techniques, based on their newsletters. Demonstrate these techniques to help students implement their layout designs:

-
- Transforming objects
 - Managing text between frames
 - Adding and creating page numbers
 - Creating captions

InDesign guide: How to transform objects

InDesign guide: How to manage text flow between frames

InDesign guide: How to add page numbers

InDesign guide: How to create captions

Have students conduct research on the articles they plan to include. Remind students to validate the content for currency and accuracy as they gather information for articles.^{T3}

Note: If students are creating the newsletter for a client, they might need to gather this content from the client and then synthesize the information into articles. Also, if students are preparing for the Visual Communication certification, have them conduct research on a scientific concept.

If students are creating a newsletter for an engineering, scientific, or medical audience or researching and writing scientific articles, they can use the measurement tool in Photoshop to extract quantitative information such as distance, perimeter, area, and other measurements. Using the “I do, we do, you do” method, demonstrate how to use the measurement tool in Photoshop.

Photoshop guide: How to use measurement and analysis tools

Discuss the ability to create content within InDesign or write content in a word processing program and import it into InDesign. Using the “I do, we do, you do” method, demonstrate how to import text from Microsoft Word into InDesign.

InDesign Guide: How to import text from Microsoft Word

Allow teams time to write drafts of the articles to be submitted for instructor review and approval.

Note: Have students use commenting tools in Acrobat to review and improve articles.

Allow teams time to create any needed graphic elements in Photoshop or Illustrator and then

| | | |
|--|--|---|
| | finalize the article content and layout in InDesign. | |
| | Instruct the students to have a final editing review of the content and design, finalize the newsletter, and create PDF versions that can be printed and e-mailed. | |
| e. Present the finished newsletter to an audience. (DOK 2) | <p>e. Explain that each team will present its newsletter to the class, identifying and explaining the following:</p> <ul style="list-style-type: none"> • The design decisions the team made so it could implement the theme and purpose through the nameplate, layout, graphic elements, and content of the newsletter • How the team plans to distribute its newsletter • What the team learned through this process and how team members will continue to use and enhance these skills in the future • The differences of working in a team with assigned roles | e. Graded reflection paper Project Rubric |

Competency 6: Research careers, and develop a professional portfolio. DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Portfolios communicate accomplishments, works in progress, or personal history. Students can use portfolios to showcase their work when applying for a job.

Suggested Essential Questions

1. What software is available for the creation of PDF portfolios?
2. How can students successfully display their work electronically?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|--|
| a. Research career areas in design and/or print production. (DOK 1) <small>E1, E2, E4, E5, E6</small> | a. Have students research career areas in design and then select the focus for their portfolios based on their research (creative/art director, print production manager or coordinator, book designer, book jacket designer, layout artist, logo designer, brand identity designer, illustrator, photo editor, photographer, or prepress technician). | a. Have students choose a career from their research and write a three- to five-paragraph essay explaining why they would choose this career over the other careers they researched. Grade for completion, correct grammar, and composition. |
| b. Identify the purpose of a portfolio as it relates to career planning. (DOK 2) | <p>b. Discuss the following goals of a portfolio:</p> <ul style="list-style-type: none"> • Understand goals and uses of portfolios. • Research career areas in design and/or print production. • Plan and create a flowchart for a portfolio. • Select and organize content for a PDF portfolio. | b. Assign students a worksheet to complete answering questions regarding the goals of the portfolio project as |

Discuss the concept of a portfolio, its purpose, and its audience.

- What is a portfolio?
- What are the goals of a particular portfolio?
- What does a portfolio contain?
- Would it contain professional experiences? Coursework?
- How do you use a portfolio to communicate ideas?
- What could you use to communicate these ideas (images, text, page layout, organization of the portfolio)?
- What are the long-term and short-term goals of a portfolio?
- Who is the audience for the portfolio?

Show examples of portfolios—both paper-based and online—and analyze their purpose and audience with students.

Students will select files they could include in their portfolios that would represent their best work and highlight their skills.

Explain the expectations of the portfolio.

- Portfolio introduction explaining skill set, training, projects included in portfolio, career interests and goals, and any professional experience
- Narrative introductions to each project, explaining the ways their work highlights their skills
- Narrative introductions including specific examples comparing their skills with the career area they are interested in
- Learning plan that identifies skills or concepts they might be lacking at this point but would want to learn about and focus on
- Web photo gallery of images to link to their photography work

well as the concepts of the portfolio, its purpose, and its audience for a grade.

Graded flowchart

c. Construct a portfolio. (DOK 3)

c. Students will construct their PDF portfolios, creating any assets in Photoshop and creating the layout and text in InDesign, using the various lessons learned.

c. **Portfolio Project Rubric**

Students will export final portfolio content from InDesign to Acrobat to create a PDF portfolio. Students will create bookmarks in the PDF as well as any internal and external links they gathered earlier.

Guide: *How to Create a PDF Portfolio*

Guide: *How to Create Links*

Guide: *How to Create and Organize Bookmarks*

d. Present a portfolio. (DOK
2)

d. Students will pair up for the purpose of testing each other's PDF portfolios. Students will finalize their PDF portfolios and make a version that can be printed and a lighter version (smaller file size) for use on the Web or to e-mail.

d. Students will conduct peer reviews in groups of four, reviewing one another's portfolios.

Standards

National Industry Standards

- AVC 1 Setting project requirements
- AVC 2 Identifying design elements when preparing images
- AVC 3 Understanding Adobe Photoshop CS4
- AVC 4 Manipulating images using Adobe Photoshop CS4

21st Century Learning Standards

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

National Educational Technology Standards for Students

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

ACT College Readiness Standards

- E1 Topic Development in Terms of Purpose and Focus
- E2 Organization, Unity, and Coherence
- E3 Word Choice in Terms of Style, Tone, Clarity, and Economy
- E4 Sentence Structure and Formation
- E5 Conventions of Usage
- E6 Conventions of Punctuation
- M5 Graphical Representations
- M6 Properties of Plane Figures
- M7 Measurement
- R1 Main Ideas and Author's Approach
- R3 Sequential, Comparative, and Cause–Effect Relationships
- R4 Meaning of Words
- R5 Generalizations and Conclusions
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W3 Developing a Position
- W4 Organizing Ideas
- W5 Using Language

References

Adobe Systems, Inc. (2008). *Visual design: Foundations of design and print production*. Retrieved November 21, 2008, from <http://www.adobe.com/education/instruction/teach/visualdesign.html>

Adobe Systems, Inc. (2008). *Adobe design center*. Retrieved September 15, 2008, from <http://www.adobe.com/products/tips/photoshop.html>

Kodak. (n.d.). *Tips and projects center*. Retrieved September 15, 2005, from http://www.kodak.com/eknec/PageQuerier.jhtml?pq-path=2/3/38&pq-locale=en_US

For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Suggested Rubrics and Checklists



Name: _____

Date: _____

Period: _____

Group Participation Rubric

| | Beginning 1 point | Developing 2 points | Accomplished 3 points | Exemplary 4 points | Score |
|--------------------------|--|---|--|--|--------------|
| 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 | | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Brochure (Advanced Image Manipulation and Page Layout) Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------------|--|---|--|--------------|
| Interview | Absent or incomplete | The interview identifies the client's goals, the target audience, and the intended purpose of the brochure. The interview identifies the content and information crucial to the brochure. The interview identifies the client's preferred design requirements and includes any additional relevant questions. | The interview clearly identifies the client's goals, the target audience, and the intended purpose of the brochure. The interview clearly identifies the content (both original and repurposed) and information crucial to the brochure. The interview identifies the client's preferred design requirements and documents specific examples. The interview includes additional relevant and thorough questions to get or clarify specific information. | |
| Project Plan | Absent or incomplete | Project plans are thorough and complete and document all the phases and tasks for the project. | Project plans are thorough and complete and document all the phases and tasks for the project. Milestones and deadlines reflect appropriate time frames and learning from previous projects. | |
| Focus Group | Absent or incomplete | Focus groups are well planned and well run. Student questioning probes effectively at understanding audience needs. Data gathered from focus groups is synthesized and informs the brochure design. | Focus groups are well planned and well run. Plans and process reflect learning from previous sessions. Student questioning probes effectively at understanding audience needs. Data gathered from focus groups are synthesized and inform the brochure design. | |
| Review and Redesign | Absent or incomplete | The review and redesign process identifies whether the design comp meets the initial goals, requires new goals, and reflects good design principles. The review and redesign process details redesign changes for the final brochure. | The review and redesign process clearly and explicitly identifies how the design comp meets or does not meet the initial goals, whether the brochure requires new goals, and how the brochure reflects good design principles. The review and redesign process details changes for the final brochure and identifies new design principles and technological techniques to incorporate. In the course of reviewing the design comps, students use commenting tools and placeholder text to help them select the final layout design. | |
| Brochures - | Absent, incomplete, or | The brochure is appropriately written and communicates | The brochure is original, creative, and eye-catching. The brochure is well | |

| | | | | |
|---------------------------|----------------------------------|--|---|--|
| Content | unfocused | information to the target audience(s). Brochure content reflects accurate information gathered from reliable sources. | written and communicates information effectively to the target audience(s). The brochure's content synthesizes information from the interview and through research and conveys a specific message. Brochure content reflects accurate information gathered from reliable sources. | |
| Brochures - Design | Absent, incomplete, or unfocused | The brochure employs design principles through the layout and uses such techniques as wrapped text, columns, and borders. | The brochure clearly and efficiently employs appropriate color theory, page layout, and design principles to help communicate the purpose and goal. The brochure incorporates such techniques as wrapped text, headlines, text effects, columns, shapes, and borders. Selected images use photo manipulation techniques such as filters and blending tools. | |
| Reflection Paper | Absent, incomplete, or unfocused | The reflection paper explains the brochure design and production process. The reflection paper explains what students learned from the client debriefing. | The reflection paper clearly and concisely explains the brochure design and production process and makes relevant and clear connections to using and expanding upon the design, project management, and technical skills students have learned in the current and in previous projects. The reflection paper clearly analyzes what they learned from the client debriefing and identifies what they want to learn next to further their design and print production skills. | |
| Teamwork | Absent or incomplete | Student collaborates with other students as required to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Sometimes consults with other team members on major project decisions but makes minimal effort to help others build skills. Teams plan and manage multiple steps to ensure delivery and approval for design comps, content, and a final product to client. | Student collaborates freely with other students to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Consults with other team members on major project decisions and voluntarily helps others build skills to complete the project. Teams efficiently and effectively collaborate and interact with peers, experts, or others to create design comps and final brochure. Teams efficiently and effectively plan and manage multiple steps to ensure delivery and approval for design comps, content, and a final product to client. | |
| Time Management | Absent or incomplete | Student allots time for each phase of the design and development process. Completes most phases on schedule. | Student thoughtfully and effectively allots time for each phase of the design and development process. Completes all phases on schedule. | |
| Client Debriefing | Absent or incomplete | Teams debrief with the client to access the level and degree of communication, the satisfaction with deliverables, | Teams debrief with client and access the following: <ul style="list-style-type: none"> • Effective forms and appropriate level of communication | |

| | | | | |
|--------------------|--|---|---|--|
| | | the experience with feedback, and perceptions of the final product. | <ul style="list-style-type: none"> • Communication challenges and ways to improve communication • Schedule and expectation of deliverables • Ways to improve deliverable process • Time and ability to give and receive feedback • Expectations of the final product | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Career Research and Development Rubric

| | Does not meet expectations 0 | Meets expectations 3 | Exceeds Expectations 5 | Score |
|--------------------------------|---|---|---|--------------|
| Research | Absent or incomplete | Research covers design and/or print production career area. Research is evident in the portfolio content, providing such information as job description, qualifications, skill set, technical knowledge, required training, and salary information. | Research clearly covers a specific design and/or print production career area. Research is evident in the portfolio content, providing specific information and examples such as job description, qualifications, skill set, technical knowledge, required training, and salary information. | |
| Flowchart | Absent or incomplete | Flowchart is detailed and includes an appropriate organizational structure for the planned content. | Flowchart is detailed and includes a clear and logical organizational structure for the planned content. Flowchart includes all content that should go in PDF portfolio. | |
| Learning plan | Absent or incomplete | Learning plan identifies the skills and concepts the student is interested in learning. | Learning plan clearly identifies the skills and concepts tied to the job or higher education program areas the student is interested in pursuing. | |
| PDF portfolio – content | Absent, incomplete, or unfocused | PDF portfolio highlights student's completed projects and includes an introduction and descriptive narratives for each project. PDF portfolio highlights skills relevant to design and/or print production career area that interests him or her. | PDF portfolio is well organized and clearly highlights student's completed projects. PDF portfolio includes a clear and concise introduction and descriptive narratives for each project that relates to and clearly highlights the design and/or print production career area that interests them. | |
| PDF portfolio – design | Absent, incomplete, or unfocused | Overall design of PDF portfolio and highlighted projects employ appropriate use of design principles, layout design, image composition, color | Overall design of PDF portfolio and highlighted projects employs effective use of design principles, layout design, image composition, color theory, and typography for showcasing student work to | |

| | | | | |
|--------------------|----------------------|---|--|--|
| | | theory, and typography. PDF portfolio showcases student's technical skills in Photoshop, InDesign, and Acrobat. PDF portfolio's organization includes use of links and bookmarks in Acrobat. | potential employers. PDF portfolio clearly showcases the student's technical skills in Photoshop, InDesign, and Acrobat. PDF portfolio's organization includes efficient and appropriate use of links and bookmarks. | |
| Peer review | Absent or incomplete | Peer review expresses both strengths and weaknesses of the PDF portfolio and offers suggestions for improvement. Peer review considers how the portfolio supports career goals. | Peer review expresses both strengths and weaknesses of the PDF portfolio. Reviewer offers clear suggestions for improvement and provides specific examples. Peer review considers and offers suggestions on how to strengthen the portfolio to support career goals. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Career Research and Development Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------------|--|---|--|--------------|
| Research | Absent or incomplete | Research covers a design and/or print production career area by going to specific job-recruitment Web sites. Research is evident in the portfolio content by providing career information such as job description, qualifications, skill set, technical knowledge, required training, and salary information. | Research clearly covers a specific design and/or print production career area by going to specific job recruitment Web sites. Research is evident in the portfolio content by providing specific career information and examples such as job description, qualifications, skill set, technical knowledge, required training, and salary information. | |
| Review and Redesign | Absent or incomplete | Review and redesign analyzes the necessary changes to the original portfolio and plans and manages the content. Review and redesign considers and assesses intended career and/or education goals and changes the initial purpose and audience accordingly. | Review and redesign analyzes the necessary changes to the original portfolio and plans and manages the content. Review and redesign carefully considers and assesses intended lifelong career and/or education goals and changes the initial purpose and audience accordingly. | |
| Peer Review | Absent or incomplete | Peer review expresses both strengths and weaknesses of the planned changes to the PDF portfolio. Reviewer offers suggestions for improvement and considers how the portfolio supports career goals. | Peer review expresses both strengths and weaknesses of the planned changes to the PDF portfolio. Reviewer offers clear suggestions for improvement and provides specific examples. Reviewer considers and offers suggestions on how to strengthen the portfolio to support career goals. | |
| Flowchart | Absent or | Flowchart is detailed and includes an appropriate organizational structure | Flowchart is detailed and includes a clear and logical organizational structure for the planned content. | |

| | | | | |
|--------------------------------|----------------------------------|---|--|--|
| | incomplete | for the planned content. | Flowchart includes all content that should go in the PDF portfolio. | |
| PDF portfolio - Content | Absent, incomplete, or unfocused | PDF portfolio highlights student's completed projects, and the information is geared toward a specific career goal and audience. PDF portfolio includes descriptive narratives for each project, highlighting skills relevant to the design and/or print production career area of interest. | PDF portfolio highlights student's completed projects and is well organized, and the information is geared toward a specific career goal and audience. PDF portfolio includes clear and descriptive narratives for each project, highlighting skills relevant to the design and/or print production career area of interest. | |
| PDF Portfolio - Design | Absent, incomplete, or unfocused | Overall design of PDF portfolio and highlighted projects employ appropriate use of design principles, layout design, image composition, color theory, and typography. PDF portfolio showcases student's technical skills in Photoshop, InDesign, Illustrator, and Acrobat. PDF portfolio's organization includes links and bookmarks. | Overall design of PDF portfolio and highlighted projects employs design principles, layout design, image composition, color theory, and typography that allow the portfolio to meet the goal of showcasing student work to potential employers. PDF portfolio clearly showcases student's technical skills in Photoshop, InDesign, Illustrator, and Acrobat. PDF portfolio's organization includes efficient and appropriate use of links and bookmarks. | |
| Presentation | Absent or incomplete | Overall design of PDF portfolio and highlighted projects employ appropriate use of design principles, layout design, image composition, color theory, and typography. PDF portfolio showcases student's technical skills in Photoshop, InDesign, Illustrator, and Acrobat. PDF portfolio's organization includes links and bookmarks. | Overall design of PDF portfolio and highlighted projects employs design principles, layout design, image composition, color theory, and typography that allow the portfolio to meet the goal of showcasing student work to potential employers. PDF portfolio clearly showcases student's technical skills in Photoshop, InDesign, Illustrator, and Acrobat. PDF portfolio's organization includes efficient and appropriate use of links and bookmarks. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Newsletter Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|-----------------------------|--|---|--|--------------|
| Design Comps | Absent or incomplete | Teams present two layout design comps for peer review. | Teams present two layout design comps with clear explanations of the design principles used and requests for specific feedback from the peer review process. | |
| Project Plan | Absent or incomplete | Project plan details the estimated hours, the delivery date, and the owner of specific tasks in each project phase: The project definition phase, the design phase, the building phase, and the delivery phase. Project plan identifies assets requiring copyright or fair use permission. Students track each milestone and adjust the plan based on any unforeseen challenges during the project cycle. | Project plan clearly and explicitly details the estimated hours, the delivery date, and the owner of specific tasks in each project phase: The project definition phase, the design phase, the building phase, and the delivery phase. Project plan identifies assets requiring copyright or fair use permission. Students track each milestone and adjust the plan based on any unforeseen challenges during the project cycle. | |
| Newsletter - Content | Absent, incomplete, or unfocused | Newsletter theme and articles are for a target audience. Newsletter consists of two to three articles. Content is readable and properly aligned. Content adheres to the journalistic code of ethics, and appropriate copyright and fair use guidelines are applied when needed. | Newsletter theme and articles are for a target audience. Newsletter consists of three or more articles that are well written and copyedited. Content is easy to read and properly aligned and has a clear hierarchy established through the use of titles and headers. Content adheres to the journalistic code of ethics, and appropriate copyright and fair use guidelines are applied when needed. | |
| Newsletter - Design | Absent, incomplete, or | Newsletter is three to four pages, and the nameplate design supports the newsletter theme. | Newsletter is three to four pages, and the nameplate design clearly and consistently supports the newsletter theme and goals. | |

| | | | | |
|---------------------|----------------------------------|---|---|--|
| | unfocused | <p>Newsletter includes elements such as titles, headers, page numbers, captions, pull quotes, and so forth. Newsletter includes three to four sections and three to four images. Newsletter uses a multicolumn and multipage layout. Newsletter utilizes consistent design through layout templates and consistent styles. Newsletter is prepared for print and e-mail distribution.</p> | <p>Newsletter titles, headers, page numbers, captions, pull quotes, images, and so forth are appropriately used to support the theme and connect to the target audience. Newsletter includes four or more sections and four or more images. Newsletter uses a multicolumn and multipage layout to create clear sections and readable content. Templates and consistent use of styles and font create a consistent design throughout the layout.</p> | |
| Presentation | Absent, incomplete, or unfocused | <p>Presentation explains the design decisions made throughout the process to implement the theme and purpose through all elements of the newsletter (nameplate, layout, graphic elements, and content). Presentation explains how students plan to distribute the newsletter and describes their experience of working as a team, especially while working in roles. Presentation reflects on what students learned through the process and how they will continue to use and enhance these skills in the future.</p> | <p>Presentation clearly explains, using specific examples, the design decisions made throughout the process to implement the theme and purpose through all elements of the newsletter (nameplate, layout, graphic elements, and content). Presentation details how students plan to distribute the newsletter and describes how the experience of working as a team differed because they were assigned and responsible for specific roles. Presentation reflects on what students learned through the process and analyzes how they will continue to use and enhance these skills in the future.</p> | |
| Teamwork | Absent or incomplete | <p>Student collaborates with other students as required to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Sometimes consults with other team members on major project decisions but makes minimal effort to help others build skills. Teams plan and manage multiple steps to ensure</p> | <p>Student collaborates freely with other students to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Consults with other team members on major project decisions and voluntarily helps others build skills to complete the project. Teams efficiently and effectively collaborate and interact with peers, experts, and others to create design comps and final newsletter. Teams efficiently and</p> | |

| | | | | |
|------------------------|----------------------|---|--|--|
| | | delivery to client and approval for design comps, content, and a final product. | effectively plan and manage multiple steps to ensure delivery to client and approval for design comps, content, and a final product. | |
| Time Management | Absent or incomplete | Student allots time for each phase of the design and development process. Completes most phases on schedule | Student thoughtfully and effectively allots time for each phase of the design and development process. Completes all phases on schedule. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Analyzing Color Theory Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|-----------------------|--|---|---|--------------|
| Brainstorm | Absent or incomplete | Does not identify person, group, or organization for which to design logo. Few descriptive details. May or may not contain sketch | Identifies person, group, or organization for which to design logo. Provides descriptive words and sketch of logo with a purpose and goal | |
| Logo - Content | Absent or incomplete | Logo communicates a purpose and goal for person, group, or organization for which it is designed. | Logo clearly and effectively communicates a purpose and goal for person, group, or organization for which it is designed. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Understanding Typography and Layout Design Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|---------------------------------|--|---|--|--------------|
| Analyzing Business Cards | Absent or incomplete | Analyzing Business Cards Worksheet is complete and draws examples from the class discussion, typography guide, and presentation on typography. | Analyzing Business Cards Worksheet is clearly and thoughtfully completed. Worksheet includes specific and clear examples from the class discussion, typography guide, and presentation on typography. Worksheet also includes specific and clear examples from previous discussions, guides, and presentations on design principles, color theory, and layout. | |
| Review and Redesign | Absent or incomplete | The review and redesign process analyzes and critiques whether the first version of the business card meets the initial goals, requires new goals, and reflects good design principles. The review and redesign process details changes needed for final business card. | The review and redesign process clearly and explicitly analyzes and critiques how the first version of the business meets or does not meet the initial goals, whether the business card requires new goals, and how the business card reflects good design principles. The review and redesign process insightfully analyzes changes for the final business card and identifies new design principles and technological techniques to incorporate. | |
| Business Card – Content | Absent or incomplete | Business card incorporates a variety of assets and is designed for and communicates to multiple audiences. Any outside graphics elements are properly cited with copyright or fair use guidelines. | Business card has a clear tone and purpose and effectively communicates information to multiple audiences. Any outside graphics elements are properly cited with copyright or fair use guidelines. | |
| Business Card – Design | Absent or incomplete | Business card incorporates the logo and uses appropriate typography design, layout design, and color selection. Business card assets employ use of filters, and graphics elements are properly aligned. | Business card incorporates the logo and clearly and elegantly incorporates typography design, layout design, and color selection. In planning and designing the business card, appropriate technological techniques were employed, such as use of filters on graphics elements, proper alignment of graphics, and appropriate document dimensions, such as margins. | |

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|------------------------------------|----------------------------------|---|--|--|
| PDF Slide Show Presentation | Absent, incomplete, or unfocused | Slide show presentation includes an original business card. Slide show presentation highlights three redesigned business cards with explanations and analysis of the design process, decisions, and implemented changes (typography design, color selection, layout design, technologies used, and so forth) made to each card for use in a serious, creative, or entertaining situation. | Slide show presentation includes an original business card. Slide show presentation highlights three redesigned business cards with clear and detailed explanations and analysis (including examples such as sketches) of the design process, decisions, and implemented changes (typography design, color selection, layout design, technologies used, and so forth) made to each card for use in a serious, creative, or entertaining situation. | |
| Teamwork | Absent or incomplete | Student collaborates with other students as required to provide feedback or assistance. Contributes equally to project work but makes minimal effort to help others build skills | Student collaborates freely with other students to provide feedback or assistance. Contributes equally to project work. Consults with other team members on major project decisions and voluntarily helps others build skills to complete the project | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Design Principles and Techniques Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------------|--|---|--|--------------|
| Project Plan | Absent or incomplete | Project plan is present but with little or no details. Phases may or may not be evident. Copyright and/or fair use permission is absent. | Project plan clearly and explicitly details the estimated hours, the delivery date, and the owner or specific tasks in each project phase: the project definition phase, the design phase, the building phase, and the delivery phase. Project plan identifies assets requiring copyright or fair use permission. | |
| Interview | Absent or incomplete | The interview identifies the client's goals, the target audience, and the intended purpose of the advertisement. The interview identifies the content and information crucial to the advertisement. The interview identifies the client's preferred design requirements. | The interview clearly identifies the client's goals, the target audience, and the intended purpose of the advertisement. The interview clearly identifies the content (both original and repurposed) and information crucial to the advertisement. The interview identifies the client's preferred design requirements and documents specific examples. The interview includes additional relevant and thorough questions used during the course of the conversation to get or clarify specific information. | |
| Design Comps | Absent, incomplete, or unfocused rationale | Teams review with client three design comps created in Photoshop. Design comps use relevant photographs and assets. | Teams review with client three design comps, with clear explanations of the design principles used. Design comps use relevant photographs and assets to clearly convey and support the intended advertisement message. | |
| Review and Redesign | Absent or incomplete | The students effectively use the review and redesign process to work with the client to gain approval for final advertisement idea. Review and redesign identifies whether the design comp meets the initial goals, requires new goals, and reflects good design principles. The review and redesign process details redesign changes for the | The students effectively use the review and redesign process to work with the client to gain approval for the final advertisement idea. The review and redesign process clearly and explicitly identifies how the design comp meets or does not meet the initial goals, whether the advertisement requires new goals, and how the advertisement reflects good design principles. The review and redesign process details redesign changes for the advertisement and identifies new design principles and | |

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| | | advertisement. | technological techniques to incorporate. In the course of reviewing design comps, students use design notes to assist in the review and redesign process. | |
| Focus Groups | Absent or incomplete | Focus group questions elicit feedback on advertisement design, layout, content, and message. Focus group is planned, scheduled, and conducted with potential advertisement audience. Focus group findings and data are recorded, summarized, and analyzed. Teams review their watermarked design comp and redesign according to focus group feedback. | Focus group questions elicit specific and pointed feedback on the advertisement design, layout, content, and message. Focus group is planned, scheduled, and conducted with multiple advertisement audiences. Focus group findings and data are recorded, summarized, and analyzed with specific redesign notes. Teams review their design comp and redesign according to focus group feedback. | |
| Advertisement – Print | Absent, incomplete, or unfocused | Advertisement is created in appropriate file format and size for printing in color. Advertisement employs appropriate color theory, page layout, and design principles. | Advertisement is created in appropriate file format and size for printing in color. Advertisement conveys a clear purpose and message. Advertisement clearly speaks to an intended audience. Advertisement clearly and efficiently employs appropriate color theory, page layout, and design principles. | |
| Advertisement – Web | Absent, incomplete, or unfocused | Advertisement is created in appropriate file format and size for use on the Web. Advertisement employs appropriate color theory, page layout, and design principles. | Advertisement is created in appropriate file format and size for use on the Web. Advertisement conveys a clear purpose and message. Advertisement clearly speaks to an intended audience. Advertisement clearly and efficiently employs appropriate color theory, page layout, and design principles. | |
| Teamwork | Absent or incomplete | Student collaborates with other students as required to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Sometimes consults with other team members on major project decisions but makes minimal effort to help others build skills | Student collaborates freely with other students to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Consults with other team members on major project decisions and voluntarily helps others build skills to complete the project | |
| Time Management | Unable to manage time | Student allots time for each phase of the design and development process. Completes most phases on schedule | Student thoughtfully and effectively allots time for each phase of the design and development process. Completes all phases on schedule | |

| | | | | |
|--------------------|--|--|--|--|
| Total Score | | | | |
| | | | | |

Comments:

Digital Media Technology II

Unit 5: Introduction to Web Design

Competency 1: Identify the components of Web design application software. DOK 1, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Competing in a digital global economy entails having a presence on the Internet to reach mass consumers.

Suggested Essential Questions

1. Why is it important to have a Web page on the Internet?

Suggested Performance Indicators

- a. Research key vocabulary terms, and illustrate terminology used with Web design applications. (DOK 1) W1, W2, W4, W5, T3, T4, T6

Suggested Teaching Strategies

- a. Use multimedia presentation equipment to introduce terminology. W4, W5, T3, T4, T6

Terminology may include the following:

- Root folder
- Cache
- Table
- Local site
- Flowchart
- Alternative text
- Browser
- URL

Suggested Assessment Strategies

- a. Administer a written test. M7, R4

- b. Identify the basic components of a Web design application screen. (DOK 1)

- b. Use presentation equipment to introduce the components of good and bad Web design application screens.

- b. Observation check for understanding

- c. Research certification requirements for a Web specialist. (DOK 1)

- c. Use the Internet to research Digital Media Technology tests such as IC³ and MCPD: Web Developer Certifications. CS4, T5, R4, S1, S2

- c. Checklist for understanding

- d. Identify the elements of the graphic design software interface. (DOK 1)

- d. Using multimedia such as an interactive white board, introduce students to the workplace and panels of the graphic design software.

- d. Use a teacher-created rubric as an assessment tool.

- e. Demonstrate knowledge of best practices for designing a Web site, such as maintaining consistency, separating content from design, and using standard fonts and Web-safe fonts. (DOK

- e. Using multimedia such as an interactive whiteboard, demonstrate examples of Web sites that are appropriately designed and show differences in correct and incorrect ways to

- e. Use a teacher-created rubric as an assessment tool. ARM5, T6

| | | |
|--|--|---|
| 2) ^{AVC1, AVC2} | design a Web site. ^{AWC1, AWC2, AWC3, AWC4, AWC5, AWC6} | |
| f. Demonstrate knowledge of page layout design elements and principles, and organize content consistently. (DOK 2) | f. Students will create a simple Web-page report that will include the following elements: Title, link to a Web site, and a table with preset columns. | f. Teacher-created rubric as an assessment tool |

Competency 2: Demonstrate skills needed for planning and creating a home page. ^{DOK 3, CS1, CS2, CS3, CS4, CS5}

Suggested Enduring Understandings

1. A planned and detailed home page is important to effectively market your client’s Web site to its visitors.

Suggested Essential Questions

1. What concepts are important when planning and creating a home page for a specific individual or company?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|--|---|
| a. Research key vocabulary terms related to planning and creating a home page. (DOK 1) ^{W1, W2, W4, W5, T3, T4, T6} | a. Use multimedia presentation equipment to introduce terminology such as home page, storyboard, navigation, layout, layers, absolute positioning, margin, fixed width, fixed height, and padding. ^{T3} | a. Administer a written test. ^{M7, R4} |
| b. Plan and create a detailed storyboard for the home page of a portfolio. (DOK 2) | b. Using multimedia such as an interactive white board, show students a sample portfolio plan, and outline a navigation system and general layout. Then have them create their own individual storyboards. | b. Teacher-created rubric |
| c. Incorporate principles of good user interface design on a home page. (DOK 3) | c. Students will make design decisions such as graphic, text, navigation, and color choices and placement. ^{R2, S1, W1, W3, W4} | c. Teacher-created rubric |

Competency 3: Demonstrate knowledge of best practices for designing Web sites, such as maintaining consistency, separating content from design, and using standard fonts and Web-safe colors. ^{DOK 2, CS1, CS2, CS4, CS5}

Suggested Enduring Understandings

1. Graphic design software assists Web designers in creating and designing a consistent page design and layout across a Web site.

Suggested Essential Questions

1. Why do you think the content page is the user’s most frequent and final destination as it pertains to a particular Web site?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|---------------------------------|
| a. Research key vocabulary terms, and illustrate terminology used with creating content pages. (DOK 1) ^{W1, W2, W4, W5, T3, T4, T6} | a. Use multimedia presentation equipment to introduce terminology and show how each affects Web design. | a. Administer a written test. |

Terminology may include the following:

- Import
- Copy
- Paste
- Consistency
- Paragraph style
- Usability

b. Demonstrate knowledge of designing a Web site. (DOK 2)
AWC1, AWC2, AWC4, AWC5, AWC6

b. Using multimedia such as an interactive whiteboard, show students a sample electronic portfolio, and discuss topics related to consistency of navigation, navigation choices, consistency of design and appearance, page elements, and benefits of consistency as it relates to usability. CS5, T5, E2, M5, S1

b. Teacher-created rubric as an assessment tool

c. Make design decisions such as colors, layout, and structuring navigation through Web sites. (DOK 2)

c. Students will import a text document into a Web page and set and modify document and text properties.

c. Teacher-created rubric as an assessment tool

Competency 4: Demonstrate proficiency linking Web content using hyperlinks, e-mail links, and named anchors.
DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Moving between pages within your Web site creates a need to link those pages that are relative and do not include the complete URL.

Suggested Essential Questions

1. How do you know if you are having hardware or software problems?
2. Why is the Internet so important to business?
3. What is one of the most important marketing tools known today?

Suggested Performance Indicators

a. Identify key vocabulary terms related to linking pages. (DOK 1)

Suggested Teaching Strategies

a. Using multimedia presentation equipment, introduce terminology, and show examples.

Suggested Assessment Strategies

a. Administer a written and application test.

Terminology may include the following:

- Hyperlink
- Link
- Absolute link
- Site-root-relative link
- Link target
- Named anchor
- Pathname

| | | |
|--|--|--|
| b. Demonstrate adding links using the Properties pane. (DOK 2) ^{S1, T4, T6} | b. Discuss with the students their knowledge of dealing with links in various documents. ^{R2, R4, W5} | b. Observation check for understanding |
| c. Create links using the Hyperlink dialog box. (DOK 2) | c. Discuss absolute, site-root-relative, and document-relative. | c. Observation check for understanding |
| d. Demonstrate three methods for using the property inspector to create links from text or an image to another document. (DOK 2) | d. Prepare a PowerPoint demonstration showing students methods of linking documents. | d. Peer evaluation of completed links |

Competency 5: Demonstrate knowledge of Web site accessibility standards that address the needs of people with visual and motor impairments. ^{DOK 2, CS1, CS2, CS3, CS4, CS5}

Suggested Enduring Understandings

1. The use of nonstandard formats can cause significant accessibility and usability problems for some people.
2. Evaluation is crucial in any quality activity.

Suggested Essential Questions

1. Why would you spend weeks working on a project before testing it?
2. Why do companies employ people who test software?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|---|
| a. Identify terminology and techniques associated with ensuring usability and accessibility. (DOK 1) | <p>a. Using multimedia presentation equipment, introduce terminology and show examples.</p> <p>Terminology may include the following:</p> <ul style="list-style-type: none"> • Multimedia • Alternative text (Alt text) • Accessibility • Usability • Embedded link • Navigation elements • Readability • Site structure | a. Evaluate performance assessment of individual exercises. |
| b. Demonstrate the ability to use visual clues about navigation, structure, and organization. (DOK 2) | b. Organize students into groups of four or less, and discuss navigation and usability. Using multimedia, explain the importance of creating usable and accessible resources in Web pages. ^{CS1, CS2, T2, T4, T5} | b. Students prepare a self-reflection on what they have learned about the principles of good usability and accessibility and how navigation compares between print and Web media. |
| c. Demonstrate text-formatting guidelines that improve Web site readability. (DOK 2) | c. Discuss the use of serif and sans serif fonts and the use of color, alignment, indentation, | c. Distribute a complete Newspaper to grouped students, and let them peer |

paragraph headings, and lists.

analyze for usability and accessibility.

Competency 6: Demonstrate how to insert a graphical navigation bar created in a separate program. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

Suggested Essential Questions

1. The use of a graphical navigation bar forces prioritization of thought and creates a solid foundation that can be progressively elaborated upon without losing sight of the entirety.

1. What are the features of a graphical navigation bar?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|---|
| a. Identify terminology and techniques associated with ensuring usability and accessibility. (DOK 1) | a. Using multimedia presentation equipment, introduce terminology and show examples. Terminology may include the following: <ul style="list-style-type: none">• Button• Navigation bar• Up state• Over state• Down state• Over while down state• Active area• Roundtrip editing | a. Performance assessment of individual exercises |
| b. Demonstrate how to create three-state buttons and how to set the active area for a button using a multimedia authoring program. (DOK 2) | b. Using multimedia equipment, demonstrate how to create a three-state button and how to set the active area for a button using a multimedia authoring program. <small>CS2, T4, M1, M5, R3</small> | b. Peer evaluation |
| c. Demonstrate how to export a navigation bar from a different application. (DOK 2) | c. Ask students to create buttons for each element of their navigation bars. <small>T1, T6</small> | c. Peer evaluation |
| d. Demonstrate how to use roundtrip editing to edit images with different software. (DOK 2) | d. Ask students to export their navigation bars from creation software and then insert the navigation bars into their portfolio pages using their Web page application. | d. Self-reflection |

Competency 7: Produce Web site designs that work equally well on various operating systems and browser versions. DOK 3, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Quality assurance is required to ensure that a product (Web page) is capable of performing what it was designed to do.

Suggested Essential Questions

1. What is quality assurance?
2. What steps would you take to guarantee quality?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|----------------------------------|-------------------------------|---------------------------------|
|----------------------------------|-------------------------------|---------------------------------|

| | | |
|---|--|---|
| <p>a. Identify terminology and techniques associated with ensuring quality assurance. (DOK 1) <small>R5, W4, W5</small></p> | <p>a. Using multimedia presentation equipment, introduce terminology and demonstrate or show examples. <small>W1, W5</small></p> <p>Terminology may include the following:</p> <ul style="list-style-type: none"> • Quality assurance • Criteria • Compatibility • Testing • Broken links | <p>a. Evaluate performance assessment of individual exercises.</p> |
| <p>b. Conduct a quality assurance test on the students' electronic portfolios. (DOK 3)</p> | <p>b. Using multimedia presentation equipment, explain the importance of creating usable and accessible resources in Web pages.</p> | <p>b. Create a checklist of the technical features students need to test. <small>W1</small></p> |
| <p>c. Demonstrate how to conduct a technical and functional usability test. (DOK 2)</p> | <p>c. Present an overview of how students will conduct a technical and functional usability test. <small>T5, T6, E2, S3, W1, W3, W5</small></p> | <p>c. Once work is completed, students should fix problems found on checklist.</p> |

Competency 8: Identify techniques and methods for basic usability tests and collecting site feedback. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Usability is required to ensure that a product is capable of performing what it was designed to do.

Suggested Essential Questions

1. What is usability testing?
2. How would you conduct a usability test?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|----------------------------------|-------------------------------|---------------------------------|
|----------------------------------|-------------------------------|---------------------------------|

| | | |
|---|---|--|
| <p>a. Identify terminology and techniques associated with ensuring usability and accessibility. (DOK 1)</p> | <p>a. Using multimedia presentation equipment, introduce terminology and show examples. <small>T1, T2</small></p> <p>Terminology may include the following:</p> <ul style="list-style-type: none"> • Usability test • Latent behavior | <p>a. Evaluate performance assessment of individual exercises.</p> |
|---|---|--|

- Observation
- Feedback

| | | |
|--|--|--|
| b. Demonstrate methods for collecting site visitor feedback and site evaluation information. (DOK 2) | b. Using multimedia presentation equipment, explain the importance of creating usable and accessible resources in Web pages. | b. Students should create a test interview form to collect information from visitors to their sites and analyze results. |
| c. Identify characteristics of what a usability observation looks for. (DOK 2) | c. Using multimedia, demonstrate the behavior pattern of a typical site visitor. ^{CS3, T4, M2, R3, S1} | c. Peer evaluation |

Competency 9: Demonstrate knowledge of using and managing assets, links, and files to publish and update site files to a remote server. ^{DOK 2, CS1, CS4, CS5}

Suggested Enduring Understandings

1. It is essential to use several tools and applications for content creation in publishing a Web site on the Internet.

Suggested Essential Questions

1. How do you upload to the Internet?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|--|
| a. Identify key terminology and techniques associated with publishing a Web site. (DOK 1) | <p>a. Using multimedia presentation equipment, introduce terminology and show examples.</p> <p>Terminology may include the following:</p> <ul style="list-style-type: none"> • Root folder • Cache • FTP • Local host • Remote site • Site map • Get files • Put files | a. Evaluate performance assessment of individual exercises. |
| b. Demonstrate how to set up a remote site. (DOK 2) ^{AWC1, AWC2, AWC3, AWC4, AWC5, AWC6} | b. Using multimedia presentation equipment, introduce students to the concept of publishing a Web site. ^{AWC4} | b. Generate a list of techniques that can be used to publish files. |
| c. Demonstrate how to use the Web browser to open newly published sites. (DOK 2) | c. Using multimedia presentation equipment, open your Web page software, and introduce students to techniques they will need to know to publish files. ^{T5, R4, R5, S2, W4} | c. A checklist observation to ensure quality assurance and usability was met |
| d. Identify how to navigate each page to ensure all files were | d. Using multimedia, explain how to navigate to each page and | d. Peer evaluation of work completed |

successfully published and are valid and reliable. (DOK 3)

make sure all files were successfully published and function as they should.

Competency 10: Use basic HTML tags to set up an HTML document, format text, add links, create tables, and build ordered and unordered lists. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. An essential part of making error corrections is to know how the error occurred.

Suggested Essential Questions

1. What does the acronym “HTML” stand for?
2. Why should you learn HTML if there is a program that will code for you?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| a. Identify terminology and techniques associated with Hyper Text Markup Language (HTML). (DOK 1) | a. Using multimedia presentation equipment, discuss and introduce terminology and show examples. <small>CS4, T1, T5, E2, R4</small> Terminology may include the following: <ul style="list-style-type: none">• Tag• HTML• Source code• URL• Align• Design view• Code view• Code and design view | a. Evaluate performance assessment of individual exercises. |
| b. Demonstrate how to locate the code view and create tags using the Web browser. (DOK 2) | b. Using a Web browser, show students how they can use code view to examine and write HTML code. | b. Present students with a code that has errors in it. Have students correct the code and submit for a grade. |

Standards

National Industry Standards

- AVC 1 Setting project requirements
- AVC 2 Identifying design elements when preparing images
- AWC 1 Setting project requirements
- AWC 2 Planning site design and page layout
- AWC 3 Understanding the Adobe Dreamweaver CS4 interface
- AWC 4 Adding content by using Dreamweaver CS4
- AWC 5 Organizing content by using Dreamweaver CS4
- AWC 6 Evaluating and maintaining a site by using Dreamweaver CS4
- ARM 5 Evaluating rich media elements

21st Century Learning Standards

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

National Educational Technology Standards for Students

- 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

ACT College Readiness Standards

- E2 Organization, Unity, and Coherence
- M1 Basic Operations and Applications
- M2 Probability, Statistics, and Data Analysis
- M5 Graphical Representations
- M7 Measurement
- R2 Supporting Details
- R3 Sequential, Comparative, and Cause–Effect Relationships
- R4 Meaning of Words
- R5 Generalizations and Conclusions
- S1 Interpretation of Data
- S2 Scientific Investigation
- S3 Evaluation of Models, Inferences, and Experimental Results
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W3 Developing a Position
- W4 Organizing Ideas
- W5 Using Language

References

Adobe Systems, Inc. (2008). *Visual design: Foundations of design and print production*. Retrieved November 21, 2008, from <http://www.adobe.com/education/instruction/teach/visualdesign.html>

Adobe Systems, Inc. (2008). *Adobe design center*. Retrieved September 15, 2008, from <http://www.adobe.com/products/tips/photoshop.html>

Kodak. (n.d.). *Tips and projects center*. Retrieved September 15, 2005, from http://www.kodak.com/eknec/PageQuerier.jhtml?pq-path=2/3/38&pq-locale=en_US

For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Suggested Rubrics and Checklists



Name: _____

Date: _____

Period: _____

Introduction to Basic Web Design Vocabulary

Define the following key words:

Root folder

Cache

Table

Local site

Flowchart

Alternative text



Name: _____

Date: _____

Period: _____

Introduction to Web Design

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|--------------------|--|---|---|--------------|
| Web Page | Absent or incomplete | Students can set up a local root folder and local site. Web pages include text, table, image, and e-mail link. Students can identify components of the Web application program interface. | Students can set up a local root folder and local site as well as clearly articulate the difference between these objects. Web pages include text, table, image, and e-mail link. Students can identify components of the Web application program interface and explain when to use each component. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Planning and Creating a Home Page Vocabulary

Define the following key words:

Home page

Storyboard

Navigation

Layout

Layers

Absolute positioning

Margin

Fixed width

Fixed height

Padding



Name: _____

Date: _____

Period: _____

Planning and Creating a Home Page Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|-----------------------------|--|---|--|-------|
| Home Page Storyboard | Absent or incomplete | <p>Storyboards are consistent with home page flowchart and include information on color, placement, and navigation choices.</p> <p>Students clearly explain design decisions for home page plan.</p> | <p>Storyboards are consistent with home page flowchart and include information on color, placement, and navigation choices.</p> <p>Students clearly explain design decisions for home page plan. Explanations also include synthesis of information from Web site analysis. Design and layout of the home page reflect good application of design principles.</p> | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Creating Content Pages Vocabulary

Define the following key words:

Import

Copy

Paste

Consistency

Paragraph style

Usability



Name: _____

Date: _____

Period: _____

Creating Content Pages Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------|--|--|--|--------------|
| Content Pages | Absent or incomplete | Portfolio content pages reflect flowchart elements, have a common structure, and include consistent design elements that improve usability for visitors. | Portfolio content pages reflect flowchart elements, have a common structure, and include consistent design elements that improve usability for visitors. Content pages apply principles learned through Web site analysis. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Linking Pages Vocabulary

Define the following key words:

Hyperlink

Link

Absolute link

Site-root-relative link

Link target

Named anchor

Pathname



Name: _____

Date: _____

Period: _____

Linking Pages Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------------------|--|---|--|-------|
| Text-Based Navigation Bar | Absent or incomplete | Text-based navigation bar is included on the home page and all content pages of the portfolio. Text navigation accurately reflects flowchart for portfolio. Students understand the differences between different types of links and link targets. | Text-based navigation bar is included on the home page and all content pages of the portfolio. Text navigation accurately reflects flowchart for portfolio. Students understand and can clearly articulate the differences between different types of links and link targets. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Ensuring Usability and Accessibility Vocabulary

Define the following key words:

Multimedia

Alternative text (Alt text)

Accessibility

Usability

Embedded link

Navigation elements

Readability

Site structure



Name: _____

Date: _____

Period: _____

Ensuring Usability and Accessibility Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|-------------------------------|--|---|--|--------------|
| Navigation Analysis | Absent or incomplete | Students can identify elements used to aid navigation in print and Web media. Students can evaluate how well navigation elements work to help users find information quickly and efficiently. | Students can identify elements used to aid navigation in print and Web media. Students can evaluate how well navigation elements work to help users find information quickly and efficiently. Students' analysis clearly distinguishes successful mechanisms used across different mediums to reach audiences. | |
| Usability Analysis | Absent or incomplete | Students can define usability and explain its impact on Web page elements. Usability evaluations include supporting information for ranking decisions. | Students can define usability and explain its impact on Web page elements. Usability evaluations include supporting information for ranking decisions. Students can offer alternatives to improve usability. | |
| Accessibility Analysis | Absent or incomplete | Students can define accessibility and explain its impact on Web page elements. Students understand the role of WC3 for setting accessibility guidelines globally. Accessibility evaluations include supporting information for ranking decisions. | Students can define accessibility and explain its impact on Web page elements. Students understand the role of WC3 for setting accessibility guidelines globally. Accessibility evaluations include supporting information for ranking decisions. Students can offer alternatives to improve accessibility. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Making a Graphical Navigation Bar Vocabulary

Define the following key words:

Button

Navigation bar

Up state

Over state

Down state

Over while down state

Active area

Roundtrip editing



Name: _____

Date: _____

Period: _____

Making a Graphical Navigation Bar Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|--------------------------|--|---|---|--------------|
| Button Navigation | Absent or incomplete | Buttons have clear up, over, and down states. Button design coordinates with overall site design. | Buttons have clear up, over, and down states. Button design coordinates with overall site design. Students articulate design principles used when designing their button navigations. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Quality Assurance I: Technical Testing Vocabulary

Define the following key words:

Quality assurance

Criteria

Compatibility

Testing

Broken links



Name: _____

Date: _____

Period: _____

Quality Assurance I: Technical Testing Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|---------------------------|--|---|---|--------------|
| Test Plan | Absent or incomplete | Test plans have clear goals and a checklist of items to test for site. Students document test and report results. | Test plans have clear goals and checklist of items to test for site. Students document test and report results. Plans are carried out effectively, offering alternatives and solutions for improvement. | |
| Portfolio Web Site | Absent or incomplete | Students identify and implement solutions to technical problems. | Students identify and implement solutions to technical problems. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Quality Assurance II: Usability Testing Vocabulary

Define the following key words:

Usability test

Latent behavior

Observation

Feedback



Name: _____

Date: _____

Period: _____

Quality Assurance II: Usability Testing Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|---------------------------|--|--|--|--------------|
| User Test Plan | Absent or incomplete | User test plans have clear goals and a comprehensive set of elements to investigate for the site. Students clearly and completely document test and report results that include suggestions and alternatives for solving user problems related to items identified on the user test form and problems found through observation. | User test plans have clear goals and a comprehensive set of elements to investigate for the site. Students clearly and completely document test and report results that include suggestions and alternatives for solving user problems related to items identified on the user test form and problems found through observation. Students retest revised sites to make sure user problems are truly minimized. | |
| Portfolio Web Site | Absent or incomplete | Students identify and implement solutions to user problems. Students provide explanations and substantiation for implemented changes. | Students identify and implement solutions to user problems. Students provide explanations and substantiation for implemented changes. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Publishing a Web Site Vocabulary

Define the following key words:

Root folder

Cache

FTP

Local host

Remote site

Site map

Get files

Put files



Name: _____

Date: _____

Period: _____

Publishing a Web Site Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------------|--|--|---|--------------|
| Published Portfolio | Absent or incomplete | Students can define terms related to Web site publishing and articulate the differences between local and remote sites. Students understand the main components of the Files panel used in remote site setup. Published portfolios function as they did when testing them locally. | Students can define terms related to Web site publishing and articulate the differences between local and remote sites. Students understand and explain to others the main components of the Files panel used in remote site setup and how they are used for publishing. Published portfolios function as they did when testing them locally. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

HTML Basics Vocabulary

Define the following key words:

Tag

HTML

Source code

URL

Align

Design view

Code view

Code and design view



Name: _____

Date: _____

Period: _____

HTML Basics Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|------------------------------|--|--|---|--------------|
| HTML Tags | Absent or incomplete | Students can distinguish between required HTML elements and optional HTML elements needed to structure pages. Students can identify and use tags to set up an HTML document, format text, add links, create tables, and build ordered and unordered lists. | Students can identify and clearly articulate the difference between required HTML elements and optional HTML elements needed to structure pages. Students can identify and use tags to set up an HTML document, format text, add links, create tables, and build ordered and unordered lists. | |
| HTML Circuit Teaching | Absent or incomplete | Student presentations include tag format, a page that renders that tag, and an explanation of how the tag works. | Student presentations include tag format, a page that renders that tag, and an explanation of how the tag works. Student presentations include clear explanations and original and researched examples. | |
| Total Score | | | | |

Comments:

Digital Media Technology II

Unit 6: Building a Basic Client Web Site

Competency 1: Gather information and data as it pertains to the development of a client Web site. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when used appropriately.

Suggested Essential Questions

1. What techniques and software are available to build client Web sites?
2. How can the student use the design process for Web site development?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|--|
| <p>a. Define the scope of the project and related terms. (DOK 1) <small>R5, W1, W4, W5</small></p> | <p>a. Introduce the project with information about the client organization (name of organization, its mission and goals, product or service provided by the organization, an explanation of how it works, background and history, and why the organization is in search of a Web-design team).</p> <p>Related terms may include the following: <small>T3, T4, AWC1, AWC2, AWC4, AWC5, AWC6</small></p> <ul style="list-style-type: none"> • Audience • Screen view • Flowchart • Design comp • Production storyboard • Design review • Launch plan | <p>a. Test for key terms, definitions, and phases of Web site development.</p> |
| <p>b. Identify the phases of a client Web site project to build a common class understanding and agreement for each phase and task (i.e., goals, target audience, content, and delivery requirements for the Web site). (DOK 1)</p> | <p>b. Explore the phases of Web site production.</p> <ul style="list-style-type: none"> • Structure: (1) Flowchart to portray the overall structure of the site (2) Screen views to block out the basic structure of site pages • Design: (1) Design of comps to provide detailed alternative page designs (2) Review of comps with client to ascertain client’s design preferences (3) Redesign based on client feedback (4) Production storyboard • Build and test: (1) Site production based on storyboards (2) Technical and usability testing, recording bugs, and design-change requirements (3) Revision based on test results (4) Technical and usability testing of revised site (5) Final presentation to client and final revision • Launch the plan. <small>S1, S2, S3</small> | <p>b. Create flowchart identifying the phases of Web site development.</p> |

| | | |
|--|--|---|
| <p>c. Interview clients to identify the goals and audience, the design and technical (delivery) requirements, and the main content. (DOK 2) T2, T4</p> | <p>c. Discuss the kind of information the student needs from his or her client’s goals and target audience in order to build an understanding of the client’s needs. Students should interview clients and take notes to ensure all information has been collected to complete the Web site. W1, W2, W3, W4, W5</p> | <p>c. The student is responsible for compiling a list of needs to be graded. Client Interview Worksheet</p> |
| <p>d. Write a brief design document incorporating information from clients. (DOK 2) W1, W3, W4, W5</p> | <p>d. Students will prepare the design document to include the headings Project Overview, Goals and Objectives, Audience, Content, Design Summary and Site Messages, and Technical (delivery) and Functional Requirements.</p> | |

Competency 2: Utilize the phases involved in planning a client Web site in order to effectively meet the client’s needs. DOK 2, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when planned appropriately.

Suggested Essential Questions

1. How can a student plan properly for a successful Web site?
2. What are the project phases in planning?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| <p>a. Discuss the project phases again in the context of the client Web sites. (DOK 2) W3, W5</p> | <p>a. Ask students to organize the planning of their tasks within the project phases. AWC2, E2</p> <ul style="list-style-type: none"> • Define: <ul style="list-style-type: none"> ○ Goals and target audience ○ Content and asset collection ○ Style information ○ Delivery requirements • Structure: <ul style="list-style-type: none"> ○ Flowchart ○ Screen view sketches • Design: <ul style="list-style-type: none"> ○ Design comps ○ Review with client ○ Redesign based on client feedback ○ Production storyboard • Build and Test: <ul style="list-style-type: none"> ○ Site production based on storyboards ○ Technical test (against storyboards) and bug list ○ Usability test ○ Revision based on test results ○ Technical and usability testing of revised site ○ Final presentation to client and final revision | <p>a. Project Plan Worksheet</p> |

- Launch:
 - Launch plan

Guide: Professional Web design and development process

- | | | |
|---|---|---|
| b. Define a project plan for a client Web site project. (DOK 2) | b. Assign a completion date for the client site. Discuss reasonable time frames for each phase. | b. Check off completion dates for client sites. |
|---|---|---|
- Ask students to discuss project plans and set due dates.

Competency 3: Use an effective and functional structure in creating a client Web site. DOK 3, CS1, CS2, CS4, CS5

| | |
|---|---|
| <p>Suggested Enduring Understandings</p> <ol style="list-style-type: none"> 1. A Web site can be a powerful and successful business tool when structured appropriately. | <p>Suggested Essential Questions</p> <ol style="list-style-type: none"> 1. What techniques and software are available to properly structure client Web sites? 2. How can the student use the structuring process for Web site development? |
|---|---|

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|---|
| a. Build a flowchart for the client site (screen view, flowchart, and information organization). (DOK 2) <i>S1, S2</i> | a. Define key terms. Review the structure phase of the project. Discuss how the flowchart and screen views communicate information about the organization. | a. Key terms test |
| b. Present the flowchart to the client. (DOK 2) | b. Students will organize and outline their content considering technical features that might be relevant to convey the content provided by the client, such as calendars, forms, image maps, rollover images, pop-up menus, and so forth. Students will draw a flowchart for the client site using an organizational chart or visual design software. | b. Students will submit the flowchart for a grade. (Rubric) |
| c. Create screen views of the home page and sample content page for the client site. (DOK 3) | c. Introduce the concept of making quick screen views of key pages in a Web site. Show students example screen views. Discuss the techniques involved in making screen views, such as using shapes to represent graphics, showing page layout and content layout, and communicating visual design without using specific graphics. Guide: Sample screen views Discuss page elements that may be affected by delivery requirements. Examine items in each team's delivery requirements, and ask students to | c. Teacher observation Have peers act as clients and evaluate screen views for a grade. (Rubric) |

describe how each requirement can affect their page designs.

Ask students to present their screen views to the client. The client will give an assessment of how well the information organization and placement meets their goals and addresses their target audience.

Have students revise their screen views in response to the client's feedback.

Competency 4: Apply techniques of design to create a suitable client Web site. DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when designed appropriately.

Suggested Essential Questions

1. What techniques and software are available to properly design client Web sites?
2. How can the student use the design process for Web site development?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| a. Create design comps of a home page and a sample content page to show different looks. (DOK 3) <small>AWC1, AWC2, AWC4, AWC5, AWC6</small> | <p>a. Introduce the concept of a design comp and emphasize (1) mood, (2) color, (3) fonts, (4) images, (5) text, (6) navigation elements, and (7) presentation.</p> <p>Assign each student to make at least one design comp of the home page and a sample content page—showing varying perspectives on the pages but still keeping the value of consistency between the home page and content. <small>AWC6, T6</small></p> <p>After individual students have completed their comps, each team will select their two best home page comps and their two best content page comps to share with clients.</p> | <p>a. Graded design comp (Rubric)</p> <p>Graded team process activity (Rubric)</p> |

Competency 5: Utilize client feedback to improve a design concept. DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when designed appropriately and the student maintains open communication with the client.

Suggested Essential Questions

1. What techniques can be used regarding client input that has a direct impact on the design requirements and the end product?
2. How can the student use the client's input upon the completion of the review process?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---------------------------------|
| a. Define the terms <i>active listening</i> and | a. Discuss key terms with students as they relate to storyboard production. | a. Written test on key terms |

production storyboard. (DOK 1)

- | | | |
|--|--|---|
| b. Use active listening skills during the client review. (DOK 1) ^{AWC5,} _{AWC6} | b. Students will present their concepts to the client. Students should actively listen to clients' feedback: <ul style="list-style-type: none">• Take notes.• Ask clarifying questions such as the following:<ul style="list-style-type: none">○ Can you identify online examples that solve this problem?○ How would you solve this problem?○ Would this solve this problem? | b. Allow peers to act as clients giving feedback to students. Evaluate the students' note-taking abilities for a grade. |
| c. Revise design comps, and present revised design comps to the client. (DOK 3) | c. Students will revise design comps based on client feedback and present their comps to the client again. Students can begin to incorporate final graphics and content as parts of the comps are approved. | c. Graded design comp revisions (Rubric) |
| d. Create production storyboards for client Web site. (DOK 3) | d. Discuss storyboards. Students will understand that their storyboards are how they communicate page layout as well as font and color decisions within the team, so storyboards must include a high level of detail. | d. Production Storyboard Worksheet Rubric |

Guide: Production Storyboard

Students will create storyboards for all the pages in their site. Storyboards should include the following elements for each site page:

- Site name
 - Page title
 - Document name
 - Page sketch (layout)
 - Background
 - Heading texts (specification of fonts, font sizes, styles, borders, margins, alignment, padding, and colors)
 - Body texts (specification of fonts, font sizes, styles, borders, margins, alignment, padding, and colors)
 - Description of all text, graphics, Flash movies, and video, including the order in which these elements are displayed
 - Buttons, links, and their destinations
 - Graphics, video, or Flash movie files needed for the page
-

Competency 6: Utilize cascading style sheets to ensure consistency of style and theme. DOK 2, CS1, CS2, S4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when best practices for designing a Web site are followed.

Suggested Essential Questions

1. What techniques can be used to implement a reusable design?
2. What software is available for Web site design?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|--|--|
| <p>a. Define key terms related to cascading style sheets. (DOK 1)</p> | <p>a. Examine the uses of cascading style sheets.¹⁴</p> <p>Terms may include the following:</p> <ul style="list-style-type: none"> • Cascading style sheets (CSS) • Tag style • Class style • Selector style • Linked style sheet • External style sheet | <p>a. Test on key terms and the importance of CSS.</p> |
| <p>b. Create a style sheet for use with the client Web site. (DOK 2)</p> | <p>b. Discuss the importance of CSS as follows:</p> <ul style="list-style-type: none"> • Simplify text formatting. • Enable design of consistent-looking pages. • Enable site-wide changes. <p>Using a sample Web page, demonstrate style features on the CSS styles panel to show students the types of styles they can create.</p> <p>Guide: CSS styles panel in (Dreamweaver)</p> <p>Students will select a style in the CSS styles panel and either make changes to an existing property in the Properties pane or click Add Property and select a property to add and manipulate. Students can also complete this same action by clicking the Edit Style button at the bottom of the panel. They can make a change to the features of the style to see how the change is implemented on the page.</p> <p>After manipulating styles, students should create a new style and add it to the sample CSS. Have students create the following:</p> <ul style="list-style-type: none"> • A redefined style (e.g., an H1 tag that is bold and green, with a 25-point Arial font) • A new style class (e.g., a tag called special that is italic and yellow, with a 10-point Times font) • Demonstrate how to turn internal styles into a new external style sheet. Ask students to start creating external style sheets for their client sites as they follow along with the demonstration. | <p>b. CSS Styles Panel Worksheet (in Dreamweaver)</p> <p>CSS Style Sheets Rubric</p> |

Guide: How to create Cascading Style Sheets

Have students complete the style sheets for their client sites, applying what they have learned about creating and editing styles to implement the styles required by their design comps.

Competency 7: Develop a final product for the client utilizing all design phases, feedback, and peer collaboration.
DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when designed appropriately and the student demonstrates knowledge of best practices for designing a Web site.

Suggested Essential Questions

1. What technical features of the software can be used to complete Web site pages?
2. How can the students use the create graphic assets for their client sites?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|--|
| a. Work collaboratively to build a client Web site. (DOK 3) ^{AWC1, AWC2, AWC3, AWC4, AWC5, AWC6} | a. Define the following terms: <ul style="list-style-type: none">• Template• Library• Search engines• Check in• Check out• Meta tags | a. Test on terms |
| b. Use templates and libraries to build consistent Web pages. (DOK 2) ^{M5} | b. Have students work together to figure out what elements of the final comps will be on all pages of the site. Explain how using templates helps keep the site consistent while a team produces the site. Ask students to use Fireworks to create the common graphic page elements from their final comps and export each of the Fireworks graphics. They will use these graphics on the content page template. | b. Teacher observation of graphic design element |
| c. Apply cascading style sheets to templates. (DOK 2) ^{T6} | c. Briefly demonstrate to students the templates available in the Web design software. Have students use Web site software to create a template for their content pages, following their storyboards. Their templates should incorporate their style sheets. Encourage them to use tables, paragraph styles for headings, and indentation to create and maintain a page structure and a meaningful content hierarchy. Students should insert the graphics they created in Fireworks. Make sure they add editable regions and save their files as templates. | c. Reusable Elements Rubric |

Guide: How to use templates

- | | |
|--|---|
| d. Discuss and demonstrate library features as they relate to templates. (DOK 2) | d. Discuss the types of elements that can be stored in a library. Briefly demonstrate how to add an element to the library and how to place a library item in a document by dragging or by using the Insert button. Have students add elements to the library for later use throughout the site, such as logos, buttons, and mottos. In particular, they should add to the library any elements that are used more than once on site pages. |
|--|---|

Guide: How to use libraries

Discuss the importance of templates and libraries as tools for promoting consistency in Web site design. Other techniques with which students should be familiar include managing reusable assets in the Assets panel, applying styles to text, using standard fonts, and using Web-safe colors.

Introduce the procedure for checking out the Web site software files in and out. Discuss how this procedure supports collaboration within a team and eliminates the possibility that two different team members simultaneously make different changes to a file.

Guide: How to check files in and out

-
- | | | |
|---|--|---------------------------------------|
| e. Create a Web site using templates. (DOK 3) | e. Have students use their templates to build all the pages for their client Web sites, inserting elements from the library as appropriate. Using the template, all team members can work on the pages and still maintain uniformity of site design. | e. Evaluation of hands-on performance |
|---|--|---------------------------------------|

Competency 8: Test the Web site for usability and accessibility. DOK 2, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool when designed appropriately and the student assures quality assurance.

Suggested Essential Questions

1. What tests can be conducted to evaluate usability of the client's site?
2. What items should a student include in a checklist for testing a client site?

Suggested Performance Indicators

Suggested Teaching Strategies

Suggested Assessment Strategies

| | | |
|--|--|---|
| <p>a. Conduct a technical test on a client Web site, and compile a bug list. (DOK 2) ^{S1, S2, S3}</p> | <p>a. Define the following key terms:</p> <ul style="list-style-type: none"> • Technical testing • Bug list • Usability testing • Latent behavior | <p>a. Test on key terms</p> |
| <p>b. Conduct a usability test on a client Web site. (DOK 2) ^{S1, S2, S3}</p> | <p>b. Have students begin the process of technical testing by making a checklist—also called a test plan—of the technical features they need to test, as those features are specified in their design documents and storyboards. The checklists might include the following:</p> <ul style="list-style-type: none"> • Test links to make sure they go to proper destinations. • Check for layout elements that should appear on every page (e.g., banners across the top, navigation bars). • Check the spelling of all text (such as content paragraphs and button labels) on every page. • Check that the site works in at least of the two major browsers, Netscape Navigator and Internet Explorer. If students have access to both Macintosh computers and computers with Windows installed, they should test their sites on each platform. | <p>b. Evaluate student checklists.</p> |
| <p>c. Compile the results of technical testing and usability testing of a client Web site, make necessary revisions, and add the client site to an electronic portfolio. (DOK 2) ^{S1, S2, S3}</p> | <p>c. Have students test each other’s sites, or have each team follow the test checklist on their own site. Make sure testers write down the bugs and problems they find so the team knows everything that needs to be fixed. ^{AWC6}</p> <p>To prepare for usability testing, have student teams make a usability test interview sheet for testers to complete as they go through a site. Interview worksheet ideas can be found at www.pantos.org/atw/35317.html.</p> <p>Pair students from different teams, asking one partner to test the other’s site, following the usability test worksheet. The other partner should observe the tester and document the tester’s actions, looking for latent behavior.</p> <p>After the first test is completed, have partners switch roles and perform the usability test for the other student’s site.</p> <p>From the peer feedback and personal notes, ask students to propose written solutions and implement them. If they do not plan to implement a proposed solution, make sure they document why they choose not to do so.</p> | <p>Testing a Client Web Site Rubric ^{AWC5}</p> <p>Launching a Client Web Site Rubric ^{AWC6}</p> |

Ask teams to revise their sites based on information from the technical and usability tests.

Competency 9: Compose a marketing plan to publicize the client Web site. DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. A Web site can be a powerful and successful business tool.

Suggested Essential Questions

1. How can audience awareness be created for the client’s Web site?
2. How should a client’s Web site be marketed?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|--|
| a. Create a basic marketing plan for the client Web site. (DOK 3) <small>T1, T2, T3, T4, T5, T6</small> | a. Define the following terms: <ul style="list-style-type: none"> • Launch • Promote • Marketing | a. Test on terms |
| b. Present a Web site and marketing plan to the client. (DOK 2) | b. Students will investigate how to use Web search engines to promote or market a Web site. Students should explore and contrast the following options: <ul style="list-style-type: none"> • Find a search engine that offers free submission of Web sites. Make a list of their submission procedures. • Find a search engine or promotion site for which you pay to submit your site. State the cost, and discuss whether the benefits of the service are worth the cost. <small>AWC1, AWC2, AWC3, AWC4, AWC5, AWC6</small> <p>Students will outline a brief launch plan for the client site that is based on the above research. Have students think about their target audience and goals when selecting the organizations and methods they might use for promoting the site.</p> <p>Discuss how to organize a formal presentation to the clients. Students should point out the following:</p> <ul style="list-style-type: none"> • Highlights of the client site • Explanation of how the client site functions and how it markets the clients business or product. <p>Students will create formal presentations and then present to the clients.</p> | b. How to Promote a Web Site Worksheet Grade for launch plan. Have students participate in class-wide critique of some final products. Launch Plan and Client Presentation Rubric |

Standards

National Industry Standards

- AWC 1 Setting project requirements
- AWC 2 Planning site design and page layout
- AWC 3 Understanding the Adobe Dreamweaver CS4 interface
- AWC 4 Adding content by using Dreamweaver CS4
- AWC 5 Organizing content by using Dreamweaver CS4
- AWC 6 Evaluating and maintaining a site by using Dreamweaver CS4

21st Century Learning Standards

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

National Educational Technology Standards for Students

- 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

ACT College Readiness Standards

- E2 Organization, Unity, and Coherence
- M5 Graphical Representations
- R5 Generalizations and Conclusions
- S1 Interpretation of Data
- S2 Scientific Investigation
- S3 Evaluation of Models, Inferences, and Experimental Results
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W3 Developing a Position
- W4 Organizing Ideas
- W5 Using Language

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For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E.

Web site at <http://rcu.blackboard.com> (available only to registered users).

Suggested Rubrics and Checklists



Name: _____

Date: _____

Period: _____

Structuring a Client Web Site Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|-----------------------|--|--|---|--------------|
| Flowchart | Absent or incomplete | Students organize information and create a flowchart for the client site based on goals, requirements, and content identified from interviews. | Students organize information and create a detailed flowchart for the client site based on goals, requirements, and content identified from interviews. Students support each decision in the flowchart with data and information gathered from research and clients. | |
| Screen Views | Absent or incomplete | Students create screen views based on design principles and delivery requirements to organize content on pages. | Students create screen views based on design principles and delivery requirements to organize content on pages. Students support each decision on elements in the screen views with data and information gathered from research and clients. | |
| Client Reviews | Absent or incomplete | Students present to clients to clarify information and review flowcharts and screen views. Students take detailed notes and implement changes to come to agreement with clients and meet goals for the project in a timely manner. | Students present to clients to clarify information and review flowcharts and screen views. Students exhibit professionalism, such as being on time, dressing professionally, and showing respect for ideas. Students take detailed notes and implement changes to come to agreement with clients and meet goals for the project in a timely manner. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Designing a Client Web Site Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|---------------------|--|---|--|--------------|
| Design Comps | Absent or incomplete | Students each create design comps that accurately reflect client design requirements, audience, and goals. The selected comps reflect different approaches to the design. | Students each create design comps that accurately reflect client design requirements, audience, and goals. The selected comps reflect different approaches to the design. Students can clearly articulate the ways design principles are implemented to impact the audience. | |
| Team Process | Absent or incomplete | Students fairly select two comps to share with the client. | Students discuss and analyze each comp to determine the best representations of client needs. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Reviewing and Revising to a Client Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|------------------------------|--|--|--|--------------|
| Client Reviews | Absent or incomplete | Students clearly present their comps, providing details for design decisions and actively listening to feedback. Design comp revisions incorporate client feedback. Students engage in an ongoing review process to gain approval for all elements of the comps. | Students clearly present their comps, providing details for design decisions and actively listening to feedback. Design comp revisions incorporate client feedback. Students engage in an ongoing review process to gain approval for all elements of the comps using effective, clarifying questions to be sure all decisions reflect good design that meets the needs of the audience and purpose of the site. | |
| Production Storyboard | Absent or incomplete | Students create detailed production storyboards with information for design and structure of the site and its elements. | Students create detailed production storyboards with information for design and structure of the site and its elements. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Implementing a Reusable Design Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|-------------------------|--|---|---|--------------|
| CSS Style Sheets | Absent or incomplete | Students understand CSS styles and their uses in implementing page design. Students create CSS styles using a combination of redefined styles and new styles. Students generate external style sheets that reflect approved design comps. | Students understand and clearly articulate CSS styles and their uses in implementing page design. Students create CSS styles using redefined styles and new styles. Students generate external style sheets that reflect approved design comps. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Implementing a Reusable Design Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|--------------------------|--|--|--|--------------|
| Templates | Absent or incomplete | Students build templates with editable regions that reflect the production storyboard. Students use the CSS style sheet generated for the site to implement the design on the templates. Students build site pages from templates. | Students build templates with editable regions that reflect the production storyboard. Students use different types of editable regions to creatively display content on the page. Students use the CSS style sheet generated for the site to implement the design on the templates. Students build site pages from templates. | |
| Reusable Elements | Absent or incomplete | Students identify graphical elements that will be reused across the site. Students use the library in Dreamweaver to hold all reusable graphical elements to maintain consistency across pages. | Students identify graphical elements that will be reused across the site. Students use the library in Dreamweaver to hold all reusable graphical elements, fonts, and colors to maintain consistency across pages. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Testing a Client Web Site Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|------------------------------|--|--|--|--------------|
| Technical Test | Absent or incomplete | Students create detailed test plans to test all technical aspects of the client's site. Students test sites, document bugs, and provide design teams with this documentation. Design teams fix bugs. | Students create test plans to test all technical aspects of the client's site. Students test sites, document bugs, and provide design teams with this documentation. Design teams fix bugs. | |
| Usability Test | Absent or incomplete | Students create detailed user feedback forms and run usability tests with multiple peers. Students clearly document observations of user subject and gather detailed reports for user from the test. Design teams implement all feasible suggestions from user test. | Students create detailed user feedback forms and run usability tests with multiple peers. Students clearly document observations of user subject and gather detailed reports for user from the test. Design teams implement all suggestions from user test and provide clear articulation of the impact these changes had on the overall site. | |
| Final Client Web Site | Absent or incomplete | Students complete the client site and add it to their electronic portfolios. Students explain goals, purpose, and audience when adding the site to their portfolios. | Students complete the client site and add it to their electronic portfolios. Students explain goals, purpose, and audience and highlight achievements (whether technical, team process, or design) when adding the site to their portfolios. | |
| Total Score | | | | |

Comments:



Name: _____

Date: _____

Period: _____

Launching a Client Web Site Rubric

| | Does Not Meet Expectations 0 Points | Meets Expectations 3 Points | Exceeds Expectations 5 Points | Score |
|----------------------------|--|--|--|--------------|
| Launch Plan | Absent or incomplete | Students understand the way search engines work and the mechanisms they might use to promote their site. Students create a detailed launch plan based on their search research. | Students understand the way search engines work and the mechanisms they might use to promote their site. Students can articulate the different methods and offer a thoughtful proposal on the mechanisms they select. Students create a detailed launch plan based on their search research. | |
| Client Presentation | Absent or incomplete | Students present the client site to the client, highlighting how the client site accomplishes the client's goals, meets audience needs, and addresses client content and technical requirements as well as proposes the launch plan. | Students present the client site to the client, highlighting how the client site accomplishes the client's goals, meets audience needs, and addresses client content and technical requirements as well as proposes the launch plan. Students evaluate successful strategies employed during the production and offer a plan for how the client can go forward with managing and maintaining the site. | |
| Total Score | | | | |

Comments:

Digital Media Technology II

Unit 7: Media Rich Content for Web Design

Competency 1: Apply media rich concepts in order to enhance a Web site. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Designers choose different ways to present their Web site content—from animated graphics to rich client interfaces. How do they do it?

Suggested Essential Questions

1. How do you make the animation work on a Web site?
2. How do you put music on a Web site?
3. How do you make interactive buttons on a Web site?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|--|
| <p>a. Identify parts of a rich media software program workspace, including the following (DOK 1):</p> <ul style="list-style-type: none"> • Timeline • Frames • Layers • The stage • Scenes • Tools • Panels • Property inspector • Symbols • Instances • Libraries | <p>a. Show students Web sites that use Flash elements. Discuss how designers use Flash to enhance the user experience. Some elements to discuss include the following:</p> <ul style="list-style-type: none"> • Navigation systems • Integrated user interface • Animated screen elements • Rich media advertising <p>Note: Rich media advertising consists of communication using a combination of graphics with video, audio, or animation. An example is banner ads. <small>ARM2, ARM3, ARM4, ARM5</small></p> <p>Using a slide presentation, introduce students to the Flash interface. You might open the sample animated face document to explain and demonstrate the following elements: <small>ARM3, ARM4</small></p> <ul style="list-style-type: none"> • Flash document: Where you create your Flash content. You save a Flash document as a file with a .fla extension. • Tools panel: Tools for drawing, painting, writing, selecting, moving, modifying, viewing, and coloring • Panels: Additional tools for modifying and creating objects • Property inspector: Where you set or change the most commonly used attributes of objects in a Flash document • Movie: A published Flash document. Explain the difference between FLA and SWF files. • Stage: Where you compose the content of a Flash document • Timeline: Where you organize and control the content of a Flash document over time, using | <p>a. Written test that contains key terms, phrases, or concepts <small>W1, W4, W5</small></p> |

layers and frames

- **Frame:** A single picture in a series that forms the content of a Flash document
- **Keyframe:** A frame in which you define a change in what is displayed on the stage or include frame actions to modify action on the stage
- **Layers:** Where you organize the various content elements in a Flash document
- **Scene:** Each document can contain multiple scenes, each with its own timeline and stage. Scenes can be placed within other scenes.
- **Edit bar:** Indicates the current scene. On the right side, you can select the scene to open on the stage or change the magnification for viewing the stage.
- **Symbol:** An element stored in a library for reuse in a Flash document
- **Instance:** A copy of a symbol when it is on the stage. Each instance references the complete information stored in the corresponding library symbol, without duplicating that information. The use of instances minimizes the file size of a Flash movie.
- **Library:** Where you store and organize symbols
- **Tweening:** An automated way to create smooth movement and changes over time
- **Sounds:** Music loops or sound effects that play during the movie or are triggered by an action
- **Actions:** ActionScript statements that control an object or the timeline when a movie is played

Presentation: Introduction to Adobe Flash CS3

Worksheet: The Flash workspace

Guide: The Flash workspace

Electronic file: sample_animated_face.swf

Electronic file: sample_animated_face fla

-
- b. Create an interactive animated movie that incorporates motion and shape tweens, sound, and buttons. (DOK 3)^{T4},
AWC2, ARM1, ARM2, ARM3, ARM4,
ARM5

- b. Using the “I do, we do, you do” method, build a simple animated face with students. Highlight the following elements:
- Drawings on separate layers
 - A shape tween on one layer
 - A motion tween on another layer
 - A static object that persists throughout the movie on a separate layer ^{ARM3, ARM4}

Guide: How to create an animated face

Electronic file: sample_animated_face.swf

Electronic file: sample_animated_face fla

During the process of creating the animated face with students, find opportunities to discuss the

- b. Performance-based assessment that includes the use of rich media to include the following:
- Video
 - Audio
 - Animation

Written test that contains key terms, phrases, or concepts

following:

- Various ways to open, close, expand, and collapse panels
- Stage size and its relationship to screen resolution
- Document properties and settings (and how to open the Document Properties dialog box)
- How non-symbol shapes merge if you place one over the other in the same layer
- The difference between bitmap images and vector images in Flash
- Drawing tools, such as shapes and lines
- Selection tools, such as marquee, lasso, and magic wand
- The timeline and its use in animation
- How keyframes differ from regular frames
- Frame rate and timing (typically 12 frames per second) and the effect of frame rate on file size
- The definition of shape in Flash
- Symbols, instances, and the library
- Editing modes, such as editing an object on the stage or editing a symbol
- Locking and unlocking layers to protect objects you are not manipulating
- Publishing the face using different methods
- The differences between an SWF file and its corresponding FLA file

Guide: Symbols, instances, and the library

Guide: Frames and keyframes

Guide: How to create motion and shape tweens

As you build the Flash document, watch for the following teaching opportunities:

- When you create an instance of an object from the library, discuss why you use symbols and libraries.
- When you create tweens, discuss the two kinds of tweens.

Once students have created the initial face, pair students and have them check each other's animated faces. They should test and discuss the following:

- Select each keyframe, and determine if more than one object is highlighted on the stage. (Objects should be on separate layers if they are to be animated.)
- Select each keyframe, and determine if an object is a shape or a symbol and if the correct type of tween has been applied. (Motion tweens animate symbols; shape tweens animate shapes.)

-
- In turn, select each keyframe along the timeline, and make sure the object is in the expected location on the stage based on the point in the movie.

Inform students that these techniques for checking that their Flash document is clean will help when they are looking for errors in more complex movies later.

Once students successfully create the simple face, inform them that they will now add some user control and a soundtrack.

Using the “I do, we do, you do” method, introduce students to the basic concepts of using ActionScript to stop their movies from looping. Some key terms you might want to define as you step students through this process include the following:

- Class
- Object
- Property
- Variable
- Method
- Function
- Event

Guide: How to get started with ActionScript

Building on the basic concepts of ActionScript, demonstrate how to create a button to stop and play the movie. Watch for the following teaching opportunities:

- When you create a button, make sure students understand the different button states.
- What are events handlers and listeners?

Guide: How to create a button symbol

Demonstrate how to add sound on a separate layer and use actions to make sure the sound stops when the movie stops. Be sure to discuss copyright issues related to sounds students propose to add to their movies.

If students complete their animated face and buttons early, challenge them to add one or more of the following features on their own; then have them show the result to a partner and explain how they created the feature.

- Add eyebrows that do not move.
- Add eyebrows that move up as the eyes move.
- Add a tongue that comes out as the face smiles.
- Add eyes that open and close as the face smiles.

Ask students to share their completed movies with the rest of the class.

Have students add their animations to a new animation section in their portfolios to illustrate their graphics work.

Competency 2: Examine the properties and benefits of Adobe Flash software. DOK 1, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Web Sites with animation and video look more attractive than sites that are static.

Suggested Essential Questions

1. What are the key elements to a good animation?
2. How are animations, movies, and sound added to a Web site?
3. How are animations and movies created for a Web site?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|--|---|
| <p>a. Identify the use of technical elements such as tweens, images, text animations, actions, and sound in Adobe Flash CS3 movies and ads on the Web. (DOK 1) <small>ARM1, ARM2, ARM3, ARM4, ARM5</small></p> | <p>a. Have students open one or more Web sites that illustrate a variety of Flash techniques. (Alternatively, you could open such sites on the teacher workstation.)</p> <p>As a class, identify the following Flash techniques on the Web sites: <small>T2, T3, T4, T6</small></p> <ul style="list-style-type: none"> • Motion tweens • Shape tweens • Movie clips • Buttons • Combinations of symbols, such as buttons that contain animated movie clips • Sound (number of sounds used, number of times a sound is looped) • Stop actions • Go to and play actions <p>Have students speculate on the types or combinations of techniques that might be involved to create some of the more complicated effects they see.</p> <p>Discuss the purposes for implementing content as rich media. You might include the following:</p> <ul style="list-style-type: none"> • Incorporating audio and video • Providing continuity • Providing transitions • Illustrating change over time • Getting multiple layers of information from one part of the display • Enriching graphical representations • Visualizing three-dimensional structures | <p>a. Ask students to find a professional Web site that contains a variety of Flash techniques.</p> <p>Students must identify the Flash techniques that are used such as tweens, movies, sound, buttons, and so forth.</p> <p>Analyzing Flash on the Web Worksheet</p> <p>Have students attempt to recreate the techniques they have identified.</p> <p>Have students write a journal entry or reflective paragraph that describes how they might incorporate these techniques in their Web site design.</p> |

- Attracting attention

If time permits, challenge students to comment on one or more of the following:

- A surprising technique
- A challenging technique
- An unidentified technique
- A creative design solution

Competency 3: Incorporate video and multimedia elements into Web design. DOK 3, CS1, CS2, CS3, CS4, CS3,C.55

Suggested Enduring Understandings

1. Know how to incorporate video into Web site design properly and efficiently.

Suggested Essential Questions

1. How is video a more compelling form of media for some Web sites?
2. Is video seen on Web sites the future of most multimedia types including television?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|----------------------------------|-------------------------------|---------------------------------|
|----------------------------------|-------------------------------|---------------------------------|

a. Examine Web sites that incorporate Flash video. (DOK 1) ARM3, ARM4

- a. Brainstorm with students the different kinds of video they have seen on the Web and what type of video player these sites use. Some examples follow: T1, T2, T3, T4, T6
- Video trailers of upcoming movies (QuickTime) www.apple.com/trailers/
 - Television show previews (RealPlayer) www.pbs.org/wnet/nature/preview.html
 - News videos (Windows Media Player) <http://video.msn.com/video/p.htm?rf=http://www.msn.com/>
 - Case studies (Flash video in Flash Player) www.adobe.com/education/products/creativesuite/customers/hed/index.html

a. Assess knowledge of different types of media players and terminology associated with the use of these players using a pre-assessment quiz and a follow-up post-test.

As you view these sites, you might ask students to identify some of the general challenges of incorporating video on a Web site. Some topics you can use to guide the conversation include the following:

- **Bandwidth limitations:** Video files are generally quite large, requiring megabytes of data to display even short video clips.
- **Complex video authoring for the Web:** No standard tool sets exist for creating interactivity, navigation control, and fusion of video with other rich media content.
- **Time-consuming player downloads:** Most video playback requires site visitors to download a plug-in or application to view a video.
- **Lack of compelling integration of video and**

other Web content: Most video formats restrict playback of video to a separate generic window, interrupting the user experience.

Discuss how Flash video addresses these challenges. The benefits of Flash video implemented through Flash Player include the following:

- **Availability:** Flash Player is the most widely installed Internet video client, running on over 94% of all Internet-connected personal computers.
- **Creative control:** Designers can integrate Flash Video into a Web site by customizing the skin that frames the video.
- **Video in context:** Because Flash treats Flash Video as a media type, you can integrate video directly into a Web page just as you would any image or sound you bring into Flash.

Show students how Flash video is used to enhance the experience of different audiences. Some examples you might start with include the following:

- News: Flash video to provide recent news and events
www.cnn.com/video/
- Entertainment: Flash video to show the latest Asian music videos
www.iatv.tv/music/
- Research: Online polls using video interactivity as part of the poll (click Take a Sample Poll)
<http://hertzresearch.com/software.html>
- Case studies (Flash video in Flash Player)
www.adobe.com/education/products/creativesuite/customers/hed/index.html

b. Appropriately incorporate video in a Flash document for use on a Web site. (DOK 3)

b. Have students identify ways in which these videos address the intended audience and the site purpose and goals.

Demonstrate the ways to incorporate video into a Flash document. You might want to highlight the following aspects of incorporating video:

- Delivery options, such as progressive, streaming, and embedded video
- How delivery option affects the file size of the published Flash document
- Video file formats that can be used in a Flash document
- The advantages of storing video files outside the published Flash document ^{ARM4}

b. Allow students to peer evaluate knowledge of video delivery options using the Internet and appropriate Web sites.

Guide: How to produce video for use on the Web
 Electronic file: sample_video.mov

Break students into small groups, and have each group use the sample video to create a Flash video.

- | | | |
|--|--|---|
| <p>c. Identify challenges with using video on the Web and the ways in which Flash video addresses these challenges and improves user experience. (DOK 2)</p> | <p>c. Assign one of three scenarios to each group:</p> <ul style="list-style-type: none"> • A local news team is reporting a story about the Golden Gate Bridge on its Web site. • A movie director is shooting the trailer for a movie based in San Francisco. • A tourism Web site is creating a feature to lure tourists to San Francisco. | <p>c. Evaluate the project using a rubric to determine quality of the work. ^{ARM5}</p> |
|--|--|---|

Ask each group to write a two- or three-sentence narration that will appeal to the audience each organization is trying to attract.

Have each group record its narration, import the audio into the Flash document with the video, and apply appropriate audio compression settings. Ask each group to modify the skin of its video to appeal to its target audience.

Guide: How to import sound

Competency 4: Utilize motion tweens to enhance the user experience. ^{DOK 2, CS1, CS2, CS3, CS4, CS5}

Suggested Enduring Understandings

Suggested Essential Questions

- | | |
|---|--|
| <p>1. Animations on a Web site enhance the viewer’s experience.</p> | <p>1. Why are Web site animations more attractive than static text and graphics?</p> |
|---|--|

Suggested Performance Indicators

Suggested Teaching Strategies

Suggested Assessment Strategies

- | | | |
|---|---|---|
| <p>a. Examine Web sites that use masking and path animation techniques. (DOK 1) ^{ARM2, ARM3, ARM4, ARM5}</p> | <p>a. Introduce masking and path animations by showing students some sites that use these specific techniques, such as the following:</p> <ul style="list-style-type: none"> • The Digital Classroom’s example of the movement of molecules: http://thedigitalclassroom.com/showcase/flash/flash2.htm • 20 Enhancing user experience with Adobe Flash CS3 © 2007 Adobe Systems Incorporated • National Geographic’s Lewis and Clark Journey map : www.nationalgeographic.com/lewisandclark/journey_leg_1.html | <p>a. Allow students to perform a self-evaluation on their knowledge of masking and path animation by illustrating these techniques on appropriate Web sites. ^{AWC3, T1, T2, T4, T5, T6}</p> |
|---|---|---|

- | | | |
|--|---|---|
| <p>b. Build mask effects and path animations</p> | <p>b. Explain that the motion tweening learned in the first activity to simply change position can be</p> | <p>b. Allow students to peer evaluate the</p> |
|--|---|---|

| | | |
|---|--|--|
| <p>involving advanced motion tweens. (DOK 2)</p> | <p>applied in different ways to create more advanced effects.</p> <p>Have students indicate the ways in which using these techniques enhances the user’s ability to understand the information being presented.</p> <p>Demonstrate to students the steps to create a masking effect and a path animation.</p> <p>Electronic file: mask_sample.swf Electronic file: path_anim_sample.swf</p> <p>Break students into small groups. Assign each group to create either a masking effect or a path animation. ^{M5, M7}</p> | <p>work of their classmates.</p> |
| <p>c. Identify how masking and path animations can be used to enhance user experience on the Web. (DOK 2)</p> | <p>c. Have students build an example of the effect and brainstorm three applications for their effect. Have them use the guides and rulers in Flash to accurately line up the objects they use when creating their masking and path animation effects.</p> <p>Note: Be sure to provide students with any needed assets for them to create the effect. ^{T4, T6, ARM2, ARM3, ARM4, ARM5}</p> <p>Guide: How to use guides and rulers Guide: How to create masks Guide: How to use a motion guide for animation Guide: How to create and edit symbols</p> <p>After students have had a chance to complete their tasks, have a few groups share their samples and explain the applications they would see for their techniques.</p> <p>Let students know that later in the course they will create a digital narrative and design a Web site for a client. In each of these projects, students will have the opportunity to apply what they have learned about Flash video, masking, and path animation.</p> | <p>c. Use a rubric to evaluate students’ animation techniques. ^{ARM5}</p> |

Standards

National Industry Standards

- AWC 2 Planning site design and page layout
- AWC 3 Understanding the Adobe Dreamweaver CS4 interface
- ARM 1 Setting project requirements
- ARM 2 Identifying rich media design elements
- ARM 3 Understanding Adobe Flash CS4 Interface
- ARM 4 Building rich media elements by using Flash CS4
- ARM 5 Evaluating rich media elements

21st Century Learning Standards

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

National Educational Technology Standards for Students

- 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

ACT College Readiness Standards

- M5 Graphical Representations
- M7 Measurement
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W4 Organizing Ideas
- W5 Using Language

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For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Digital Media Technology II

Unit 8: Planning a Digital Narrative and Creating a Script

Competency 1: Utilize effects and film techniques to make a story more effective. DOK 2, CS1, CS2, CS4, CS5

Suggested Enduring Understandings

1. Well-developed narratives contain effective transitions and effects, both visual and auditory.

Suggested Essential Questions

1. What effects and transitions can I use to make my story more effective?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|--|
| <p>a. Examine online examples that use various Adobe Flash CS3 techniques. (DOK 1) ^{S1,} <small>M5, T1, T3, T4, T6</small></p> | <p>a. Introduce techniques for creating filming and transition effects; show students some sites that use these techniques, such as www.becominghuman.org and www.usolympicteam.com/kids/toons/index.shtml.</p> <p>Explain that certain filmmaking techniques can be incorporated into motion, shape, and text tweens to enhance the narrative capabilities of Flash. You might discuss the following: ^{W5, T4}</p> <ul style="list-style-type: none"> • Pan, tilt, and zoom effect: Moving the camera horizontally across a scene is called a pan. Moving the camera up or down across a scene is called a tilt. Moving the camera away from or toward a subject in a scene is called a zoom. • Camera angles: The rule of thirds and adjusting the viewing angle can help emphasize a certain aspect of the subject. • Cross fades: A transitional effect for moving from one image to another. This technique appears to fade in one image while another fades out. Another version of the cross fade is a color fade—dissolving between different color instances of the same object. • Bounce effect: A moving object rebounds before stopping. This technique grabs attention and can focus the visitor on an area of the screen. • Transitions: Multiple techniques (such as flipping, fading, and color fading) used to move from one section of a digital narrative to another <p>Electronic file: pan-zoom_example fla, Electronic file: fade_example fla Electronic file: bounce_example fla</p> | <p>a. Give a pretest reflecting the content of the competency for creating effects and film techniques. ^{W1,} <small>W2, W4, W5</small></p> |

| | | |
|---|--|--|
| <p>b. Work with custom colors and gradients in Flash. (DOK 1)</p> | <p>b. Explain to students that they are not limited to the colors in the default color palette. They can create new colors and gradients by using the Color Mixer panel. ^{T6, ARM2, ARM3, ARM4}</p> <p>Guide: How to apply colors and gradients</p> <p>Briefly demonstrate how students can use graphic filters to create text effects. ^{T6, ARM2, ARM3, ARM4}</p> <p>Guide: How to create text effects with filters</p> <p>Discuss how to import images, including the difference between importing to the stage and to the library. Discuss the differences between bitmap images and vector graphics.</p> <p>Guide: How to import images</p> <p>Discuss how Flash allows designers and developers to deliver filmmaking and traditional animation techniques over the Web by offering media-rich effects and animation with support for video and audio content, smaller file sizes, and easier authoring. Some questions to guide the discussion around these effects might include the following:</p> <ul style="list-style-type: none"> • How does each of these techniques enhance the site? • Why might the developer have used Flash instead of HTML? | <p>b. Create a checklist that assesses students' abilities to create new colors and gradients.</p> <p>Have students submit their thoughts on the discussion topics via blog entries.</p> |
| <p>c. Develop transition effects built through motion, shape, and text tweening in preparation for enhancing a narrative. (DOK 2) ^{T6, ARM2, ARM3, ARM4}</p> | <p>c. Divide students into small groups. Assign each group a filmmaking or transition technique to learn independently. Ask each group to build an example of its assigned technique and discuss where this technique might be used and how it would relate to the audience and message. Remind groups that they will teach their techniques to the class.</p> <p>Guide: How to create transitions with motion tweens</p> <p>Guide: How to create timeline effects</p> <p>Guide: How to use filmmaking techniques</p> <p>Worksheet: Examples of effects</p> | <p>c. Use a rubric to evaluate students' projects as they relate to the DOK of the stated competency.</p> |
| <p>d. Build filmmaking effects involving advanced motion and shape tweens. (DOK 2)</p> | <p>d. You might highlight some technical aspects of Flash you are asking students to use when creating the effects:</p> <ul style="list-style-type: none"> • Frame rate and how it affects playback, timing, and published movie size | <p>d. Teacher assessment of hands-on project</p> |

- Frame labels and the benefits of using them when adding actions

Note: You might have early finishers look specifically at these technical aspects of Flash and comment on their uses as well as their effects on the size of a published movie.

Have each group explain to the class when and why its assigned technique is used. The group should then lead the class through the process of creating an example of the technique.

Note: You might have one member of the group show the steps for creating the technique while the other members of the group help students in the classroom as teaching assistants.

Wrap up the activity by explaining to students the concept of sharing resources online (similar to the presentation activity in class). The Internet provides a vast amount of general information and many specific tutorials on Flash. Explain to students that a good idea is to establish a need, categorize the type of effect they need, investigate options, and then download and customize a sample FLA file.

Show them how they might search for new techniques at sites such as www.flashkit.com.

Competency 2: Compose a digital narrative and script in order to effectively communicate through multimedia.

DOK 3, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Narratives that are well planned and well designed are more effective than those that are not.

Suggested Essential Questions

1. Are stories that are rehearsed more effective than those that are impromptu?
2. Does “well-planned” and “well-designed” look more professional?
3. What does it mean to “plan” and “design” a narrative?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| a. Plan and design a narrative to effectively communicate a message. (DOK 3) ^{W1, W2, W3, W4, W5} | a. Introduce areas where digital storytelling is used. You might look at different types of online narratives: Documentaries, personal opinions, and cartoons and animations. You might also look at non-Web narratives such as commercials. Some places to find online narratives include the following: ^{S1, R3, T3, T4, T6} | a. Plan and design a narrative to effectively communicate a message. ^{W1, W2, W3, W4, W5} |

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- Arizona State University and the Institute of Human Origins created this documentary: www.becominghuman.org.
 - Second Story's site contains links to a variety of Web sites with interactive features on subjects ranging from the visual arts, architecture, and music to history, geography, and the sciences: www.secondstory.com.
 - Youth Radio's Web site has examples that use Flash to animate commentaries on various subjects with varying degrees of seriousness: www.youthradio.org/animation/index.shtml.
 - USA Olympics kids' site contains cartoons: www.usolympicteam.com/kids/toons/index.shtml.

Have students analyze and discuss each narrative you present. You might structure their analysis with the following questions: ^{R1, R2, R4, R5}

- What type of narrative is it (such as documentary, cartoon, or personal opinion)? Describe how the words and visuals are used to make it this type of narrative.
- What is the primary audience? Describe how the words and visuals target this specific audience.
- How relevant is the narrative content to the overall purpose of the site?
- What is the message of the narrative? (Summarize in one sentence.)
- How long is the narrative piece? Does it seem too long for the amount of visual action? Does it seem too short? Why or why not?
- How does the narrative meet the site purpose, address the target audience, and enhance the overall goals of the site?

Remind students of the design and development process they followed in creating Web sites. Point out that as they create a digital narrative they will engage in the same phases of the design and development process: Defining the project, structuring the narrative, designing the narrative, building and testing the narrative, and finally publishing or launching the narrative.

b. Write a script for a digital narrative. (DOK 2)
^{W1, W2, W3, W4}

b. As part of the definition and structuring phases, have students write a short narrative for a Web site and indicate the goals, audience, and message of the narrative, the length of time it will take to view the narrative, and the delivery requirements for the narrative (such as download speed, screen

b. Allow peer evaluation of students' work using the attached rubric to evaluate students' narrative.

resolution, and Internet connection speed). You might present the following criteria to help contain the project:

- The audio recording for the narrative does not exceed 45 seconds.
- The length of the movie does not exceed 1 minute.
- The number of written and spoken words is not more than 50.
- The narrative contains at least one transition effect.
- The narrative contains at least one filmmaking technique.
- The narrative contains no more than five different filmmaking and transition techniques.

Worksheet: Analyzing and scripting a digital narrative

You might also suggest that students consider using one of the techniques they learned in the previous unit, such as producing video, creating masks, or creating path animations.

Allow students time to write their scripts.

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|---|---|---|
| <p>c. Peer critique narrative scripts, considering audience and time frame. (DOK 2) ^{W1, W3, W5}</p> | <p>c. Pair students, and have them trade scripts with their partners. ^{R3}</p> <p>Ask partners to read each other's scripts, analyze the goals of the narratives, and analyze the specific audiences, message of the narratives, and the time they believe it will take for the narratives to be read or animated.</p> <p>Have partners discuss their analyses to make sure the goals, audience, message, and time frame match what was intended.</p> <p>Have students revise their narrative scripts based on feedback from their partners.</p> | <p>c. Have students write a reflective journal entry on unit content.</p> |
|---|---|---|

Competency 3: Design an animation storyboard in order to plan and organize a digital narrative. ^{DOK 3, CS1, CS2, CS3, CS4, CS5}

Suggested Enduring Understandings

1. Storyboarding is the format for planning and designing a narrative.

Suggested Essential Questions

1. Why do people take the time to storyboard their ideas?
2. Will storyboarding make for better narratives?
3. How will I be able to use storyboarding to convey my ideas for a narrative?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|---|
| <p>a. Create an animation storyboard. (DOK 3) ^{E1,E2,} R3, R5 W1, W4, W5</p> | <p>a. Introduce animation storyboards and flowcharts by showing students examples of storyboards used to create cartoons, films, or other narratives. You might highlight the following ideas:</p> <ul style="list-style-type: none"> • Flowcharts describe the overall information architecture or flow of the movie, and storyboards are detailed versions of the flowchart. ^{S1, M2, M5, T1, T3, T4} • Storyboards do not need great drawings, just rough sketches to visually represent the scenes. • Although detailed drawings are not necessary in these storyboards, they all contain detailed descriptions of animations, interactions (such as dialog boxes), and sounds. • Flash storyboards are similar to cartoon animation storyboards but give details about text and images, (drawn and imported), video, audio, and effects (such as fading, color changing, rotation, and zooming). • Designers make storyboards for each section of a narrative. Sections occur when there is a logical break or transition in the script (when a new image is displayed or an action happens). • Often you create a storyboard for another designer or programmer. Keep this in mind when you decide what level of detail to include in your instructions. <p>Go through the narrative summary and storyboard elements while highlighting and explaining these elements in a completed summary and storyboard. (You can use sf_fog.swf to show students a produced version of the narrative that is illustrated in the Sample Narrative and Storyboard guide, if you choose.)</p> <p>Narrative summary elements:</p> <ul style="list-style-type: none"> • Flowchart • General movie settings • Main project folder, together with image, video, and audio subfolders • Frame rate, background color, and movie dimensions <p>Storyboard elements:</p> <ul style="list-style-type: none"> • Sketches of each section, indicating objects or images and their placement on the stage at the beginning of the section (initial state) and at the end of the section (final state) | <p>a. Use assigned worksheets as a method of assessing students' DOK based on the correctness of answers.</p> |

- Section descriptions for both the initial state and the final state of the section
- Displayed text
- Description of images drawn in Flash
- Filenames for imported images, video clips, and sounds
- Description of imported images
- Text of any voice recording
- Any other general color or setting descriptions for the section, such as background, transparency, or object size

Transition description:

- Description of any effects (such as fading, movement, or color change) that can be created with text effects, motion tweens, or shape tweens

Guide: Sample narrative summary and storyboard
Electronic file: sf_fog.swf

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|---|---|--|
| <p>b. Develop techniques for an effective animation storyboard. (DOK 2)</p> | <p>b. As part of the design phase, have students create digital narrative flowcharts and storyboards based on their scripts. Some items for students to keep in mind as they build their flowcharts and storyboards include the following:</p> <ul style="list-style-type: none"> • The narrative look and feel should be consistent with the site into which it will be placed. • The narrative should exemplify effective design principles. • Elements included in the narrative should be accessible. Discuss why accessibility is important to Web site sponsors as well as site visitors. Identify elements of an SWF file that can be read by screen readers. • Text should be formatted to enhance readability. Discuss minimum font sizes, use of screen fonts, when to use serif and sans serif fonts, use of font color, use of alignment and text placement, line spacing, and indentation. | <p>b. Students create a presentation to describe the plan and design of their storyboard to peers. Use a rubric to evaluate students' storyboards.</p> |
|---|---|--|

Worksheet: Narrative summary and storyboard

Competency 4: Produce a digital narrative from a peer-created storyboard. DOK 2, CS1, CS2, CS3, CS4, CS5

Suggested Enduring Understandings

1. Implementation of the storyboard leads to a well-designed narrative.
2. Time management is essential in developing professional narratives.

Suggested Essential Questions

1. How well can I use my storyboard and create what I had intended?
2. How far from the storyboard can I deviate and still be an effective designer?
3. Does storyboarding incorporate a wide use of time management skills?

4. How important is time management in a professional environment?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| <p>a. Import optimized images and self-recorded audio into Adobe Flash CS3. (DOK 2) ^{ARM1, ARM2, ARM3, ARM4}</p> | <p>a. Have student authors collect or develop assets for their narratives. ^{AVC2, AVC3, AVC4, AVC5}</p> <ul style="list-style-type: none"> • Record audio, if there is to be a spoken narrative. • Gather images, sound loops, and video. • Gather or create content. • Optimize assets, such as graphics, sound, and video. <p>Pair students, and have the partners trade their finished storyboards and all necessary assets for each partner to produce the other’s digital narrative.</p> <p>Explain to producers that they need to make sure they have enough information to build the digital narrative.</p> <p>Have partners discuss the storyboards and ask questions to clarify the author’s intent.</p> <p>Before students begin production, review optimal image use and file management in Flash. Some techniques include the following:</p> <ul style="list-style-type: none"> • Optimize images in Fireworks <i>before</i> importing them into Flash. This step reduces image file size before creating effects in Flash. • Apply appropriate audio compression settings to the document. • Name layers and organize layers into folders. • Organize items such as buttons, graphics, movie clips, and imported images into folders in the library. • Label frames to organize sections of the document. • Set appropriate JPEG quality when publishing. | <p>a. Use a rubric to assess students’ digital narratives.</p> |
| <p>b. Produce a digital narrative from a flowchart and animation storyboard. (DOK 2)</p> | <p>b. Have partners build each other’s narratives, following the instructions given in the author’s flowchart and storyboard. Steps to guide their process might include the following:</p> <ul style="list-style-type: none"> • Set up the document. <ul style="list-style-type: none"> ○ Create a new document in Flash, and set document properties. ○ Import images, audio, and video. ○ Organize the library. | <p>b. Use a checklist to determine if all assigned elements of narrative are included in the submitted product.</p> |

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- Save the document file.
 - Build the narrative. (These steps are not sequential but provide a checklist of tasks to complete, as indicated on the storyboard.)
 - Create new assets, such as drawings and text. Format text to enhance readability.
 - Convert objects to symbols, as appropriate.
 - Create layers for different elements, and organize the layers into folders. (It is usually a good idea to get all elements into the Flash document and then go back and animate them.)
 - Set audio compression options.
 - Insert and label keyframes at appropriate points in the narrative, including the beginning of each section.
 - Add effects.
 - Make the content accessible.
 - Test and publish the document.
 - Test and refine each section and transition.
 - Test the completed movie.
 - Check spelling.
 - Publish the movie, making sure to select the option that compresses the published SWF file.
 - Test the published movie before and after it is uploaded to the Web.

After they complete their narratives, have students review their produced narratives with the authors of the animation storyboards.

Have students work together to reconcile what the author intended with the narrative. Some questions to guide their review might include the following:

- Does the content (audio and text) of the digital narrative achieve the goals and message intended by the author? If not, what content needs to be added? ^{T2, T4}
- Does the digital narrative contain all the images, audio, and video the author provided? If not, what needs to be added? ^{AVC5}
- Do the techniques used to animate the narrative contribute to the overall message and goals? If not, what techniques need to be changed, removed, or added? ^{AVC4, AVC5}

Have student producers revise their work according to the changes specified by the author.

Competency 5: Prepare a digital narrative for publishing by collecting feedback and editing accordingly. ^{DOK 2, CS1, CS2, CS3, CS4, CS5}

Suggested Enduring Understandings

1. Reviewing and redesigning leads to a more professional narrative.

Suggested Essential Questions

1. What can I do to improve the quality of my work?
2. Is there anything that I might have implied that might be misunderstood?
3. How can I use peer evaluation to make me a better professional?

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|--|---|
| <p>a. Conduct a peer review of a digital narrative. (DOK 2) ^{T1, T4, ARMS}</p> | <p>a. Have students run their final digital narratives and conduct a technical test, such as making sure buttons work and tweening occurs as expected. ^{S1, S2, S3}</p> <p>Guide: How to test a digital narrative</p> <p>Have students conduct a usability test of their narratives. You might have students make a user test interview sheet for testers to fill out as they go through the narrative as they did when testing the Web sites in Unit 3. Students should remember to observe the tester and document the tester’s actions, looking for latent behavior.</p> <p>Ask students to swap narratives with a new partner (not the producer of their narrative).</p> <p>Have the author briefly explain the intended message, goals, and audience of the narrative.</p> | <p>a. Have other professionals critique students’ narratives. ^{W4}</p> |
| <p>b. Incorporate peer-suggested changes into a digital narrative. (DOK 2)</p> | <p>b. Ask partners to review each other’s digital narratives. Some questions to guide their review might include the following:</p> <ul style="list-style-type: none"> • Does the narrative convey the intended message and address the stated goals? • How do the effects and visual content enhance or detract from the overall message and goals of the narrative? • How does the text and audio content of the narrative enhance or detract from the overall message and goals of the narrative? • How well do the effects and visual content reach the intended audience? • How relevant is the content to the overall site into which it is placed? • How well does the text and audio content of the narrative reach the intended audience? | <p>b. Use a rubric to assess the review process.</p> <p>Use correctness of worksheet answers to assess DOK.</p> |

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- Does the narrative fall within the required time and word limits?
 - How accessible is the content to visitors with disabilities?

Worksheet: Evaluating a digital narrative

After the review, have student authors make any necessary changes to their narratives.

c. Publish a digital narrative as an HTML document. (DOK 2) ^{AWCS}

c. Have students publish their digital narratives.

c. Work is completed.

Ask students to present their final digital narratives to the class. Some questions to guide their presentations might include the following:

- What are the goals, message, and intended audience?
 - What effects and techniques are used to support the goals and message?
 - How do the effects and techniques work to reach the intended audience?
 - What did the producer and reviewer add to the final production of the narrative?
-

Standards

National Industry Standards

- ARM 1 Setting project requirements
- ARM 2 Identifying rich media design elements
- ARM 3 Understanding Adobe Flash CS4 Interface
- ARM 4 Building rich media elements by using Flash CS4
- ARM 5 Evaluating rich media elements
- AVC 2 Identifying design elements when preparing images
- AVC 3 Understanding Adobe Photoshop CS4
- AVC 4 Manipulating images using Adobe Photoshop CS4
- AVC 5 Publishing digital images using Adobe Photoshop CS4

21st Century Learning Standards

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

National Educational Technology Standards for Students

- T1 Creativity and Innovation
- T3 Research and Information Fluency
- T4 Critical Thinking, Problem Solving, and Decision Making
- T6 Technology Operations and Concepts

ACT College Readiness Standards

- E1 Topic Development in Terms of Purpose and Focus
- E2 Organization, Unity, and Coherence
- M2 Probability, Statistics, and Data Analysis
- M5 Graphical Representations
- R1 Main Ideas and Author's Approach
- R2 Supporting Details
- R3 Sequential, Comparative, and Cause–Effect Relationships
- R4 Meaning of Words
- R5 Generalizations and Conclusions
- S1 Interpretation of Data
- S2 Scientific Investigation
- S3 Evaluation of Models, Inferences, and Experimental Results
- W1 Expressing Judgments
- W2 Focusing on the Topic
- W3 Developing a Position
- W4 Organizing Ideas
- W5 Using Language

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For additional references, activities, and Web resources, please refer to the Digital Media Technology P.A.C.E. Web site at <http://rcu.blackboard.com> (available only to registered users).

Suggested Rubrics and Checklists



Name: _____

Date: _____

Period: _____

Web Page Rubric

| | 4 Points | 3 Points | 2 Points | 1 Point | Score |
|----------------------|---|--|---|--|-------|
| Background | Background is exceptionally attractive and consistent across pages, adds to the theme or purpose of the site, and does not detract from readability. | Background is attractive and consistent across pages, adds to the theme or purpose of the site, and does not detract from readability. | Background is consistent across pages and does not detract from readability. | Background detracts from the readability of the site. | |
| Color Choices | Colors of background, fonts, and unvisited and visited links form a pleasing palette, do not detract from the content, and are consistent across pages. | Colors of background, fonts, and unvisited and visited links do not detract from the content and are consistent across pages. | Colors of background, fonts, and unvisited and visited links do not detract from the content. | Colors of background, fonts, and unvisited and visited links make the content hard to read or otherwise distract the reader. | |
| Fonts | The fonts are consistent and easy to read, and point size varies appropriately for headings and text. Use of font styles (italic, bold, underline) is used consistently and improves readability. | The fonts are consistent and easy to read, and point size varies appropriately for headings and text. | The fonts are consistent, and point size varies appropriately for headings and text. | A wide variety of fonts, styles, and point sizes is used. | |
| Graphics | Graphics are related to the theme/purpose of the site, are thoughtfully cropped, are of high quality, and | Graphics are related to the theme/purpose of the site, are of good quality, and enhance reader interest or | Graphics are related to the theme/purpose of the site and are of good quality. | Graphics seem randomly chosen, are of low quality, OR distract the reader. | |

| | | | | | |
|-----------------------------|---|---|---|--|--|
| | enhance reader interest or understanding. | understanding. | | | |
| Links | All links point to high-quality, up-to-date, credible sites. | Almost all links point to high-quality, up-to-date, credible sites. | Most links point to high-quality, up-to-date, credible sites. | Less than 3/4 of the links point to high-quality, up-to-date, credible sites. | |
| Spelling and Grammar | There are no errors in spelling, punctuation, or grammar in the final draft of the Web site. | There are one to three errors in spelling, punctuation, or grammar in the final draft of the Web site. | There are four to five errors in spelling, punctuation, or grammar in the final draft of the Web site. | There are more than five errors in spelling, punctuation, or grammar in the final draft of the Web site. | |
| Content | The site has a well-stated clear purpose and theme that are carried out throughout the site. | The site has a clearly stated purpose and theme but may have one or two elements that do not seem to be related. | The purpose and theme of the site are somewhat muddy or vague. | The site lacks a purpose and theme. | |
| Layout | The Web site has an exceptionally attractive and usable layout. It is easy to locate all important elements. White space, graphic elements, and/or alignment are used effectively to organize material. | The Web pages have an attractive and usable layout. It is easy to locate all important elements. | The Web pages have a usable layout but may appear busy or boring. It is easy to locate most of the important elements. | The Web pages are cluttered looking or confusing. It is often difficult to locate important elements. | |
| Navigation | Links for navigation are clearly labeled, consistently placed, allow the reader to easily move from a page to related pages (forward and back), and take the reader where he or she expects to go. A user does not become lost. | Links for navigation are clearly labeled and allow the reader to easily move from a page to related pages (forward and back), and internal links take the reader where he or she expects to go. A user rarely becomes lost. | Links for navigation take the reader where he or she expects to go, but some needed links seem to be missing. A user sometimes gets lost. | Some links do not take the reader to the sites described. A user typically feels lost. | |
| Content | All information provided by the | Almost all the information | Almost all of the information | There are several inaccuracies in the | |

| | | | | | |
|--------------------|--|--|--|--|--|
| Accuracy | student on the Web site is accurate, and all the requirements of the assignment have been met. | provided by the student on the Web site is accurate, and all requirements of the assignment have been met. | provided by the student on the Web site is accurate, and almost all of the requirements have been met. | content provided by the students, OR many of the requirements have not been met. | |
| Total Score | | | | | |

Comments:

Digital Media Technology III

Unit 9: Creating a Rough Cut

Competency 1: Edit, build, and finish a rough cut of a video using video editing software. ^{DOK 3}

Suggested Enduring Understandings

1.

Suggested Essential Questions

1.

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|--|
| <p>a. Identify and navigate the video editing software interface. (DOK 4)</p> | <p>a. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Launch video editing software • Open and close projects • Navigate the video editing software interface using menus, keyboard shortcuts, and the mouse • Save, hide, and quit video editing software <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> • Launch video editing software • Open and close projects • Navigate the video editing software interface using menus, keyboard shortcuts, and the mouse • Save, hide, and quit video editing software | <p>a. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.</p> |
| <p>b. Demonstrate basic editing skills in video editing software. (DOK 2)</p> | <p>b. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Import clips into project • Play and navigate through clips in Viewer • Mark clips in Viewer • Edit clips into the Timeline • Play and navigate a sequence • Organize Project elements • View Bin contents <p>The student will be allowed to work in groups</p> | <p>b. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.</p> |



or individually to complete the exercises demonstrating mastery of the following:

- Import clips into project
- Play and navigate through clips in Viewer
- Mark clips in Viewer
- Edit clips into the Timeline
- Play and navigate a sequence
- Organize Project elements
- View Bin contents

c. Construct a rough cut. (DOK 3)

c. The teacher will use guided practice to demonstrate the following:

- Prepare a project for editing
- Make overwrite edits
- Manage timeline tracks
- Make insert edits
- Edit audio clips
- Move clips in the Timeline
- Use drag and drop editing
- Change the volume of edited clips

c. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.

The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:

- Prepare a project for editing
- Make overwrite edits
- Manage timeline tracks
- Make insert edits
- Edit audio clips
- Move clips in the Timeline
- Use drag and drop editing
- Change the volume of edited clips

d. Finish a rough cut. (DOK 3)

d. The teacher will use guided practice to demonstrate the following:

- Set edit points in the Timeline
- Add cutaways
- Edit narration
- Backtime a clip

d. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.

-
- Edit music tracks
 - Copy, cut, paste, and position a clip
 - Play a sequence full screen

The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:

- Set edit points in the Timeline
 - Add cutaways
 - Edit narration
 - Backtime a clip
 - Edit music tracks
 - Copy, cut, paste, and position a clip
 - Play a sequence full screen
-

Unit 10: Refining a Rough Cut

Competency 1: Demonstrate the techniques involved trimming clip duration, refining edit points, and refining the editing process. ^{DOK 2}

Suggested Enduring Understandings

1.

Suggested Essential Questions

1.

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|---|---|---|
| a. Demonstrate the ability to trim a clip to make it shorter or longer in length. (DOK 2) | <p>a. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Explain the concept of trimming. • Use the Ripple tool to trim clips. • Trim clips in the Viewer. • Trim clips in the V2 Track. • Trim one track of a linked clip. <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> • Explain the concept of trimming. • Use the Ripple tool to trim clips. • Trim clips in the Viewer. • Trim clips in the V2 Track. • Trim one track of a linked clip. | a. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist. |
| b. Demonstrate the ability to refine edit points using Slip, Roll, and Slide tools. (DOK 2) | <p>b. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Trim two edit points at the same time. • Slip In and Out points. • Roll two edit points. • Extend an edit point using the roll or the selection tool. • Use the slide tool to refine position. • Drag a clip to a new location. • Keep linked clips in sync. <p>The student will be allowed to work in groups or individually to complete the exercises</p> | b. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist. |

demonstrating mastery of the following:

- Trim two edit points at the same time.
- Slip In and Out points.
- Roll two edit points.
- Extend an edit point using the roll or the selection tool.
- Use the slide tool to refine position.
- Drag a clip to a new location.
- Keep linked clips in sync.

c. Refine the editing process in order to organize overall workflow. (DOK 2)

- c. The teacher will use guided practice to demonstrate the following:
- Label and rename project elements.
 - Create subclips using In and Out points.
 - Create subclips using markers.
 - Use markers to align actions.
 - Create a storyboard.
 - Use a replace edit to swap individual clips.
 - Edit multicam footage.

The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:

- Label and rename project elements.
- Create subclips using In and Out points.
- Create subclips using markers.
- Use markers to align actions.
- Create a storyboard.
- Use a replace edit to swap individual clips.
- Edit multicam footage.

c. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.

Unit 11: Customizing and Capturing Footage

Competency 1: Demonstrate the methods for customizing video editing software and capturing and transferring footage. ^{DOK 2}

Suggested Enduring Understandings

1.

Suggested Essential Questions

1.

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| <p>a. Customize, change, or add metadata throughout the editing process. (DOK 2)</p> | <p>a. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Reconnect unlinked media files. • Customize, change, or add metadata throughout the editing process. • Play sequences with multiple formats. • Edit a master clip. • Log notes in the Browser columns. • Find project items. • Customize shortcut keys and button bars. • Save and reload customized layouts. • Optimize user preferences. <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> • Reconnect unlinked media files. • Customize, change, or add metadata throughout the editing process. • Play sequences with multiple formats. • Edit a master clip. • Log notes in the Browser columns. • Find project items. • Customize shortcut keys and button bars. • Save and reload customized layouts. • Optimize user preferences. | <p>a. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.</p> |
| <p>b. Capture and transfer footage. (DOK 2)</p> | <p>b. The teacher will use guided practice to demonstrate the following:</p> | <p>b. The student will be assessed by submitting their project at the end of</p> |

-
- Connect video sources for capture.
 - Preview and mark source material.
 - Log clips.
 - Choose clip settings.
 - Choose capture presets.
 - Batch capture clips.
 - Transfer files from nontape sources.

the completion of the objective. The student's work will be evaluated by the teacher through a checklist.

The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:

- Connect video sources for capture.
 - Preview and mark source material.
 - Log clips.
 - Choose clip settings.
 - Choose capture presets.
 - Batch capture clips.
 - Transfer files from nontape sources.
-

Unit 12: Completing the Cut

Competency 1: Demonstrate the process of applying transitions, mixing audio tracks, and creating titles. ^{DOK 2}

Suggested Enduring Understandings

1.

Suggested Essential Questions

1.

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|---|--|
| <p>a. Apply transitions to your video to enhance how it moves from one clip to the next. (DOK 2)</p> | <p>a. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> Evaluate project needs. Understand and view the transition options Apply video and audio transitions. Modify transitions. Use the Transition Editor. Adjust edit points under a transition. Save favorite transitions. Change transition parameters. Preview and render transitions. <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> Evaluate project needs. Understand and view the transition options Apply video and audio transitions. Modify transitions. Use the Transition Editor. Adjust edit points under a transition. Save favorite transitions. Change transition parameters. Preview and render transitions. | <p>a. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.</p> |
| <p>b. Mix multiple audio tracks into one balanced, overall</p> | <p>b. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> Prepare the project for mixing. | <p>b. The student will be assessed by submitting their project at the end of the completion of the</p> |

| | | |
|---|---|--|
| <p>sound. (DOK 2)</p> | <ul style="list-style-type: none"> • Edit and organize audio effects. • Monitor and adjust audio levels in the Timeline. • Use the razor blade to add edits and create audio fades. • Create audio fades using keyframes. • Use the Audio Mixer. • Record a voiceover. <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> • Prepare the project for mixing. • Edit and organize audio effects. • Monitor and adjust audio levels in the Timeline. • Use the razor blade to add edits and create audio fades. • Create audio fades using keyframes. • Use the Audio Mixer. • Record a voiceover. | <p>objective. The student's work will be evaluated by the teacher through a checklist.</p> |
| <p>c. Add titles to existing sequences. (DOK 2)</p> | <p>c. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Add color bars and slugs. • Create and edit text clips. • Superimpose a title. • Create a lower third. • Work with Boris text. • Add color mattes and render effects. • Import still images. • Create a multilayer effect. • Prepare graphic images for editing. • Add Motion templates. <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> • Add color bars and slugs. • Create and edit text clips. | <p>c. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.</p> |

-
- Superimpose a title.
 - Create a lower third.
 - Work with Boris text.
 - Add color mattes and render effects.
 - Import still images.
 - Create a multilayer effect.
 - Prepare graphic images for editing.
 - Add Motion templates.
-

Unit 13: Adding Effects and Finishing Video Projects

Competency 1: Demonstrate the techniques to change motion properties, apply filters, and export video projects. DOK 2

Suggested Enduring Understandings

1.

Suggested Essential Questions

1.

| Suggested Performance Indicators | Suggested Teaching Strategies | Suggested Assessment Strategies |
|--|--|--|
| <p>a. Change the motion properties of a clip. (DOK 2)</p> | <p>a. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Change clip speed. • Use the Speed tool. • Create fit to fill edits. • Create freeze frames. • Change image size and position. • Crop and rotate images. • Copy and paste motion attributes. • Animate motion effects. <p>The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:</p> <ul style="list-style-type: none"> • Change clip speed. • Use the Speed tool. • Create fit to fill edits. • Create freeze frames. • Change image size and position. • Crop and rotate images. • Copy and paste motion attributes. • Animate motion effects. • Create a motion path. | <p>a. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.</p> |
| <p>b. Apply filters to create visual attractiveness and to correct or improve aspects of an image. (DOK 2)</p> | <p>b. The teacher will use guided practice to demonstrate the following:</p> <ul style="list-style-type: none"> • Apply audio and video filters. • View and modify filters. | <p>b. The student will be assessed by submitting their project at the end of the completion of the objective. The student's</p> |

-
- Apply filters for image correction.
 - Apply filters to multiple clips.
 - Use tools to adjust filters.
 - Animate filters using keyframes.

work will be evaluated by the teacher through a checklist.

The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:

- Apply audio and video filters.
- View and modify filters.
- Apply filters for image correction.
- Apply filters to multiple clips.
- Use tools to adjust filters.
- Animate filters using keyframes.

c. Finish and output a project. (DOK 2)

c. The teacher will use guided practice to demonstrate the following:

- Detect audio peaks.
- Adjust video levels for broadcast.
- Share clips and sequences.
- Export a QuickTime movie.
- Export a QuickTime conversion.
- Export a still image.
- Output a sequence to tape.
- Create a timecode window burn.
- Back up a project.

The student will be allowed to work in groups or individually to complete the exercises demonstrating mastery of the following:

- Detect audio peaks.
- Adjust video levels for broadcast.
- Share clips and sequences.
- Export a QuickTime movie.
- Export a QuickTime conversion.
- Export a still image.
- Output a sequence to tape.
- Create a timecode window burn.
- Back up a project.

c. The student will be assessed by submitting their project at the end of the completion of the objective. The student's work will be evaluated by the teacher through a checklist.

Digital Media Technology IV

Unit 14: Preparing Electronics Portfolios

Competency 1: Plan and create an electronic portfolio detailing the culmination of several digital, audio, and video projects. ^{DOK 4}

Suggested Enduring Understandings

1.

Suggested Essential Questions

1.

Suggested Performance Indicators

- a. Plan and create a detailed project that includes all of the digital, audio, and video skills learned in this course. (DOK 4)

Suggested Teaching Strategies

- a. Work individually with each student to define a culminating project that will showcase all of the skills learned in DMT. Outline the tasks, timelines, and due dates of each component of the portfolio. The project should require long-term strategic planning and thinking and should run throughout the entire final semester of DMT.

Suggested Assessment Strategies

- a. Portfolio Rubric (individual rubrics may be used to grade independent portions of the portfolio).

Student Competency Profile

Student's Name: _____



This record is intended to serve as a method of noting student achievement of the competencies _____ 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: Introduction, Safety , and Orientation

- _____ Identify course expectations, school policies, program policies, and safety procedures related to
- _____ 1. Digital Media Technology (DMT).
Explore personality development, leadership, and teamwork in relation to the classroom
 - _____ 2. environment, interpersonal skills, and others.

Unit 2: Ethical Content and Production

- _____ Research copyright rules, regulations, and issues related to graphics and images produced by
- _____ 1. others and original work, and adhere to those rules and regulations when developing work.
 - _____ 2. Research online content, and evaluate content bias, currency, and source.
 - _____ 3. Define and abide by the journalistic code of ethics.
 - _____ 4. Create and edit a written document in a technical environment.

Unit 3: Photography

- _____ Demonstrate proficiency in the setup, operation, and troubleshooting of a graphic design
- _____ 1. computer.
 - _____ 2. Explain photography and graphic design elements.
 - _____ 3. Complete a photography project that meets the needs of an audience.
 - _____ 4. Use photo editing software to create and edit a product for a customer.

Unit 4: Graphic Design and Print Production

- _____ 1. Apply color theory and design principles.
- _____ 2. Understand typography and layout design.
- _____ 3. Apply design principles and techniques in the creation of an advertisement.
- _____ 4. Utilize advanced image manipulation and page layout to create a brochure.
- _____ 5. Create a newsletter layout with advanced editing.
- _____ 6. Research careers and develop a professional portfolio.



Student Competency Profile

Student's Name: _____

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

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

Unit 5: Introduction to Web Design

- _____ 1. Identify the components of Web design application software.
- _____ 2. Demonstrate skills needed for planning and creating a home page.
Demonstrate knowledge of best practices for designing Web sites, such as maintaining
- _____ 3. consistency, separating content from design, and using standard fonts and Web-safe colors.
- _____ 4. Demonstrate proficiency linking Web content using hyperlinks, e-mail links, and named anchors.
Demonstrate knowledge of Web site accessibility standards that address the needs of people
- _____ 5. with visual and motor impairments.
- _____ 6. Demonstrate how to insert a graphical navigation bar created in a separate program.
Produce Web site designs that work equally well on various operating systems and browser
- _____ 7. versions.
- _____ 8. Identify techniques and methods for basic usability tests and collecting site feedback.
Demonstrate knowledge of using and managing assets, links, and files to publish and update site
- _____ 9. files to a remote server.
Use basic HTML tags to set up an HTML document, format text, add links, create tables, and build
- _____ 10. ordered and unordered lists.

Unit 6: Building a Basic Client Web Site

- _____ 1. Gather information and data as it pertains to the development of a client Web site.
Utilize the phases involved in planning a client Web site in order to effectively meet the client's
- _____ 2. needs.
- _____ 3. Use an effective and functional structure in creating a client Web site.
- _____ 4. Apply techniques of design to create a suitable client Web site.
- _____ 5. Utilize client feedback to improve a design concept.
- _____ 6. Utilize cascading style sheets to ensure consistency of style and theme.
- _____ 7. Develop a final product for the client utilizing all design phases, feedback, and peer collaboration.
- _____ 8. Test the Web site for usability and accessibility.
- _____ 9. Compose a marketing plan to publicize the client Web site.

Unit 7: Media Rich Content for Web Design

- _____ 1. Apply media rich concepts in order to enhance a Web site.
- _____ 2. Examine the properties and benefits of Adobe Flash software.

- _____ 3. Incorporate video and multimedia elements into Web design.
- _____ 4. Utilize motion tweens to enhance the user experience.

Unit 8: Planning a Digital Narrative and Creating a Script

- _____ 1. Utilize effects and film techniques to make a story more effective.
- _____ 2. Compose a digital narrative and script in order to effectively communicate through multimedia.
- _____ 3. Design an animation storyboard in order to plan and organize a digital narrative.
- _____ 4. Produce a digital narrative from a peer-created storyboard.
- _____ 5. Prepare a digital narrative for publishing by collecting feedback and editing accordingly.



Student Competency Profile

Student's Name: _____

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

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

Unit 9: Creating a Rough Cut

_____ 1. Edit, build, and finish a rough cut of a video using video editing software.

Unit 10: Refining a Rough Cut

Demonstrate the techniques involved trimming clip duration, refining edit points, and refining

_____ 1. the editing process.

Unit 11: Customizing and Capturing Footage

Demonstrate the methods for customizing video editing software and capturing and transferring

_____ 1. footage.

Unit 12: Completing the Cut

_____ 1. Demonstrate the process of applying transitions, mixing audio tracks, and creating titles.

Unit 13: Adding Effects and Finishing Video Projects

Demonstrate the techniques to change motion properties, apply filters, and export video

_____ 1. projects.

Student Competency Profile

Student's Name: _____

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

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

Unit 14: Preparing Electronic Portfolios

_____ 1. Plan and create an electronic portfolio detailing the culmination of several digital, audio, and video projects.

Appendix A: 21st Century Skills Standards

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

Today's life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills.

CS 1 Flexibility and Adaptability

- Adapting to varied roles and responsibilities
- Working effectively in a climate of ambiguity and changing priorities

CS 2 Initiative and Self-Direction

- Monitoring one's own understanding and learning needs
- Going beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrating initiative to advance skill levels toward a professional level
- Defining, prioritizing, and completing tasks without direct oversight
- Utilizing time efficiently and managing workload
- Demonstrating commitment to learning as a lifelong process

CS 3 Social and Cross-Cultural Skills

- Working appropriately and productively with others
- Leveraging the collective intelligence of groups when appropriate
- Bridging cultural differences and using differing perspectives to increase innovation and the quality of work

CS 4 Productivity and Accountability

- Setting and meeting high standards and goals for delivering quality work on time
- Demonstrating diligence and a positive work ethic (e.g., being punctual and reliable)

CS 5 Leadership and Responsibility

- Using interpersonal and problem-solving skills to influence and guide others toward a goal
- Leveraging strengths of others to accomplish a common goal
- Demonstrating integrity and ethical behavior
- Acting responsibly with the interests of the larger community in mind

Appendix B: ACT College Readiness Standards

English

E1 Topic Development in Terms of Purpose and Focus

- Identify the basic purpose or role of a specified phrase or sentence.
- Delete a clause or sentence because it is obviously irrelevant to the essay.
- Identify the central idea or main topic of a straightforward piece of writing.
- Determine relevancy when presented with a variety of sentence-level details.
- Identify the focus of a simple essay, applying that knowledge to add a sentence that sharpens that focus or to determine if an essay has met a specified goal.
- Delete material primarily because it disturbs the flow and development of the paragraph.
- Add a sentence to accomplish a fairly straightforward purpose such as illustrating a given statement.
- Apply an awareness of the focus and purpose of a fairly involved essay to determine the rhetorical effect and suitability of an existing phrase or sentence or to determine the need to delete plausible but irrelevant material.
- Add a sentence to accomplish a subtle rhetorical purpose such as to emphasize, to add supporting detail, or to express meaning through connotation.
- Determine whether a complex essay has accomplished a specific purpose.
- Add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay.

E2 Organization, Unity, and Coherence

- Use conjunctive adverbs or phrases to show time relationship in simple narrative essays (e.g., *then, this time, etc.*).
- Select the most logical place to add a sentence in a paragraph.
- Use conjunctive adverbs or phrases to express straightforward logical relationships (e.g., *first, afterward, in response*).
- Decide the most logical place to add a sentence in an essay.
- Add a sentence that introduces a simple paragraph.
- Determine the need for conjunctive adverbs or phrases to create subtle logical connections between sentences (e.g., *therefore, however, in addition*).
- Rearrange the sentences in a fairly uncomplicated paragraph for the sake of logic.
- Add a sentence to introduce or conclude the essay or to provide a transition between paragraphs when the essay is fairly straightforward.
- Make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases, particularly when signaling a shift between paragraphs.
- Rearrange sentences to improve the logic and coherence of a complex paragraph.
- Add a sentence to introduce or conclude a fairly complex paragraph.
- Consider the need for introductory sentences or transitions, basing decisions on a thorough understanding of both the logic and rhetorical effect of the paragraph and essay.

E3 Word Choice in Terms of Style, Tone, Clarity, and Economy

- Revise sentences to correct awkward and confusing arrangements of sentence elements.
- Revise vague nouns and pronouns that create obvious logic problems.
- Delete obviously synonymous and wordy material in a sentence.
- Revise expressions that deviate from the style of an essay.

- Delete redundant material when information is repeated in different parts of speech (e.g., *alarmingly startled*).
- Use the word or phrase most consistent with the style and tone of a fairly straightforward essay.
- Determine the clearest and most logical conjunction to link clauses.
- Revise a phrase that is redundant in terms of the meaning and logic of the entire sentence.
- Identify and correct ambiguous pronoun references.
- Use the word or phrase most appropriate in terms of the content of the sentence and tone of the essay.
- Correct redundant material that involves sophisticated vocabulary and sounds acceptable as conversational English (e.g., *an aesthetic viewpoint* versus *the outlook of an aesthetic viewpoint*).
- Correct vague and wordy or clumsy and confusing writing containing sophisticated language.
- Delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole.

E4 Sentence Structure and Formation

- Use conjunctions or punctuation to join simple clauses.
- Revise shifts in verb tense between simple clauses in a sentence or between simple adjoining sentences.
- Determine the need for punctuation and conjunctions to avoid awkward-sounding sentence fragments and fused sentences.
- Decide the appropriate verb tense and voice by considering the meaning of the entire sentence.
- Recognize and correct marked disturbances of sentence flow and structure (e.g., participial phrase fragments, missing or incorrect relative pronouns, dangling or misplaced modifiers).
- Revise to avoid faulty placement of phrases and faulty coordination and subordination of clauses in sentences with subtle structural problems.
- Maintain consistent verb tense and pronoun person on the basis of the preceding clause or sentence.
- Use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs.
- Maintain a consistent and logical use of verb tense and pronoun person on the basis of information in the paragraph or essay as a whole.
- Work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses.

E5 Conventions of Usage

- Solve such basic grammatical problems as how to form the past and past participle of irregular but commonly used verbs and how to form comparative and superlative adjectives.
- Solve such grammatical problems as whether to use an adverb or adjective form, how to ensure straightforward subject–verb and pronoun–antecedent agreement, and which preposition to use in simple contexts.
- Recognize and use the appropriate word in frequently confused pairs such as *there* and *their*, *past* and *passed*, and *led* and *lead*.
- Use idiomatically appropriate prepositions, especially in combination with verbs (e.g., *long for*, *appeal to*).
- Ensure that a verb agrees with its subject when there is some text between the two.
- Ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences.
- Identify the correct past and past participle forms of irregular and infrequently used verbs and form present–perfect verbs by using *have* rather than *of*.
- Correctly use reflexive pronouns, the possessive pronouns *its* and *your*, and the relative pronouns *who* and *whom*.
- Ensure that a verb agrees with its subject in unusual situations (e.g., when the subject–verb order is inverted or when the subject is an indefinite pronoun).
- Provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas.

- Ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb.

E6 Conventions of Punctuation

- Delete commas that create basic sense problems (e.g., between verb and direct object).
- Provide appropriate punctuation in straightforward situations (e.g., items in a series).
- Delete commas that disturb the sentence flow (e.g., between modifier and modified element).
- Use commas to set off simple parenthetical phrases.
- Delete unnecessary commas when an incorrect reading of the sentence suggests a pause that should be punctuated (e.g., between verb and direct object clause).
- Use punctuation to set off complex parenthetical phrases.
- Recognize and delete unnecessary commas based on a careful reading of a complicated sentence (e.g., between the elements of a compound subject or compound verb joined by *and*).
- Use apostrophes to indicate simple possessive nouns.
- Recognize inappropriate uses of colons and semicolons.
- Use commas to set off a nonessential/nonrestrictive appositive or clause.
- Deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical).
- Use an apostrophe to show possession, especially with irregular plural nouns.
- Use a semicolon to indicate a relationship between closely related independent clauses.
- Use a colon to introduce an example or an elaboration.

Math

M1 Basic Operations and Applications

- Perform one-operation computation with whole numbers and decimals.
- Solve problems in one or two steps using whole numbers.
- Perform common conversions (e.g., inches to feet or hours to minutes).
- Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent.
- Solve some routine two-step arithmetic problems.
- Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average.
- Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour).
- Solve word problems containing several rates, proportions, or percentages.
- Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings).

M2 Probability, Statistics, and Data Analysis

- Calculate the average of a list of positive whole numbers.
- Perform a single computation using information from a table or chart.
- Calculate the average of a list of numbers.
- Calculate the average, given the number of data values and the sum of the data values.
- Read tables and graphs.
- Perform computations on data from tables and graphs.
- Use the relationship between the probability of an event and the probability of its complement.
- Calculate the missing data value, given the average and all data values but one.
- Translate from one representation of data to another (e.g., a bar graph to a circle graph).
- Determine the probability of a simple event.

- Exhibit knowledge of simple counting techniques.*
- Calculate the average, given the frequency counts of all the data values.
- Manipulate data from tables and graphs.
- Compute straightforward probabilities for common situations.
- Use Venn diagrams in counting.*
- Calculate or use a weighted average.
- Interpret and use information from figures, tables, and graphs.
- Apply counting techniques.
- Compute a probability when the event and/or sample space is not given or obvious.
- Distinguish between mean, median, and mode for a list of numbers.
- Analyze and draw conclusions based on information from figures, tables, and graphs.
- Exhibit knowledge of conditional and joint probability.

M3 Numbers: Concepts and Properties

- Recognize equivalent fractions and fractions in lowest terms.
- Recognize one-digit factors of a number.
- Identify a digit's place value.
- Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor.
- Find and use the least common multiple.
- Order fractions.
- Work with numerical factors.
- Work with scientific notation.
- Work with squares and square roots of numbers.
- Work problems involving positive integer exponents.*
- Work with cubes and cube roots of numbers.*
- Determine when an expression is undefined.*
- Exhibit some knowledge of the complex numbers.†
- Apply number properties involving prime factorization.
- Apply number properties involving even and odd numbers and factors and multiples.
- Apply number properties involving positive and negative numbers.
- Apply rules of exponents.
- Multiply two complex numbers.†
- Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers .
- Exhibit knowledge of logarithms and geometric sequences.
- Apply properties of complex numbers.

M4 Expressions, Equations, and Inequalities

- Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$).
- Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals.
- Substitute whole numbers for unknown quantities to evaluate expressions.
- Solve one-step equations having integer or decimal answers.
- Combine like terms (e.g., $2x + 5x$).
- Evaluate algebraic expressions by substituting integers for unknown quantities.
- Add and subtract simple algebraic expressions.
- Solve routine first-degree equations.
- Perform straightforward word-to-symbol translations.
- Multiply two binomials.*
- Solve real-world problems using first-degree equations.

- Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions).
- Identify solutions to simple quadratic equations.
- Add, subtract, and multiply polynomials.*
- Factor simple quadratics (e.g., the difference of squares and perfect square trinomials).*
- Solve first-degree inequalities that do not require reversing the inequality sign.*
- Manipulate expressions and equations.
- Write expressions, equations, and inequalities for common algebra settings.
- Solve linear inequalities that require reversing the inequality sign.
- Solve absolute value equations.
- Solve quadratic equations.
- Find solutions to systems of linear equations.
- Write expressions that require planning and/or manipulating to accurately model a situation.
- Write equations and inequalities that require planning, manipulating, and/or solving.
- Solve simple absolute value inequalities.

M5 Graphical Representations

- Identify the location of a point with a positive coordinate on the number line.
- Locate points on the number line and in the first quadrant.
- Locate points in the coordinate plane.
- Comprehend the concept of length on the number line.*
- Exhibit knowledge of slope.*
- Identify the graph of a linear inequality on the number line.*
- Determine the slope of a line from points or equations.*
- Match linear graphs with their equations.*
- Find the midpoint of a line segment.*
- Interpret and use information from graphs in the coordinate plane.
- Match number line graphs with solution sets of linear inequalities.
- Use the distance formula.
- Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point.
- Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle).†
- Match number line graphs with solution sets of simple quadratic inequalities.
- Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$.
- Solve problems integrating multiple algebraic and/or geometric concepts.
- Analyze and draw conclusions based on information from graphs in the coordinate plane.

M6 Properties of Plane Figures

- Exhibit some knowledge of the angles associated with parallel lines.
- Find the measure of an angle using properties of parallel lines.
- Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90° , 180° , and 360°).
- Use several angle properties to find an unknown angle measure.
- Recognize Pythagorean triples.*
- Use properties of isosceles triangles.*
- Apply properties of 30° - 60° - 90° , 45° - 45° - 90° , similar, and congruent triangles.
- Use the Pythagorean theorem.
- Draw conclusions based on a set of conditions.
- Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas.
- Use relationships among angles, arcs, and distances in a circle.

M7 Measurement

- Estimate or calculate the length of a line segment based on other lengths given on a geometric figure.
- Compute the perimeter of polygons when all side lengths are given.
- Compute the area of rectangles when whole number dimensions are given.
- Compute the area and perimeter of triangles and rectangles in simple problems.
- Use geometric formulas when all necessary information is given.
- Compute the area of triangles and rectangles when one or more additional simple steps are required.
- Compute the area and circumference of circles after identifying necessary information.
- Compute the perimeter of simple composite geometric figures with unknown side lengths.*
- Use relationships involving area, perimeter, and volume of geometric figures to compute another measure.
- Use scale factors to determine the magnitude of a size change.
- Compute the area of composite geometric figures when planning or visualization is required.

M8 Functions

- Evaluate quadratic functions, expressed in function notation, at integer values.
- Evaluate polynomial functions, expressed in function notation, at integer values.†
- Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths.†
- Evaluate composite functions at integer values.†
- Apply basic trigonometric ratios to solve right-triangle problems.†
- Write an expression for the composite of two simple functions.†
- Use trigonometric concepts and basic identities to solve problems.†
- Exhibit knowledge of unit circle trigonometry.†
- Match graphs of basic trigonometric functions with their equations.

Notes

- Students who score in the 1–12 range are most likely beginning to develop the knowledge and skills assessed in the other ranges.
- Standards followed by an asterisk (*) apply to the PLAN and ACT Mathematics Tests only.
- Standards followed by a dagger (†) apply to the ACT Mathematics Test only.

Reading

R1 Main Ideas and Author's Approach

- Recognize a clear intent of an author or narrator in uncomplicated literary narratives.
- Identify a clear main idea or purpose of straightforward paragraphs in uncomplicated literary narratives.
- Infer the main idea or purpose of straightforward paragraphs in uncomplicated literary narratives.
- Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in uncomplicated passages.
- Identify a clear main idea or purpose of any paragraph or paragraphs in uncomplicated passages.
- Infer the main idea or purpose of straightforward paragraphs in more challenging passages.
- Summarize basic events and ideas in more challenging passages.
- Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in more challenging passages.
- Infer the main idea or purpose of more challenging passages or their paragraphs.
- Summarize events and ideas in virtually any passage.
- Understand the overall approach taken by an author or narrator (e.g., point of view, kinds of evidence used) in virtually any passage.
- Identify clear main ideas or purposes of complex passages or their paragraphs.

R2 Supporting Details

- Locate basic facts (e.g., names, dates, events) clearly stated in a passage.
- Locate simple details at the sentence and paragraph level in uncomplicated passages.
- Recognize a clear function of a part of an uncomplicated passage.
- Locate important details in uncomplicated passages.
- Make simple inferences about how details are used in passages.
- Locate important details in more challenging passages.
- Locate and interpret minor or subtly stated details in uncomplicated passages.
- Discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages.
- Locate and interpret minor or subtly stated details in more challenging passages.
- Use details from different sections of some complex informational passages to support a specific point or argument.
- Locate and interpret details in complex passages.
- Understand the function of a part of a passage when the function is subtle or complex.

R3 Sequential, Comparative, and Cause—Effect Relationships

- Determine when (e.g., first, last, before, after) or if an event occurred in uncomplicated passages.
- Recognize clear cause—effect relationships described within a single sentence in a passage.
- Identify relationships between main characters in uncomplicated literary narratives.
- Recognize clear cause—effect relationships within a single paragraph in uncomplicated literary narratives.
- Order simple sequences of events in uncomplicated literary narratives.
- Identify clear relationships between people, ideas, and so forth in uncomplicated passages.
- Identify clear cause—effect relationships in uncomplicated passages.
- Order sequences of events in uncomplicated passages.
- Understand relationships between people, ideas, and so forth in uncomplicated passages.
- Identify clear relationships between characters, ideas, and so forth in more challenging literary narratives.
- Understand implied or subtly stated cause—effect relationships in uncomplicated passages.
- Identify clear cause—effect relationships in more challenging passages.
- Order sequences of events in more challenging passages.
- Understand the dynamics between people, ideas, and so forth in more challenging passages.
- Understand implied or subtly stated cause—effect relationships in more challenging passages.
- Order sequences of events in complex passages.
- Understand the subtleties in relationships between people, ideas, and so forth in virtually any passage.
- Understand implied, subtle, or complex cause—effect relationships in virtually any passage.

R4 Meaning of Words

- Understand the implication of a familiar word or phrase and of simple descriptive language.
- Use context to understand basic figurative language.
- Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in uncomplicated passages.
- Use context to determine the appropriate meaning of virtually any word, phrase, or statement in uncomplicated passages.
- Use context to determine the appropriate meaning of some figurative and nonfigurative words, phrases, and statements in more challenging passages.
- Determine the appropriate meaning of words, phrases, or statements from figurative or somewhat technical contexts.
- Determine, even when the language is richly figurative and the vocabulary is difficult, the appropriate meaning of context-dependent words, phrases, or statements in virtually any passage.

R5 Generalizations and Conclusions

- Draw simple generalizations and conclusions about the main characters in uncomplicated literary narratives.
- Draw simple generalizations and conclusions about people, ideas, and so forth in uncomplicated passages.
- Draw generalizations and conclusions about people, ideas, and so forth in uncomplicated passages.
- Draw simple generalizations and conclusions using details that support the main points of more challenging passages.
- Draw subtle generalizations and conclusions about characters, ideas, and so forth in uncomplicated literary narratives.
- Draw generalizations and conclusions about people, ideas, and so forth in more challenging passages.
- Use information from one or more sections of a more challenging passage to draw generalizations and conclusions about people, ideas, and so forth.
- Draw complex or subtle generalizations and conclusions about people, ideas, and so forth, often by synthesizing information from different portions of the passage.
- Understand and generalize about portions of a complex literary narrative.

Science

S1 Interpretation of Data

- Select a single piece of data (numerical or nonnumerical) from a simple data presentation (e.g., a table or graph with two or three variables, a food web diagram).
- Identify basic features of a table, graph, or diagram (e.g., headings, units of measurement, axis labels).
- Select two or more pieces of data from a simple data presentation.
- Understand basic scientific terminology.
- Find basic information in a brief body of text.
- Determine how the value of one variable changes as the value of another variable changes in a simple data presentation.
- Select data from a complex data presentation (e.g., a table or graph with more than three variables, a phase diagram).
- Compare or combine data from a simple data presentation (e.g., order or sum data from a table).
- Translate information into a table, graph, or diagram.
- Compare or combine data from two or more simple data presentations (e.g., categorize data from a table using a scale from another table).
- Compare or combine data from a complex data presentation.
- Interpolate between data points in a table or graph.
- Determine how the value of one variable changes as the value of another variable changes in a complex data presentation.
- Identify and/or use a simple (e.g., linear) mathematical relationship between data.
- Analyze given information when presented with new, simple information.
- Compare or combine data from a simple data presentation with data from a complex data presentation.
- Identify and/or use a complex (e.g., nonlinear) mathematical relationship between data.
- Extrapolate from data points in a table or graph.
- Compare or combine data from two or more complex data presentations.
- Analyze given information when presented with new, complex information.

S2 Scientific Investigation

- Understand the methods and tools used in a simple experiment.
- Understand the methods and tools used in a moderately complex experiment.
- Understand a simple experimental design.
- Identify a control in an experiment.
- Identify similarities and differences between experiments.

- Understand the methods and tools used in a complex experiment.
- Understand a complex experimental design.
- Predict the results of an additional trial or measurement in an experiment.
- Determine the experimental conditions that would produce specified results.
- Determine the hypothesis for an experiment.
- Identify an alternate method for testing a hypothesis.
- Understand precision and accuracy issues.
- Predict how modifying the design or methods of an experiment will affect results.
- Identify an additional trial or experiment that could be performed to enhance or evaluate experimental results.

S3 Evaluation of Models, Inferences, and Experimental Results

- Select a simple hypothesis, prediction, or conclusion that is supported by a data presentation or a model.
- Identify key issues or assumptions in a model.
- Select a simple hypothesis, prediction, or conclusion that is supported by two or more data presentations or models.
- Determine whether given information supports or contradicts a simple hypothesis or conclusion and why.
- Identify strengths and weaknesses in one or more models.
- Identify similarities and differences between models.
- Determine which model(s) is/are supported or weakened by new information.
- Select a data presentation or a model that supports or contradicts a hypothesis, prediction, or conclusion.
- Select a complex hypothesis, prediction, or conclusion that is supported by a data presentation or model.
- Determine whether new information supports or weakens a model and why.
- Use new information to make a prediction based on a model.
- Select a complex hypothesis, prediction, or conclusion that is supported by two or more data presentations or models.
- Determine whether given information supports or contradicts a complex hypothesis or conclusion and why.

Writing

W1 Expressing Judgments

- Show a little understanding of the persuasive purpose of the task but neglect to take or to maintain a position on the issue in the prompt.
- Show limited recognition of the complexity of the issue in the prompt.
- Show a basic understanding of the persuasive purpose of the task by taking a position on the issue in the prompt but may not maintain that position.
- Show a little recognition of the complexity of the issue in the prompt by acknowledging, but only briefly describing, a counterargument to the writer’s position.
- Show understanding of the persuasive purpose of the task by taking a position on the issue in the prompt.
- Show some recognition of the complexity of the issue in the prompt by doing the following:
 - Acknowledging counterarguments to the writer’s position
 - Providing some response to counterarguments to the writer’s position
- Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a broad context for discussion.
- Show recognition of the complexity of the issue in the prompt by doing the following:
 - Partially evaluating implications and/or complications of the issue, and/or
 - Posing and partially responding to counterarguments to the writer’s position
- Show clear understanding of the persuasive purpose of the task by taking a position on the specific issue in the prompt and offering a critical context for discussion.
- Show understanding of the complexity of the issue in the prompt by doing the following:

- Examining different perspectives, and/or
- Evaluating implications or complications of the issue, and/or
- Posing and fully discussing counterarguments to the writer's position

W2 Focusing on the Topic

- Maintain a focus on the general topic in the prompt through most of the essay.
- Maintain a focus on the general topic in the prompt throughout the essay.
- Maintain a focus on the general topic in the prompt throughout the essay, and attempt a focus on the specific issue in the prompt.
- Present a thesis that establishes focus on the topic.
- Maintain a focus on discussion of the specific topic and issue in the prompt throughout the essay.
- Present a thesis that establishes a focus on the writer's position on the issue.
- Maintain a clear focus on discussion of the specific topic and issue in the prompt throughout the essay.
- Present a critical thesis that clearly establishes the focus on the writer's position on the issue.

W3 Developing a Position

- Offer a little development, with one or two ideas; if examples are given, they are general and may not be clearly relevant; resort often to merely repeating ideas.
- Show little or no movement between general and specific ideas and examples.
- Offer limited development of ideas using a few general examples; resort sometimes to merely repeating ideas.
- Show little movement between general and specific ideas and examples.
- Develop ideas by using some specific reasons, details, and examples.
- Show some movement between general and specific ideas and examples.
- Develop most ideas fully, using some specific and relevant reasons, details, and examples.
- Show clear movement between general and specific ideas and examples.
- Develop several ideas fully, using specific and relevant reasons, details, and examples.
- Show effective movement between general and specific ideas and examples.

W4 Organizing Ideas

- Provide a discernible organization with some logical grouping of ideas in parts of the essay.
- Use a few simple and obvious transitions.
- Present a discernible, though minimally developed, introduction and conclusion.
- Provide a simple organization with logical grouping of ideas in parts of the essay.
- Use some simple and obvious transitional words, though they may at times be inappropriate or misleading.
- Present a discernible, though underdeveloped, introduction and conclusion.
- Provide an adequate but simple organization with logical grouping of ideas in parts of the essay but with little evidence of logical progression of ideas.
- Use some simple and obvious, but appropriate, transitional words and phrases.
- Present a discernible introduction and conclusion with a little development.
- Provide unity and coherence throughout the essay, sometimes with a logical progression of ideas.
- Use relevant, though at times simple and obvious, transitional words and phrases to convey logical relationships between ideas.
- Present a somewhat developed introduction and conclusion.
- Provide unity and coherence throughout the essay, often with a logical progression of ideas.
- Use relevant transitional words, phrases, and sentences to convey logical relationships between ideas.
- Present a well-developed introduction and conclusion.

W5 Using Language

- Show limited control of language by doing the following:

- Correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes significantly impede understanding
- Using simple vocabulary
- Using simple sentence structure
- Correctly employing some of the conventions of standard English grammar, usage, and mechanics, but with distracting errors that sometimes impede understanding
- Using simple but appropriate vocabulary
- Using a little sentence variety, though most sentences are simple in structure
- Correctly employing many of the conventions of standard English grammar, usage, and mechanics, but with some distracting errors that may occasionally impede understanding
- Using appropriate vocabulary
- Using some varied kinds of sentence structures to vary pace
- Correctly employing most conventions of standard English grammar, usage, and mechanics with a few distracting errors but none that impede understanding
- Using some precise and varied vocabulary
- Using several kinds of sentence structures to vary pace and to support meaning
- Correctly employing most conventions of standard English grammar, usage, and mechanics with just a few, if any, errors
- Using precise and varied vocabulary
- Using a variety of kinds of sentence structures to vary pace and to support meaning

Appendix C: National Industry Standards

Adobe Certified Associate Standards

Web Communication

AWC 1 Setting project requirements

- AWC 1.1** Identify the purpose, audience, and audience needs for a Web site.
- AWC 1.2** Identify Web page content that is relevant to the Web site purpose and appropriate for the target audience.
- AWC 1.3** Demonstrate knowledge of standard copyright rules (related terms, obtaining permission, and citing copyrighted material).
- AWC 1.4** Demonstrate knowledge of Web site accessibility standards that address the needs of people with visual and motor impairments.
- AWC 1.5** Make Web site development decisions based on your analysis and interpretation of design specifications.
- AWC 1.6** Understand project management tasks and responsibilities.

AWC 2 Planning site design and page layout

- AWC 2.1** Demonstrate general and Dreamweaver-specific knowledge of best practices for designing a Web site, such as maintaining consistency, separating content from design, using standard fonts and Web-safe colors, and utilizing visual hierarchy.
- AWC 2.2** Produce Web site designs that work equally well on various operating systems and browser versions/configurations.
- AWC 2.3** Demonstrate knowledge of page layout design concepts and principles.
- AWC 2.4** Identify basic principles of Web site usability, readability, and accessibility.
- AWC 2.5** Demonstrate knowledge of flowcharts, storyboards, and wireframes to create Web pages and a site map (site index) that maintain the planned Web site hierarchy.
- AWC 2.6** Communicate with others (such as peers and clients) about design and content plans.

AWC 3 Understanding the Adobe Dreamweaver CS4 interface

- AWC 3.1** Identify elements of the Dreamweaver interface.
- AWC 3.2** Use the Insert bar.
- AWC 3.3** Use the Property inspector.
- AWC 3.4** Use the Assets panel.
- AWC 3.5** Use the Files panel.

AWC 4 Adding content by using Dreamweaver CS4

- AWC 4.1** Define a Dreamweaver site.
- AWC 4.2** Create, title, name, and save a Web page.
- AWC 4.3** Add text to a Web page.
- AWC 4.4** Insert images and apply alternative text on a Web page.
- AWC 4.5** Link Web content, using hyperlinks, e-mail links, and named anchors.
- AWC 4.6** Insert rich media, such as video, sound, and animation in Flash format.
- AWC 4.7** Insert navigation bars, rollover images, and buttons created in Adobe Fireworks on a Web page.
- AWC 4.8** Build image maps.
- AWC 4.9** Import tabular data to a Web page.
- AWC 4.10** Import and display a Microsoft Word or Microsoft Excel document to a Web page.
- AWC 4.11** Create forms.

AWC 5 Organizing content by using Dreamweaver CS4

- AWC 5.1** Set and modify document properties.
- AWC 5.2** Organize Web page layout with absolutely positioned div tags and CSS styles.
- AWC 5.3** Modify text and text properties.
- AWC 5.4** Modify images and image properties.
- AWC 5.5** Create Web page templates.
- AWC 5.6** Use basic HTML tags to set up an HTML document, format text, add links, create tables, and build ordered and unordered lists.
- AWC 5.7** Add head content to make a Web page visible to search engines.
- AWC 5.9** Use CSS to implement a reusable design.

AWC 6 Evaluating and maintaining a site by using Dreamweaver CS4

- AWC 6.1** Conduct basic technical tests.
- AWC 6.2** Identify techniques for basic usability tests.
- AWC 6.3** Present Web pages to others (such as team members and clients) for feedback and evaluation.
- AWC 6.4** Identify methods for collecting site feedback.
- AWC 6.5** Manage assets, links, and files for a site.
- AWC 6.6** Publish and update site files to a remote server.

Rich Media Communication

ARM 1 Setting project requirements

- ARM 1.1** Identify the purpose, audience, and audience needs for rich media content.
- ARM 1.2** Identify rich media content that is relevant to the purpose of the media in which it will be used (Web sites, mobile devices, etc.).
- ARM 1.3** Understand options for producing accessible rich media content.
- ARM 1.4** Demonstrate knowledge of standard copyright rules (related terms, obtaining permission, and citing copyrighted material).
- ARM 1.5** Understand project management tasks and responsibilities.
- ARM 1.6** Communicate with others (such as peers and clients) about design and content plans.

ARM 2 Identifying rich media design elements

- ARM 2.1** Identify general and Flash-specific best practices for designing rich media content for a Web site.
- ARM 2.2** Demonstrate knowledge of design elements and principles.
- ARM 2.3** Identify general and Flash-specific techniques to create rich media elements that are accessible and readable.
- ARM 2.4** Use a storyboard to produce rich media elements.
- ARM 2.5** Organize a Flash document.

ARM 3 Understanding Adobe Flash CS4 Interface

- ARM 3.1** Identify elements of the Flash interface.
- ARM 3.2** Use the Property inspector.
- ARM 3.3** Use the Timeline.
- ARM 3.4** Use the Motion Editor.
- ARM 3.5** Understand Flash file types.
- ARM 3.6** Identify best practices for managing the file size of a published Flash document.

ARM 4 Building rich media elements by using Flash CS4

- ARM 4.1** Make rich media content development decisions based on your analysis and interpretation of design specifications.

- ARM 4.2** Adjust document properties.
- ARM 4.3** Use Flash guides and rulers.
- ARM 4.4** Use tools on the Tools panel to select, create, and manipulate graphics and text.
- ARM 4.5** Import and modify graphics.
- ARM 4.6** Create text.
- ARM 4.7** Adjust text properties.
- ARM 4.8** Create objects, and convert them to symbols, including graphics, movie clips, and buttons.
- ARM 4.9** Understand symbols and the library.
- ARM 4.10** Edit symbols and instances.
- ARM 4.11** Create masks.
- ARM 4.12** Create animations (changes in shape, position, size, color, and transparency).
- ARM 4.13** Add simple controls through ActionScript 3.0.
- ARM 4.14** Import and use sound.
- ARM 4.15** Add and export video.
- ARM 4.16** Publish Flash documents.
- ARM 4.17** Make a document accessible.

ARM 5 Evaluating rich media elements

- ARM 5.1** Conduct basic technical tests.
- ARM 5.2** Identify techniques for basic usability tests

Visual Communication

AVC 1 Setting project requirements

- AVC 1.1** Identify the purpose, audience, and audience needs for preparing image(s).
- AVC 1.2** Demonstrate knowledge of standard copyright rules for images and image use.
- AVC 1.3** Demonstrate knowledge of project management tasks and responsibilities.
- AVC 1.4** Communicate with others (such as peers and clients) about design plans.

AVC 2 Identifying design elements when preparing images

- AVC 2.1** Demonstrate knowledge of image resolution, image size, and image file format for Web, video, and print.
- AVC 2.2** Demonstrate knowledge of design principles and image composition.
- AVC 2.3** Demonstrate knowledge of typography.
- AVC 2.4** Demonstrate knowledge of color correction using Photoshop CS4.
- AVC 2.5** Demonstrate knowledge of image generating devices, their resulting image types, and how to access resulting images in Photoshop.

AVC 3 Understanding Adobe Photoshop CS4

- AVC 3.1** Identify elements of the Photoshop CS4 user interface, and demonstrate knowledge of their functions.
- AVC 3.2** Demonstrate knowledge of layers and masks.
- AVC 3.3** Demonstrate knowledge of importing, exporting, organizing, and saving.
- AVC 3.4** Demonstrate knowledge of producing and reusing images.
- AVC 3.5** Demonstrate an understanding of and select the appropriate features and options required to implement a color management workflow.

AVC 4 Manipulating images using Adobe Photoshop CS4

- AVC 4.1** Demonstrate knowledge of working with selections and measurement.
- AVC 4.2** Use Photoshop guides and rulers.
- AVC 4.3** Transform images.

- AVC 4.4** Adjust the tonal range and correct the color of an image.
- AVC 4.5** Demonstrate knowledge of retouching and blending images.
- AVC 4.6** Demonstrate knowledge of drawing and painting.
- AVC 4.7** Demonstrate knowledge of type.
- AVC 4.8** Demonstrate knowledge of filters.

AVC 5 Publishing digital images using Adobe Photoshop CS4

- AVC 5.1** Demonstrate knowledge of preparing images for Web, print, and video.

Appendix D:

National Educational Technology Standards for Students

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:

- 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:

- 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:

- 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:

- 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:

- 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:

- 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.