

<b>COURSE:</b> Web Design	<b>GRADE(S):</b> 9 - 12
<b>UNIT:</b> Web Terminology, History and Publishing	<b>TIMEFRAME:</b> 90 Days

**National Educational Standards for Students (NETS-S):**

**ISTE 1a, 1b, 2a, 2b, 2d, 3b, 3c, 3d, 4b, 4c, 4d, 5a, 5b, 5c, 5d, 6a, 6b, 6d**

- 1a. Apply existing knowledge to generate new ideas, products or processes
- 1b. Create original works as a means of personal or group expression
- 2a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
- 2b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats
- 2d. Contribute to project teams to produce original works or solve problems
- 3b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
- 3c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks
- 3d. Process data and report results
- 4b. Plan and manage activities to develop a solution or complete a project
- 4c. Collect and analyze data to identify solutions and/or make informed decisions
- 4d. Use multiple processes and diverse perspectives to explore alternative solutions
- 5a. Advocate and practice safe, legal and responsible use of information and technology
- 5b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity
- 5c. Demonstrate personal responsibility for lifelong learning
- 5d. Exhibit leadership for digital citizenship
- 6a. Understand and use technology systems
- 6b. Select and use applications effectively and productively
- 6d. Transfer current knowledge to learning of new technologies

**National Business Education Standards:**

**Section 4: Input Technologies:** Use various input technologies to enter and manipulate information appropriately

**Section 5: Productivity Software:** Identify, evaluate, select, install, use, upgrade, and customize application software; diagnose and solve problems resulting from an application software's installation and use

**Section 6: Interactive Multimedia:** Use multimedia software to create media rich projects

**Section 9: Database Management Systems:** Use, plan, develop, and maintain database management systems

**Section 17: Information Technology and Business Functions:** Describe the information technology components of business functions and explain their interrelationships

**Pennsylvania Academic Standards:**

**A Career Education and Work**

- 13.2.11 C Analyze workplace problems and cite technological solutions
- 1.3.11 E Evaluate strategies used to manage time and their application in different work situations
- 13.3.11 F Analyze the impact of change on the evolving world economy and the individual's work
- 13.2.11 B Analyze and evaluate complex technical tasks using sophisticated processes
- 13.311 C Evaluate team member roles to describe and illustrate active listening techniques
- 1.1.11 A Analyze career options based on student interests, abilities, aptitudes and accomplishments
- 1.1.11 C Evaluate opportunities for career exploration

**P Mathematics**

- 2.1.1 A Use operations
- 2.2.11 A Develop and use computation concepts, operations and procedures with real numbers in problem-solving situations
- 2.2.11 F Demonstrate skills for using computer spreadsheets and scientific and graphing calculators

2.6.11 B Use appropriate technology to organize and analyze data taken from the local community  
2.5.11 A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems  
2.4.11 E Demonstrate mathematical solutions to problems

**PA Science and Technology**

3.7.12 A Evaluate computer operations and concepts as to their effectiveness to solve specific problems  
3.7.12 C Assess and apply multiple input and output devices to solve specific problems  
3.7.12 D Evaluate the effectiveness of computer software to solve specific problems  
3.8.12 B Apply the use of ingenuity and technological resources to solve specific problems  
3.8.12 C Evaluate the consequences and impacts of scientific and technological solutions

**PA Reading, Writing, Speaking, Listening**

1.1.11 A Locate various texts, media and traditional resources for assigned and independent projects before reading  
1.2.11 A Read and understand essential content of informational texts and documents in all academic areas  
1.2.11 B Use and understand a variety of media and evaluate the quality of material produced  
1.4.11 B Write complex informational pieces  
1.5.11 A Write with a sharp, distinct focus  
1.5.11 B Writing using well-developed content appropriate for the topic  
1.5.11 C Write with a controlled and/or subtle organization  
1.6.11 A Listen to others  
1.6.11 C Speak using skills appropriate to formal speech situations  
1.6.11 D Contribute to discussions  
1.6.11 E Participate in small and large group discussions and presentations  
1.6.11 F Use media for learning purposes  
1.8.11 B Locate information using appropriate sources and strategies  
1.1.11 F Understand the meaning and apply key vocabulary across the various subject areas  
1.5.11 E Revise writing to improve style, word choice, sentence variety and subtlety of meaning after rethinking how questions of purpose, audience and genre have been addressed  
1.5.11 F Edit writing using the conventions of language

**UNIT OBJECTIVES:**

**1a. Web Related Terminology and History:**

- Define and provide examples web terminology as: URL, ISP, web server, browser
- Outline the history and development of the Internet and explain its effects on computing and society
- Define, provide examples and efficiently utilize search engines
- Evaluate search results with respect to relevance, reliability, and credibility
- Evaluate web sites and develop a list of characteristics of well-designed web sites
- Identify the various types of web sites

**1b. Online Publishing and Responsibility:**

- Identify and utilize Web 2.0 methods for creating an online presence including blogs, wikis, social networks, etc.
- Discuss ethical, responsible and acceptable issues concerning items published to the web
- Explain intellectual property (e.g., software, images, open source, documentation)
- Distinguish among the various forms of intellectual property rights (e.g., copyright, patent, trademark, trade secrets)
- Identify consequences of the violation of intellectual property and software licensing intellectual laws
- Demonstrate an understanding of plagiarism and fair use; respect copyright laws of information producers (e.g., piracy; illegal downloading; licensing infringement; inappropriate use of software, hardware, and mobile devices)
- Describe the process to obtain a copyright

- Determine what is and is not protected by the law

#### **ACTIVITIES:**

- Vocabulary
- Review and practice
- Application
- Research and writing
- Team problem solving
- Prediction
- Process identification
- Discussion and debate
- Assessment

#### **ASSESSMENTS:**

- Pre-assessment (for grouping purposes)
- Teacher observation
- Project rubrics
- Assessments
- Activities
- Projects

#### **DIFFERENTIATED INSTRUCTION:**

- Highlight critical features
- Provide multiple media and formats
- Provide opportunities to practice with support
- Offer adjustable levels of challenge
- Offer flexible opportunities for demonstrating skill
- Tiered activities or products
- Varied graphic organizers to support learning
- Offer choices of content and tools
- Offer choices of learning contexts
- Varied rubrics

#### **RESOURCES:**

- Internet history: <http://www.pbs.org/opb/nerds2.0.1/timeline/>
- Website accessibility: <http://www.w3.org/WAI/ER/tools/Overview.html>
- Information Literacy skills: <http://www.informationliteracy.org/>
- Validating websites: <http://eduscapes.com/tap/topic32.htm>
- Web 2.0: <http://www.go2web20.net/#>

<b>COURSE:</b> Web Design	<b>GRADE(S):</b> 9 - 12
<b>UNIT:</b> Web Development, Standards, & Structure	<b>TIMEFRAME:</b> 90 Days

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- 5a. Advocate and practice safe, legal, and responsible use of information and technology
- 5b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity
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**Section 9: Database Management Systems:** Use, plan, develop, and maintain database management systems

**Section 17: Information Technology and Business Functions:** Describe the information technology components of business functions and explain their interrelationships

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**PA Mathematics**

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- 2.2.11 A Develop and use computations concepts, operations and procedures with real numbers in problem-solving situations

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**UNIT OBJECTIVES:**

**2a. Web Development:**

- Identify content and aesthetic aspects of a site based on the target audience
- Define storyboarding
- Create a storyboard from an existing web site
- Design web pages that are aesthetically pleasing and sophisticated
- Plan web pages that are logical and intuitive in navigation
- Apply ethical and responsible practices in web authoring and publishing

**2b. Web Standards:**

- Discuss and list web site accessibility issues for those with disabilities
- Organize a list of web site standards
- Identify why web site validation is important
- Validate web sites according to web standards

**2c. Web Structure:**

- Write effective interactive coding
- Evaluate the functionality of web site applications and make adjustments
- Assess the usability of Web design solutions and correct any design problems

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#### **RESOURCES:**

- Adobe - Site Planning: [http://www.adobe.com/support/dreamweaver/layout/site\\_planning/](http://www.adobe.com/support/dreamweaver/layout/site_planning/)
- W3C Markup Validation Service: <http://validator.w3.org/>
- World Wide Web Consortium – Web Quality: <http://www.w3.org/QA/2002/04/Web-Quality>
- W3C: <http://www.w3.org>

<b>COURSE:</b> Web Design	<b>GRADE(S):</b> 9 - 12
<b>UNIT:</b> HTML & CSS	<b>TIMEFRAME:</b> 90 Days

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**UNIT OBJECTIVES:**

**3a. Introduction to HTML:**

- Define HTML
- Write HTML code utilizing a text editor
- Create a document using HTML tags
- Opening, editing, manipulating a web page written in HTML
- Recognize the difference between source code and a browser
- Identify the difference between a browser and a search engine

**3b. Utilize HTML tags to:**

- Format text and page properties
- Create ordered, unordered and definition lists
- Insert horizontal rules
- Connect documents using anchored, email, internal and external hyperlinks
- Organize content with tables
- Apply color codes
- Align and wrap text around images

**3c. CSS:**

- Apply CSS (Cascading Style Sheets) coding language to standardize a Web application
- Create style sheets – define several attributes
- Create user-defined classes – internal and external style sheets
- Access styles in HTML pages

**ACTIVITIES:**

- Vocabulary
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**RESOURCES:**

- Webmonkey: <http://www.webmonkey.com>
- HTML Tutorial: <http://www.w3schools.com/html/>
- CSS Tutorial: <http://www.w3schools.com/css/>

<b>COURSE:</b> Web Design	<b>GRADE(S):</b> 9 - 12
<b>UNIT:</b> Web Authoring Software (Dreamweaver)	<b>TIMEFRAME:</b> 90 Days

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**UNIT OBJECTIVES:**

**4a. Introduction to the Web Authoring Tools (Dreamweaver):**

- Navigate around the Dreamweaver workspace
- Manipulate text and page properties
- Identify and use the Property Inspector
- Define context sensitive
- Work between Design, Code and Split views
- Insert lists and links
- Use word tools to spell check and find/replace text

**4b. Page Layout with Web Authoring Tools (Dreamweaver):**

- Create layers and layout tables
- Insert and manipulate tables
- Work with Image formats

**4c. Manipulate CSS in Web Authoring Tools (Dreamweaver):**

- Apply CSS (Cascading Style Sheets) coding language to standardize a Web application
- Create style sheets – define several attributes
- Create user-defined classes – internal and external style sheets
- Access styles in HTML pages

**ACTIVITIES:**

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**RESOURCES:**

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- 13.1.11 C Evaluate opportunities for career exploration

**PA Mathematics**

- 2.1.11 A Use operations
- 2.2.11 A Develop and use computations concepts, operations and procedures with real numbers in problem-solving situations
- 2.2.11 F Demonstrate skills for using computer spreadsheets and scientific and graphing calculators

2.6.11 B Use appropriate technology to organize and analyze data taken from the local community  
2.5.11 A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems  
2.4.11 E Demonstrate mathematical solutions to problems

#### **PA Science and Technology**

3.7.12 A Evaluate computer operations and concepts as to their effectiveness to solve specific problems  
3.7.12 C Assess and apply multiple input and output devices to solve specific problems  
3.7.12 D Evaluate the effectiveness of computer software to solve specific problems  
3.8.12 B Apply the use of ingenuity and technological resources to solve specific problems  
3.8.12 C Evaluate the consequences and impacts of scientific and technological solutions

#### **PA Reading, Writing, Speaking, Listening**

1.1.11 A Locate various texts, media and traditional resources for assigned and independent projects before reading  
1.2.11 A Read and understand essential content of informational texts and documents in all academic areas  
1.2.11 B Use and understand a variety of media and evaluate the quality of material produced  
1.4.11 B Write complex informational pieces  
1.5.11 A Write with a sharp, distinct focus  
1.5.11 B Writing using well-developed content appropriate for the topic  
1.5.11 C Write with a controlled and/or subtle organization  
1.6.11 A Listen to others  
1.6.11 C Speak using skills appropriate to formal speech situations  
1.6.11 D Contribute to discussions  
1.6.11 E Participate in small and large group discussions and presentations  
1.6.11 F Use media for learning purposes  
1.8.11 B Locate information using appropriate sources and strategies  
1.1.11 F Understand the meaning and apply key vocabulary across the various subject areas  
1.5.11 E Revise writing to improve style, word choice, sentence variety and subtlety of meaning after rethinking how questions of purpose, audience and genre have been addressed  
1.5.11 F Edit writing using the conventions of language

### **UNIT OBJECTIVES:**

#### **5a. Media:**

- Insert audio and videos within web pages
- Utilize Web 2.0 tools or software (such as Audacity) to edit or manipulate video or audio files

#### **5b. Edit Images with Software (Current Digital Manipulation Software):**

- Resize images
- Optimize images for the web
- Crop images
- Work with layers to manipulate and create images for a web site

#### **5c. Animated web images (Current Animation Software):**

- Utilize drawing tools in animation software
- Navigate around the animation software workspace
- Identify and use the Property Inspector
- Animate with Frame-by-Frame technique
- Animate an image with the tweening technique
- Apply shape tween to an object
- Rotate, resize, fade and redirect objects within an animation
- Stop an animation from looping
- Save and insert the animated object into a web page

#### **ACTIVITIES:**

- Vocabulary
- Review and practice
- Application
- Research and writing
- Team problem solving
- Prediction
- Process identification
- Discussion and debate
- Assessment

#### **ASSESSMENTS:**

- Pre-assessment (for grouping purposes)
- Teacher observation
- Project rubrics
- Assessments
- Activities
- Projects

#### **DIFFERENTIATED INSTRUCTION:**

- Highlight critical features
- Provide multiple media and formats
- Provide opportunities to practice with support
- Offer adjustable levels of challenge
- Offer flexible opportunities for demonstrating skill
- Tiered activities or products
- Varied graphic organizers to support learning
- Offer choices of content and tools
- Offer choices of learning contexts
- Varied rubrics

#### **RESOURCES:**

- Adobe Flash Tutorials: <http://www.adobe.com/devnet/flash.html>
- Adobe Design Center: <http://www.adobe.com/designcenter/>
- Web 2.0 Tools: <http://www.go2web20.net/>