

Unit 3: Web Design



Introduction

The Web Design unit builds on the concepts presented in the previous units by having students apply problem solving strategies to web design; thus, it also serves as a bridge to the Introduction to Programming unit as students move from user to creator. The unit also provides an opportunity to expand upon the issues of ethics and privacy related to the internet that were introduced in the first unit.

The basics of html and css are introduced as a method for describing features of web pages that students can use to design and develop web pages based on their own culture, interests and unique experiences.

The html and css lessons are scaffolded in order to provide all students an entry point, but it is likely that as students explore they will encounter features they wish to add for which they do not yet know the correct tags. Many students will be able to figure these out on their own and should be encouraged to do so.

Resist the temptation to provide lists of appropriate font and color palettes and/or best layout designs. As students experiment and share their work, challenge them to explain why they chose the features they did and encourage peers to comment.

Example projects are provided as a starting point, but students should be encouraged to work on projects that are authentic for them. They may choose to create web pages on different topics for each assigned project or build on a prior one as appropriate.

There are two supplements—Flash animation and Javascript—at the end of the unit for use if there is additional time and interest.

Specific topics for each instructional day are listed in the overview chart on the next page.

Daily Overview Chart	
Instructional Day	Topic
1-2	Explore issues of social responsibility in web use as well as the relative merits of the influence of the web on society, personal lives, and education.
3-4	Introduce the use of basic html.
5	Introduce basic formatting in html.
6-7	Explore image editing for the web using Photoshop or an image editor of choice.
8-10	Introduce basic css.
11-13	Explore the concept of separating style from structure by keeping separate html and css files.
14	Add hyperlinks to other websites.
15-16	Introduce a variety of page layout styles.
17-19	Practice the use of various design elements.
20-21	Introduce several different enhancements for website design, including web user interface elements combining Javascript, html, css, and Photoshop, accordion menus, lightbox and sliding images.
22-25	Final projects and gallery walk

Daily Lesson Plans

Instructional Days: 1-2

Topic Description: This lesson engages students in a discussion of the web as social experience. Issues of social responsibility in web use are explored as well as the relative merits of the influence of the web on society, personal lives, and education.

Objectives:

The student will be able to:

- Set up a blog.
- Explain basic security issues on the internet.
- Identify web applications which influence society and education.
- Identify appropriate vs. inappropriate use of social websites.

Outline of the Lesson:

- Set up a blog (25 minutes)
- Discussion of online security issues (20 minutes)
- Blog entry of students' online experiences (10 minutes)
- Discussion of parts 1-3 of *Growing Up Online* from the PBS series *Frontline* (40 minutes)
- Blog entry reflecting on *Growing Up Online* (15 minutes)

Student Activities:

- Set up a blog.
- Participate in discussion of online security.
- Create a blog entry on online experiences.
- Participate in a discussion about online experiences with social networking sites, blogs, email, online chatting and the kind of impact it has had on their lives.
- View and discuss *Growing Up Online*.
- Create a Blog entry reflecting on *Growing Up Online*.

Teaching/Learning Strategies:

- Set up a blog
 - Complete the portions of the setup that were not done prior to class.
 - Guide a discussion of online security as students work on setting up their blogs.
- Create a blog entry on online experiences.
 - Show students how to create a blog entry using the blogging tool chosen for the class.
 - Have students create an entry that describes some of their current online experiences.

- Guide a discussion regarding student use of social networking applications. (Note: This discussion may be a review of discussions from Unit 1.) Ask questions such as:
 - Which social networking applications do you use? (blogging, Facebook, MySpace)
 - How often? How many of your friends use them?
 - How important are these web applications to your lives? How have they changed your lives?
 - Living their lives essentially online
 - A revolution in classrooms and in social life
 - Self expression, trying on new Identities
- Display parts 1-3 of *Growing Up Online* from the PBS series *Frontline*.
 - After viewing the video, lead a discussion on the content.
- Blog entry reflecting on *Growing Up Online*
 - Have students create a blog entry reflecting on the video. Did any of their thoughts change after viewing the video?

Note: Helping each student set up a blog will require some time outside of class and should be completed in advance of the lesson. For example, students need to get a free Google gmail account before signing up for blogger. This can only be done outside of the LAUSD firewall.

Resources:

- <http://www.pbs.org/wgbh/pages/frontline/kidsonline/>

Suggested blogging tools:

- <http://www.blogger.com>
- <http://www.wordpress.com>
- <http://www.tumblr.com>

Instructional Days: 3-4**Topic Description:** An introduction to the use of basic html**Objectives:**

The student will be able to:

- Create a storyboard
- Navigate an html editor.
- Create an html page with a title and a body.
- Create an html page with paragraph tags, headings, line breaks, and horizontal lines.

Outline of the Lesson:

- Create a storyboard (15 minutes)
- Demo of html editor (15 minutes)
- Html page with a title and body (15 minutes)
- Html page with paragraphs and headings (25 minutes)
- Html page with line breaks and horizontal lines (40 minutes)

Student Activities:

- Create a storyboard for a webpage.
- Follow along during the demo of the html editor.
- Create an html page with a title and body.
- Create an html page with paragraphs and headings.
- Create an html page with line breaks and horizontal lines.

Teaching/Learning Strategies:

- Create a storyboard for a webpage
 - Explain to students that a storyboard is a visual plan for a website. It usually consists of a series of pages that include a rough sketch outlining the content, navigation, and design elements of the website.
 - Have students create a storyboard for a website that includes a title, several paragraphs, and headings for each paragraph before beginning the demo of the html editor.
- Demo of html editor
 - Display the html editor that you have chosen for the class. Point out the following html tags.

Tag	Description	End Tag
<html>	Defines an HTML document	</html>
<head>	Defines information about the document	</head>

<code><title></code>	Defines the title of the document	<code></title></code>
<code><body></code>	Defines the main part of the document	<code></body></code>

- Enter a title and a one sentence body. Demonstrate how to save the document as an html file and how to view the output page in a browser. Point out that the title appears in the bar at the top of the window. Also point out that the end tag is a necessary part of the syntax in order to tell the computer when to stop doing a particular thing.
- **Html page with a title and a body**
 - Have students write a paragraph in the body section and give it a title. (Students can choose to write about themselves or another topic of interest.)
 - Demonstrate the creation of a basic html/css page in the html editor of choice.
- **Html page with paragraphs and headings**
 - Have students add a second paragraph to their web page and note what happens.
 - Then have them add two lists related to their topic (favorite movies, music, hobbies, etc.) and note what happens.
 - Guide students to notice that everything runs together no matter how they type it.
 - Explain the following html tags.

Tag	Description	End Tag
<code><p></code>	Defines a paragraph	<code></p></code>
<code><h1></code> to <code><h6></code>	Defines headings at levels 1-6	<code></h1></code> to <code><h6></code>

- Have students try inserting these new tags into their web page and note what happens.
- Remind students that they need the end tag.
- This is a good place to point out that html is one language that can be used to give the computer instructions as discussed in Unit 1 and that the computer will produce exactly the output that the user indicates with the syntax provided. Html is not a programming language; it is a markup language.
- **Html page with line breaks and horizontal lines**
 - Explain the following html tags.

Tag	Description	End Tag
<code>
</code>	Defines a single line break	
<code><hr/></code>	Defines a horizontal line	

- Have students try inserting these new tags into their web pages and note what happens.
- Give students time to experiment and determine what combination of tags will allow them to put their lists in a column, with each list having its own heading.
- Point out that trying different tags and checking the output is an example of testing and verification. If the output is not what is intended, then they need to debug the code they wrote.

- Note that you can retrieve an html reference from <http://www.w3schools.com/html/>

Resources:

html editors

- <http://www.tacosw.com> (mac only)
- <http://www.barebones.com/products/TextWrangler/index.shtml> (mac only)
- <http://smultron.sourceforge.net/> (mac only)
- <http://www.alleycode.com/download.htm> (windows only)

html tutorial

- <http://www.w3schools.com/html/>

Instructional Day: 5**Topic Description:** An introduction to basic formatting in html**Objectives:**

The student will be able to:

- Create an html page that includes emphasized text.

Outline of the Lesson:

- Review of tags learned to date (5 minutes)
- Html pages that include emphasized text (50 minutes)

Student Activities:

- Participate in review of tags.
- Create an html page that includes emphasized text.

Teaching/Learning Strategies:

- Review of tags
 - Have students open their files; then lead a quick review of the tags.
- Html pages that include emphasized text
 - Explain the following html tags.

Tag	Description	End Tag
	Defines where you want text to be strongly emphasized (appears bold)	
	Defines where you want text to be emphasized (appears in italics)	

- Have students try inserting these new tags into their web pages and note what happens.
- Give students time to experiment.
- Ask students to think about what things they would like to be able to do with web pages that they have not done already. Answers will vary: pictures, different types of fonts, colors, etc.

Resources:

html tutorial

- <http://www.w3schools.com/html/>

Instructional Days: 6-7

Topic Description: Explore image editing for the web using Photoshop or an image editor of choice.

Objectives:

The student will be able to:

- Identify the standard image resolution for the web (72 dpi).
- Resize and crop images for the web.
- Identify and differentiate between the various image formats used in web sites: jpg, gif, png.
- Create an html page that includes images.

Outline of the Lesson:

- Discussion of various web image formats (5 minutes)
- Demo of resizing and cropping images (15 minutes)
- Selecting and cropping a images (35 minutes)
- Html pages that include images (55 minutes)

Student Activities:

- Participate in discussion and follow along with demo.
- Select and crop a few images.
- Create an html page that includes images.

Teaching/Learning Strategies:

- Discussion of various web image formats
 - Explain that image properties are relevant to web use.
 - It is important to check the size when preparing an image for use on the web. Resolution can be set under image size.
 - Remind students of the website evaluation they did in unit 1 and features that made a particular site user-friendly.
- Selecting and cropping an image
 - Demonstrate how to crop and resize images in Photoshop or image editor of choice. Part of this will be review from Unit 1.
 - Have students choose a few images that they will add to their web page and crop them.
 - Explain that students should save their images for use in this project and later projects.
- Html pages that include images
 - Explain the following html tag.

Tag	Description	End Tag
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- Point out that the correct syntax for defining an image is ``
- xxxx is the name of the image file. The image should be in the same folder as the html file.
- Have students insert their image into their html page.
- They can resize the photo on the screen with: ``
- They can add a title by: ``
- Give students time to experiment with placement, sizes, headings, and additional images.
- For students who finish early, you can have them view the filters and effects section of <http://www.georgebenainous.com/web> and try modifying their images.

Resources:

- <http://www.georgebenainous.com/web> (photoshop—filters/effects)
- <http://morph.cs.st-andrews.ac.uk/>
- <https://www.photoshop.com/express>

Instructional Days: 8-10

Topic Description: An introduction to the use of basic css.

Objectives:

The student will be able to:

- Create inline styles with css.
- Create a web page that uses inline styles.
- Create an internal style sheet with css.
- Create a web page that uses an internal style sheet.

Outline of the Lesson:

- Overview of css (10 minutes)
- Sample inline styles (15 minutes)
- A web page that uses inline styles (15 minutes)
- Sample internal style sheet (15 minutes)
- Movie review html/css page (45 minutes)
- Share student work (10 minutes)
- A second html/css page (45 minutes)
- Share student work. (10 minutes)

Student Activities:

- Examine sample web content.
- Create a web page that uses inline styles.
- Examine sample web content.
- Complete movie review html/css project.
- Share completed projects.
- Complete second html/css project.
- Share completed projects.

Teaching/Learning Strategies:

- Overview of css
 - CSS stands for Cascading Style Sheets.
 - CSS provides the formatting and style for a web page, while html provides the content.
 - There are three methods for inserting styles.
 - Inline styles
 - Internal style sheet
 - External style sheet

- The basic format for a style is:

Selector	Declaration	Declaration
h1	{color:blue;	Font_size:12px;}

- The selector is the element you want to style; each declaration consists of a property and a value; the property is the attribute you want to change and each property has a value.
- To make it more readable you can put each declaration on a separate line.
- Demonstrate creating a header with the inline style listed above.
- Note that you can retrieve a css reference from <http://www.w3schools.com/css/>.
- Display http://www.w3schools.com/tags/ref_colornames.asp and http://www.w3schools.com/tags/ref_colorpicker.asp as sources for choosing colors.
- Have students suggest a few different declarations and demonstrate the results.
- Create a web page that uses inline styles.
 - Have students add a few styles to their web page.
- Sample internal style sheet.
 - Point out that inline styles should be used sparingly because they defeat the purpose of separating the style from the content.
 - Have students view <http://www.georgebenainous.com/web> (html/css--basic markup). They should view the page before and after the styling is added.
 - Point out what each piece of the styling does to the original page. Point out the format and that the internal style sheet is included in the <head>. Also note that the style applies to the entire page unless a specific inline style is added.
 - Talk about the fact that this is a way to do decomposition in their design process because they can choose the content and provide the style in two separate stages. They can also then test the various style elements one at a time to verify correctness. You may want to note that this is similar to the way you can think about writing the algorithm for making a peanut butter and jelly sandwich—write the instructions to work for any “bread”, any kind of peanut butter, and any kind of jelly; then the specific kinds of bread, peanut butter, and jelly can be changed according to particular taste. You could even extend this further to make it any kind of sandwich—bread, filling 1, filling 2, etc. (Note: This is an example of abstraction.)
- Movie review html/css page
 - Students create a website with one or more movie reviews. The html page will contain the following paragraphs for each review: title, director, synopsis, review. The css stylesheet will have corresponding classes. The page will also include:
 - At least one picture
 - The name of at least one of the actors in italics
 - The background and text colors
- Share student work.
 - Guide students in sharing their work either by a gallery walk, volunteers, etc.
- Complete second html/css project

- Note: you may choose to have students continue working on their movie project rather than start a second one if time is short.
- Some examples of projects from which to have students choose are provided in the tutorial or have students create their own project.
- Share results of student work.
 - Guide students in sharing their work either by a gallery walk, volunteers, etc.
 - Have students provide feedback to their peers.

Resources:

- <http://www.georgebenainous.com/web> (html/css--basic markup)
- http://www.w3schools.com/tags/ref_colornames.asp
- http://www.w3schools.com/tags/ref_colorpicker.asp

Instructional Days: 11-13

Topic Description: Explore the concept of separating style from structure by keeping separate html and css files.

Objectives:

The student will be able to

- Create an html page which links to a separate css file.
- Use html tags and css styling elements to separate style from structure.

Outline of the Lesson:

- Review of html/css concepts and description of how to link to a separate css file (15 minutes)
- Sample web content (20 minutes)
- Creation of separate html and css pages for the previous movie review project (40 minutes)
- Creation of separate html and css pages for a second project (75 minutes)
- Share student work (15 minutes)

Student Activities:

- Review html/css concepts.
- Examine sample web content.
- Complete html/css movie review project.
- Complete html/css project 2.
- Share completed projects.

Teaching/Learning Strategies:

- Review of html/css concepts
 - Guide a discussion of the highlights of the previous lesson.
 - Using the text editor, demonstrate how to create an external file for the styles. Emphasize that whatever the name of the style sheet, it needs to have a .css extension. Save the file in the web folder.
 - Note that this allows designers to further separate the style from the content. Such separation would be particularly useful in maintaining a large website that has a standard look and feel. That standard look and feel can be added to a page by just include the external css file. By utilizing reusable code, there is consistency and it means that the designer does not need to retype the entire content of the style every time a new page is added.
- Sample web content
 - Answer questions as students view and read the html/css reusable code section at <http://www.georgebenainous.com/web> (html/css—reusable code)
 - Demonstrate how to add the appropriate link to the html file.
- Complete html/css movie review project.

- Have students revise their previous movie review project to use an external css file.
- Complete html/css project 2.
 - One example of a project might be to create a website with information on their favorite band.
 - A paragraph with the name of the band in large bold type.
 - At least one picture
 - The genre of the band in italics (i.e. Rock, Rap, etc.)
 - A list of some of the songs from the band in a paragraph in regular type
 - A separate section that explains why the band is their favorite
 - The background and text in different colors
 - Other examples can be found in the tutorial
- Share student work.
 - Guide students in sharing their work either by a gallery walk, volunteers, etc.

Resources:

- <http://www.georgebenainous.com/web> (html/css—reusable code)

Instructional Day: 14

Topic Description: This lesson explores the use of links to other websites.

Objectives:

The student will be able to:

- Create an html page that includes hyperlinks.

Outline of the Lesson:

- Explanation of how to add hyperlinks (15 minutes)
- Addition of hyperlinks to web pages (40 minutes)

Student Activities:

- Participate in discussion of hyperlinks.
- Add hyperlinks to web page.

Teaching/Learning Strategies:

- Html pages that include hyperlinks
 - Explain the following html tag.

Tag	Description	End Tag
<code><a href = "url"</code>	Defines what is to be displayed.	<code></code>

- Point out that the correct syntax for defining a hyperlink is `Link text `
- The start tag contains information about the link address.
- What is to be displayed can be text, an image, etc.
- Give students time to experiment with adding hyperlinks to their previous project, including placement and sizes.

Resources:

- No additional resources needed

Instructional Days: 15-16

Topic Description: In this lesson a variety of page layout styles are introduced.

Objectives:

The student will be able to:

- Use table, row, and column tagging in an html page.
- Add css styling to an html table.
- Use ordered and unordered list tagging in an html page.
- Add css styling to an html list.
- Use grid elements in css div placement.
- Add a menu to an html page.
- Create a web page that includes layout styles.

Outline of the Lesson:

- Explanation of how to create an html table (15 minutes)
- Examples of data that lends itself to being presented in a table (5 minutes)
- Explanation of how to create html ordered and unordered lists and how to add styling to list elements. (15 minutes)
- Examples of data that lends itself to being presented in a list. (5 minutes)
- Preliminary css positioning and opacity exercise (15 minutes)
- Explanation of how to create a menu (15 minutes)
- Creation of a web page that includes layout styles (40 minutes)

Student Activities:

- Participate in the discussion of creating an html table.
- View examples of data that lends itself to being presented in a table.
- Participate in the discussion of creating ordered and unordered lists.
- View examples of data that lends itself to being presented in a list.
- Complete css positioning exercise.
- Participate in the discussion of menu creation.
- Create a web page that includes layout styles.

Teaching/Learning Strategies:

- Use the tutorial (<http://www.georgebenainous.com/web/html/css—tables>) to demonstrate how to create a table, how to add rows and columns and how to add css styling to table, row, and column elements. Have students view the example code and predict the results prior to viewing.
- Demonstrate examples of data that lends itself to being presented in a table

- Use the tutorial (<http://www.georgebenainous.com/web> html/css—styled lists) to demonstrate how to create ordered and unordered lists and how to add css styling to list elements. Have students view the example code and predict the results prior to viewing.
- Demonstrate examples of data that lends itself to being presented in a list.
 - Remind students of the data they worked with in units 1 and 2. Ask questions about how that might have been displayed on a web page. Point out that they may want to keep this in mind for the final project in Unit 5.
- Use the tutorial (<http://www.georgebenainous.com/web> html/css—page layout) to demonstrate div positioning using css. Have students view the example code and predict the results prior to viewing.
- Use the tutorial (<http://www.georgebenainous.com/web> html/css—menus) to demonstrate how to create a menu. Have students view the example code and predict the results prior to viewing.
- Have students create a web page which serves as an advertisement for a product of their choice.
 - Explain project requirements.
 - The page must make use of at least one of the page layout methods discussed.
 - Circulate room and help students with projects.

Resources:

- <http://www.georgebenainous.com/web> (html/css—tables, styled lists, page layout, menus)

html and css tutorials

- <http://www.w3schools.com/html/>
- <http://www.w3schools.com/css/default.asp>

Instructional Days: 17-19

Topic Description: Practice the use of various design elements.

Objectives:

The student will be able to:

- Create web pages which incorporate design elements previously studied.

Outline of the Lesson:

- Explanation of project (10 minutes)
- Design and creation of a web page that links to at least 5 other websites (135 minutes)
- Share student work. (20 minutes)

Student Activities:

- Design and create a 3 page website about their future that links to at least 5 other websites and includes a variety of design elements.
- Share completed work.

Teaching/Learning Strategies:

- Design and create a web page about their future that links to at least 5 other websites and includes a variety of design elements.
 - The three pages may either scroll or link to each other.
 - The project should include images related to their future.
- Share student work.

Resources:

- <http://www.georgebenainous.com/web> (html/css)

Instructional Days: 20-21**Topic Description:**

This lesson introduces a variety of enhancements for website development. Possible enhancements include: several web user interface elements combining Javascript, html, css, and Photoshop, accordion menus, lightbox, slideshow and jquery.

Objectives:

The student will be able to:

- Create a multi-page web site that includes a variety of enhancements.

Outline of the Lesson:

- Exploration of a variety of enhancement possibilities
- Creation of a multi-page website (55 minutes)
- Share student work. (10 minutes)

Student Activities:

- Review the sections of the tutorial website related to the enhancement possibilities.
- Create a multi-page website.
- Share completed work.

Teaching/Learning Strategies:

- Have students review the sections of the tutorial website dealing with
 - the creation of rollover buttons.
 - the lasso for inverted selections.
 - menus.
 - accordion menus.
 - lightbox.
 - sliding images.
- Creation of a multi-page website
 - Have students choose 2 or more of the enhancements to include in their website.
 - Students may add to the website about their future or create something new.
- Share student work.

Resources:

- <http://www.georgebenainous.com/web> (photoshop—filters/effects, javascript—rollover buttons, photoshop—project 2)

- <http://www.georgebenainous.com/web> (javascript—mootools)
- <http://www.georgebenainous.com/web> (javascript—light box, javascript—jquery)
- <https://www.photoshop.com/express/index.html>

Instructional Days: 22-25

Topic Description: Students complete final projects.

Objectives:

The students will be able to:

- Incorporate all objectives of the unit into the final project.

Outline of the Lesson:

- Explanation of final project (15 minutes)
- Final project (135 minutes)
- Gallery walk and vote on final projects (15 minutes)

Student Activities:

- Complete final project.
- Participate in gallery walk to view and vote on completed projects.

Teaching/Learning Strategies:

- Final project
 - Explain final project choices.
 - Help students with projects as necessary.
- Gallery walk
 - Encourage students to ask each other questions as they view the websites.
 - Have students vote on their favorite.

Resources:

- Final Project
- Final Project Sample Rubric

Final Project

Your task is to create a website that includes

- Images and text with references to sources
- Pages with headers, navigation and content
- An external css file to define layout and styling

You may choose any of the following topics

- An ethical dilemma
- A career
- A worldwide or community problem
- A topic of your choice that has been approved

Ethical Dilemma Web Site

Your task is to analyze an ethical dilemma. Choose one of the four dilemmas listed below or get approval for a different one. You must consider the alternatives and give reasons for the why and the why not you should do what is described. Then you must choose what you would do and explain why. The website should include pages that

1. Describe the dilemma you have chosen.
2. Give 3 reasons why you should do what is described.
3. Give 3 reasons why you should NOT do what is described.
4. Describes what you will do and explains why.

Ethical Dilemmas:

1. People illegally download music over the internet. Although it's free, it is still illegal. What do you choose to do? Why?
2. Your parent loses his/her job. You could help out by selling illegal dvds on the streets. What should you do?
3. You have the ability to hack into the school computer system. You can change people's grades. Would you change your own? Why or why not? What if you could change the grade for a basketball player who has a scholarship to play for a big university?
4. Someone you know works at a store that sells iPods. He steals some and asks if you want to buy one for half the price the store sells it for? Should you buy it? Why or why not?

Career Website

Research a career and create a website that provides information about it.

The website should include pages that

- Provide a brief description of the career
- Explain the education required
- Describe tasks performed in the career, salaries and how computer science is used in the career.

Worldwide or Community Problem Website

Research a worldwide or community problem and create a website that provides information about it.

The website should include pages that

- Provide a brief description of the problem.
- Explain how the problem is affecting people.
- Describe possible solutions to the problem and what people reading the website can do to help solve it.

Final Project Sample Rubric:

Do you have?	Points Possible	Yes	No	Points Earned
Website Content				
A home page with an image and a brief description of your topic	5			
3 or more additional pages on your site	15			
Images that support your topic	10			
Cite the source(s) of you images	5			
Complete information for your topic	10			
Cite the source(s) of your information	5			
Website Design				
Have a background color or image.	5			
Incorporate one of the layout styles into your website	5			
Include rollover images	5			
Links to all the pages of your website on each page.	10			
Integrate the lightbox slideshow, sliding images, or mootools accordion into your website.	5			
Use one shared external .css file for your site.	5			
Peer Grading	15			
Your project is voted best by your peers. (EXTRA CREDIT)	up to 10			
Total	100			

Flash Animation Supplement

(These activities can be used as the last days prior to the final project if students finish other projects prior to the time allotted.)

Instructional Day: 1

Topic Description: Adobe Flash (formerly Macromedia Flash) is a proprietary web animation platform. The introductory lesson demonstrates how to use stop action photography and Flash to create a flipbook effect.

Objectives:

The student will be able to:

- Use stop action photography in animated flip books.
- Create a simple flash animation by importing a series of images.

Outline of the Lesson:

- Preview the stop action photography study of the galloping horse (5 minutes)
- Demonstration of how to clip each image in Photoshop (5 minutes)
- Demonstration of how to import a series of images into Flash and how to play the movie (10 minutes)
- Practice of the import procedure (5 minutes)
- Creation of a movie from stop action photography (25 minutes)
- Share student work (5 minutes)

Student Activities:

- Preview the stop action photography study of the galloping horse from the Flash section of the tutorial website.
- View how to clip each image in Photoshop.
- View how to import a series of images into Flash and how to play the movie.
- Create a movie.
- Share completed work.

Teaching/Learning Strategies:

- Preview of the stop action photography study of the galloping horse from the Flash section of the tutorial website
 - Discuss the historical significance of Eadweard Muybridge and stop action photography.
 - Preview various Eadweard Muybridge photographic studies.
- Demonstration of how to clip each image in Photoshop
 - Create eleven separate images.
 - Follow a numerical naming convention: 01.jpg, 02.jpg...11.jpg.
- Demonstration of how to import a series of images into Flash and how to play the movie

- Guide students as they follow the procedure after it is demonstrated.
- Creation of a movie
 - Suggest students download another Eadweard Muybridge stop action photographic study and follow the same procedure or have them photograph their own stop action study.
 - Circulate room and help students choose and complete projects.
- Share student work

Resources:

- <http://www.georgebenainous.com/web> (flash—flipbook)
- <http://www.adobe.com/cfusion/designcenter/search.cfm?product=Flash&go=Go>

Instructional Day: 2

Topic Description: An animation technique called tweening is explored in Adobe Flash.

Objectives:

The student will be able to:

- Use frame/timeline based animation.
- Use an automatic frame based animation technique called tweening.
- Create several examples of tweened animations.

Outline of the Lesson:

- Demonstration of tweening techniques (15 minutes)
- Creation of a visual composition (30 minutes)
- Share student work (10 minutes)

Student Activities:

- View tweening techniques (outlined in the tutorial website).
- Create a visual composition.
- Share completed work.

Teaching/Learning Strategies:

- Demonstration of tweening techniques (outlined in the tutorial website)
 - motion, size, rotation, color
 - Discuss elements of design as they pertain to objects in motion.
- Creation of a visual composition
 - Explain the requirements for one or more of the following sample projects and guide students as they create their versions.
 - Create a visual composition using Flash tweening. (Remember to put each tween on a separate layer). Study the ideas of symmetry (balance) and asymmetry (imbalance) in motion.
 - Create a visual composition using Flash tweening applied to initials. Students can use their own initials. (Type can be tweened in Flash.)
- Share student work

Resources:

- <http://www.georgebenainous.com/web> (flash—tweening)
- <http://www.adobe.com/cfusion/designcenter/search.cfm?product=Flash&go=Go>

Instructional Day: 3

Topic Description: The movie clip is the basic unit of Flash animation which allows for reusability and scripting. This lesson is an introduction in the creation of movie clips.

Objectives:

The student will be able to:

- Explain the concept of a Flash movie clip.
- Differentiate between a movie clip and an instance of a movie clip.
- Create a movie clip based on keyframed animation.

Outline of the Lesson:

- Demonstration of creating a movie clip (10 minutes)
- Demonstration of how to reuse multiple instances of a movie (5 minutes)
- Creation of a horse movie clip (20 minutes)
- Creation and implementation of movie clips (20 minutes)

Student Activities:

- View examples of Flash movie clips.
- Create various Flash movie clips based on the galloping horse study as outlined in the Flash section of the tutorial website.
- Design and create follow-up movie clips.
- View the creation of a movie clip.
- View how to reuse multiple instances of a movie clip.
- Create the horse movie clip as outlined in the tutorial website.
- Create and implement movie clips.

Teaching/Learning Strategies:

- Demonstration of examples of Flash movie clips
 - Explain how to create a keyframed animation based on the galloping horse example from the Flash section of the tutorial website.
 - Guide students as they create various Flash movie clips based on the galloping horse study as outlined in the Flash section of the tutorial website.
 - Guide students as they design and create follow-up movie clips.
- Demonstration of creating a movie clip.
- Demonstration of how to reuse multiple instances of a movie clip
 - including a secondary tweening
- Creation of a horse movie clip as outlined in the tutorial website
- Creation and implementation of movie clips

- Guide students as they create their own ideas and then implement.

Resources:

- <http://www.georgebenainous.com/web> (flash—movie clips)
- <http://www.adobe.com/cfusion/designcenter/search.cfm?product=Flash&go=Go>

Javascript Supplement

Instructional Day: 1

Topic Description: Introduce basic Javascript; add interactivity to web pages.

Objectives:

The student will be able to:

- Add a Javascript to an html page.
- Link to an external Javascript file.
- Create alerts and prompts in Javascript.
- Write basic math statements in Javascript.

Outline of the Lesson:

- Demonstration of Javascript basic markup code samples (5 minutes)
- Creation of Javascript's (10 minutes)
- Extension of code samples provided in tutorial website (40 minutes)

Student Activities:

- View code samples from tutorial website.
- Create initial Javascript's.
- Extend code samples provided in tutorial website.

Teaching/Learning Strategies:

- Demonstrate how to create and link to a Javascript file.
- Guide students in the creation of initial Javascript files.
- Extension of code samples provided in tutorial website
 - Demonstrate how to extend the code samples.
 - Students extend the code samples.

Resources:

- <http://www.georgebenainous.com/web> (javascript—basic scripting)

Javascript tutorial

- <http://www.w3schools.com/JS/default.asp>

Instructional Day: 2

Topic Description: Introduce Javascript functions. Create modular, reusable code and use Javascript to learn fundamental programming concepts.

Objectives:

The student will be able to:

- Use the correct syntax rules for creating functions in Javascript.
- Create Javascript math functions.
- Create Javascript functions which apply css styling to a div.

Outline of the Lesson:

- Demonstration of Javascript function code samples (10 minutes)
- Creation of a Javascript function (10 minutes)
- Extension of code samples provided in tutorial website (35 minutes)

Student Activities:

- View Javascript code samples from tutorial website.
- Create a simple Javascript function.
- Extend code samples provided in tutorial website and create math functions.

Teaching/Learning Strategies:

- Demonstrate how to create a Javascript function.
- Guide students in the creation of initial Javascript functions.
- Extension of code samples provided in tutorial website
 - Demonstrate how to extend the code samples provided in the tutorial website
 - Students extend the code samples to create their own math functions a

Resources:

- <http://www.georgebenainous.com/web> (javascript—functions)

Javascript tutorial

- <http://www.w3schools.com/JS/default.asp>