Web design basics

Project Overview

In this project, students will get an introduction to the basic principles of web design, HTML, and CSS as they create a webpage. Through analyzing websites, they will learn to identify purpose and audience and to use design principles to emphasize purpose and audience. They will also learn about the phases of web production and about publishing web projects.

The main focus of this project is for students to learn and understand how CSS is used to create consistency and allow for easy site-wide changes. The emphasis is on employing their understanding of design principles to inform the modifications and customizations they make to the page's Cascading Style Sheet.

Student product: Original webpage

Note: Portions of this project align to the Adobe Certified Associate objectives. Within the instruction steps and technical guides, the specific learning objectives for the exam(s) are referenced with the following format: [1.1]

Project Objectives

At the completion of the project, students will have developed the following skills:

Project management skills
- Designing for a specific audience and purpose
- Understanding the phases of web development

Design skills
- Designing for their audience(s)
- Applying design principles
- Creating wireframes
- Creating design comps
- Learning basic HTML
- Understanding CSS

- Designing with CSS
- Organizing pages with CSS
- Applying design aspects such as color, design, layout, contrast, and composition
- Integrating images and text
- Planning images and graphics based on needs and audience

Research and communication skills
- Analyzing and critiquing websites
- Evaluating and analyzing content validity
- Evaluating and analyzing website navigation
- Understanding copyright issues and fair-use guidelines
- Advocating and practicing legal use of images
- Collecting and analyzing audience needs and purpose to inform design

- Participating in peer review
- Communicating and presenting design decisions
- Giving feedback on a project

Technical Skills

Photoshop

- Understanding the Photoshop workspace
- Resizing, rotating, and cropping images
- Correcting color
- Retouching images
- Generating multiple file formats

Illustrator

- Understanding the Illustrator workspace
- Creating vector artwork
- Modifying and transforming graphics

Dreamweaver

- Understanding the Dreamweaver workspace
- Setting up a web project
- Using the Insert panel
- Using the Assets panel
- Creating and editing HTML
- Inserting images
- Inserting text
- Creating, modifying, and troubleshooting Cascading Style Sheets
- Editing and customizing CSS rules
- Using the CSS Styles panel
- Using CSS text styles
- Using Live View
- Publishing web files

Background preparation resources

Technical and content information

Keywords

ISTE NETS*S Standards for Students

Adobe Certified Associate objectives

1. Introduce students to goals of the project:
    - Introduce web design principles
    - Analyze websites for audience and purpose
    - Introduce HTML and CSS
    - Introduce wireframes and design comps
    - Select, edit, and prepare images and graphics
    - Edit and customize CSS rules
    - Create a web page using HTML and CSS

2. *Activity:* Design principles   ACA Exam Objectives: 2.3, 2.2, 2.3, 2.3, 2.2, 2.1, 2.3, 2.2, 2.3
    (Suggested time: 50–100 minutes)

    Follow these steps to utilize this activity for this project:

    a. This activity introduces the concept of using design principles and typography to evaluate and inform design. Topics include color theory, layout, tone, and sustainable design. It is recommended to prepare examples of specific design principles for this activity.

    b. Show students at least two websites, one that is well designed and one that is not, and discuss them in relation to consistency and visual hierarchy. Ask students to identify the design elements on the sample websites. Identify visual elements on some of the web pages that can support content hierarchy, such as navigation scheme, the use of color, text headings, fonts (color, emphasis, and size), indentation and alignment, paragraph headings, and lists

3. *Activity:* Analyzing websites   ACA Exam Objectives: 1.1, 1.2, 1.4, 2.1, 2.2, 2.3, 2.4
    (Suggested time: 50-150 minutes)

    Use this activity to teach students how to:
    - Identify the kind of information that determines purpose, audience, and audience needs of a website.
    - Demonstrate website analysis techniques.
    - Introduce how to assess for usability and accessibility.
    - Introduce how to design for usability and accessibility.

    Note: It is recommended to focus on the website analysis techniques in this project. You can focus more on usability and accessibility in Project 2: Web design & planning.

4. *Activity:* Introduction to HTML and CSS

   (Suggested time: 50-100 minutes)

   ACA Exam Objectives: 1.1, 1.2, 1.4, 2.1, 2.2, 2.3, 2.4

Use the presentation in this activity to introduce and discuss best practices for using CSS and HTML.

5. *Activity:* Introduction to project planning, project management, and teamwork

   (Suggested time: 50–150 minutes)

   ACA Exam Objectives: 1.6, 2.6, 1.3, 1.4, 1.4, 2.6, 1.5, 1.6, 1.3, 1.4, 1.3, 1.4

Follow these steps to utilize this activity for this project:

a. Use this activity to introduce and discuss project planning, production phases, project management, and working in teams.

b. Explain that in another project they will go through each phase of the production process. However, for this project they will only be working with wireframes and design comps to assist them in creating a web page.

c. Ask students to determine the audience and purpose of their web page.

Note: You can help students pick a focus for their web page by having them do one of the following:

- Create a web page about themselves.
- Create a web page about someone famous.
- Re-design an existing web page.
- Create a web page about a class they are taking.

6. *Activity:* Getting started with Adobe Photoshop
   Activity: Getting started with Adobe Illustrator

   (Suggested time: 100–150 minutes)

   ACA Exam Objectives: 2.1, 2.4, 2.6, 3.1, 3.2, 3.3, 3.5, 4.2
   ACA Exam Objectives: 3.1, 3.2, 3.3, 3.6, 3.7, 4.1, 4.2, 5.1

Prepare students to create wireframes and design comps and edit images and graphics for use on their webpages. Use these two activities to introduce students to the interface, terminology, and basic panels in Photoshop and Illustrator. Explain that Photoshop and Illustrator are industry-standard tools for creating images and graphics for web sites.

7. *Activity:* Wireframes

   (Suggested time: 50 minutes)

   ACA Exam Objectives: 2.1, 2.2, 2.3, 2.4, 2.5, 3.2, 3.3, 4.1, 4.2, 4.6, 4.7, 5.1

Follow these steps to utilize this activity for this project:

a. In this activity you will introduce students to wireframes, why they are an important part of the design process, and how to create them.

b. Ask students to think about their web page and the design elements that would make it consistent. Some guiding questions:

- What font will you use for titles or headings?
- What color will you use for titles or headings?

- What font will you use for descriptions?
- What color will you use for the description font?
- How will your navigation bar and text navigation help visitors know where they are?

Note: Explain that while they are only creating a single web page they can still think about how the navigation would work if they were to turn the web page into a full website.

c. Ask students to create a wireframe for their web page.

8. *Activity:* Design comps
   (Suggested time: 50 minutes)

   ACA Exam Objectives: 1.6, 1.3, 3.2, 1.5, 1.3, 1.3

Follow these steps to utilize this activity for this project:

a. This activity introduces the concept of a design comp and how they are used to create and present multiple design ideas.

b. Ask students to create 2 or 3 design comps for their web page.

9. *Activity:* Peer review
   (Suggested time: 50 minutes)

   ACA Exam Objectives: 2.6, 1.4, 2.6, 1.6, 1.4, 1.4

Follow these steps to utilize this activity for this project:

a. Use the guidelines in this activity to discuss with your students how to participate in peer review by communicating information and listening and providing feedback.

b. Ask several students to share their design comps with the class for feedback.

c. From the feedback ask students to select one design comp to use for their web page, and allow them time to make any needed adjustments to the design comp.

10. *Activity:* Editing images and graphics
    (Suggested time: 100-150 minutes)

    ACA Exam Objectives: 5.4, 2.1, 2.6, 3.1, 3.2, 3.3, 4.1, 4.3, 4.4, 4.5, 5.1, 2.5, 3.4, 4.4, 4.6

Follow these steps to utilize this activity for this project:

a. Use this activity to teach your students how to edit images and create graphic elements for their webpage by using Photoshop and Illustrator. Discuss the difference between vector and bitmap images and demonstrate how to how to crop, rotate, resize, and transform images, how to adjust colors, and how to create and modify vector artwork.

b. Explain that students need to select images or create graphics to use on their web page.

Note: You may want to supply images for students to select from or have students use digital cameras and take photographs.

c. Using their wireframe and design comps, allow student time to create and edit any necessary images and/ or graphics for their web page.

11. *Activity:* Copyright and fair use
  (Suggested time: 50 minutes)

ACA Exam Objectives: 1.3, 1.2, 1.3, 1.4, 1.2, 1.2

Use this activity to teach your students about copyright issues and fair use guidelines as they relate to using content in their webpages.

12. *Activity:* Getting started with Adobe Dreamweaver
  (Suggested time: 100-150 minutes)

ACA Exam Objectives: 3.1, 3.3, 3.6, 4.1, 4.2, 4.3, 5.1

Follow these steps to utilize this activity for this project:

a. In this activity, you will introduce students to Adobe Dreamweaver by demonstrating how to:
  • Understand the Dreamweaver interface, terminology, and workspaces
  • Set up a web project
  • Creating a new document

b. Explain that students will use the index.html page they created as their web page. Referring back to the Introduction to HTML and CSS activity, ask students to use code-view or split-view to hand-code some HTML to create a structure for their page. Some things to include:
  • Create a DOCTYPE declaration
  • Create specific HTML tags such as: HEAD, TITLE, BODY, H1-H6, P, EM, STRONG, A HREF
  • Create 2-4 specific HTML5 elements such as: section, article, aside, hgroup, header, footer, nav.

c. When you are demonstrating how to use the Insert and Asset panels, ask students to use the images and graphics they created during their portion of the demonstration.

d. Ask students to create any needed text for their web page.

e. Time permitting, ask students to customize their Dreamweaver workspace according to their preferences.

13. *Activity:* Inserting content with Dreamweaver
  (Suggested time: 50-100 minutes)

ACA Exam Objectives: 3.2, 3.4, 4.4, 4.5, 4.6, 4.11, 5.3

Follow these steps to utilize this activity for this project:

a. Demonstrate how to use the Insert and Asset panels to add text, images, graphics, and links to a web page.

b. Ask students to use the images and graphics they created earlier to add to their webpage.

c. Ask students to write and insert any text they need for their webpage.

d. Ask students to create and insert any links they need for their webpage.

14. *Activity:* Working with CSS   ACA Exam Objectives: 2.5, 3.3, 5.1, 5.2, 5.3, 5.8
    (Suggested time: 100 - 150 minutes)

Follow these steps to utilize this activity for this project:

a. Use this activity to introduce your students to designing with CSS by teaching how to:
   • Organize pages with CSS
   • Edit and customize CSS rules
   • Create CSS text styles
   • Create, modify, and troubleshoot Cascading Style Sheets
   • Use Live View

b. As you work through the activity ask students to create div tags for their web page based on their wireframes.

c. Ask your students to create and customize a Cascading Style Sheet file for the web page according to their design comps.

d. Using what they learned, ask student to make changes to their CSS file according to their design comp and use Live View to see the impact of their selections on their webpage. Encourage them to make any necessary revisions.

15. Allow students time to continue to work with HTML and CSS by using Dreamweaver to refine their webpage. Ask students to use Split view so they can see the impact of the code they input on their design.

16. Once students have finalized their webpage, have them save their files and prepare for publishing.

17. *Activity:* Publishing with Dreamweaver   ACA Exam Objectives: 4.2, 6.5
    (Suggested time: 50 minutes)

Follow these steps to utilize this activity for this project:

a. Use this activity to teach your students how to publish web files, including how to set up a remote server and use FTP servers.

b. Explain that students will now publish and/or display their web pages. Choose from several options, depending on time and resources. Have your students publish and/or display their web pages in one of the following ways:
   • If you don't have access to a web server, have students use Preview In Browser to display the web page. Explain that to preview in a web browser, they need to select File > Preview In Browser and select their preferred web browser. If they have not already saved their HTML file, they will be required to do so before previewing it.
   • Have students publish the web page to a web server.

18. *Activity:* Presenting design projects

(Suggested time: 50-100 minutes)

ACA Exam Objectives: 2.6, 1.4, 1.6, 1.6, 1.4, 1.4

Follow these steps to utilize this activity for this project:

a. This activity introduces your students to presenting their work to a variety of audiences, including clients. Use the tips in this activity to help your students learn how to communicate their ideas clearly.

b. Ask several or all of your students to present their web pages to the class, explaining the audience and purpose, the design choices they made in creating their web page, what HTML tags they used and why, what CSS rules they created and why, and lessons they learned in creating and publishing a web page.

Extension Activities

You can extend the project in the following ways:

- *More design investigation*: Add more graphic design exploration to this activity by having students use the Internet to find examples of each design principle.

- *Research*: To provide students with a deeper foundation in Cascading Style Sheets, you might have teams of students spend some time researching topics and then present their findings to the class. Topics could include the following:

  - The emergence of CSS

  - The current standards around CSS from the W3C

  - The benefits of using CSS

- *Student Seminar Introduction:* You might ask a small student group to review Using Dreamweaver or the online Dreamweaver Support Center (in the Dreamweaver Help menu) to research how to set up the local site and root folder. This group can then report to the class the reasoning for setting up the site and why doing so is important.

- Reflection supplement: Ask students to write up the decisions they made in planning their widgets. This document will help students reflect on their process and provide a framework for the next time they plan a website.

- Interview: To help students better understand the importance of creating a wireframe for a website, find a web designer students can interview about the planning process.

- *Technical Help in the Classroom*: To encourage students to develop self-sufficiency when seeking help, you can assign a small group or pair of students to research challenging skills and present their findings to the class. Ask them to define key terms (such as optimization) and to explain the relevance of these terms to the task at hand. Then ask students to give a three- to five-minute oral report at the beginning of class, demonstrating the skill and reporting their findings.

- *Fast finishers*: For students who finish early, ask them to use CSS to redesign their webpage for a tablet and/or mobile phone screen sizes.

Assessment

This is a high level view of what student should create during this project. Refer to the assessment rubrics in each activity for more detailed/specific assessment rubrics for each part of the project.

	0 – Does not meet expectations	3 – Meets expectations	5 – Exceeds expectations
Web page	Absent or incomplete.	Student understands HTML and uses it to create a web page. Student understands CSS and uses it to create a web page. Student creates CSS styles, using a combination of redefined styles and new styles. Students publish their web pages.	Student understands HTML and uses it to create a web page. Student understands and clearly articulates CSS and its uses in creating a web page. Student creates CSS styles, using a combination of redefined styles and new styles. Students publish their web pages.

Background preparation resource

- To view video tutorials aligned with the skills required to complete this project, visit Adobe TV: http://tv.adobe.com.
- For more teaching and learning resources on the topics in this project, search for resources from the community on the Adobe Education Exchange: http://edex.adobe.com/
- For an overview of the interface and for more information on the technical aspects of *Adobe Dreamweaver,* see *Dreamweaver* Help.
- For an overview of the interface and for more information on the technical aspects of *Adobe Photoshop,* see *Photoshop* Help.
- For an overview of the interface and for more information on the technical aspects of *Adobe Illustrator,* see *Illustrator* Help.

Keywords

- design principles
- HTML
- HTML5
- Cascading Style Sheets (CSS)

- wireframe
- design comp
- widget
- copyright

This project is aligned to the ISTE NETS*S Technology Standards. Depending on the subject and content area the student selects you may research your own state content standards to see how this project aligns to your state requirements.

ISTE NETS*S: Curriculum and Content Area Standards – NETS for Students

1. Creativity and Innovation

    Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

    a. apply existing knowledge to generate new ideas, products, or processes.

    b. create original works as a means of personal or group expression.

    d. identify trends and forecast possibilities.

2. Communication and Collaboration

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

    b. communicate information and ideas effectively to multiple audiences using a variety of media and formats

3. Research and Information Retrieval

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

    a. plan strategies to guide inquiry.

    b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

    c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks

4. Critical Thinking and Problem Solving

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

    a. identify and define authentic problems and significant questions for investigation.

    b. plan and manage activities to develop a solution or complete a project.

    d. use multiple processes and diverse perspectives to explore alternative solutions

5. Digital Citizenship

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

    a. advocate and practice safe, legal, and responsible use of information and technology.

    b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

    c. demonstrate personal responsibility for lifelong learning.

6. Technology Operations and Concepts

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

a. understand and use technology systems.

b. select and use applications effectively and productively.

d. transfer current knowledge to learning of new technologies.

Adobe Certified Associate Exam Objectives

Adobe Certified Associate, Web Authoring objectives

1.1   Identify the purpose, audience, and audience needs for a website.

1.2   Identify web page content that is relevant to the website purpose and appropriate for the target audience.

1.3   Demonstrate knowledge of standard copyright rules (related terms, obtaining permission, and citing copyrighted material).

1.4   Demonstrate knowledge of website accessibility standards that address the needs of people with visual and motor impairments.

1.6   Understand project management tasks and responsibilities.

2.1   Demonstrate general and Dreamweaver-specific knowledge of best practices for designing a website, such as maintaining consistency, separating content from design, using standard fonts, and utilizing visual hierarchy.

2.2   Produce website designs that work equally well on various operating systems, browser versions/configurations, and devices.

2.3   Demonstrate knowledge of page layout design concepts and principles.

2.4   Identify basic principles of website usability, readability, and accessibility.

2.5   Demonstrate knowledge of flowcharts, storyboards, and wireframes to create web pages and a site map (site index) that maintain the planned website hierarchy.

2.6   Communicate with others (such as peers and clients) about design plans.

3.1   Identify elements of the Dreamweaver interface.

3.2   Use the Insert panel.

3.3   Use the Property inspector.

3.4   Use the Assets panel.

3.6   Customize the workspace.

4.1   Demonstrate knowledge of Hypertext Markup Language.

4.2   Define a Dreamweaver site.

4.3   Create, title, name, and save a web page.

4.4   Add text to a web page.

4.5   Insert images and apply alternative text on a web page.

4.6   Link web content, using hyperlinks, e-mail links, and named anchors.

4.11 Import and display a Microsoft Word or Microsoft Excel document to a web page.

5.1   Set and modify document properties.

5.2   Organize web-page layout with relative and absolutely positioned div tags and CSS styles.

5.3   Modify text and text properties.

5.4   Modify images and image properties.

5.6   Use basic HTML tags to set up and HTML document, format text, add links, create tables, and build ordered and unordered lists.

5.8   Use CSS to implement reusable design.

6.5   Publish and update site files to a remote server.

Adobe Certified Associate, Visual Communication objectives

1.2   Demonstrate knowledge of standard copyright rules for images and image use.

1.3   Demonstrate knowledge of project management tasks and responsibilities.

1.4   Communicate with others (such as peers and clients) about design plans.

2.1   Demonstrate knowledge of image resolution, image size, and image file format for web, video, and print.

2.2   Demonstrate knowledge of design principles, elements, and graphic composition.

2.3   Demonstrate knowledge of typography.

2.4   Demonstrate knowledge of color correction using Photoshop.

2.5   Demonstrate knowledge of image-generating devices, their resulting image types, and how to access resulting images in Photoshop.

2.6   Understanding key terminology of digital images.

3.1   Identify elements of the Photoshop user interface and demonstrate knowledge of their functions.

3.2   Demonstrate knowledge of layers and masks.

3.3   Demonstrate knowledge of importing, exporting, organizing, and saving.

3.5   Demonstrate an understanding of and select the appropriate features and options required to implement a color management workflow.

4.1   Demonstrate knowledge of working with selections.

4.2   Use Photoshop guides and rulers.

4.3   Transform images.

4.4   Adjust or correct the tonal range, color, or distortions of an image.

4.5   Demonstrate knowledge of retouching and blending images.

5.1   Demonstrate knowledge of preparing images for web, print, and video.

Adobe Certified Associate, Video Communication objectives

1.3   Demonstrate knowledge of standard copyright rules (related terms, obtaining permission, and citing copyrighted material).

1.4   Demonstrate knowledge of the production planning and management process.

2.3   Demonstrate knowledge of visual techniques for enhancing video content.

2.6   Communicate with others (such as peers and clients) about design and content plans.

Adobe Certified Associate, Interactive Media Communication objectives

1.4   Demonstrate knowledge of standard copyright rules (related terms, obtaining permission, and citing copyrighted material).

1.5   Understand project management tasks and responsibilities.

1.6   Communicate with others (such as peers and clients) about design and content plans.

2.2   Demonstrate knowledge of design elements and principles.

Adobe Certified Associate, Graphic Design & Illustration objectives

1.2   Demonstrate knowledge of standard copyright rules for artwork, graphics and graphic use.

1.3   Demonstrate knowledge of project management tasks and responsibilities.

1.4   Communicate with others (such as peers and clients) about design plans.

2.1   Demonstrate knowledge of design principles, elements, and graphic composition.

2.3   Demonstrate knowledge of typography.

2.5   Understand key terminology of graphics.

3.1   Identify elements of the Illustrator user interface and demonstrate knowledge of their functions.

3.2   Use non-printing design tools in the interface.

3.3   Demonstrate an understanding of and select the appropriate features and options required to manage color, pattern, and gradient swatches.

3.4   Demonstrate an understanding of vector drawing concepts.

3.6   Demonstrate knowledge of layers and masks.

3.7   Import, export, and save files.

4.1   Demonstrate knowledge of how to create documents.

4.2   Demonstrate knowledge of how to use drawing and shape tools.

4.4   Demonstrate knowledge of how to use scanned or photographic images.

4.6   Demonstrate knowledge of how to modify and transform objects.

5.1   Demonstrate knowledge of preparing graphics for web, print, and video.

Adobe Certified Associate, Print & Digital Media Publication objectives

1.2   Demonstrate knowledge of standard copyright rules for content use in page layouts.

1.3   Demonstrate knowledge of project management tasks and responsibilities.

1.4   Communicate with others (such as peers and clients) about design plans.

2.2   Demonstrate knowledge of design principles, elements and page layout composition.

2.3   Demonstrate knowledge of typography.

For more information

Find more teaching materials for using Adobe software in your classroom on the Adobe Education Exchange: http://edex.adobe.com/.

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