

# 2007 Mississippi Curriculum Framework

## Secondary Computer Graphics

(Program CIP: 50.0402 - Commercial and Advertising Art)

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### Published by

Office of Vocational Education and Workforce  
Development  
Mississippi Department of Education  
Jackson, MS 39205

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

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Standards in this document are based on information from the following organizations:

### Standards and Guidelines for Computer Graphics

National Association of State Directors of Career Technical Education Consortium; *Career Cluster Resources for Arts, A/V Technology and Communications*;  
[www.careerclusters.org](http://www.careerclusters.org)

### Academic Standards

Mississippi Department of Education Subject Area Testing Program

### 21<sup>st</sup> Century Skills

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## Preface

### *Secondary Computer Graphics Research Synopsis*

Articles, books, Web sites, and other materials listed at the end of each unit were considered during the revision process. *Teaching and Learning with Technology* and *Educational Leadership* were especially useful in providing insight into trends and issues in the field. These references are suggested for use by instructors and students during the study of the topics outlined.

Industry advisory team members from schools throughout the state were asked to give input related to changes to be made to the curriculum framework. Specific comments related to soft skills needed in this program included having a positive attitude, being at work every day and on time, and having reading and writing skills. Occupation-specific skills stated included the need for professional software used in industry. Safety practices emphasized included observing all safety rules and using appropriate safety equipment.

Instructors from schools throughout the state were also asked to give input on changes to be made to the curriculum framework. Specific comments related to this program included statements from Advisory Committee members that indicated a need for the use of professional software used in industry. Changes suggested for the curriculum included updating information related to the use of multimedia.

### **Curriculum**

The following state/national standards were referenced in each course of the curriculum:

- *Mississippi Department of Education Subject Area Testing Program Academic Standards*
- *21<sup>st</sup> Century Skills*
- *Graphics Design Standards* published by the National Association of State Directors of Career Technical Education Consortium

Industry and instructor comments, along with current research, were considered by the curriculum revision team during the revision process; and changes were made as needed and appropriate. Many of the skills and topics noted in the research were already included in the curriculum framework. Specific changes made to the curriculum at the September 20, 2006, curriculum revision meeting included:

- Competencies and objectives were reviewed to ensure accuracy and appropriateness.
- Competencies and objectives were updated to include instruction at all levels of Bloom's Taxonomy.
- Teaching strategies were strengthened, and rubrics were added.
- The list of recommended tools and equipment list was updated.

### **Assessment**

Students will be assessed using the *Secondary Computer Graphics Technology MS-CPAS2 Test*.

## Professional Learning

It is suggested that instructors participate in professional learning related to the following concepts:

- Differentiated instruction – To learn more about differentiated instruction go to [http://www.paec.org/teacher2teacher/additional\\_subjects.html](http://www.paec.org/teacher2teacher/additional_subjects.html) and click on Differentiated Instruction. Work through this online course and review the additional resources.
- For the latest in online and yearly Connect training provided by the RCU, please go to <http://info.rcu.msstate.edu/>.
- For information on using Flash in the curriculum, visit the online Web site [http://www.adobe.com/support/flash/tutorial\\_index.html](http://www.adobe.com/support/flash/tutorial_index.html)

## Foreword

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 III, 1998; and No Child Left Behind Act of 2001).

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

- Unit Number and Title
- Suggested Time on Task - An estimated number of clock hours of instruction that should be required to teach the competencies and objectives of the unit. A minimum of 140 hours of instruction is required for each Carnegie unit credit. The curriculum framework should account for approximately 75-80 percent 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 strategies that can be used to enable students to master each competency. Emphasis has been placed on strategies which 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 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, Workplace Skills, Technology Standards, and Occupational Standards - This section identifies related academic topics as required in the Subject Area Assessment Program (SATP) in Algebra I, Biology I, English II, and U. S. History from 1877, which are integrated into the content of the unit. It also identifies the 21<sup>st</sup> Century Skills, which were developed by the Partnership for 21<sup>st</sup> Century Skills, a group of business and education organizations concerned about the gap between the knowledge and skills learned in school and those needed in communities and the workplace. A portion of the 21<sup>st</sup> Century Skills addresses learning skills needed in the 21<sup>st</sup> century, including information and communication skills, thinking and problem-solving skills, and interpersonal and self-directional skills. The need for these types of skills has been recognized for some time and the 21<sup>st</sup> Century Skills are adapted in part from the 1991 report from the U.S. Secretary of Labor's Commission on Achieving Necessary Skills (SCANS). Another important aspect of learning and working in the 21<sup>st</sup> century involves technology skills, and the International Society for Technology in Education, developers of the National Educational Technology Standards (NETS), were strategic partners in the Partnership for 21<sup>st</sup> Century Skills.
- 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.

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## Program Description

The Computer Graphics Technology Program is a two-year occupational program that provides instruction in the basics of graphic design and the use of computer software to produce various media including print, video, and Web page projects. The proposed program will consist of two courses for students in grades 10-12, with each course offering two Carnegie units of vocational-technical credit toward graduation. This program will prepare students for entry-level employment in screen printing, basic Web page design, and advertising layout for print publications; and to continue their studies in postsecondary educational programs.

Industry standards referenced are from the *Career Cluster Resources for Arts, A/V Technology and Communications* published by the National Association of State Directors of Career Technical Education Consortium. Additional research data used in the development of this publication were collected from a review of related literature and from surveys of local experts in business, industry, and education.



## Course Outline

### Computer Graphics Technology I

Course CIP Code: 50.0402

**Course Description:** Computer Graphics Technology I will provide an introduction to basic design concepts, typography, photography, printing, Web page development, video, animation, and presentation software.

Unit	Title	Hours
1	Orientation	40
2	History and Career Orientation	7.5
3	Introduction to Graphic Computers	43
4	Basic Design Concepts	43
5	Digital Video Production	74

### Computer Graphics Technology II

Course CIP Code: 50.0403

**Course Description:** Computer Graphics Technology II will provide instruction in advanced software applications, marketing and advertising concepts, print products, Web page design, multimedia projects, and career preparation. Students in this course will be required to complete and present a series of integrated graphics design projects focusing on a common theme/issue.

Unit	Title	Hours
1	Orientation and Review	29
2	Marketing/Advertising Concepts	29
3	Print Products	29
4	Advanced Software Applications	29
5	Web Page Design	74
6	Directed Individual Study	29

**Computer Graphics Technology I**  
**Unit 1: Orientation**

(40 hours)

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Research educational, occupational, and leadership opportunities in Computer Graphics Technology.</p> <ol style="list-style-type: none"> <li>Review student rules and regulations for the local school.</li> <li>Investigate career opportunities, standards, skills, and emerging technologies in Computer Graphics Technology.</li> <li>Research educational options available in computer technology.</li> <li>Update the students' career and educational plans.</li> <li>Identify and describe leadership opportunities available from student youth organizations in the school and community.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Lead students in a discussion about various careers in the field and how they differ throughout the world. Discuss salaries, educational requirements, working conditions, and other topics for people working in various locations (e.g., China, Iraq, South America, and Europe). Also discuss the proportion of each gender currently working in the field.</li> <li>Explain educational and career opportunities that will be available to students after they complete the program. Have each student use the Internet to research the technology introduced each year since the year they were born. Technology can be related to various fields, including health, engineering, science, art, or agriculture. Have students create a multimedia presentation using the researched information.</li> <li>Have students develop a timeline that shows the evolution of the Internet. Have students summarize their timeline.</li> <li>Have students use career software, such as Choices, to measure their aptitudes and abilities for particular careers.</li> <li>Use a multiple learning styles inventory to determine students' learning styles and interests. Share with the students their styles and the impact they have. Throughout the year, provide varied projects to meet the learning styles.</li> <li>Work with the Special Populations instructor to assess the reading, writing, and math skills of each student and to provide materials that are appropriate for each student. Plan to reassess students at the end of the year.</li> <li>Have students work in groups based on their learning styles or interests and use the Internet, college catalogs, industry</li> </ul>

	<p>publications, and other information to research a list of careers for which they will be qualified upon program completion and postsecondary educational opportunities that will be available to them. Have each group present their findings by developing a game, compiling a booklet, or creating a bulletin board.</p> <ul style="list-style-type: none"><li>• Have each student select a career in a field related to the course and use the Occupational Outlook Handbook (book or Web site), Internet, and other resources to research job titles, educational and skill requirements, expected job growth, and entry-level salaries. Have each student report the findings by writing a news report, making a learning center, or creating a job announcement.</li><li>• Have students create an electronic slide presentation on three careers related to their research.</li><li>• Discuss the importance of professionalism in the workplace. Invite guest speakers to discuss qualities they look for in job applicants.</li><li>• Describe the vocational student organization associated with the program, and provide an overview of opportunities to participate in leadership activities, community service projects, and competitive events.</li><li>• Have students work in pairs to explore the vocational student organization Web site and develop a slide presentation, brochure, or display that includes the motto, creed, emblem, colors, theme, and history of the organization. Also have students research which famous or successful people were part of the organization.</li><li>• Discuss with students the election process used in the vocational student organization; compare and contrast this process with the processes used for local, state, and national elections. Emphasize the importance of participating in elections as a part of good citizenship.</li></ul>
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	<ul style="list-style-type: none"> <li>• Have students participate in local officer elections modeled after the election process. Have candidates for office campaign and prepare posters and a speech. Have members vote by secret ballot.</li> <li>• Have students plan a ceremony to install officers and induct members.</li> <li>• Have students work in teams to develop club goals and service projects for the year.</li> <li>• Have each student select and participate in a competitive event appropriate to his or her skills, aptitudes, and abilities.</li> <li>• Lead students in a discussion of what they have learned in this unit and where they feel they need more practice.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Monitor group work throughout the unit to ensure that each member participates.</li> <li>• Evaluate the career and educational opportunities project for content and delivery.</li> <li>• Evaluate the career project for content and delivery.</li> <li>• Evaluate the vocational student organization presentation. Evaluate campaign posters using the Poster Assessment Rubric located in Appendix D.</li> <li>• Use the Workplace Skills Weekly Checklist found in Appendix D to evaluate students' understanding of workplace skills and safety (ongoing on a weekly basis).</li> <li>• Explain to students that portfolios are a collection of works gathered over time that demonstrate their progress in learning and writing. Explain to students that they will build a portfolio throughout the 2-year program. Have students correct any errors to assignments and include them in their Computer Graphics Technology portfolio.</li> <li>• Have students collect artifacts related to this competency, correct them, and include them in their portfolio.</li> </ul>
2. Apply safety procedures in the computer	<b>Teaching:</b>

<p>classroom and lab.</p> <ol style="list-style-type: none"> <li>Discuss the proper classroom and personal safety procedures to include fire extinguishers, electrical, clothing, jewelry, eye protection, etc.</li> <li>Care for and use computer hardware correctly.</li> <li>Handle diskettes and CDs correctly.</li> <li>Explore potential health hazards when working on computer equipment.</li> <li>Examine PC security procedures.</li> </ol>	<ul style="list-style-type: none"> <li>Have students use the word processing program to define and illustrate terminology such as cybercrime, hacker, cyberextortionist, cyberterrorist, virus, worm, Trojan Horse, antivirus program, virus signature, quarantine, denial of service attack, back door, spoofing, firewall, unauthorized access, user name, password, hardware theft, hardware vandalism, software threat, piracy, license agreement, information threat, encryption, digital signature, power surge, surge protector, backup, restore, computer ethics, intellectual property rights, copyright, code of conduct, acceptable use policy, information privacy, cookies, spyware, adware, spam, computer forensics, identity theft, Web filtering software, ergonomics, computer addiction, phishing, etc.</li> <li>Show students video clips about Internet safety for teens from <a href="http://www.netsmartz.org/resources/reallife.htm#realamy">http://www.netsmartz.org/resources/reallife.htm#realamy</a>. Divide students into groups of four. Have each group visit <a href="http://www.getnetwise.org/">http://www.getnetwise.org/</a> to research one of the following topics: <ul style="list-style-type: none"> <li>Keeping children safe online</li> <li>Stopping unwanted e-mail and spam</li> <li>Protecting your computer from hackers and viruses</li> <li>Keeping your personal information private</li> </ul> </li> <li>Ask each group to become experts on their assigned topic. Have each group teach the class about their topic. As a whole group, have students brainstorm guidelines for teen safety on the Internet. Share with students the Web sites <a href="http://www.missingkids.com">http://www.missingkids.com</a> and <a href="http://www.getnetwise.org/">http://www.getnetwise.org/</a>. Have students complete a teen safety reference sheet that includes information about the following: <ul style="list-style-type: none"> <li>Internet safety guidelines for teens</li> <li>Strategies to enhance their ability to recognize dangers on the Internet</li> </ul> </li> </ul>
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	<ul style="list-style-type: none"><li>○ Information about how to report victimizations to a trusted adult</li><li>• Have students take their teen safety reference sheet home and discuss it with their parents/guardians.</li><li>• Discuss the impact of safety in the workplace. Pre-assess student knowledge of workplace safety by asking them to describe potential computer-related health problems and workplace safety issues.</li><li>• Have students use the MAGNOLIA database to find five articles about computer-related health problems and workplace safety issues. Have students use the writing process and technology tools to develop an essay.</li><li>• Invite a guest speaker from industry to discuss potential computer-related health hazards.</li><li>• Discuss ESD (Electrostatic Discharge) and how to protect equipment from ESD.</li><li>• Discuss power issues and how to determine if the computer is having problems related to power, i.e., burnt parts or odor, computer reboots constantly, etc.</li><li>• Give students scenarios related to safety issues. Have students determine appropriate procedures for each scenario.</li><li>• Have students create a safety cartoon that shows four frames of how to use equipment safely.</li><li>• Have each student use the Internet or other resources to research safety issues and procedures. Have students present findings to the class by writing and producing a play, creating a slide show, leading a panel discussion, or writing a new law.</li><li>• Research proper disposal procedures for computers, monitors, and laptop batteries. Have students illustrate and summarize the proper procedures.</li><li>• Have students work in teams of two to use the Internet to locate and print OSHA regulations related to the workplace. Have teams use presentation software to present safety procedures related to the</li></ul>
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	<p>information they researched.</p> <ul style="list-style-type: none"> <li>• Provide students with case studies or scenarios which describe various hazardous situations. Have students work in teams of three or four to analyze the case studies or scenarios, applying the appropriate rules and procedures and developing ways to prevent workplace hazards and apply appropriate first aid procedures.</li> <li>• Review proper procedures for a fire and tornado. Have students locate all fire extinguishers in the building. Throughout the year, have unannounced fire and safety drills. Have a local firefighter visit the classroom and discuss fire safety.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Assess each student's safety knowledge with a written unit test, and file the completed test for documentation. Each student must score 100% accuracy before being allowed to participate in lab activities.</li> <li>• Evaluate the student summary of the guest speaker for content and grammar.</li> <li>• Evaluate the project on OSHA regulations for content and delivery.</li> <li>• Use the Written Report Writing Rubric found in Appendix D to evaluate student essays.</li> <li>• Lead a discussion in which the class evaluates the solutions to each case study presented by each team.</li> <li>• Monitor and reinforce student safety habits throughout the year.</li> <li>• Have the class self-evaluate their own work and peer-evaluate their classmates' work throughout the program.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>3. Describe legal implications related to the computer industry.</p> <ol style="list-style-type: none"> <li>a. Discuss software copyright issues.</li> <li>b. Examine software licensing.</li> <li>c. Outline Internet ethics and policies.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Have students use technology tools to define and illustrate terms related to the legal and ethical use of technology.</li> <li>• Discuss copyright issues. Have students brainstorm copyright violations they might</li> </ul>

	<p>have committed, such as copying and distributing compact discs to others or downloading songs from the Internet.</p> <ul style="list-style-type: none"><li>• Divide students into four groups. Assign each student a component of fair use: (1) purpose of work; (2) nature of the work; (3) amount used; and (4) effect on the market. Have each group become an expert on their assigned component and teach their information to other members of the class.</li><li>• Have students read the Digital Millennium Copyright Act of 1998, the Technology Education and Copyright Harmonization Act of 2002 (the TEACH Act), and the Assistive Technology Act of 1998. Have students use technology tools and classroom resources to develop a timeline and summary of each law and determine how information from these key pieces of legislation affects the computer graphics technology industry.</li><li>• Divide students into groups of two and have them use the Internet to research current news events related to such violations and then write a report, a song, or a poem to present their findings.</li><li>• Discuss the purpose of software licensing agreements.</li><li>• Have students use the Internet to research and review copyright agreements. Have them look for unusual terms of use and read them aloud to the class.</li><li>• Have students research the problems that illegal music downloads have caused for the music industry. Have students use a spreadsheet application program to calculate the potential profit that unethical behavior can have on an industry. Have students develop a narrative for their spreadsheet.</li><li>• Have students use the Internet and classroom resources to research the Children’s Internet Protection Act of 2000.</li><li>• Have students complete a Web quest to research the following privacy laws: CN-</li></ul>
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	<p>SPAM Act of 2003, Sarbanes-Oxley Act of 2002, Provide Appropriate Tools Required to Intercept and Obstruct Terrorism (PATRIOT) Act of 2001, Financial Modernization act of 1999, Children’s Online Privacy Protection Act of 1998, Digital Millennium Copyright Act of 1998, No Electronic Theft Act of 1997, Health Insurance Portability Accountability Act of 1996, National Information Infrastructure Protection Act of 1996, Computer Abuse Amendments Act of 1994, Cable Act of 1992, Telephone Consumer Protection Act of 1991, Computer Matching and Privacy Protection Act of 1988, Video Privacy Protection Act of 1988, Electronic Communications Privacy Act of 1986, Cable Communications Policy Act of 1984, Right to Financial Privacy Act of 1978, Privacy Act of 1974, Family Educational Rights and Privacy Act of 1974, and the Fair Credit Reporting Act of 1970.</p> <ul style="list-style-type: none"> <li>• Have students compare and contrast privacy laws that were in place prior to September 11, 2001 and laws that were in place after September 11, 2001. Divide students into two groups. Allow groups to debate ethical and security issues related to file sharing Web sites.</li> <li>• Have students develop a chart that compares and contrasts the different security products (example: antivirus vs. firewalls).</li> <li>• Discuss Internet ethics and policies and the local Internet policy.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Administer a written test to evaluate knowledge of terminology and laws.</li> <li>• Use the Written Report Writing Rubric found in Appendix D to evaluate student writings.</li> <li>• Assess student presentations of news events related to copyright issues using a student- and teacher-created rubric.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Observe student presentations of unusual terms of use included in copyright agreements.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>4. Use the Internet.</p> <ol style="list-style-type: none"> <li>a. Understand terminology related to locating, evaluating, and collecting information from a variety of sources.</li> <li>b. Use browsers, search engines, and e-mail.</li> <li>c. Evaluate web page design techniques.</li> <li>d. Understand technology used to locate, evaluate, and collect information from a variety of sources.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Revisit the school and/or classroom Acceptable Use Policy.</li> <li>• Have students use the Internet to research netiquette. Have students create a “Netiquette Fact Sheet” to use while interacting with peers, experts, and other audiences.</li> <li>• Use presentation equipment to introduce terminology such as telecommunications, Internet, electronic mail, World Wide Web, facsimile, browser, search engine, netiquette, download and upload, modem, URL (uniform resource locator), HTTP (hypertext transfer protocol), address bar (extensions), FTP (file transfer protocol), message boards, weblog/blogs, wiki, IM (instant message), etc. Have students prepare for a vocabulary test using written activity or game.</li> <li>• Utilize a multimedia presentation to identify the services of the Internet (World Wide Web, e-mail, newsgroups, listservs, Internet meetings, distance learning, etc.).</li> <li>• Demonstrate how to use a browser and a search engine to locate and create a free, Web-based e-mail account using filtered e-mail such as Gaggle.net.</li> <li>• Have students work in teams of two to practice sending e-mail.</li> <li>• Allow students to complete a teacher-created Web quest activity to gain a solid foundation for e-mail. Make sure that students know the difference between SMTP, POP3, IMAP, and HTTP e-mail protocols.</li> <li>• Discuss e-mail security issues such as junk mail, spam, and viruses.</li> <li>• Have students evaluate a list of guidelines that distinguish between safe and potentially harmful e-mails.</li> </ul>

	<ul style="list-style-type: none"><li>• Have students practice or observe blocking e-mails from unsafe senders.</li><li>• Show students a personal information manager application, such as Microsoft Outlook<sup>®</sup>. Have students take notes as the teacher discusses the different components of the personal information manager application screen.</li><li>• Have students send and receive e-mail messages using a personal information manager application. Have students send e-mail attachments and create an electronic signature using a personal information manager application.</li><li>• Have students add their classmates to their personal information manager applications address book.</li><li>• Explain folders such as inbox, sent items, deleted items, drafts, and outbox. Students will create folders for their friends, family, and teachers. Have students organize e-mail messages into folders.</li><li>• If appropriate, communicate with students throughout the year using e-mail. Require the students to submit multiple assignments to teacher using e-mail. If students do not have access to e-mail, have them communicate throughout the year using a course management Web site, such as the Blackboard Learning System<sup>®</sup>.</li><li>• Demonstrate how to use the Blackboard Learning System<sup>®</sup>. Invite parents and students to a parent night meeting where students teach their parents how to use the Blackboard Learning System<sup>®</sup>.</li><li>• Provide instruction in accessing and searching the Internet properly. Show students different types of search engines such as Yahoo, Google, MSN, Excite, Ask Jeeves, etc. Show students how to use online databases such as MAGNOLA and Ebsco Host. Contact your local library media specialist for more information regarding these databases.</li><li>• Demonstrate how to add a Web page to the favorites list and how to utilize the history</li></ul>
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	<p>list to access Web pages.</p> <ul style="list-style-type: none"><li>• Show students how to cite a personal Web page, an article in an online magazine, an electronic article from a database such as MAGNOLIA, and a posting from a discussion list using the Modern Language Association (MLA) guidelines. Perform integrated academic searches to locate information (reports, online tutorials, reference materials, maps, and weather information, etc.). Have students select a topic to research and find and correctly cite 10 electronic sources to support that topic. Have students develop an outline or graphic organizer of the information. Have students submit their electronic sources using the Blackboard<sup>®</sup> Web site or e-mail.</li><li>• Discuss the process of evaluating Web sites for information. Have the class work together to develop a rubric to use when evaluating Web sites for information. Have students work individually to choose five Web sites that can be used as a scholarly resource related to the topic of graphic design technology. Have students summarize and illustrate information from the articles.</li><li>• Show students examples of high-quality designed Web pages and low-quality designed Web pages. Have students use a Venn Diagram (see example in Appendix D) to compare the two categories. Have students organize, summarize, and illustrate information from their Venn Diagram.</li><li>• Have each student create a checklist of Web page design elements and then use the checklist to evaluate Web pages located using a search engine.</li></ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"><li>• Observe students as they use browsers, search engines, and e-mail.</li><li>• Evaluate the completed checklists for accuracy and completeness.</li><li>• Evaluate Venn Diagrams for accuracy.</li><li>• Have students insert artifacts from this</li></ul>
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	competency into their portfolio.
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## STANDARDS

### *Graphic Design Standards*

- GDS1 Pathway: Research the scope of career opportunities and qualifications in the Visual Arts Pathway.
- GDS2 Performance Element: Examine the numerous career paths within visual arts to discover personal preferences.
- GDS3 Performance Element: Identify required knowledge and skills, education opportunities, and lifestyles associated with different levels of employment in visual arts careers and related career fields.

### *Academic Standards*

- A2 Recognize, create, extend, and apply patterns, relations, and functions and their applications.
- A8 Analyze data and apply concepts of probability.
- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.

### *21<sup>st</sup> Century Skills*

- CS1 Global Awareness
- CS2 Financial, Economic, and Business Literacy
- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

## SUGGESTED REFERENCES

Adobe Photoshop CS2 [Computer Software]. (2006). San Jose, CA: Adobe Systems.

Aho, K. (2004). *Macromedia Studio MX 2004: Step by step*. Boston: Thomson Course Technology.

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**Computer Graphics Technology I**  
**Unit 2: History and Career Orientation**

(7.5 hours)

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Compare the changing purposes served by graphic design throughout history.</p> <ol style="list-style-type: none"> <li>Research graphic design as a communication tool.</li> <li>Organize and explain the evolution of graphic design as a communication tool.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Use technology to present a video clip of a television advertisement. Use the following questions to lead a class discussion:             <ul style="list-style-type: none"> <li>What product is being advertised?</li> <li>What was your reaction to the advertisement?</li> </ul> </li> <li>Present examples of effective designs from print media to electronic media. Discussion should include printing from black and white to color and more recently electronic.</li> <li>Divide students in groups and have each group use print media to evaluate the effectiveness of advertisements as a communication tool. Have each group present findings.</li> <li>Have each student use the Internet and other available resources to research and develop a timeline depicting the evolution of graphic design as a communication tool.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Monitor student responses during the discussion.</li> <li>Use the Group Presentation Assessment Rubric found in Appendix D to evaluate group presentations.</li> <li>Evaluate the timeline for accuracy, neatness, and completeness.</li> <li>Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>2. Analyze the development of tools and technologies and their effects on the evolution of graphic design.</p> <ol style="list-style-type: none"> <li>Discuss the developments, events, and inventions throughout history that influenced the field of graphic design.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Use technology to present the influence of the printing press, the Industrial Revolution, photography, automated typesetting, lithography, and computer technology on graphic design. Have students take notes from the presentation. Give students time to reflect and ask questions throughout the presentation. Have students use technology tools to</li> </ul>

	<p>organize and summarize notes from the presentation.</p> <ul style="list-style-type: none"> <li>• Have students work in groups to research developments, events, and inventions that influenced the field of graphic design using technology.</li> <li>• Have each student prepare a poster that explains the research information and present it to the class.</li> <li>• Have students select a leader from the graphic design technology field. Have students use the writing process to prepare a biography for their selected leader. Have students include facts about the leader's life and why they think this person is a good leader.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Monitor student responses during the discussion.</li> <li>• Evaluate posters for accuracy and professionalism.</li> <li>• Use the Written Report Writing Rubric found in Appendix D to evaluate student biographies.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS6 Pathway: Research the history and evolution of visual arts and their role within society.
- GDS7 Performance Element: Compare the changing purposes served by visual arts throughout history.
- GDS8 Performance Element: Analyze the opportunities for communication through the visual arts.
- GDS9 Performance Element: Apply critical thinking skills to evaluate works of art.

### *Academic Standards*

- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.



- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.

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### 21<sup>st</sup> Century Skills

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- CS4 Information and Communication Skills  
 CS5 Thinking and Problem-Solving Skills  
 CS6 Interpersonal and Self-Directional Skills

### SUGGESTED REFERENCES

- Adobe Photoshop CS2 [Computer Software]. (2006). San Jose, CA: Adobe Systems.
- Aho, K. (2004). *Macromedia Studio MX 2004: Step by step*. Boston: Thomson Course Technology.
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**Computer Graphics Technology I**  
**Unit 3: Introduction to Graphic Computers**

(43 hours)

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Identify and discuss the hardware in the computer system.</p> <ol style="list-style-type: none"> <li>Examine hardware appropriate to graphic design technology.</li> <li>Describe the hardware related to the classroom lab.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Show students the video, <i>Emerging Careers: Information Technology Occupations</i>, from United Streaming (<a href="http://www.unitedstreaming.com">http://www.unitedstreaming.com</a>). Have students compare and contrast fields related to this topic to the graphic design industry.</li> <li>Have students complete a Web quest such as <a href="http://www.berksiu.k12.pa.us/webquest/BarnettR/index.htm">http://www.berksiu.k12.pa.us/webquest/BarnettR/index.htm</a> to learn about the basic components of a computer system.</li> <li>Have students complete the online tutorial titled <i>History of Computers</i> located at <a href="http://www97.intel.com/discover/JourneyInside/TJI_Intro_lesson1/default.aspx">http://www97.intel.com/discover/JourneyInside/TJI_Intro_lesson1/default.aspx</a>.</li> <li>Have students use the Internet to define and illustrate terminology related to the computer system such as input, monitor, CPU, mouse, keyboard, disk drive, printer, hardware, software, RAM, ROM, GUI, file, byte, bit, folder, files, etc. Students should have a definition and a clipart or photograph of each term. Lead students in discussion of the hardware and peripherals specific to graphic design to include memory, speed, cards, plug-ins, printers, scanners, cameras, touch pads, electronic tablets, monitors, etc.</li> <li>Walk students through the lab: hub, server, computers, and peripherals. Re-emphasize lab regulation, safety factors, cost factors, and behavioral expectations.</li> <li>Have students analyze their assigned computer for individual hardware specifications and peripherals.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Monitor student responses during class discussion.</li> <li>Use a teacher-generated evaluation on lab hardware and peripherals.</li> </ul>

	<ul style="list-style-type: none"> <li>• Use a teacher-generated evaluation on student computer hardware and peripherals.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>2. Investigate various graphic design software.</p> <ol style="list-style-type: none"> <li>a. Identify and compare various graphic design software.</li> <li>b. Associate graphic design software in relation to the hardware required to run the software.</li> <li>c. Prepare a specification plan for a stand-alone graphic computer system.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Investigate different types of graphic design software.</li> <li>• Discuss and demonstrate the capabilities of various graphic softwares. Be aware of the classes of software used in computers graphics to include word processors, draw/paint software, graphic editors, and page composition programs.</li> <li>• Discuss limitations in regard to laptops, out-dated computers, lower capacity computers, monitor size, etc. Discuss limitations of peripherals such as printer quality, digital camera image quality, scanner quality, etc.</li> <li>• Formulate a purchasing plan where students develop their dream plan. Have students research the approximate costs and revise plans to a feasible option. Have students design their dream lab for students with disabilities.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Use a teacher-generated checklist addressing questions such as: What software is most appropriate for photo editing? What software is most appropriate for converting text to outline? to evaluate student understanding.</li> <li>• Use the Information Technology in Education Accessibility Checklist found in Appendix D to evaluate student labs.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>3. Compare file types.</p> <ol style="list-style-type: none"> <li>a. Compare various examples of file formats, uses of each, and where different file types can be acquired.</li> <li>b. Discuss security and file storage procedures.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Discuss terms and show examples such as clipart files, downloads from the Internet, and other imported files formats.</li> <li>• Discuss passwords, targeted directories, file server, and instructions on naming files. Emphasis should also be placed on the procedure for renaming and deleting</li> </ul>

	<p>files.</p> <ul style="list-style-type: none"> <li>• Have students create a summary of different file extensions and when to use them properly.</li> <li>• Have students create and illustrate analogies and metaphors for file extensions.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Use a teacher-generated matching assessment relating file types to software.</li> <li>• Monitor student ability at file manipulation.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>4. Examine various types of storage devices.</p> <ol style="list-style-type: none"> <li>a. Discuss and compare storage media including floppy disk, CD-R/RW, and DVD-R/RW.</li> <li>b. Discuss and compare other storage devices.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Discuss limitations (life span, storage capacity) and advantages (mobility, physical size, price) of storage media and devices.</li> <li>• Identify various storage devices such as ZIP, JAZZ, and others with an emphasis on compression techniques.</li> <li>• Have students use a Venn Diagram (see example in Appendix D) to compare and contrast various storage devices. Have students summarize their Venn Diagram.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Monitor student comprehension of comparison and contrast of various types of storage devices.</li> <li>• Administer a written test that includes multiple choice and essay questions.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> <li>• Use the Portfolio Rubric to evaluate student portfolios.</li> </ul>

## STANDARDS

### *Graphic Design Standards*

GDS18 Performance Element: Analyze multimedia applications of software/hardware for the purposes of visual communications.

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*Academic Standards*


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- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- CS2 Financial, Economic, and Business Literacy
- CS5 Thinking and Problem-Solving Skills

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**SUGGESTED REFERENCES**


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**Computer Graphics Technology I**  
**Unit 4: Basic Design Concepts**

**(43 hours)**

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Apply basic design concepts leading to effective composition.</p> <ol style="list-style-type: none"> <li>a. Explain various design techniques to include basic principles and elements of design.</li> <li>b. Utilize available space effectively.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Present students with a brief explanation or description of terminology related to basic design concepts. Present nonlinguistic representations of the new terms to students. Ask students to develop their own explanation or description of the term or phrase. Have students create their own nonlinguistic representation of the term or phrase. Throughout the unit, ask students to review the accuracy of their explanations and representations of terminology.</li> <li>• Provide examples of compositions pointing out positive and negative aspects.</li> <li>• Divide the students into pairs and have them research Web sites and print media for readability and effect. Discussion should include emphasis on the use of white space.</li> <li>• Have students create a composition combining the basic principles and elements of design media such as pen and ink, markers, and computer software.</li> <li>• Have students work as a group to develop a set of standards that will be used throughout the year to evaluate effective composition. As a homework assignment, have students search magazines, newspaper ads, or other documents to find exemplary products that meet their standards of effective composition.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Use a teacher-created checklist to evaluate composition(s) for utilizing the basic principles and elements of design.</li> <li>• Use the standards that students create to evaluate students' exemplary product samples.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>



<p>2. Examine color theory and use.</p> <ol style="list-style-type: none"> <li>Explain the use of color as it relates to design.</li> <li>Discuss terminology related to color.</li> <li>Examine factors related to color.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Have students use the MAGNOLIA database to find five scholarly articles related to color theory. Have students collect and organize information from the articles.</li> <li>Discuss warm, cool, visual effects, complementary colors, and other aesthetic qualities.</li> <li>Students create a color wheel that identifies examples of color schemes using magazine print media cutouts.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Monitor student participation in class discussion.</li> <li>Evaluate the color wheel creation with a student- and teacher-created rubric.</li> <li>Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>3. Critique typography as a design element.</p> <ol style="list-style-type: none"> <li>Determine appropriate font and sizes.</li> <li>Critique the placement, orientation, and aesthetic quality of type as it relates to overall design of a composition.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Have students use the MAGNOLIA database to find five scholarly articles related to typography as a design. Have students collect and organize information from the articles.</li> <li>Discuss typography as a design element. Discussion should include balance, readability, boldness, underlining, focal point, and appropriate font (wedding, headline, seasonal, formal, playful, dynamic).</li> <li>Have students design posters on an assigned topic that illustrates understanding and use of typographical elements.</li> <li>Have students peer critique three posters by writing in paragraph form to indicate students' ability to describe typographical elements from other posters with correct writing form.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Monitor student discussion.</li> <li>Evaluate posters for accuracy and professionalism.</li> <li>Have students insert artifacts from this competency into their portfolio.</li> </ul>

<p>4. Explain the imagery process.</p> <ol style="list-style-type: none"> <li>a. Discuss effective imagery.</li> <li>b. Demonstrate capturing/importing images.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Use a multimedia presentation to explain the imagery process. Have students take notes from the presentation. Have students organize and color code notes for future use.</li> <li>• Discuss the aesthetics of images in relation to their project goal (size of image, resolution, number of images, artistic quality, etc.). Discuss the evaluation of images from the Internet, print media, personal photographs, etc. Have students collect and discuss good and bad examples. Have students work individually to enhance and improve the bad examples.</li> <li>• Demonstrate the use of scanners, digital cameras, download process, etc.</li> <li>• Have students compare and contrast different types of scanners and different types of digital cameras. Have students select their preferred camera and scanner and write a narrative defending their selection.</li> <li>• Have students work as a class to develop a top ten list of “taking good pictures.” Have students find ten picture taking tips and give examples of exemplary photographs for each tip.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Have students insert artifacts from this competency into their portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS8 Performance Element: Analyze the opportunities for communication through the visual arts.
- GDS9 Performance Element: Apply critical thinking skills to evaluate works of art.
- GDS10 Performance Element: Demonstrate the ability to present and defend written and oral evaluations of visual art works.
- GDS12 Pathway: Analyze elements and principles of the visual arts and what they communicate.

- GDS13 Performance Element: Analyze the elements and principles of art applied to visual art forms.
- GDS14 Analyze the communicative effects of art elements.

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### *Academic Standards*

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- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E9 Sustain progress toward fluent control of grammar, mechanics, and usage of standard English in the context of writing and speaking.
- E10 Use language and critical thinking strategies to serve as tools for learning.

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### *21<sup>st</sup> Century Skills*

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- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

## **SUGGESTED REFERENCES**

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**Computer Graphics Technology I**  
**Unit 5: Digital Video Production**

**(74 hours)**

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Identify and define multimedia presentations.</p> <ol style="list-style-type: none"> <li>a. Designate the purpose and target audience of the multimedia presentations.</li> <li>b. Identify the components of the presentations.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Give students a pre-test to determine the amount of experience and understanding they have in multimedia presentations.</li> <li>• Use presentation equipment to introduce terminology. Prepare for vocabulary test using written activity or game.</li> <li>• Have students use a word processing application, the print screen feature, and drawing tools to label the components of the presentation window. Identify, define, and illustrate terminology related to multimedia presentations.</li> <li>• Assign topics to individuals or groups. Topics could include selling satellite vs. cable providers, saving the rainforest, teaching a lesson, drug awareness, etc. Students would identify target audience and establish goals for presentations.</li> <li>• Discuss the process while demonstrating the applications of the software.</li> <li>• Have students use a word processing application to create a “quick start” guide on presentation development.</li> <li>• Have students work in groups to research one of the following topics:             <ul style="list-style-type: none"> <li>○ Why you must have high quality presentation skills</li> <li>○ The most common mistakes a developer makes</li> <li>○ The importance of researching and analyzing your audience</li> <li>○ How to research materials for a presentation</li> <li>○ How to use visual aids effectively (tips for using color, graphics, and text)</li> <li>○ How to handle difficult people that are on your developing team</li> </ul> </li> <li>• Have students edit fonts, alignments, clipart, colors, added effects, transitions, etc.</li> <li>• Have students deliver their presentations.</li> </ul>

	<p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Administer a written test that includes multiple choice and essay questions.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>2. Apply the properties of text construction.</p> <ol style="list-style-type: none"> <li>Gather subject information.</li> <li>Storyboard the information.</li> <li>Assemble the text within the presentations.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Explore the properties of text construction.</li> <li>• Research topics using the Internet, library, or other resources.</li> <li>• Determine information to be used as the text for the presentations. Issues to be addressed for the storyboard are organization of information and formatting of text (typography). Have students produce the storyboard.</li> <li>• Using the storyboard as a guide, input the information into individual slides.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Have students work as a group to develop a presentation rubric. Allow students to peer evaluate slides. Use the class-created rubric to evaluate student work.</li> <li>• Administer a written test that includes multiple choice and essay questions.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>3. Evaluate effective imagery.</p> <ol style="list-style-type: none"> <li>Discuss effective imagery.</li> <li>Demonstrate capturing/importing images.</li> <li>Select and import appropriate imagery.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Review components of the Digital Millennium Copyright Act of 1998, the Technology Education and Copyright Harmonization Act of 2002 (the TEACH Act), and the Assistive Technology Act of 1998.</li> <li>• Have students import audio by searching the Internet, download, or audio purchased from CDs.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Administer a written test that includes multiple choice and essay questions.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>4. Explain the audio process.</p> <ol style="list-style-type: none"> <li>Discuss effective use of audio.</li> <li>Demonstrate capturing/importing audio.</li> <li>Select and import audio.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Model the process of collecting and editing audio. Have students take notes and ask questions through the modeled process. Have students work in groups to</li> </ul>

	<p>collect and edit audio.</p> <ul style="list-style-type: none"> <li>• Discuss the effective use of music, sound effects, and narrative. Direct students to predetermined Web sites. Listen to the audio portion of commercials and determine the proper usage of the above audio components.</li> <li>• Demonstrate capturing and importing audio components.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Administer a written test that includes multiple choice and essay questions.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>5. Plan and prepare a multimedia production/presentation.</p> <ol style="list-style-type: none"> <li>a. Review design principles.</li> <li>b. Discuss marketing advertising strategies.</li> <li>c. Research approved project.</li> <li>d. Assemble components of project.</li> <li>e. Produce the final product.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Review multimedia productions/presentations.</li> <li>• Refresh students with a discussion of previous experiences they've had with presenting. Review terminology such as storyboarding, imagery, importing, audio, text, critique, etc. Cover high points in class achievement as examples of each of these.</li> <li>• Discuss marketing strategies. Possibly invite a guest speaker.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Administer a written test that includes multiple choice and essay questions.</li> </ul>
<p>6. Produce and present a multimedia presentation.</p> <ol style="list-style-type: none"> <li>a. Assemble text, imagery, and sound.</li> <li>b. Demonstrate the text, imagery, and sound for presentations.</li> <li>c. Evaluate the presentations.</li> <li>d. Edit the production for final version.</li> <li>e. Make a formal presentation of the project.</li> <li>f. Create a video to provide to a state or national community service project.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Have students prepare the project. (Peer support may be utilized as a means of reinforcing principles.)</li> <li>• Demonstrate the proper and safe methods of cutting, pasting, and mounting a display board.</li> <li>• Have students evaluate their presentations as to effectiveness through trial run of presentations using presentation set-up.</li> <li>• Have students revise projects as needed.</li> <li>• Explain that digital video has become a prominent and effective way of conveying new ideas and products. Explain that during this unit, students will be responsible for demonstrating their ability to create an effective video and present an</li> </ul>

idea to a specific audience. Give students the following scenario and have them work as a group or as an individual to create a solution:

- The Make a Wish Foundation<sup>®</sup> is the premier wish granting organization for children with life-threatening medical conditions. Visit

<http://www.makeawish.org> to learn more about the organization. The Make a Wish Foundation<sup>®</sup> relies heavily on individual contributions, corporate contributions, and community fundraisers to fund wishes for children. Unfortunately, some children's wishes are not granted due to the lack of funds. There has been a change of leadership at the Make a Wish Foundation<sup>®</sup>, and a new executive director has made it her mission to ensure that a child's wish is never turned away. She has contacted your principal and asked if your class can create a 2 – 4 minute digital video that shares the mission of the Make a Wish Foundation<sup>®</sup>. She wants to make sure that the process of granting wishes is included in the video. Also, she wants to show how important individual and corporate sponsors are to the wish granting process. Once the video is complete, your class must present the video to the national board of directors and the national advisory committee for the Make a Wish Foundation<sup>®</sup>. If the board and committee approve the video, it will be placed on the Make a Wish Foundation<sup>®</sup> Web site.

- Have students follow the guidelines listed below when developing the Make a Wish Foundation<sup>®</sup> digital video:
  - Video should be at least two and no more than four minutes in length.
  - Video may be created using any video editing program, but must also play on a standard DVD player and on a Web



	<p>site.</p> <ul style="list-style-type: none"> <li>○ The production may use any method to capture or create moving images. Cameras can include traditional camcorders or mini-DVD format.</li> <li>○ Videos must be accompanied by a written clearances and/or releases for all images of individuals, locations, storefronts, etc., included in the production.</li> <li>○ Videos and music used in the video must not violate any copyright law.</li> <li>○ Video productions must be accompanied by a script.</li> <li>○ Students must present a “pitch” to the national board of directors and national advisory council for the Make a Wish Foundation<sup>®</sup>.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Have students work as a group to develop a presentation rubric. Allow students to peer evaluate slides. Use the class-created rubric to evaluate student work.</li> <li>• Administer a written test that includes multiple choice and essay questions.</li> <li>• Use the Digital Video Production Rubric found in the <i>FBLA Chapter Management Handbook</i> (<a href="http://www.fbla-pbl.org/docs/FBLA_CMH_2006/FBLA_Tab5.pdf">http://www.fbla-pbl.org/docs/FBLA_CMH_2006/FBLA_Tab5.pdf</a>) to evaluate students’ digital video.</li> <li>• Have students insert artifacts from this competency into their portfolio.</li> </ul>
<p>7. Present the final multimedia production/presentation.</p> <ol style="list-style-type: none"> <li>a. Make a formal presentation of the project.</li> <li>b. Discuss/critique the final project.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Students should be required to formally present their work. Clothing, speech, sound, etc. should be considered so that each student will achieve the desired professionalism. Clearly state objectives and grading criteria. Invite community and industry members to serve as evaluators.</li> <li>• Allow students to present to the class. Then, in following classes, allow students to peer evaluate the video productions. Videoing the projects could also allow other classes to see quality presentations</li> </ul>

	<p>from their peers.</p> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Have students insert artifacts from this competency into their portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS8 Performance Element: Analyze the opportunities for communication through the visual arts.
- GDS14 Analyze the communicative effects of art elements.
- GDS16 Performance Element: Analyze art elements and principles of two-dimensional works of visual art in various media, including drawing, print making, and computer software.
- GDS18 Performance Element: Analyze multimedia applications of software/hardware for the purposes of visual communications.

### *Academic Standards*

- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.

### *21<sup>st</sup> Century Skills*

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

## SUGGESTED REFERENCES

Adobe Photoshop CS2 [Computer Software]. (2006). San Jose, CA: Adobe Systems.

Aho, K. (2004). *Macromedia Studio MX 2004: Step by step*. Boston: Thomson Course Technology.

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- Williams, R. (2004). *The non-designer's design book*. Berkeley, CA: Peachpit Press.

**Computer Graphics Technology II**  
**Unit 1: Orientation and Review**

(29 hours)

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Research educational, occupational, and leadership opportunities in Computer Graphics Technology on the Internet.</p> <ol style="list-style-type: none"> <li>Review student rules and regulations for the local school.</li> <li>Investigate career opportunities, standards, skills and emerging technologies in Computer Graphics Technology.</li> <li>Research educational options available in computer technology</li> <li>Update the students' career and educational plans.</li> <li>Identify and describe leadership opportunities available from student youth organizations in the school and community.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Review educational, occupational, and leadership opportunities in Computer Graphics Technology.</li> <li>Review student rules and regulations for the local school.</li> <li>Investigate career opportunities and emerging technologies in Computer Graphics Technology. Establish and maintain a presentation relating to emerging technologies as an ongoing project.</li> <li>Have students compare and contrast school and classroom rules to industry expectations.</li> <li>Update the students' career and educational plans.</li> <li>Identify and describe leadership opportunities available from student youth organizations in the school and community.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Review educational, occupational, and leadership opportunities in Computer Graphics Technology.</li> <li>Administer a written test related to classroom rules and regulations.</li> <li>Place students' career and education plans in students' cumulative folders.</li> <li>Have students insert artifacts from this competency into their electronic portfolio.</li> </ul>
<p>2. Review basic principles covered in Computer Graphics Technology I.</p> <ol style="list-style-type: none"> <li>Review graphic hardware, software, and file manipulation.</li> <li>Re-examine principles of design.</li> <li>Discuss typography principles previously covered.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Administer a pre-test to determine what knowledge students remember from year one. Use reinforcement and enhancement strategies throughout the year to individualize instruction for students.</li> <li>Review basic principles covered in Computer Graphics Technology I.</li> <li>Review material covered in year I for hardware, software, and file manipulation.</li> <li>Discuss the principles of design covered in</li> </ul>

	<p>year one.</p> <ul style="list-style-type: none"> <li>• Discuss typography principles covered in year one.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Review basic principles covered in Computer Graphics Technology I.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> </ul>
<p>3. Demonstrate work ethics related to graphic design.</p> <ol style="list-style-type: none"> <li>a. Discuss employer expectations related to graphic design.</li> <li>b. Discuss and demonstrate work ethics related to the individual responsibilities.</li> <li>c. Discuss employer expectations related to graphic design.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Have students read <i>Making Ethical Decisions</i> published by the Josephson Institute of Ethics (<a href="http://www.josephsoninstitute.org/MED/MED-intro+toc.htm">http://www.josephsoninstitute.org/MED/MED-intro+toc.htm</a>). Assign one chapter per week. Have students use the Text-Based Seminar protocol found in Appendix D to discuss information from each chapter.</li> <li>• Review work ethics and application skills to career opportunities in graphic design.</li> <li>• Discuss work ethics to be employed in the classroom and their relation to real-world application. Practice these ethics for the duration of the program.</li> <li>• Review all copyright legislation that impacts the field of graphic design.</li> <li>• Have students use the writing process to prepare a report about employer expectations for graphic artists and designers. The report should include, but is not limited to: <ul style="list-style-type: none"> <li>○ Overview of the field, education expectations, demand for jobs, and salary</li> <li>○ Sample work activities that are specific to graphic design</li> <li>○ Working conditions to include, interpersonal relationships, physical work conditions, work performance, and hours/travel</li> <li>○ Physical demands</li> <li>○ Job specific skills and abilities that include communication; reason and problem solving skills; and managing oneself, people, time, and things</li> </ul> </li> </ul> <p><b>Assessment:</b></p>

	<ul style="list-style-type: none"> <li>• Relate work ethics and application skills to career opportunities in graphic design.</li> <li>• Use the Written Report Writing Rubric found in Appendix D to evaluate student reports.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS1 Pathway: Research the scope of career opportunities and qualifications in the Visual Arts Pathway.
- GDS2 Performance Element: Examine the numerous career paths within visual arts to discover personal preferences.
- GDS3 Performance Element: Identify required knowledge and skills, education opportunities, and lifestyles associated with different levels of employment in visual arts careers and related career fields.

### *Academic Standards*

- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.

### *21<sup>st</sup> Century Skills*

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

**SUGGESTED REFERENCES**

- Adobe Photoshop CS2 [Computer Software]. (2006). San Jose, CA: Adobe Systems.
- Aho, K. (2004). *Macromedia Studio MX 2004: Step by step*. Boston: Thomson Course Technology.
- American Institute of Graphic Arts (AIGA). (2006). Retrieved September 28, 2006, from <http://www.aiga.org/>
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**Computer Graphics Technology II**  
**Unit 2: Marketing/Advertising Concepts**

(29 hours)

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Identify and define terms related to marketing/advertising.</p> <ol style="list-style-type: none"> <li>Discuss marketing terminology.</li> <li>Discuss advertising terminology.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Identify, define, and illustrate terms related to marketing and advertising. Terms related to advertising should include storyboard, print media, visual media, audio media, slogans, trademarks, trade names, strategy, target audience, focus groups, impact, etc.</li> <li>Invite a guest speaker from the marketing and advertising industry to discuss industry expectations, skills and knowledge needed, and soft skills needed for success in the field.</li> <li>Have students develop a flow chart that shows the process of developing a commercial. Have students identify specific skills needed for each component of the flow chart. Have students summarize and illustrate their chart.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Administer a written test that includes multiple choice and essay questions.</li> <li>Evaluate flow charts for accuracy.</li> <li>Have students insert artifacts from this competency into their electronic portfolio.</li> </ul>
<p>2. Identify product and target audience.</p> <ol style="list-style-type: none"> <li>Determine product to be marketed.</li> <li>Identify the target audience.</li> <li>Understand the role of advertising as it relates to current events.</li> <li>Understand the techniques of persuasion used by advertisers.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Have students use the Internet and classroom resources to research the process for identifying product and target audience.</li> <li>Once a product is assigned for advertisement, have students decide what the target audience will be. Discuss possible angles and ways to present their product based upon who will be targeted.</li> <li>Introduce the idea of how American culture changed after September 11, 2006. Have students read <i>Judging the Mood of a Nation</i> (<a href="http://www.pbs.org/newshour/extra/features/july-dec01/culture.html">http://www.pbs.org/newshour/extra/features/july-dec01/culture.html</a>). This could be assigned the day before as homework.</li> </ul>



	<ul style="list-style-type: none"> <li>• Have students read <i>An Advertising Call to Arms</i> (<a href="http://www.pbs.org/newshour/extra/teachers/lessonplans/october01/warads/advertisingage.html">http://www.pbs.org/newshour/extra/teachers/lessonplans/october01/warads/advertisingage.html</a>). This article from <i>Advertising Age</i> magazine provides sufficient historical background about advertising history in the time of war and tragedy. Ask students what role advertising plays in affecting the mood of the nation. Discuss the possible role of a War Advertising Council in the year 2001-2002 and have students predict the kinds of messages it might create and disseminate.</li> <li>• Ask students to bring in copies of current event magazines (i.e., <i>TIME</i>, <i>Newsweek</i>, <i>U.S. News &amp; World Report</i>, <i>Business Week</i>, etc.). Have students review the print advertisements, looking specifically for words, phrases, and sentences that might relate to current events. Write these on the board or overhead.</li> <li>• Have students prepare a report or essay discussing the role of advertising after a national tragedy. Have students use the MAGNOLIA database to find scholarly articles. Have students cite articles as references in their report or essay.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Evaluate student products for accurate information.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> </ul>
<p>3. Develop a product design.</p> <ol style="list-style-type: none"> <li>a. Comprehend and illustrate branding for the product.</li> <li>b. Develop packaging for a product.</li> <li>c. Review and discuss how design principles relate to the product.</li> <li>d. Prepare and present final advertising campaign.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Have students decide what way they are going to advertise their products. For instance, a student advertising a new murder mystery novel might choose to design a series of book marks instead of a newspaper ad.</li> <li>• Have students create a storyboard that includes several possible versions. Don't allow students to "run with" their first idea. Have them explore and refine their work before going to the final design process.</li> </ul>

	<ul style="list-style-type: none"> <li>• Discuss how individual designs are related to design principles (or how they aren't). Have each student point out four or five good design principles they've employed. Suggest improvements and emphasize quality points.</li> <li>• Have students "tweak" their designs until they are the most effective they can be. Students may seek out consultation with other students as long as the work remains their own. Have students present their products. Save the best pieces as examples for your other classes, or mount a display area in the room as a "Wall of Fame."</li> <li>• Have students create an Advertising Campaign Proposal. The proposal must include, but is not limited to: <ul style="list-style-type: none"> <li>◦ Executive summary – one page description of the campaign</li> <li>◦ Descriptions – descriptions of the product, service, company or business selected, and descriptions of the client/advertiser</li> <li>◦ Objective(s) of the campaign</li> <li>◦ Identification of the target market</li> <li>◦ List of examples of advertising media selection necessary for the campaign (must have at least 3 components, e.g., newsletter, web page, commercial script)</li> <li>◦ Budget – detailed projections of actual cost</li> <li>◦ Schedules of all advertising planned</li> <li>◦ Schedules of all sales promotion activity(ies) planned</li> <li>◦ Statement of benefits to the client/advertiser</li> </ul> </li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Evaluate products for accuracy and creativeness.</li> <li>• Use the Advertising Campaign Evaluation Rubric found in Appendix D to evaluate student projects.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in</li> </ul>
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	Appendix D to evaluate student electronic portfolios.
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## STANDARDS

### *Graphic Design Standards*

- GDS14 Analyze the communicative effects of art elements.
- GDS15 Pathway: Analyze and create two- and three-dimensional art forms from various media in the visual arts.

### *Academic Standards*

- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.
- E6 Explore cultural contributions to the history of the English language and its literature.

### *21<sup>st</sup> Century Skills*

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

## SUGGESTED REFERENCES

- Adobe Photoshop CS2 [Computer Software]. (2006). San Jose, CA: Adobe Systems.
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**Computer Graphics Technology II**  
**Unit 3: Print Products**

**(29 hours)**

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Identify and discuss various print media.</p> <ol style="list-style-type: none"> <li>Examine types and uses of each print product.</li> <li>Develop the layout of an assigned print product.</li> <li>Present the layout design.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Have students identify, define, and illustrate terminology related to print media.</li> <li>Discuss brochures, newspapers, magazines, advertisements, etc. as students are shown multiple examples of each. Have students critique each example for the quality of design.</li> <li>Have students use technology tools and the writing process to design an interdisciplinary tri-fold, two-color brochure. Have students work as a class to develop a rubric to evaluate the project. Topics may include, but are not limited to, saving the rainforest, raising money for local little leagues, selling new video releases, inviting visitors to tour an antebellum home, etc. Have students incorporate photos, images, and text into their projects.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>Invite community members to serve as evaluators for the presentation. Evaluators should discuss the successful aspects of the student's work. Suggestions for improvement will be provided to students.</li> <li>Use the rubric that students create to evaluate student projects.</li> <li>Have students insert artifacts from this competency into their electronic portfolio.</li> </ul>
<p>2. Apply various print processes.</p> <ol style="list-style-type: none"> <li>Examine various print formats.</li> <li>Apply assigned layout to the appropriate format.</li> <li>Print final layout to appropriate media.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Discuss and show examples of various print formats. Include the processes used by students in their brochure designs from Competency 1. Demonstrate other processes for preparing items for different formats.</li> <li>Using prescribed items prepared by the teacher, students should prepare a layout for printing using an assigned format. Possible ways to handle all formats could</li> </ul>

	<p>include having student groups of two or three where each team does the layout in all formats; individual students can be responsible for one aspect, but all can learn by observing peers.</p> <ul style="list-style-type: none"> <li>• Discuss printers and peripherals in relation to the assigned printing process. Students will complete printing by working in their teams.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Evaluate layout for accuracy and creativeness.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS14 Analyze the communicative effects of art elements.
- GDS15 Pathway: Analyze and create two- and three-dimensional art forms from various media in the visual arts.
- GDS16 Performance Element: Analyze art elements and principles of two- dimensional works of visual art in various media, including drawing, print making, and computer software.

### *Academic Standards*

- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.
- E6 Explore cultural contributions to the history of the English language and its literature.

### *21<sup>st</sup> Century Skills*

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

## SUGGESTED REFERENCES

- Adobe Photoshop CS2 [Computer Software]. (2006). San Jose, CA: Adobe Systems.
- Aho, K. (2004). *Macromedia Studio MX 2004: Step by step*. Boston: Thomson Course Technology.
- American Institute of Graphic Arts (AIGA). (2006). Retrieved September 28, 2006, from <http://www.aiga.org/>
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- Microsoft Frontpage [Computer Software]. (2003). Redmond, WA: Microsoft.
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- Weixel, S., Fulton, J., Barksdale, K., Morse, C., & Morse, B. (2004). *Multimedia basics*. Boston: Thomson Course Technology.
- Wiley Publishing, Inc. (2006). *Creating web pages with HTML, simplified*. Indianapolis, IN: Author.
- Williams, R. (2004). *The non-designer's design book*. Berkeley, CA: Peachpit Press.

**Computer Graphics Technology II**  
**Unit 4: Advanced Software Applications**

**(29 hours)**

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Perform image manipulation and enhancement.</p> <ol style="list-style-type: none"> <li>a. Review imagery process.</li> <li>b. Employ photo manipulation.</li> <li>c. Explore photo enhancement.</li> <li>d. Explore special effects.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Perform image manipulation and enhancement.</li> <li>• Discuss aesthetics of images in relation to principles of design. Review the use of scanners, digital cameras, download process, etc.</li> <li>• Demonstrate the manipulation of captured images through the use of the photo manipulation software. Discuss desired outcomes and the process for achieving the goals of resizing, cropping, etc. Direct students to a directory on the server where example photos were pre-stored by the instructor for use in these activities.</li> <li>• Demonstrate the process of enhancing images with the software. Procedures to be addressed should include: changing colors, erasing undesired objects (such as taking a flagpole out of a shot), tinting, flipping, perspective-altering, feathered edges, masks, etc. Possible activities could include asking students to transform an image into a sepia-toned, old weathered photograph complete with dust and scratches and border. Also, have students remove “red eye” from a photo, or to take some object out of the background.</li> <li>• Demonstrate the use of special effects in a design process. Have students complete a project using special effects from the Internet or using special effects software.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Evaluate student projects for accuracy and creativeness.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> </ul>
<p>2. Discuss and apply software applications related to print products.</p> <ol style="list-style-type: none"> <li>a. Explore sizing techniques.</li> <li>b. Demonstrate text manipulation.</li> <li>c. Explore layout capabilities.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Discuss and apply software applications related to print products.</li> <li>• Demonstrate the resizing and placement of objects as related to a specific product or</li> </ul>



	<p>advertising specification. Have students add a product shot photo to the pre-existing label (such as a picture of a taco to a taco shell box). Show effective and bad examples of sizing.</p> <ul style="list-style-type: none"> <li>• Demonstrate how to work with text using the following: fonts, sizes, colors, perspective, boldness, etc. Show students how to physically change each of these. Assign the project of adding “Now Fat Free” banner to an existing product layout. Have students prepare three or four different versions; they could choose the best and explain why it was most effective in using the principles of typography and design.</li> <li>• Explore layout capabilities through a discussion of the advanced uses of the software. This should include layering, masks, gradient fades, feathering, etc. in relation to effective design. Give specific assignments, such as “design a business card,” or “place this image in the background and create an ad on top of it.”</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Evaluate student projects for accuracy and creativeness.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS15 Pathway: Analyze and create two- and three-dimensional art forms from various media in the visual arts.
- GDS16 Performance Element: Analyze art elements and principles of two-dimensional works of visual art in various media, including drawing, print making, and computer software.
- GDS17 Performance Element: Apply art elements and principles to photographic works of visual art in both traditional and digital photographic media.
- GDS18 Performance Element: Analyze multimedia applications of software/hardware for the purposes of visual communications.

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### Academic Standards

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- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.
- E6 Explore cultural contributions to the history of the English language and its literature.

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### 21<sup>st</sup> Century Skills

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- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

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**Computer Graphics Technology II**  
**Unit 5: Web Page Design**

(74 hours)

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Incorporate the principles of multimedia presentation production with Web page design.</p> <p>a. Demonstrate sound Web page design principles including information, interaction, and presentation.</p> <p>b. Examine the concepts of Web design including web safe color, appropriate fonts for internet use, and proper file format.</p>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Use presentation equipment to introduce terminology such as alignment, animated GIF, animation, active server page (ASP), banner, bitmap image (bmp), check box, cascading style sheet (CSS), dynamic hypertext mark-up language (DHTML), drop down menu, Error 404, flash, Web forms, frame, file transfer protocol (FTP), GIF, graphic backgrounds, hypertext markup language (HTML), hyperlink, hypertext, image map, information page, java, JavaScript, JPEG, mouse over, portable document format (PDF), radio button, WYSIWYG (What You See Is What You Get), etc. Have students define and illustrate terminology related to Web page design. Have students prepare for vocabulary test using written activity or game.</li> <li>• Have students research different Web design certifications.</li> <li>• Explain basic components of a Web application program, identify the different parts of the screen, and show examples of high and low quality Web pages.</li> <li>• Discuss characteristics of high quality Web pages. Have the class develop a rubric to evaluate Web pages.</li> <li>• Use presentation equipment to demonstrate the basic components of Web design applications. Have students take notes from the presentation.</li> <li>• Have students use the Internet and a word processing application to find, key, illustrate, and print definitions. Students will also key their notes from the teacher's presentation.</li> <li>• Compare the principles of multimedia presentation production with Web page design.</li> <li>• Review basics of multimedia presentation</li> </ul>

	<p>as related to Web page design. Introduce the additional principles needed to construct a Web page.</p> <ul style="list-style-type: none"> <li>• Direct students to predetermined Web sites as examples for discussion.</li> <li>• Have students peer review and peer teach techniques listed above as reinforcement. Once students are comfortable with the techniques listed above, have them make create an HTML Web resource guide with detailed steps of how to complete the different techniques.</li> <li>• Demonstrate construction of a Web page. Given time, have students work individually or as a group to develop a simple Web page for a Mississippi industry. The Web site should include the logo, slogan, information about the industry, local area information, and contact information. (This is for internal use only and is not for publication on the Web.) In this exercise, students should be expected to create the following: <ul style="list-style-type: none"> <li>○ Give the Web page a title</li> <li>○ Insert, format, and edit text</li> <li>○ Insert graphics</li> <li>○ Insert hypertext links</li> <li>○ Insert mail to link</li> <li>○ Image rollovers</li> <li>○ Insert graphics with links</li> <li>○ Use graphics effectively (e.g., .jpg vs. .gif, resizing, creating thumbnails, etc.)</li> <li>○ Create and modify tables</li> <li>○ Create and modify lists</li> <li>○ Create and modify horizontal rules</li> <li>○ Indent text</li> <li>○ Text alignment</li> <li>○ Add links (absolute vs. relative)</li> <li>○ Add paragraph and line breaks</li> <li>○ Modify fonts and colors</li> </ul> </li> <li>• Have students transfer contents of their portfolio to an electronic portfolio. Have students publish their portfolios.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Evaluate performance assessment of individual exercises.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Have students work as a group to develop a classroom Web page evaluation rubric. Have students use the rubric to peer edit Web pages. Use the rubric to administer a final grade for student Web pages.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>
<p>2. Evaluate Web page design.</p> <ol style="list-style-type: none"> <li>a. Develop the layout of an assigned Web page.</li> <li>b. Present the draft Web page designs.</li> <li>c. Discuss and evaluate Web page designs.</li> <li>d. Present the final Web page.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Assign students the topic of designing a Web page advertising a growing Mississippi industry. Lead students through rough design process, trial and error, and storyboarding. Have students work together to develop a rubric to evaluate their Web pages.</li> <li>• In small groups or to the class, students should present a draft design for their Web page.</li> <li>• Discussion and critique should include suggestions for enhancement of designs with the individual student as the final judge as to what he/she should change. After making decisions as to the effectiveness of said designs, give students an opportunity to “clean up” their work and finish their designs.</li> <li>• Have students present their Web site to a focus group of community members. An alternative to this could be having the students present their pages in a multimedia type presentation using the projector. Attention should be given to the use of suggested changes and how the original drafts were improved.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Use the Web page rubric that students create to evaluate student projects.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>

## STANDARDS

### *Graphic Design Standards*

- GDS9 Performance Element: Apply critical thinking skills to evaluate works of art.
- GDS14 Analyze the communicative effects of art elements.
- GDS15 Pathway: Analyze and create two- and three-dimensional art forms from various media in the visual arts.
- GDS16 Performance Element: Analyze art elements and principles of two-dimensional works of visual art in various media, including drawing, print making, and computer software.
- GDS17 Performance Element: Apply art elements and principles to photographic works of visual art in both traditional and digital photographic media.
- GDS18 Performance Element: Analyze multimedia applications of software/hardware for the purposes of visual communications.

### *Academic Standards*

- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.
- E6 Explore cultural contributions to the history of the English language and its literature.

### *21<sup>st</sup> Century Skills*

- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

## SUGGESTED REFERENCES

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**Computer Graphics Technology II**  
**Unit 6: Directed Individual Study**

**(31 hours)**

Competencies and Suggested Objectives	Suggested Strategies for Competencies
<p>1. Apply computer graphic technology and academic skills to solve real-world problems related to science, technology, and engineering.</p> <ol style="list-style-type: none"> <li>Analyze general problem solving strategies.</li> <li>Develop critical thinking skills in solving problems.</li> <li>Integrate a community service project and computer graphics technology.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>Divide students into groups of three – five. Give students six blocks that are the same size (cardboard boxes, building blocks, etc.). Give students the following problem:             <ul style="list-style-type: none"> <li>Arrange six blocks so that each block touches three, and only three, others.</li> </ul> </li> <li>Allow students to come up with a solution. One possible solution may be:             <div data-bbox="1029 667 1198 856" style="text-align: center;">  </div> </li> <li>Have groups share with the class the strategies that they used to solve the problem.</li> <li>Compose five to eight charts summarizing problem solving strategies (<a href="http://www.une.edu.au/psychology/staff/malouff/problem.htm#clarify">http://www.une.edu.au/psychology/staff/malouff/problem.htm#clarify</a>). Each chart should have content material, photographs, quotes from the text, or other means to convey one idea per chart.</li> <li>Post the charts around the classroom and number each chart. Divide students into “touring groups” to fit the class space.</li> <li>Assign one group per chart as a starting point. Allow groups to spend two to five minutes at that chart, taking notes on and/or discussing the ideas presented.</li> <li>Rotate the groups until all groups have “toured” each chart. When students return to their seats, allow some time for discussion and reaction.</li> <li>Have students develop an idea for a community service project, a plan, and goals. Have students summarize all aspects of their idea and submit. Evaluate student summaries to ensure that all students have selected a project where they can use information learned from Computer</li> </ul>

	<p>Graphics Technology. If applicable, have students refine their project. Have students expand their summaries into a Project Activity Report that includes an evaluation of the project following completion. Students should show a mastery understanding of the following:</p> <ul style="list-style-type: none"> <li>○ Enhancing the layout of documents by using formatting and design features</li> <li>○ Digital video production</li> <li>○ Marketing and advertising concepts</li> <li>○ Print products</li> <li>○ Advanced software applications</li> <li>○ Web page design</li> <li>○ Ethical decision making</li> <li>○ Proofreading and editing documents</li> <li>○ Composing a variety of documents (e.g., newsletters, ads, brochures, video production, Web page, etc.)</li> </ul> <ul style="list-style-type: none"> <li>• Once students understand the instructor expectations of the community service project, have students work as a class to develop an evaluation rubric.</li> <li>• Have students present a brief overview of their plan and evaluation to members of the class.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Use the class-developed evaluation rubric to assess projects.</li> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>
<p>2. Demonstrate employability skills.</p> <ol style="list-style-type: none"> <li>a. Discuss the elements of a resume, letter of application, and job application.</li> <li>b. Produce a resume and incorporate into portfolios.</li> <li>c. Identify and demonstrate appropriate interview techniques.</li> </ol>	<p><b>Teaching:</b></p> <ul style="list-style-type: none"> <li>• Have students research 21<sup>st</sup> Century Skills. Have each student use technology tools and the writing process to develop an essay about 21<sup>st</sup> Century Skills.</li> <li>• Discuss the various formats of a resume. Examine the parts such as personal history, goals, work experience, etc.</li> <li>• Have students develop a resume to accompany the portfolios which have been developed over the entire two-year program.</li> </ul>

	<ul style="list-style-type: none"> <li>• Have students develop a letter of application.</li> <li>• Have students get three letters of recommendation.</li> <li>• Have students complete a job application.</li> <li>• Have students update their electronic portfolios with their resumes, letters of application, letters of recommendation, and job applications.</li> <li>• Discuss and practice interview techniques. Videotape mock interviews with industry personnel, school counselor, or other peers as prospective employers.</li> <li>• Have community members visit the classroom and perform mock interviews.</li> </ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"> <li>• Have students insert artifacts from this competency into their electronic portfolio.</li> <li>• Use the Portfolio Rubric found in Appendix D to evaluate student electronic portfolios.</li> </ul>
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## STANDARDS

### *Graphic Design Standards*

- GDS1 Pathway: Research the scope of career opportunities and qualifications in the Visual Arts Pathway.
- GDS2 Performance Element: Examine the numerous career paths within visual arts to discover personal preferences.
- GDS3 Performance Element: Identify required knowledge and skills, education opportunities, and lifestyles associated with different levels of employment in visual arts careers and related career fields.
- GDS4 Performance Element: Compare the advantages and disadvantages of working independently and of working for others
- GDS5 Performance Element: Examine opportunities in visual arts careers to communicate to others in an articulate fashion the purpose of artwork, artists' intentions, and the way the process and materials help to achieve them.
- GDS6 Pathway: Research the history and evolution of visual arts and their role within society.
- GDS7 Performance Element: Compare the changing purposes served by visual arts throughout history.
- GDS8 Performance Element: Analyze the opportunities for communication through the visual arts.
- GDS9 Performance Element: Apply critical thinking skills to evaluate works of art.
- GDS10 Performance Element: Demonstrate the ability to present and defend written and oral evaluations of visual art works.

- GDS11 Performance Element: Analyze the development of tools and technologies and their effect on the evolution of visual arts.
- GDS12 Pathway: Analyze elements and principles of the visual arts and what they communicate.
- GDS13 Performance Element: Analyze the elements and principles of art applied to visual art forms.
- GDS14 Analyze the communicative effects of art elements.
- GDS15 Pathway: Analyze and create two- and three-dimensional art forms from various media in the visual arts.
- GDS16 Performance Element: Analyze art elements and principles of two-dimensional works of visual art in various media, including drawing, print making, and computer software.
- GDS17 Performance Element: Apply art elements and principles to photographic works of visual art in both traditional and digital photographic media.
- GDS18 Performance Element: Analyze multimedia applications of software/hardware for the purposes of visual communications.

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### *Academic Standards*

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- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.
- E6 Explore cultural contributions to the history of the English language and its literature.

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### *21<sup>st</sup> Century Skills*

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- CS4 Information and Communication Skills
- CS5 Thinking and Problem-Solving Skills
- CS6 Interpersonal and Self-Directional Skills

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- Williams, R. (2004). *The non-designer's design book*. Berkeley, CA: Peachpit Press.

## Recommended Tools and Equipment

### CAPITALIZED ITEMS

1. Computer Systems (16) (Graphic Quality)
2. Laptop Computer (1)
3. Network Hub (1)
4. USB (universal serial bus) Hubs (2)
5. Digital Cameras (SLR) (2) OR Digital and 35 mm Cameras (1 each)
6. Scanjet 6350 CXI (2)
7. Laser Printer (B&W) (HP2100N or greater) (2)
8. Color LaserJet Printer (1)
9. Large Format Printer (1)
10. Internet Access/Provider

### NON-CAPITALIZED ITEMS

1. Software
  - a. Text (e.g., Pagemaker)
  - b. Freehand (e.g., Macromedia)
  - c. Images (e.g., PhotoShop)
  - d. Layout (e.g., Quark)
  - e. Animation (e.g., Director)
  - f. Web pages (e.g., Dreamweaver)
  - g. Illustration (e.g., Illustrator)

### RECOMMENDED INSTRUCTIONAL AIDS

It is recommended that instructors have access to the following items:

1. Data Projector
2. 31" Television
3. VCR
4. Audio/Visual Cart
5. Telephone Line with Cordless Telephone

## ASSESSMENT

### BLUEPRINT

This program is assessed using the MS-CPAS. The following blueprint summary contains the competencies that are measured when assessing this program. Competencies are grouped into *clusters* and a weight is given to each cluster to determine the number of items needed from each cluster. The numbers of C1s and C2s (item difficulty levels) are also indicated on the blueprint.

Title of Program: Computer Graphics

Program Level: Secondary

Cluster/Competency	Level 1 (C1)	Level 2 (C2)	TOTAL	%
<b>Cluster 1 Orientation</b> Year I Units 1, 2 Year II Unit 1	14	6	20	20
<b>Cluster 2: Graphic Computers</b> Year I Unit 3	7	3	10	10
<b>Cluster 3: Design Marketing Print</b> Year I Unit 4 Year II Units 2, 3	18	8	26	26
<b>Cluster 4: Digital Video Production</b> Year I Unit 5 Year II Unit 4	18	8	26	26
<b>Cluster 5: Web Page Design</b> Year II Unit 5	13	5	18	18
	70	30	100	100

## Appendix A: Graphic Design Standards<sup>1</sup>

- GDS1 Pathway: Research the scope of career opportunities and qualifications in the Visual Arts Pathway.
- GDS2 Performance Element: Examine the numerous career paths within visual arts to discover personal preferences.
- GDS3 Performance Element: Identify required knowledge and skills, education opportunities, and lifestyles associated with different levels of employment in visual arts careers and related career fields.
- GDS4 Performance Element: Compare the advantages and disadvantages of working independently and of working for others
- GDS5 Performance Element: Examine opportunities in visual arts careers to communicate to others in an articulate fashion the purpose of artwork, artists' intentions, and the way the process and materials help to achieve them.
- GDS6 Pathway: Research the history and evolution of visual arts and their role within society.
- GDS7 Performance Element: Compare the changing purposes served by visual arts throughout history.
- GDS8 Performance Element: Analyze the opportunities for communication through the visual arts.
- GDS9 Performance Element: Apply critical thinking skills to evaluate works of art.
- GDS10 Performance Element: Demonstrate the ability to present and defend written and oral evaluations of visual art works.
- GDS11 Performance Element: Analyze the development of tools and technologies and their effect on the evolution of visual arts.
- GDS12 Pathway: Analyze elements and principles of the visual arts and what they communicate.
- GDS13 Performance Element: Analyze the elements and principles of art applied to visual art forms.
- GDS14 Analyze the communicative effects of art elements.
- GDS15 Pathway: Analyze and create two- and three-dimensional art forms from various media in the visual arts.
- GDS16 Performance Element: Analyze art elements and principles of two-dimensional works of visual art in various media, including drawing, print making, and computer software.
- GDS17 Performance Element: Apply art elements and principles to photographic works of visual art in both traditional and digital photographic media.
- GDS18 Performance Element: Analyze multimedia applications of software/hardware for the purposes of visual communications.
- GDS19 Performance Element: Analyze art elements and principles of three-dimensional forms of visual art in various media.

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<sup>1</sup> National Association of State Directors of Career Technical Education Consortium. (2003). *Career cluster resources for arts, a/v technology and communications*. Stillwater, OK: Author.



## Appendix B: Academic Standards

### Algebra I<sup>2</sup>

#### Competencies and Suggested Objective(s)

- A1 Recognize, classify, and use real numbers and their properties.
- Describe the real number system using a diagram to show the relationships of component sets of numbers that compose the set of real numbers.
  - Model properties and equivalence relationships of real numbers.
  - Demonstrate and apply properties of real numbers to algebraic expressions.
  - Perform basic operations on square roots excluding rationalizing denominators.
- A2 Recognize, create, extend, and apply patterns, relations, and functions and their applications.
- Analyze relationships between two variables, identify domain and range, and determine whether a relation is a function.
  - Explain and illustrate how change in one variable may result in a change in another variable.
  - Determine the rule that describes a pattern and determine the pattern given the rule.
  - Apply patterns to graphs and use appropriate technology.
- A3 Simplify algebraic expressions, solve and graph equations, inequalities and systems in one and two variables.
- Solve, check, and graph linear equations and inequalities in one variable, including rational coefficients.
  - Graph and check linear equations and inequalities in two variables.
  - Solve and graph absolute value equations and inequalities in one variable.
  - Use algebraic and graphical methods to solve systems of linear equations and inequalities.
  - Translate problem-solving situations into algebraic sentences and determine solutions.
- A4 Explore and communicate the characteristics and operations of polynomials.
- Classify polynomials and determine the degree.
  - Add, subtract, multiply, and divide polynomial expressions.
  - Factor polynomials using algebraic methods and geometric models.
  - Investigate and apply real number solutions to quadratic equations algebraically and graphically.
  - Use convincing arguments to justify unfactorable polynomials.
  - Apply polynomial operations to problems involving perimeter and area.
- A5 Utilize various formulas in problem-solving situations.
- Evaluate and apply formulas (e.g., circumference, perimeter, area, volume, Pythagorean Theorem, interest, distance, rate, and time).
  - Reinforce formulas experimentally to verify solutions.

<sup>2</sup> *Mississippi mathematics framework—Algebra I*. (2003). Retrieved September 10, 2003, from [http://www.mde.k12.ms.us/curriculum/index\\_1.htm](http://www.mde.k12.ms.us/curriculum/index_1.htm)

- c. Given a literal equation, solve for any variable of degree one.
  - d. Using the appropriate formula, determine the length, midpoint, and slope of a segment in a coordinate plane.
  - e. Use formulas (e.g., point-slope and slope-intercept) to write equations of lines.
- A6 Communicate using the language of algebra.
- a. Recognize and demonstrate the appropriate use of terms, symbols, and notations.
  - b. Distinguish between linear and non-linear equations.
  - c. Translate between verbal expressions and algebraic expressions.
  - d. Apply the operations of addition, subtraction, and scalar multiplication to matrices.
  - e. Use scientific notation to solve problems.
  - f. Use appropriate algebraic language to justify solutions and processes used in solving problems.
- A7 Interpret and apply slope as a rate of change.
- a. Define slope as a rate of change using algebraic and geometric representations.
  - b. Interpret and apply slope as a rate of change in problem-solving situations.
  - c. Use ratio and proportion to solve problems including direct variation ( $y=kx$ ).
  - d. Apply the concept of slope to parallel and perpendicular lines.
- A8 Analyze data and apply concepts of probability.
- a. Collect, organize, graph, and interpret data sets, draw conclusions, and make predictions from the analysis of data.
  - b. Define event and sample spaces and apply to simple probability problems.
  - c. Use counting techniques, permutations, and combinations to solve probability problems.

### Biology I<sup>3</sup>

#### Competencies and Suggested Objective(s)

- B1 Utilize critical thinking and scientific problem solving in designing and performing biological research and experimentation.
- a. Demonstrate the proper use and care for scientific equipment used in biology.
  - b. Observe and practice safe procedures in the classroom and laboratory.
  - c. Apply the components of scientific processes and methods in the classroom and laboratory investigations.
  - d. Communicate results of scientific investigations in oral, written, and graphic form.
- B2 Investigate the biochemical basis of life.
- a. Identify the characteristics of living things.
  - b. Describe and differentiate between covalent and ionic bonds using examples of each.
  - c. Describe the unique bonding and characteristics of water that makes it an essential component of living systems.

<sup>3</sup> *Mississippi science framework—Biology I*. (2003). Retrieved September 10, 2003, from [http://www.mde.k12.ms.us/curriculum/index\\_1.htm](http://www.mde.k12.ms.us/curriculum/index_1.htm)

- d. Classify solutions using the pH scale and relate the importance of pH to organism survival.
  - e. Compare the structure, properties and functions of carbohydrates, lipids, proteins and nucleic acids in living organisms.
  - f. Explain how enzymes work and identify factors that can affect enzyme action.
- B3 Investigate cell structures, functions, and methods of reproduction.
- a. Differentiate between prokaryotic and eukaryotic cells.
  - b. Distinguish between plant and animal (eukaryotic) cell structures.
  - c. Identify and describe the structure and basic functions of the major eukaryotic organelles.
  - d. Describe the way in which cells are organized in multicellular organisms.
  - e. Relate cell membrane structure to its function in passive and active transport.
  - f. Describe the main events in the cell cycle and cell mitosis including differences in plant and animal cell divisions.
  - g. Relate the importance of meiosis to sexual reproduction and the maintenance of chromosome number.
  - h. Identify and distinguish among forms of asexual and sexual reproduction.
- B4 Investigate the transfer of energy from the sun to living systems.
- a. Describe the structure of ATP and its importance in life processes.
  - b. Examine, compare, and contrast the basic processes of photosynthesis and cellular respiration.
  - c. Compare and contrast aerobic and anaerobic respiration.
- B5 Investigate the principles, mechanisms, and methodology of classical and molecular genetics.
- a. Compare and contrast the molecular structures of DNA and RNA as they relate to replication, transcription, and translation.
  - b. Identify and illustrate how changes in DNA cause mutations and evaluate the significance of these changes.
  - c. Analyze the applications of DNA technology (forensics, medicine, agriculture).
  - d. Discuss the significant contributions of well-known scientists to the historical progression of classical and molecular genetics.
  - e. Apply genetic principles to solve simple inheritance problems including monohybrid crosses, sex linkage, multiple alleles, incomplete dominance, and codominance.
  - f. Examine inheritance patterns using current technology (gel electrophoresis, pedigrees, karyotypes).
- B6 Investigate concepts of natural selection as they relate to diversity of life.
- a. Analyze how organisms are classified into a hierarchy of groups and subgroups based on similarities and differences.
  - b. Identify characteristics of kingdoms including monerans, protists, fungi, plants and animals.
  - c. Differentiate among major divisions of the plant and animal kingdoms (vascular/non-vascular; vertebrate/invertebrate).
  - d. Compare the structures and functions of viruses and bacteria relating their impact on other living organisms.

- e. Identify evidence of change in species using fossils, DNA sequences, anatomical and physiological similarities, and embryology.
  - f. Analyze the results of natural selection in speciation, diversity, adaptation, behavior and extinction.
- B7 Investigate the interdependence and interactions that occur within an ecosystem.
- a. Analyze the flow of energy and matter through various cycles including carbon, oxygen, nitrogen and water cycles.
  - b. Interpret interactions among organisms in an ecosystem (producer/consumer/decomposer, predator/prey, symbiotic relationships and competitive relationships).
  - c. Compare variations, tolerances, and adaptations of plants and animals in major biomes.
  - d. Investigate and explain the transfer of energy in an ecosystem including food chains, food webs, and food pyramids.
  - e. Examine long and short-term changes to the environment as a result of natural events and human actions.

## English II<sup>4</sup>

### Competencies and Suggested Objective(s)

- E1 Produce writing which reflects increasing proficiency through planning, writing, revising, and editing and which is specific to audience and purpose.
- a. Produce individual and/or group compositions and/or projects to persuade, tell a story, describe, create an effect, explain or justify an action or event, inform, entertain, etc.
  - b. Produce writing typically used in the workplace such as social, business, and technical correspondence; explanation of procedures; status reports; research findings; narratives for graphs; justification of decisions, actions, or expenses; etc.
  - c. Write a response, reaction, interpretation, analysis, summary, etc., of literature, other reading matter, or orally presented material.
  - d. Revise to ensure effective introductions, details, wording, topic sentences, and conclusions.
- E2 Communicate ideas for a variety of school and other life situations through listening, speaking, and reading aloud.
- a. Listen to determine the main idea and supporting details, to distinguish fact from opinion, and to determine a speaker's purpose or bias.
  - b. Speak with appropriate intonation, articulation, gestures, and facial expression.
  - c. Speak effectively to explain and justify ideas to peers, to inform, to summarize, to persuade, to entertain, to describe, etc.
- E3 Read, evaluate, and use print, non-print, and technological sources to research issues and problems, to present information, and to complete projects.
- a. Read, view, and listen to distinguish fact from opinions and to recognize persuasive and manipulative techniques.

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<sup>4</sup> *Mississippi language arts framework—English II*. (2003). Retrieved September 10, 2003, from [http://www.mde.k12.ms.us/curriculum/index\\_1.htm](http://www.mde.k12.ms.us/curriculum/index_1.htm)

- b. Access both print and non-print sources to produce an I-Search paper, research paper, or project.
  - c. Use computers and audio-visual technology to access and organize information for purposes such as resumes, career search projects, and analytical writings, etc.
  - d. Use reference sources, indices, electronic card catalog, and appropriate research procedures to gather and synthesize information.
- E4 Work individually and as a member of a team to analyze and interpret information, to make decisions, to solve problems, and to reflect, using increasingly complex and abstract thinking.
- a. Interact with peers to examine real world and literary issues and ideas.
  - b. Show growth in critical thinking, leadership skills, consensus building, and self-confidence by assuming a role in a group, negotiating compromise, and reflecting on individual or group work.
- E5 Complete oral and written presentations which exhibit interaction and consensus within a group.
- a. Share, critique, and evaluate works in progress and completed works through a process approach.
  - b. Communicate effectively in a group to present completed projects and/or compositions.
  - c. Edit oral and written presentations to reflect correct grammar, usage, and mechanics.
- E6 Explore cultural contributions to the history of the English language and its literature.
- a. Explore a variety of works from various historical periods, geographical locations, and cultures, recognizing their influence on language and literature.
  - b. Identify instances of dialectal differences which create stereotypes, perceptions, and identities.
  - c. Recognize root words, prefixes, suffixes, and cognates.
  - d. Relate how vocabulary and spelling have changed over time.
- E7 Discover the power and effect of language by reading and listening to selections from various literary genres.
- a. Listen to and read aloud selected works to recognize and respond to the rhythm and power of language to convey a message.
  - b. Read aloud with fluency and expression.
  - c. Analyze the stylistic devices, such as alliteration, assonance, word order, rhyme, onomatopoeia, etc., that make a passage achieve a certain effect.
  - d. Demonstrate how the use of language can confuse or inform, repel or persuade, or inspire or enrage.
  - e. Analyze how grammatical structure or style helps to create a certain effect.
- E8 Read, discuss, analyze, and evaluate literature from various genres and other written material.
- a. Read and explore increasingly complete works, both classic and contemporary, for oral discussion and written analysis.
  - b. Read, discuss, and interpret literature to make connections to life.
  - c. Read from a variety of genres to understand how the literary elements contribute to the overall quality of the work.

- d. Identify qualities in increasingly complex literature that have produced a lasting impact on society.
  - e. Read for enjoyment, appreciation, and comprehension of plot, style, vocabulary, etc.
- E9 Sustain progress toward fluent control of grammar, mechanics, and usage of standard English in the context of writing and speaking.
- a. Infuse the study of grammar and vocabulary into written and oral communication.
  - b. Demonstrate, in the context of their own writing, proficient use of the conventions of standard English, including, but not limited to, the following: complete sentences, subject-verb agreement, plurals, spellings, homophones, possessives, verb forms, punctuation, capitalization, pronouns, pronoun-antecedent agreement, parallel structure, and dangling and misplaced modifiers.
  - c. Give oral presentations to reinforce the use of standard English.
  - d. Employ increasingly proficient editing skills to identify and solve problems in grammar, usage, and structure.
- E10 Use language and critical thinking strategies to serve as tools for learning.
- a. Use language to facilitate continuous learning, to record observations, to clarify thought, to synthesize information, and to analyze and evaluate language.
  - b. Interpret visual material orally and in writing.

### U. S. History from 1877<sup>5</sup>

#### Competencies and Suggested Objective(s)

- H1 Explain how geography, economics, and politics have influenced the historical development of the United States in the global community.
- a. Apply economic concepts and reasoning when evaluating historical and contemporary social developments and issues (e.g., gold standard, free coinage of silver, tariff issue, laissez faire, deficit spending, etc.).
  - b. Explain the emergence of modern America from a domestic perspective (e.g., frontier experience, Industrial Revolution and organized labor, reform movements of Populism and Progressivism, Women’s Movement, Civil Rights Movement, the New Deal, etc.).
  - c. Explain the changing role of the United States in world affairs since 1877 through wars, conflicts, and foreign policy (e.g., Spanish-American War, Korean conflict, containment policy, etc.).
  - d. Trace the expansion of the United States and its acquisition of territory from 1877 (e.g., expansionism and imperialism).
- H2 Describe the impact of science and technology on the historical development of the United States in the global community.
- a. Analyze the impact of inventions on the United States (e.g., telephone, light bulb, etc.).
  - b. Examine the continuing impact of the Industrial Revolution on the development of our nation (e.g., mass production, computer operations, etc.).

<sup>5</sup> *Mississippi social studies framework—U.S. History from 1877*. (2003). Retrieved September 10, 2003, from [http://www.mde.k12.ms.us/curriculum/index\\_1.htm](http://www.mde.k12.ms.us/curriculum/index_1.htm)

- c. Describe the effects of transportation and communication advances since 1877.
- H3 Describe the relationship of people, places, and environments through time.
- a. Analyze human migration patterns since 1877 (e.g., rural to urban, the Great Migration, etc.).
  - b. Analyze how changing human, physical, geographic characteristics can alter a regional landscape (e.g., urbanization, Dust Bowl, etc.).
- H4 Demonstrate the ability to use social studies tools (e.g., timelines, maps, globes, resources, graphs, a compass, technology, etc.).
- a. Interpret special purpose maps, primary/secondary sources, and political cartoons.
  - b. Analyze technological information on graphs, charts, and timelines.
  - c. Locate areas of international conflict (e.g., Caribbean, Southeast Asia, Europe, etc.).
- H5 Analyze the contributions of Americans to the ongoing democratic process to include civic responsibilities.
- a. Examine various reform movements (e.g., Civil Rights, Women's Movement, etc.).
  - b. Examine the government's role in various movements (e.g., arbitration, 26th Amendment, etc.).
  - c. Examine the role of government in the preservation of citizens' rights (e.g., 19th Amendment, Civil Rights Act of 1964).
  - d. Examine individuals' duties and responsibilities in a democratic society (e.g., voting, volunteerism, etc.).

## Appendix C: 21<sup>st</sup> Century Skills<sup>6</sup>

### CS1 Global Awareness

- Using 21<sup>st</sup> century skills to understand and address global issues
- Learning from and working collaboratively with individuals representing diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
- Promoting the study of non-English language as a tool for understanding other nations and cultures

### CS2 Financial, Economic, and Business Literacy

- Knowing how to make appropriate personal economic choices
- Understanding the role of the economy and the role of business in the economy
- Applying appropriate 21<sup>st</sup> century skills to function as a productive contributor within an organizational setting
- Integrating oneself within and adapting continually to our nation's evolving economic and business environment

### CS3 Civic Literacy

- Being an informed citizen to participate effectively in government
- Exercising the rights and obligations of citizenship at local, state, national, and global levels
- Understanding the local and global implications of civic decisions
- Applying 21<sup>st</sup> century skills to make intelligent choices as a citizen

### CS4 Information and Communication Skills

- Information and media literacy skills: Analyzing, accessing, managing, integrating, evaluating, and creating information in a variety of forms and media; understanding the role of media in society
- Communication skills: Understanding, managing, and creating effective oral, written, and multimedia communication in a variety of forms and contexts

### CS5 Thinking and Problem-Solving Skills

- Critical thinking and systems thinking: Exercising sound reasoning in understanding and making complex choices, understanding the interconnections among systems
- Problem identification, formulation, and solution: Ability to frame, analyze, and solve problems
- Creativity and intellectual curiosity: Developing, implementing, and communicating new ideas to others, staying open and responsive to new and diverse perspectives

### CS6 Interpersonal and Self-Directional Skills

- Interpersonal and collaborative skills: Demonstrating teamwork and leadership, adapting to varied roles and responsibilities, working productively with others, exercising empathy, respecting diverse perspectives
- Self-direction: Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another
- Accountability and adaptability: Exercising personal responsibility and flexibility in personal, workplace, and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity

<sup>6</sup> 21<sup>st</sup> century skills. (n.d.). Washington, DC: Partnership for 21<sup>st</sup> Century Skills.



- Social responsibility: Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace, and community contexts

## Appendix D: Rubrics

### Advertising Campaign Evaluation Rubric

	4	3	2	1
<b>Presentation</b>				
	The oral presentation clearly expands and develops the objectives of the campaign. The written and oral presentations show evidence of a realistic knowledge of advertising principles and are well organized and presented in a logical manner. The campaign shows real creativity. All documents are professional; are neat; and use proper grammar, spelling, and word usage.	The oral presentation expands and develops the objectives of the campaign. The written and oral presentations show evidence of knowledge of advertising principles and are well organized. The campaign shows creativity. Most documents are professional; are neat; and use proper grammar, spelling, and word usage.	The oral presentation expands and develops some objectives of the campaign. The written and oral presentations show some evidence of knowledge of advertising principles. The campaign shows some creativity. Some documents are professional; are neat; and use proper grammar, spelling, and word usage.	The oral presentation expands and develops few objectives of the campaign. The written and oral presentations show little evidence of knowledge of advertising principles. The campaign shows little creativity. Few documents are professional; are neat; and use proper grammar, spelling, and word usage.
<b>Analysis of Target Audience</b>				
	The target market is clearly and accurately analyzed for the product(s) and/or service(s) selected. The campaign stresses product and/or service benefits that appeal to the target markets described.	The target market was somewhat clearly and accurately analyzed for the product(s) and/or service(s) selected. The campaign stresses product and/or service benefits that appeal to the target markets described.	The target market was somewhat clearly and accurately analyzed for the product(s) and/or service(s) selected.	The target market was not clearly and accurately analyzed for the product(s) and/or service(s) selected.
<b>Quality of Media</b>				
	The media selection is realistic and properly defined in terms of reach, frequency, and continuity. The ad layouts, commercials, etc., show an advanced understanding of production techniques, are considered with other parts of the campaign, and are original.	The paper moves from one idea to the next, but there is little variety. The paper uses comparison and contrast transition words to show relationships between ideas.	Some transitions work well; but connections between other ideas are fuzzy.	The transitions between ideas are unclear or nonexistent.

<b>Budget</b>			
The budget is realistic for the campaign based on the product and location of the campaign. All costs that would be incurred have been considered. Anticipated sales are given and are realistic in terms of the length and budget of the campaign.	The budget is somewhat realistic for the campaign based on the product and location of the campaign. Some costs that would be incurred have been considered. Anticipated sales are given and are realistic in terms of the length and budget of the campaign.	The budget is not realistic for the campaign based on the product and location of the campaign. Many costs that would be incurred have been considered.	The budget is not realistic for the campaign based on the product and location of the campaign.
<b>Timeline</b>			
The advertising schedule shows continuity and logical order. The campaign has a realistic length and promotions are scheduled properly in relation to the stated target markets.	The advertising schedule shows some continuity and logical order. The campaign has a realistic length and promotions are scheduled properly in relation to the stated target markets.	The advertising schedule shows little continuity and logical order. The campaign has a realistic length and promotions are scheduled properly in relation to the stated target markets.	The advertising schedule little shows continuity and logical order.
<b>Overall Performance</b>			
Overall performance: professional appearance, poise, confidence, presentation technique, effective use of visuals, professionalism of participants	Overall performance: professional appearance, poise, confidence, presentation technique, professionalism of participants	Overall performance: professional appearance, poise, confidence, presentation technique	Overall performance: professional appearance, poise, confidence

## Compare and Contrast Summary Rubric

	4	3	2	1
<b>Purpose &amp; Supporting Details</b>				
	The paper compares and contrasts items clearly. The paper points to specific examples to illustrate the comparison. The paper includes only the information relevant to the comparison.	The paper compares and contrasts items clearly, but the supporting information is general. The paper includes only the information relevant to the comparison.	The paper compares and contrasts items clearly, but the supporting information is incomplete. The paper may include information that is not relevant to the comparison.	The paper compares or contrasts, but does not include both. There is no supporting information or support is incomplete.
<b>Organization and Structure</b>				
	The paper breaks the information into whole-to-whole, similarities-to-differences, or point-by-point structure. It follows a consistent order when discussing the comparison.	The paper breaks the information into whole-to-whole, similarities-to-differences, or point-by-point structure but does not follow a consistent order when discussing the comparison.	The paper breaks the information into whole-to-whole, similarities-to-differences, or point-by-point structure but some information is in the wrong section. Some details are not in a logical or expected order, and this distracts the reader.	Many details are not in a logical or expected order. There is little sense that the writing is organized.
<b>Transitions</b>				
	The paper moves smoothly from one idea to the next. The paper uses comparison and contrast transition words to show relationships between ideas. The paper uses a variety of sentence structures and transitions.	The paper moves from one idea to the next, but there is little variety. The paper uses comparison and contrast transition words to show relationships between ideas.	Some transitions work well; but connections between other ideas are fuzzy.	The transitions between ideas are unclear or nonexistent.
<b>Grammar and Spelling</b>				
	Writer makes no errors in grammar or spelling that distract the reader from the content.	Writer makes 1 – 2 errors in grammar or spelling that distract the reader from the content.	Writer makes 3 – 4 errors in grammar or spelling that distract the reader from the content.	Writer makes more than four errors in grammar or spelling that distract the reader from the content.

### Group Presentation Assessment Rubric

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

## Information Technology in Education Accessibility Checklist

	Yes	No	Comments
<b>Physical Environment</b>			
Computer labs and technology-equipped classrooms are physically accessible to wheelchair users.			
Computer labs and technology-equipped classrooms are physically accessible to users with visual impairments.			
There are quiet work and/or meeting areas where noise and other distractions are minimized, or facility rules are in place (e.g., no cell phone use) to minimize noise.			
<b>Computer Hardware and Software</b>			
When we purchase computer hardware, we take steps to assure it is accessible.			
When we purchase computer software, we take steps to assure it is accessible.			
Operating systems built-in accessibility features are available by default.			
Users can customize their desktop settings in our public computing environment.			
<b>Web Sites</b>			
Our official (centrally supported) Web sites are accessible (i.e., compliant with established Web accessibility guidelines or standards)			
We have a system in place for monitoring and improving the accessibility of our Web content.			
<b>Multimedia</b>			
When we purchase multimedia products, we take steps to ensure they include captions and audio descriptions.			
We have a system in place for captioning any multimedia products that we create internally.			
We have a system in place for adding audio description to any multimedia products that we create internally.			
Our televisions are capable of displaying closed captions.			
Our video projectors are capable of transmitting closed captions.			
Our instructors and staff are trained on how to turn on captions, or clear instructions accompany the multimedia viewing equipment.			
<b>Telecommunications Products</b>			
If one or more public telephones are available, at least one is mounted at an accessible height.			
<b>Self-Contained, Closed Products</b>			
People using wheelchairs can reach the controls on our printers, scanners, copiers, and other similar devices.			
Whenever we purchase standalone IT products, our purchasing policies or procedures require that we consider the accessibility of available products.			
<b>Information Resources</b>			
In our publications, we include a statement about our commitment to access and procedures for requesting disability related accommodations.			
All printed publications are available (immediately or in a timely manner) in alternate formats such as Braille, large print, and electronic text.			
Our publicly available printed materials are within easy reach from a variety of heights and without furniture blocking access.			
<b>Assistive Technology and Individual Accommodations</b>			
A variety of hardware and software based assistive technologies are readily available for students with disabilities.			
We have a procedure to assure a quick response to requests for disability related accommodations.			
We have a designated staff member and/or committee who assures that services are accessible to students with disabilities and who responds to requests for accommodations.			
Computer support and help desk staff are trained in the maintenance and use of assistive technology.			
Instructors and staff receive training on how to respond to requests for disability related accommodations.			

Information Technology in Education Accessibility Checklist (<http://www.washington.edu/accessit/it-checklist/>)

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*Department of Education (grant #H133D010306). However, the contents do not necessarily represent the policy of the Department of Education, and you should not assume their endorsement.*

## KWL Chart

### Purposes:

- To help students access prior knowledge through brainstorming
- To identify areas of student interest or concern
- To aid the teacher in planning lessons as well as checking for understanding
- To track student learning throughout the unit
- To identify areas for further student research/study

### Process:

- Use this strategy prior to, during, or at the close of any unit of study. The process can be done individually, in small groups, or as a class activity.
- Post the charts or have students record their information in groups.
- During the brainstorming phase, emphasize getting lots of ideas rather than debating or discussing the ideas as they are generated. Debates, clarifications, and discussions of ideas occur once the brainstorming is over. Do not clarify any confusion or react in any way other than to record the data. Conflicting data may be recorded.
- During the lesson or unit of study, misconception, confusion, or curiosity should be addressed.

### Sample Chart:

<b>K</b> WHAT DO YOU ALREADY <u><b>K</b></u> NOW ABOUT THE TOPIC?	<b>W</b> WHAT DO YOU <u><b>W</b></u> ANT TO LEARN ABOUT THE TOPIC?	<b>L</b> WHAT HAVE YOU <u><b>L</b></u> EARNT ABOUT THE TOPIC?



### Portfolio Rubric

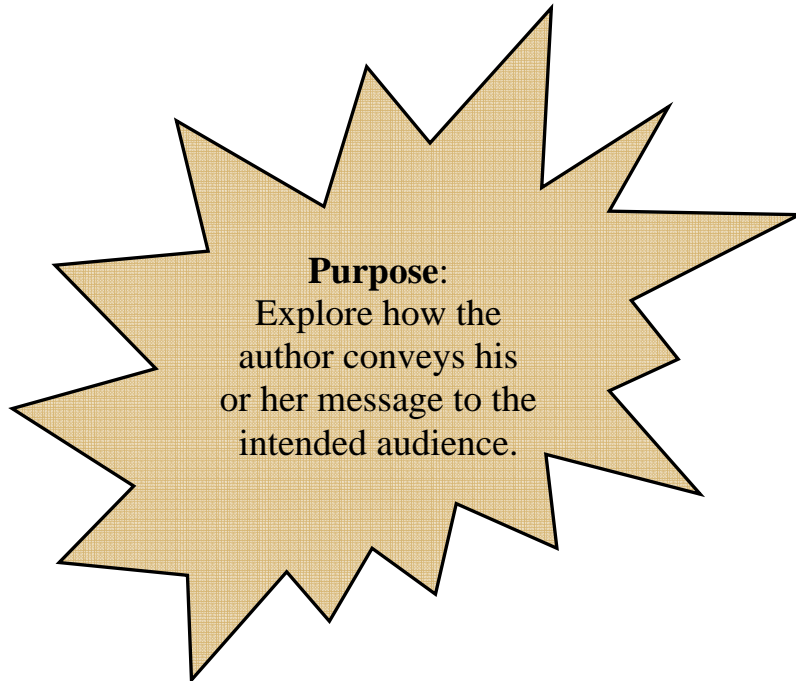
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>
Artifacts	Has produced less than 15 artifacts that support knowledge learned from the course.	Has produced 15-19 artifacts that support knowledge learned from the course.	Has produced 20-24 artifacts that support knowledge learned from the course.	Has produced 25-29 artifacts that support knowledge learned from the course.	Has produced 30 or more high-quality artifacts that support knowledge learned from the course.
Writing	Uses simple sentences only to describe each artifact.	Uses mostly simple sentences and a few complex sentences.	Uses an equal amount of simple and complex sentences.	Uses simple and complex sentences and a few compound sentences.	Uses a wide variety of simple, complex, and compound sentences.
Revision of Artifacts	Has not revised artifacts based on assessment and review.	Has made 10-20 revisions of artifacts based on assessment and review.	Has made 21-25 revisions of artifacts based on assessment and review.	Has made 26-30 revisions of artifacts based on assessment and review.	Has made revisions to all artifacts based on assessment and review.
Organization	Artifacts are unorganized; contain many errors in writing, vocabulary, and content.	Artifacts are somewhat organized but contain more than 2 errors.	Artifacts are organized; contain no more than 2 writing, vocabulary, or content errors.	Artifacts are organized; contain no more than 1 writing, vocabulary, or content error.	Artifacts are well organized, contain no writing or vocabulary errors, and have high-quality content.

### Poster Assessment Rubric

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



## Text-Based Seminar



- Refer to a particular place in the text before making your comment to the class (let everyone find it first).
- Use the rule of three (three people must speak before you can speak again).
- Respect everybody else's contributions by listening actively.
- Listen to what your peers SAY; then respond to what they said; follow up on it; build on it.

## The Writing Process

### Step 1: Prewriting

During this step, allow students to brainstorm and determine ideas for their content. Students may complete the following during prewriting activities:

- Free writing
- Journaling
- Image streaming (transplant yourself to another place or time and describe from a first person point of view)
- Lists
- Visualization
- Brainstorming - individually or as a group
- Webbing/mapping/clustering
- Graphic organizers
- Topic or word chart

### Step 2: Writing

During this step, allow students to develop a rough draft of their writing. Encourage students to be selective in the ideas they choose to include. Have students focus on developing content and putting their ideas on paper. Do not require students to count words, but have them complete ideas instead.

### Step 3: Revising

During this step, have students make decisions about how they want to improve their writing. Have students look at their writing from a different point of view. Encourage students to focus on making their writing clearer, more interesting, more informative, and more convincing. To help students revise their writing product, use the following strategies:

- Divide students into groups of 3 – 5 in varying ability. Distribute student writing samples to all group members. Make sure there are no names on the pieces of writing. Have everyone in each group read one paper and make marks for improvement. Have the reader write positive and corrective comments about each piece for later discussion within the group. Have the reader present the piece of writing to the group and discuss their comments. Have each group member add comments to each piece of writing.
- Have student ask themselves the following questions:
  - Can I read this piece of writing out loud without stumbling?
  - Is the series of events logical? Do they relate?
  - Is it clear what my goal is throughout the piece of writing?
  - Are vivid/descriptive words used to describe characters and/or events?
  - Is my train of thought clear?
  - Do I use a variety of verbs throughout the piece?
  - Is my writing wordy or redundant? Am I using the same words and phrases over and over again?
  - Is there a catch introduction?
  - Are transitional devices used throughout?

## The Writing Process, Continued

- Is there a strong hook, main idea or thesis, and lead-in?
- Is proper format followed throughout?
- Are all sentences complete?
- Did I use a thesaurus?

### Step 4: Editing

Editing is checking spelling, capitalization, punctuation, grammar, sentence structure, subject/verb agreement, consistent verb tense, and word usage. During this step, have students do the following:

- Have students read their own work backwards. Encourage them to read the last sentence, then the second to last sentence, etc. Have students ask themselves:
  - Does each sentence make sense when you read it on its own?
  - Do you see or hear any errors in the sentence?
- Have students use a checklist to peer- or self-edit.

### Step 5: Publishing

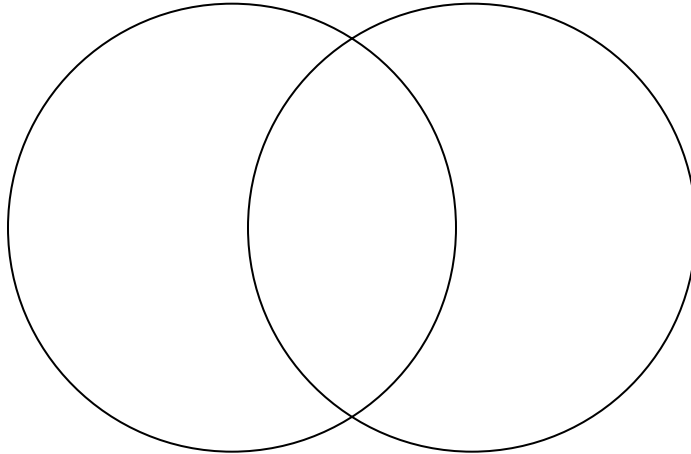
During this step, have students publish their final document. Students may use a word processing program or a blue or black pen to present their final copy. Give students a set of guidelines before they begin to publish their writing. Have students submit the following when they turn in their writing to ensure that they followed all of the steps in the writing process:

- Prewriting document
- Rough draft
- Edited copy
- Final document

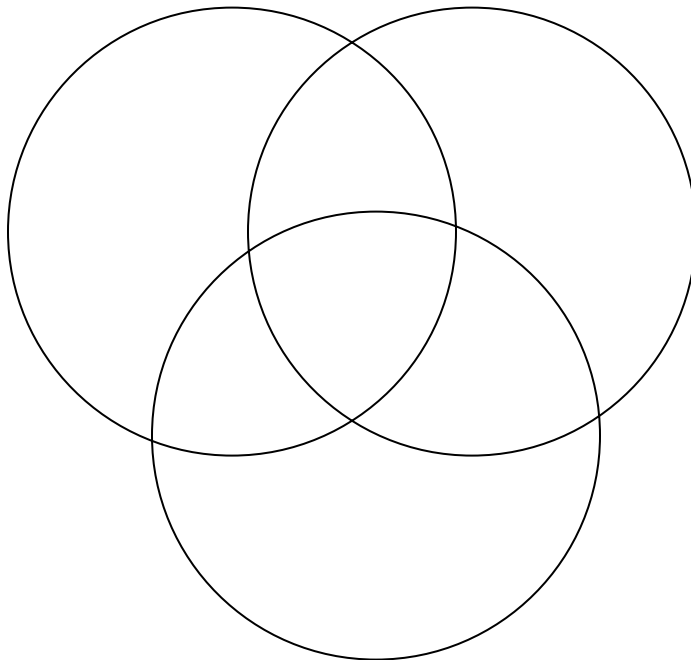
- **Venn Diagram**

Have students use a Venn Diagram to compare and contrast subjects. Have students write details that tell how subjects are different in the outer circles and details that tell how the subjects are alike where circles overlap. After students present their ideas in the graphic, have them organize their ideas into a writing summary.

Use the following Venn Diagram to compare and contrast two subjects:



Use the following Venn Diagram to compare and contrast three subjects:



## A Weekly Learning Agenda

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Course: \_\_\_\_\_ Teacher: \_\_\_\_\_

Date	My Tasks	Time Management Log	Written Reflections	Leadership Opportunities	Completion Date Teacher & Student Sign-off

**Weekly Learning Reflections**

Name: \_\_\_\_\_ Week of: \_\_\_\_\_

What did I learn this week?

How can I use this information in the real world?

In what areas am I making progress?

In what areas do I need to improve?

What learning goals do I have for next week?

What did I enjoy most about this week?

Parent's Signature and Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Student's Signature and Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Workplace Skills Weekly Checklist

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

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

## Written Report Writing Rubric

5	3	1
<b>Ideas: The heart of the message, the content of the piece, the main theme, with details that enrich and develop that theme.</b>		
<p>This paper is clear and focused. It holds the reader's attention. Relevant anecdotes and details enrich the central theme.</p> <ul style="list-style-type: none"> <li>A. The topic is narrow and manageable.</li> <li>B. Relevant, telling, quality details go beyond the obvious.</li> <li>C. Reasonably accurate details.</li> <li>D. Writing from knowledge or experience; ideas are fresh and original.</li> <li>E. Reader's questions are anticipated and answered.</li> <li>F. Insight.</li> </ul>	<p>The writer is beginning to define the topic, even though development is still basic or general.</p> <ul style="list-style-type: none"> <li>A. The topic is fairly broad.</li> <li>B. Support is attempted.</li> <li>C. Ideas are reasonably clear.</li> <li>D. Writer has difficulty going from general observations to specifics.</li> <li>E. The reader is left with questions.</li> <li>F. The writer generally stays on topic.</li> </ul>	<p>The paper has no clear sense of purpose or central theme. The reader must make inferences based on sketchy or missing details.</p> <ul style="list-style-type: none"> <li>A. The writer is still in search of a topic.</li> <li>B. Information is limited or unclear or the length is not adequate for development.</li> <li>C. The idea is a simple restatement or a simple answer to the question.</li> <li>D. The writer has begun to define the topic.</li> <li>E. Everything seems as important as everything else.</li> <li>F. The text may be repetitious or disconnected and contains too many random thoughts.</li> </ul>
<b>Organization: The internal structure, the thread of central meaning, the logical and sometimes intriguing pattern of ideas.</b>		
<p>The organizational structure of this paper enhances and showcases the central idea or theme of the paper; includes a satisfying introduction and conclusion.</p> <ul style="list-style-type: none"> <li>A. An inviting introduction draws the reader in; a satisfying conclusion leaves the reader with a sense of closure and resolution.</li> <li>B. Thoughtful transitions.</li> <li>C. Sequencing is logical and effective.</li> <li>D. Pacing is well controlled.</li> <li>E. The title, if desired, is original.</li> <li>F. Flows so smoothly, the reader hardly thinks about it.</li> </ul>	<p>The organizational structure is strong enough to move the reader through the text without too much confusion.</p> <ul style="list-style-type: none"> <li>A. The paper has a recognizable introduction and conclusion.</li> <li>B. Transitions often work well.</li> <li>C. Sequencing shows some logic, yet structure takes attention away from the content.</li> <li>D. Pacing is fairly well controlled.</li> <li>E. Organization sometimes supports the main point or story line. A title, if desired, is present.</li> </ul>	<p>The writing lacks a clear sense of direction.</p> <ul style="list-style-type: none"> <li>A. No real lead.</li> <li>B. Connections between ideas are confusing.</li> <li>C. Sequencing needs work.</li> <li>D. Pacing feels awkward.</li> <li>E. No title is present (if requested).</li> <li>F. Problems with organization make it hard for the reader to get a grip on the main point or story line.</li> </ul>
<b>Voice: The heart and soul, magic, wit, feeling, and conviction of the writer coming out.</b>		
<p>The writer of this paper speaks directly to the reader in a manner that is individual, compelling, and engaging and has personality. The reader feels a strong interaction with the writer.</p> <ul style="list-style-type: none"> <li>A. The writer takes a risk.</li> <li>B. The tone and voice give flavor and texture to the message and are appropriate for the purpose and audience.</li> <li>C. Narrative writing seems honest, personal. Expository or persuasive writing reflects a strong commitment to this topic.</li> </ul>	<p>The writer seems sincere, but not fully engaged or involved. The result is pleasant or even personable, but not compelling.</p> <ul style="list-style-type: none"> <li>A. The writing communicates in an earnest, pleasing manner.</li> <li>B. Only one or two moments here or there surprise, delight, or move the reader.</li> <li>C. Writer weighs ideas carefully and discards personal insights in favor of safe generalities.</li> <li>D. Narrative writing seems sincere; expository or persuasive writing lacks consistent engagement.</li> <li>E. Emerges strongly at some places, but is often obscured behind vague generalities.</li> </ul>	<p>The writer seems indifferent, uninvolved, or distanced from the topic and/or the audience. Writer speaks in a kind of monotone.</p> <ul style="list-style-type: none"> <li>A. Writing is humdrum and "risk-free."</li> <li>B. Writing is not concerned with the audience; writer's style is a complete mismatch for the intended reader.</li> <li>C. Writing is lifeless or mechanical.</li> <li>D. No point of view is reflected.</li> </ul>