# Lesson 5: Web Page Layout and Elements

## *Objectives*

By the end of this lesson, you will be able to:

- 1.1.14: Apply branding to a Web site.
- 2.1.1: Define and use common Web page design and layout elements (e.g., color, space, font size and style, lines, logos, symbols, pictograms, images, stationary features).
- 2.1.2: Determine ways that design helps and hinders audience participation (includes target audience, stakeholder expectations, cultural issues).
- 2.1.3: Manipulate space and content to create a visually balanced page/site that presents a coherent, unified message (includes symmetry, asymmetry, radial balance).
- 2.1.4: Use color and contrast to introduce variety, stimulate users and emphasize messages.
- 2.1.5: Use design strategies to control a user's focus on a page.
- 2.1.6: Apply strategies and tools for visual consistency to Web pages and site (e.g., style guides, page templates, image placement, navigation aids).
- 2.1.7: Convey a site's message, culture and tone (professional, casual, formal, informal) using images, colors, fonts, content style.
- 2.1.8: Eliminate unnecessary elements that distract from a page's message.
- 2.1.9: Design for typographical issues in printable content.
- 2.1.10: Design for screen resolution issues in online content.
- 2.2.1: Identify Web site characteristics and strategies to enable them, including interactivity, navigation, database integration.
- 2.2.9: Identify audience and end-user capabilities (e.g., lowest common denominator in usability).
- 3.1.3: Use hexadecimal values to specify colors in X/HTML.
- 3.3.7: Evaluate image colors to determine effectiveness in various cultures.

# Pre-Assessment Questions

1. The most effective Web page layout scheme can be best compared to which of the following media types?

   a. Television
   b. A brochure
   c. A magazine
   d. A newspaper

2. Which is more important: content, or layout and delivery? Why?

3. According to numerous surveys, do most users actually read Web pages? Why or why not?

 

# Web Users and Site Design

**NOTE:**
Do you agree from your own experience that this scanning behavior (rather than reading) is typical of Web users?

How much text on a Web page would you guess that Web users really read? All of it? Most of it? The truth is that users read almost none of it. Numerous surveys confirm that as many as 80 percent of Web users merely scan Web page content, looking for key words and phrases. Furthermore, the average person reads 25 percent slower from a computer monitor than from print.

So how does this fact affect Web page layout? As a designer, you must create a page that allows users to quickly scan and find the information they seek. Remember that one of the misconceptions of Web design is that the Web is just another form of print media. If a designer creates a Web page with the same content as a brochure or newsletter, users may take a look but are likely to move on to another site.

**OBJECTIVE**
2.1.2: Design and audience participation

When users arrive at your site, their first impressions are important. The Web site may be the only window to the world for your business. If it is unappealing to the customer, you may lose the customer to a competitor. So if you know that users only scan your Web pages, why try to force them to read a lot of content that may not interest them? Keep users satisfied, give them what they want, and they will come back. Users do not want to see cluttered pages with irrelevant content and images. Content is essential; however, the layout and delivery are just as important.

Users usually visit your site because they want specific information, whether for research or purchases. The easier you make their tasks, the more likely you are to earn their business. Remember as you design your Web sites that the design choices you make can help your audience experience the site as you intend it or hinder your audience's participation.

The Web medium is self-centric: Users are interested only in what they want. People who work in the retail business will agree that customers are selfish because they know they pay the bills that keep business's doors open. If you understand this, you will create Web pages with layout features that will earn your users' business.

Consider a Web site such as *www.cnn.com*. Upon arrival, you are greeted with the lead headline, a picture from that story, a paragraph summarizing the story, and a link to the full story. You know the story immediately from the picture and summary, and you can find out more if you want. Otherwise, you can scan down the page to the next headline, determining just about every leading story on the CNN site in about a minute. You are only one click away from any full story. The CNN site provides easy scanning, and you are more likely to return because you got what you wanted quickly.

## Design restrictions

**OBJECTIVE**
2.2.9: Audience and end-user capabilities

For a Web designer, it is exciting to think about new technologies and ways to implement them into the latest designs. Generally, Web designers are likely to have the most recent hardware, software and plug-ins. However, as tempting as it may be to create the most dynamic and interactive site that new hardware and software can support, the vast majority of the Web audience is not seeking high-end design or an exciting multimedia experience.

As a designer, your job is usually to create a Web site that meets the stakeholders' needs and that can be used by the site's target audience.

For example, if you are designing an intranet, and you know the browser and connection speed that everyone using the site will have, you are free to use any technologies you want that can be supported by this audience. If you are designing a site that will be used

 

by anyone on the Web who finds your site, however, then the range of your audience's potential browsers and bandwidth limits your technology choices.

**NOTE:**
How do you feel about this guideline of designing for the lowest common denominator? Is this practice fair to those users who have higher-grade equipment, and who probably use the Web more widely and frequently? In what creative ways might a Web developer design for the lowest common denominator without losing the interest of more advanced users?

A good guideline to follow when designing for the masses is to design for the lowest common denominator. Although there is no real agreement on what the lowest common denominator is today, the following guidelines will help you choose "safe" specifications:

- Many users still have 15-inch monitors.
- Some users set resolution to 800x600, but 1024x768 (or higher) is more common today.
- Many users still use modem connections, although modems are most likely 56 Kbps or faster.
- Most users have 4.x or newer versions of browsers.
- Although you should always be careful about using plug-ins, some plug-ins such as the Flash Player and MP3 players very commonly used.

If you are designing for a technical audience, or for an audience you know to generally have higher-end computers and monitors (such as graphic designers), you can adjust your specifications upward.

Even though the lowest common denominator system specifications continue to move upward, it is still important to try to accommodate users with lower-end systems when possible. You can do this through the use of alternate, text-only versions of multimedia rich pages, or by checking for browser and plug-in versions and informing users if their settings do not meet the minimum requirements for your site.

## Site characteristics

**OBJECTIVE**
2.2.1: Site characteristics and strategies

Before choosing the elements to include in your site (and those to exclude), you must consider some basic Web site characteristics and the strategies that you can use to implement them. Your target audience, the stakeholders' requirements and your design restrictions will determine how you enable these characteristics and how you will integrate them into your page layouts.

### *Navigation*

Navigation controls the user's movement through the site. Clear and easy navigation is critical to a site's success, and therefore must be well planned and carefully implemented to enable visitors to effectively use your site. You can use many types of navigational elements in a site, including text and image links, labels, positional indicators, menus, searching features and more. You will study navigation in detail in a later lesson.

### *Interactivity*

Interactivity is a feature of Web sites that distinguishes it from other media types. As discussed in an earlier lesson, the Web is transactional in nature because Web use is based on the interactions between Web users and the sites they visit and explore. Some Web sites offer little interactivity beyond providing several pages for users to browse among and read. Other sites offer a high level of interactivity, with forms for users to complete and submit, multimedia to watch or listen to, games to play, catalogs to search, and products to buy. Interactivity that serves your site's purpose well can attract users to your site, persuade them to stay longer, and give them reasons to return.

 

### *Database integration*

Database integration allows Web pages to use dynamic data, often in conjunction with interactivity. The site designer's job role does not necessarily include the skill of database integration, but it is an important and common site characteristic that you may need to incorporate into your design and page layout features.

Databases provide the ability to store and sort vital information, such as customer data and product information. For example, your site might use a database to store and inventory information about the products your company sells. A visitor can thus search for a specific product, and your Web site can retrieve this data and display it in a Web page for the user to view, check inventory, make selections and so forth.

As a site designer, you may need to design pages that will be populated by the results of database queries. To do this, you must determine:

- **The amount of page space you need to correctly present the information.** You must allocate enough space so that users can clearly see all text and images that might be returned from the database query.
- **The party responsible for creating scripts and database connectivity.** You may not need to create database scripts, but you will probably be working with a programmer who can implement this functionality in your design. You must ensure that your pages return expected results in a usable and aesthetically pleasing display.

You will learn more about databases and ways to integrate them into your site design later in this course.

## Effective Web Page Layout

Consider the way that your favorite newspaper is laid out. The front page has the lead story, and it also may contain brief summaries of other feature stories in the paper. How does this arrangement change your reading experience? The layout does not force you to read one story on the front page then flip through all pages to see what the other stories are. If you see a story summary on the front page that you want to investigate further, a page number reference points you to the full story.

This layout style is often compared to an inverted pyramid, as depicted in Figure 5-1. This style offers the user a list of story summaries first, then references to the details of each story for those interested. This model is different from the way we think of story telling: Instead of the main point of the story coming at the end, the conclusion comes first in the inverted pyramid model. The Web is an ideal medium for this type of delivery.

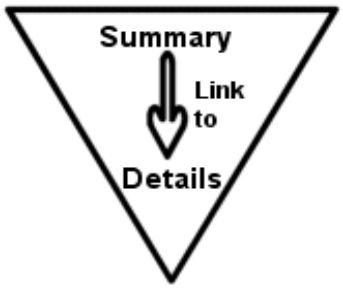


*Figure 5-1: Inverted pyramid model*

On a Web site, you can use hyperlinks to send users to any number of elaborations on subjects, stories, news, schedules, products or services. You can also use related links to

 

provide archived or extended information, which traditional newspapers cannot provide due to lack of space, time and resources. In any case, if users want further information on any topic, they can browse to it at their discretion. Otherwise, they can move on to other pursuits.

## Web page layout elements

**OBJECTIVE**
2.1.1: Web page design and layout elements

Before you begin the Web production process, consider the look and structure of your site. You must understand the elements that compose the completed Web page, and how they interact with each other, from a visual standpoint as well as a technical standpoint. You should then carry the chosen elements throughout the Web site. These Web page elements include layout, color, fonts and images, and other multimedia.

**NOTE:**
Web page layout and Web design are not the same. Layout refers to the visual components of a page and how they are arranged. Design is a larger issue that incorporates the whole site, including the visual presentation with theme, purpose, content and the multimedia available to this medium.

Page layout refers to the way in which the Web designer presents information to users. The format should be logical and easy to understand. Like documents or reports, structured formats help categorize, simplify and clarify information for distribution. As a Web designer, you must develop a structure and adhere to it so the user's experience will be meaningful and productive.

Consider the following items and their functions when planning your Web page layout.

- **Space (also called white space)** — separates elements on the page and reduces page element clutter
- **Color** — conveys a visual tone or message, and provides a consistent look and feel
- **Font** — conveys a visual tone or message, provides a consistent look and feel, and enhances readability
- **Rule** — or line, divides the page content into related sections
- **List** — organizes information into items

**NOTE:**
Can you cite examples of Web sites you have visited that used any one of these layout components particularly well or poorly?

- **Paragraph** — groups text characters on a page
- **Heading level** — creates various sizes of text to designate and organize content
- **Image** — provides visual appeal, information and navigation (includes symbols and pictograms)
- **Logo** — provides branding and site navigation
- **Margin** — controls the proximity of content to the browser window edges
- **Border** — can be applied to XHTML tables and frames
- **Navigation elements** — control the user's movement through the site

**NOTE:**
What other common layout features can you name? Are there any new types of layout features that you have seen?

- **Table** — formats data into rows and columns; also used to distribute elements into position on a page
- **Frameset** — allows multiple pages to be displayed simultaneously

Determining which of these elements your site will include helps focus the development process. If you do not address these items early in the development process, you might waste resources correcting problems that develop later.

**OBJECTIVE**
2.1.8: Eliminating unnecessary elements

Many times, a site's design and functionality can be greatly improved by eliminating design elements from the page rather than by adding new elements. Knowing which layout elements to use and which to omit is at least as important as knowing the technical aspects of using different XHTML and multimedia elements.

 

## Common layout formats

**NOTE:**
You can review the common concepts and elements of layout in **Activity 5-1: Identifying Web page layout elements**.

Web sites use some common basic structures to perform certain important functions. You can see these common features in action by browsing several sites. For example, navigation elements are generally located on the left and top margins. The background for these navigation elements often has a slightly different color or appearance than the rest of the page. Also, additional navigational features are frequently included at the bottom of the page. Black text on a white background is common, as are company logos in the upper-left corner of the display. These and other common layout features actually help each other and the user, which is the reason they are used so often.

When users visit your site, they should know what to expect. This is not to say that they know the content or products you offer, but rather that they understand the basics of using the site. These basics include common uses of navigation, text and images.

Site layout can be categorized by the way the navigational elements are placed. The type of layout that is chosen depends largely on the type and amount of content. Following are some samples of common layout types.

Figure 5-2 shows an example of the traditional left-margin layout. You can see the navigational elements in the left margin.

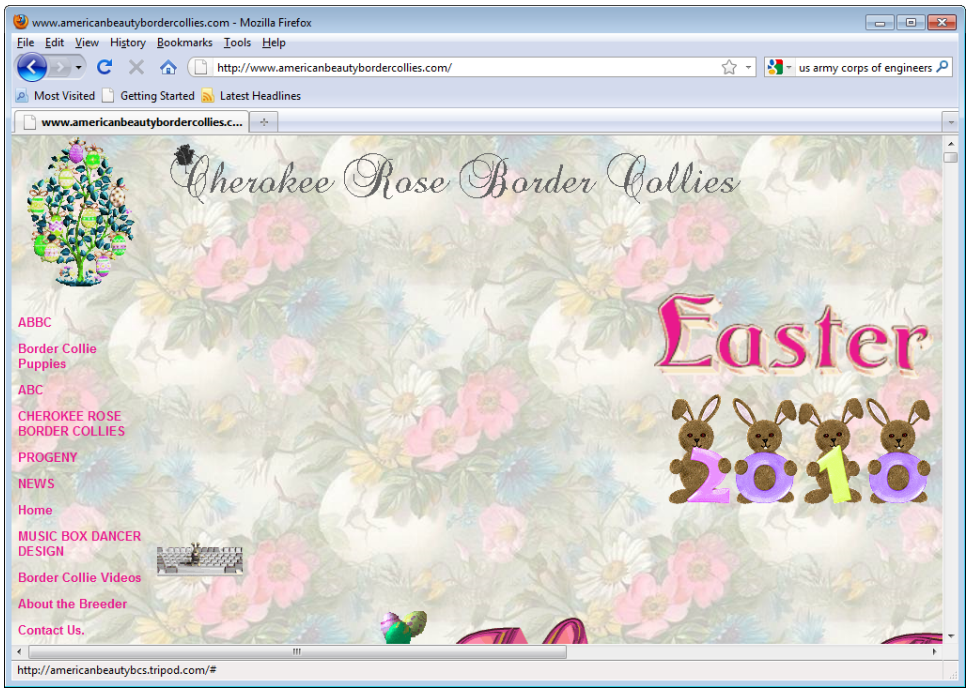


*Figure 5-2: Left-margin layout (traditional)*

 

Figure 5-3 shows the top-margin layout, in which navigational elements are placed along the top of the page.

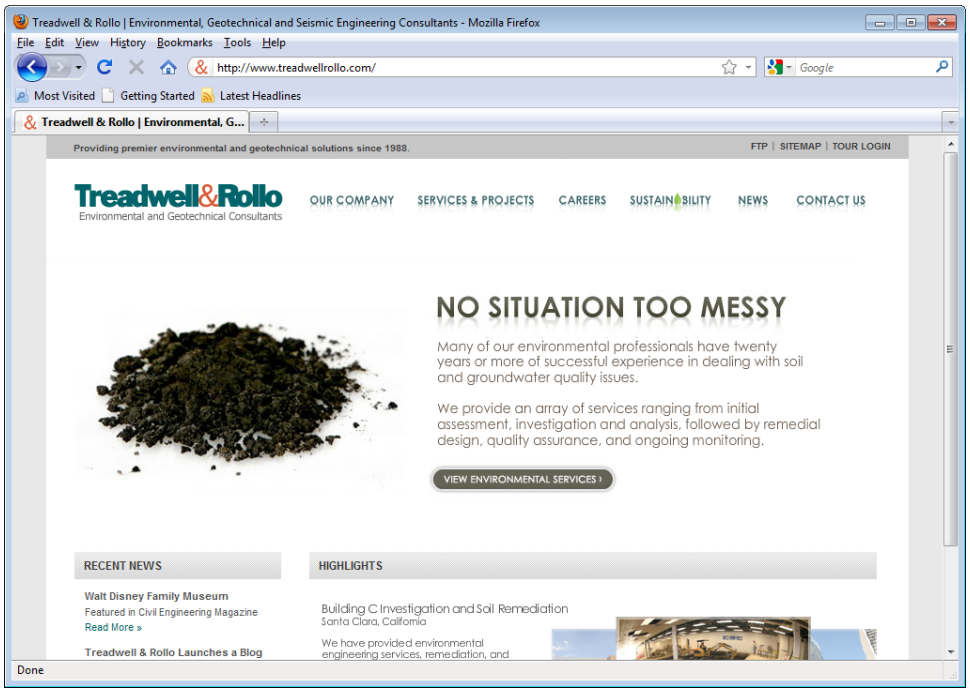


*Figure 5-3: Top-margin layout*

Figure 5-4 shows the most commonly used layout, the distributed left- and top-margin layout.

**NOTE:**
This layout is the most commonly used. There are several possible reasons for this. For example, the English language is read from left to right and top to bottom. Also, using two margins for navigational topics allows more topics to branch off. Does this approach streamline the site or make it more complicated?

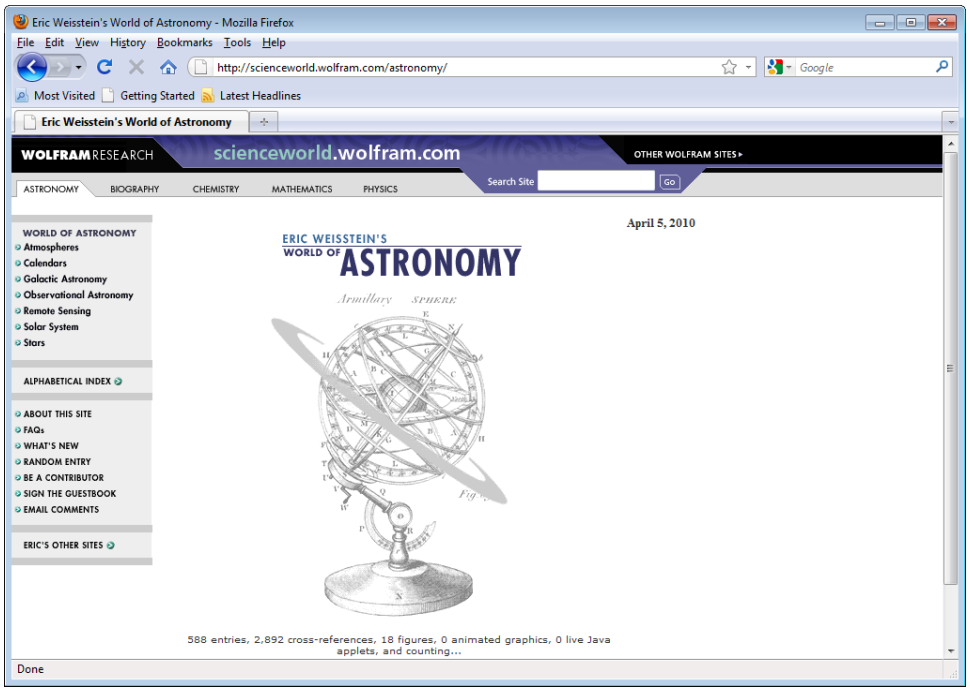


*Figure 5-4: Distributed left- and top-margin layout*

 

Figure 5-5 shows the less commonly used right-margin layout.

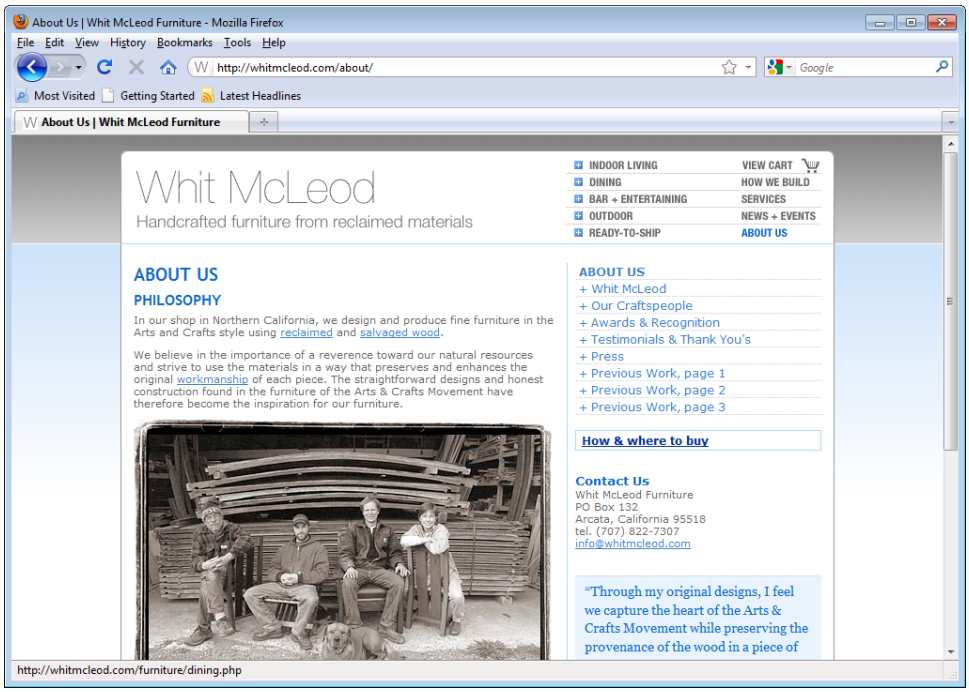


*Figure 5-5: Right-margin layout*

Figure 5-6 shows an example of the distributed layout, which works well for sites with an extensive amount of content.

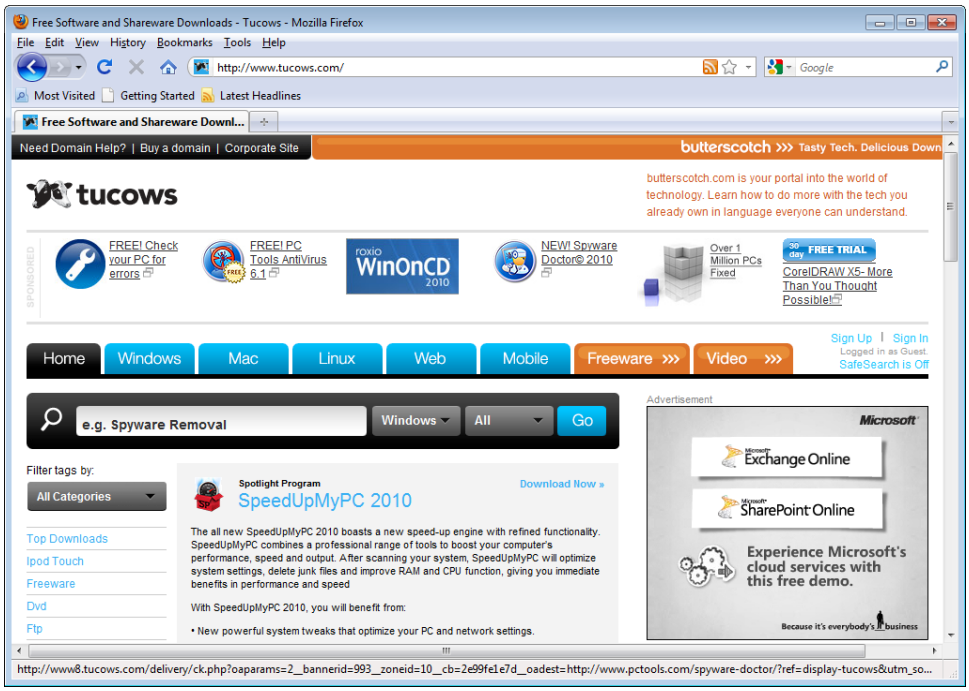


*Figure 5-6: Distributed layout*

 

### *Controlling user focus*

**OBJECTIVE**
2.1.5: Design strategies for user focus

The location of Web site elements within the user's browser window has a large effect on how the user will perceive your site. Usability studies have shown that site visitors focus on the site's content, rather than the navigation or user interface elements. You should design your sites so that the content important to your audience occupies at least 50 percent of the screen space, but preferably 80 percent. This guideline is particularly vital in the page area that a typical user sees without scrolling — the area known as "above the fold" in newspaper jargon.

Eye-tracking is a technique used to study the ways that people focus on Web pages. By tracking the motion of users' eyes when they visit Web sites, researchers can discover which parts of a Web page a user looks at and for how long. Eye-tracking studies have consistently found that most Web users first look at the center of the page (where they expect content to be), then to the left of the page, then to the right. Users rarely look at the bottom of the page unless they are seeking something they expect to find there.

By considering these facts as you design and lay out your Web pages, you can learn to emphasize elements that you consider important. Ways to ensure this include the following:

- Conduct your own reviews of Web pages using a representative group of users. Assembling your own group can help ensure that you address cultural concerns.
- Consult with marketing and others to determine common browsing habits and ways that you can adjust your Web pages to focus user attention where you want it.

## Visual consistency

**OBJECTIVE**
2.1.6: Tools for site's visual consistency

Visual consistency within a site helps users to understand your site. Using a limited and specific color scheme throughout the site makes each page look like it belongs to the whole. Using pre-designed page templates helps you to quickly and consistently style each page to your site's look and feel. Creating and following a style guide — a company's collection of guidelines and specifications for standardizing the appearance and tone of the Web site or other products — also helps designers focus on the details of presentation, such as color schemes, fonts, language usage, content tone and more. Placing an image (such as the company logo) in the same place on every page increases visual consistency and aids navigation. Using such layout techniques that are common within your site — and those common to all sites — helps Web site visitors to use your site more comfortably and effectively.

## White space

**OBJECTIVE**
2.1.3: Visually balanced page/site

Recall your Web browsing experiences at various sites you have visited. When a page initially loads into your browser, you are greeted either with content on every part of the page, or with limited well-distributed content resulting in less clutter. What is your initial impression of both these scenarios? If you are like most users, you prefer the page with even distribution and some blank space, known in the development community as white space.

 

**NOTE:**
If a Web page should contain approximately 50 percent less text than an equivalent printed page, what is the best approach for a Web developer? Divide the content into two or more pages? Omit some content entirely? Or thoroughly edit content and try to communicate the same information with fewer words?

Remember that users do not appreciate useless clutter and masses of content on Web pages. Users quickly scan pages, and the more they must scan through, the more information they will miss. This fact does not mean that you cannot provide the user with a lot of information, just not all on one page. Each Web page should contain approximately 50 percent less text than a printed version of the same information would contain.

A Web page should be designed to offer information concisely. Provide users with the basics then give them links to more depth and detail. Not every user wants every piece of information; let each user choose whether to go deeper with links. Also, do not divide a page just to make it shorter unless it is at a logical breaking point. Each page should be able to stand on its own.

After determining what users need to know, you can lay out the page to position content and provide content-free areas.

### *Page layout with transparent GIFs*

A fully transparent image file can be inserted into the page as a blank-space placeholder. You can assign height and width attributes in the XHTML <img> tag to create the desired white space dimensions. For example, if you want to indent a paragraph, you can insert the following tag prior to the first letter of the new paragraph:

```
<img src="transparent.gif" height="2" width="15"/>
```

This value will indent the paragraph 15 pixels from the left.

The same procedure can be used to increase the line space between paragraphs by placing the following tag between them:

```
<img src="transparent.gif" height="20" width="2"/>
```

This value places 20 pixels of space between the paragraphs.

Transparent GIFs can also be placed into table data cells to control column or row size if necessary. Keep in mind that the goal is to reduce clutter on the page, enabling users to easily scan the document and select links if they choose.

### *Page layout with tables*

The W3C now recommends against using tables for page layout in favor of using CSS. However, tables are still widely used for this purpose, so the XHTML designer must understand the construction and use of tables in page-layout design.

By default, everything in XHTML aligns to the left. Developers use XHTML tables to distribute content over the entire browser display. A table structure can be populated with content, and table borders can be set to zero so the user never sees the table. Later in this course, you will practice using tables for page layout.

### *Page layout with frames*

Frames can be used for page layout, although they also play a vital role in navigation. Whether frames will be used in a site should be discussed early in the design and planning process because frames can dramatically affect layout and navigation. Frames affect other factors in the development and deployment of the site as well. Later in this course, you will explore frames creation and learn how they can help or hinder your site.

 

### *Page layout using CSS positioning*

The preferred way to lay out a page in XHTML is with CSS positioning. However, important differences exist in the ways that various browsers have implemented this standard, which sometimes make it less predictable than using tables. You will learn about CSS positioning later in this course.

## Visual balance

**OBJECTIVE**
2.1.3: Visually balanced page/site

Another important concept in page layout is visual balance. If you divide a Web page vertically down the middle, you can imagine the objects on either side of that line working like a see-saw: A large object on one side of the page can visually balance an equally large object or several smaller objects on the other side. Balance can be related to the size or type (image or text) of objects on a page, as well as to the darkness or lightness of colors of objects.

There are three types of balance: symmetrical, asymmetrical and radial. Each of these principles helps you to create a clear, easy-to-browse and coherent Web site.

### *Symmetrical balance*

Symmetrical balance is created when all elements on one side of the page are mirrored on the other. Although they may not be exactly the same, the mirrored objects are similar in terms of color and weight.

An example of symmetrical design is a site with two similar columns (of color, text or image content, etc.) on either side of a larger area. The page shown in Figure 5-7 provides a good example of this type of symmetrical balance. Note that every element on the left side is mirrored on the right.


*Figure 5-7: Symmetrical balance in page layout*

### *Asymmetrical balance*

Asymmetrical balance is created when a single object on one side of the page is balanced by a number of smaller (or more lightly colored or weighted) objects on the other side. The page shown in Figure 5-8 uses a single large image on the right to balance several smaller elements on the left.


*Figure 5-8: Asymmetrical balance in page layout*

### *Radial balance*

Radial balance is created when elements on the page radiate or spiral out from a central point. Radial balance is not used much in Web design. Examples of radial balance include the petals of a sunflower or a round stained-glass window.

## Speed and scrolling

Users demand speed. You can fulfill this demand by designing pages of limited file size. Users feel interrupted after about one second; after 10 seconds, you are likely to lose their attention. Therefore, the Web designer must use images sparingly and choose file formats carefully. Optimizing graphics is an important component to quick downloads. We will discuss file formats in detail later in the course.

Table 5-1 shows the maximum page size allowable to produce desired download times for various connection speeds. Note that these are theoretical download times. Because of network overhead (e.g., the time it takes for servers to respond), actual download times will be longer.

 

**NOTE:**
It is important to consider file size in relation to downloading and browsing speed. You may tend to downplay the importance of limiting file size when you are designing Web pages, but you may relate to the frustration of waiting for pages while you are using the Web. You must take a user's point of view when developing Web pages.

*Table 5-1: Page size and download time*

| Connection Type | Connection Speed | Maximum Page Size for One-Second Download Time | Maximum Page Size for 10-Second Download Time |
|---|---|---|---|
| **Modem** | 56 kilobits per second (Kbps) | 7 KB (kilobytes) | 70 KB |
| **DSL** | 256 Kbps | 32 KB | 320 KB |
| **Cable modem** | 1.5 megabits per second (Mbps) | 187.5 KB | 1.875 MB (megabytes) |


*The numbers in this table were determined by converting the connection speeds to bytes to calculate kilobytes per second (Kbps). That is, 1 byte equals 8 bits. So, 56 Kbps (or 56,000 bps) divided by 8 equals 7000 bytes, or 7 kilobytes.*

Page size is defined as the sum of the file sizes for all elements that make up a page, including the XHTML file and all embedded objects (e.g., GIF and JPG image files).

## Design with screen resolution in mind

**OBJECTIVE**
2.1.10: Screen resolution issues

You must consider screen resolution during development because the appearance of a Web page will vary on different monitors based on their resolution settings. Several years ago, the most common setting was 640x480; this setting was considered the lowest common denominator. However, no one uses this resolution anymore. Most Web users are now using a resolution setting of 1024x768 or higher. It is acceptable today to consider either 800x600 or 1024x768 as the lowest common denominator.

**NOTE:**
A good resource for display issues can be found at the following URL: *http://webdesign.about.com/sitesearch.htm?terms=resolution&SUName=webdesign&TopNode=3042*

Of course, there are exceptions to the rule. For example, MSN TV (formerly known as WebTV) has a fixed resolution and will not accommodate 800x600 designs. As a result, users of MSN TV (as well as users with small monitors) may be forced to scroll left and right to view the entire page layout.

If you design for 1024x768 resolution, for example, you can still make your design accessible to those using lower resolution if you use percentage values instead of pixels to help adjust the screen display for the lower-resolution monitors. Additionally, JavaScript programs can be used to direct low-resolution users to alternative pages that are better suited for their display setups.

If you know that much of your audience is still using 800x600, then you should design to that lowest common denominator.

**NOTE:**
Have you ever been annoyed by having to scroll horizontally to see a Web page? Does this type of scrolling discourage you from using a site?

Figures 5-9 through 5-11 show the same Web page displayed at three different resolutions. You can see that the page shown in Figure 5-9 was designed for a resolution of 800x600. In higher resolutions, extra white space appears to the right of the page layout.

 


*Figure 5-9: Page displayed at 800x600 resolution*

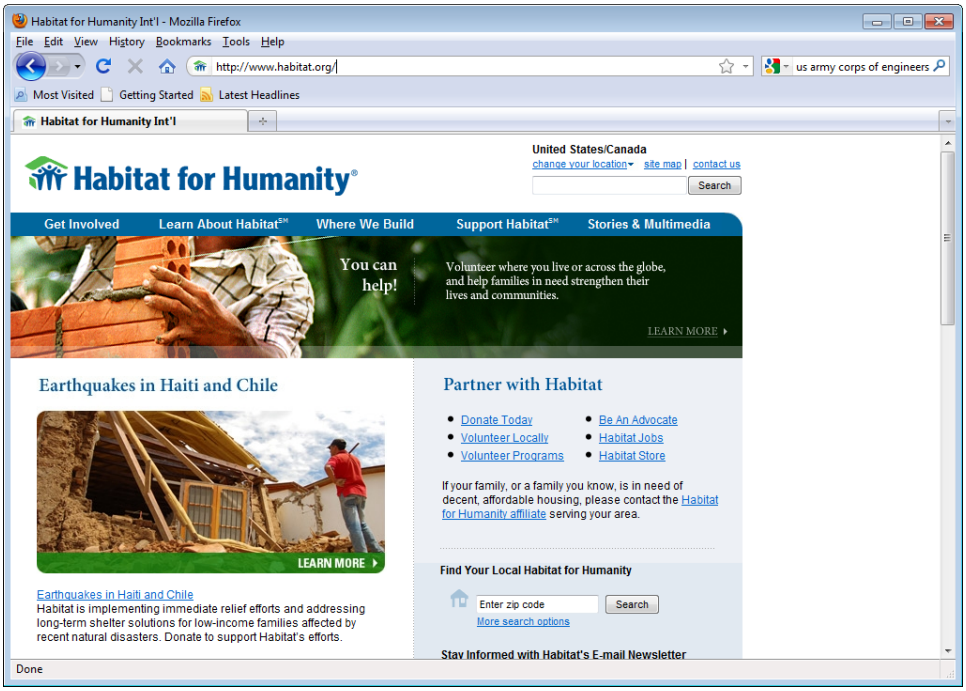


*Figure 5-10: Page displayed at 1024x768 resolution*

**NOTE:**
Visit *www.meritweb.com/resolution.htm* and change the resolution of your monitor to see the amount of screen area that each resolution offers to page designers.

 

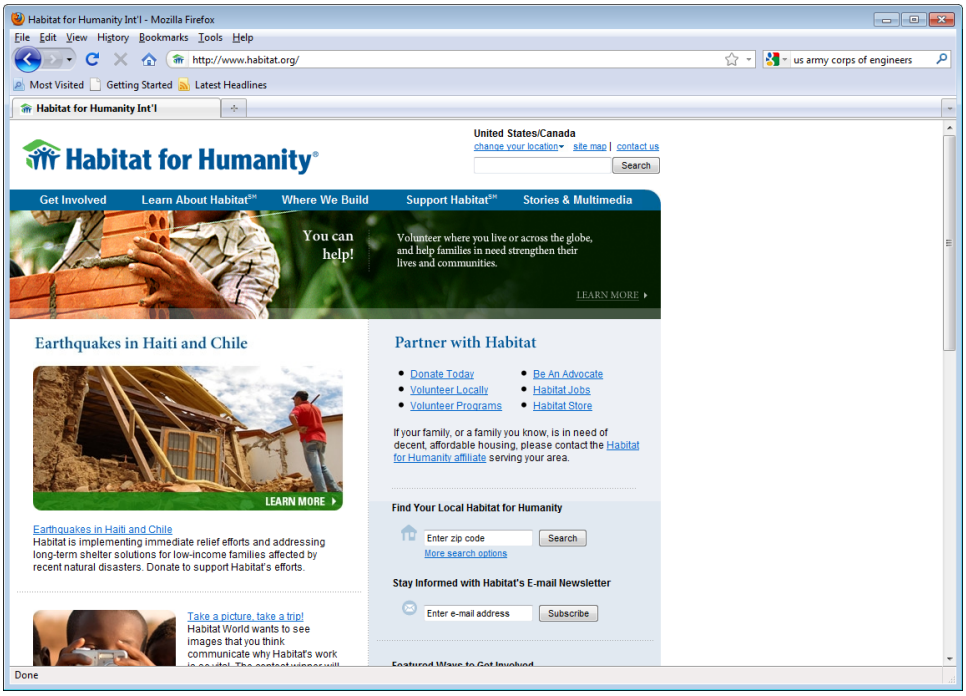


*Figure 5-11: Page displayed at 1152x864 resolution*

## Overview of acceptable screen resolutions

Historical screen resolutions include:

- 640x480 (VGA) — now considered legacy
- 800x600 (Super VGA)
- 1024x768 (XGA)
- 1280x1024 (SXVGA)
- 2048x1536 (UXGA)

Figure 5-12 shows each resolution size in context. Understand, however, that there is no real way to show the true resolution size on paper. Go to the following URL to see at least part of this image in true resolution size:
*http://www.CIWcommunity.org/drupal5/?q=node/108.*

 

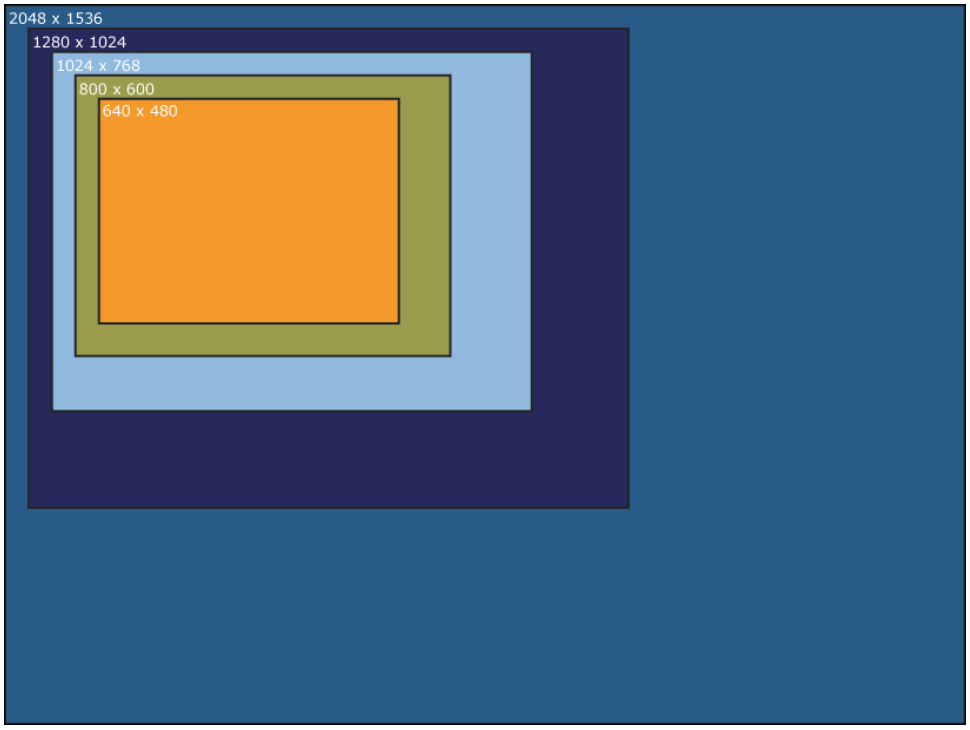


*Figure 5-12: Resolution history sample*

You should design to the highest common resolution because you want as much space as possible to design in. However, if you assume a resolution that is in any way uncommon, then your image or page will not render properly in customers' browsers. This can drive customers away.

### *A moving target*

The highest common resolution keeps changing, however, as monitor technology improves. For years, designers assumed a 640x480 screen size. It remains popular among very conservative designers to assume an 800x600 screen size. However, this resolution is overly conservative in many situations, as the majority of people use resolutions of 1024x768. This size will likely change as technology improves.

### *Consider your audience*

When choosing a screen resolution for your pages, it is best to consider the monitor size and resolution your audience will most likely be using. If you are creating pages for an audience that uses cutting-edge equipment, you can assume a more aggressive resolution level. If you are working in a corporate setting in which your image or multimedia solution must fit into a certain portion of a page, then you will need to ask your customer about the proper resolution size.

For more information about screen resolutions, consult the following URLs:

- *http://webdev.entheosweb.com/2007/12/01/maximising-web-site-viewability-resolution/*
- *http://www.z-oc.com/blog/2007/12/the-ultimate-answer-to-screen-resolutions-for-web-design*
- *http://editor.actrix.co.nz/byarticle/changeres.htm*

 

# Branding and the Web

**OBJECTIVE**
1.1.14: Web site branding

Branding is the practice by which a company tries to create an image of itself in the minds of the public with the hopes that consumers will purchase its products or services.

The most important element of a company's brand is its logo. Think of several well-known companies, such as Pepsi, Coca-Cola, Apple Computers or Nike. Everyone knows what these companies' logos look like, and we instantly associate certain shapes or colors with these companies.

It is important for an established company to ensure that its Web site enhances its brand. A poorly designed site that does not reflect the company's other marketing or branding efforts can negatively impact the company's image. By contrast, a high-quality Web site that is designed to enhance the company's image and support its other branding efforts can be an important component of any company's marketing strategy.

New companies that do not already have well-known or established brands can use the Web to build recognizable brands. To be successful, a branding effort should be unique, attractive and memorable. If a company's Web site is sloppy and does not incorporate a visual theme or coherent look, users are unlikely to remember the site or the company.

Some of the ways that a company can apply and strengthen its brand on its Web sites include:

- Consistently using colors that it wants associated with its brand.
- Placing the company logo on every page, generally in the upper-left corner.
- Creating a company style guide that standardizes the ways to which its products or services are referred.
- Using page templates to ensure a consistent page appearance throughout the site.
- Requiring the use of the trademark symbol whenever the company's name, logo or products are mentioned on the site.

# Color and Web Design

**OBJECTIVE**
2.1.4: Color and contrast

**OBJECTIVE**
2.1.2: Design and audience participation

**OBJECTIVE**
2.1.7: Site message, culture and tone

The element of color plays a vital role in the perception and presentation of a Web site. A company's style, culture and mood can be conveyed by the colors presented in the site and how they blend, coordinate or contrast.

Color is perceived as a representation of the type of culture and industry in which a company participates. For example, a Web site with primarily hard, bright colors such as red, pink, yellow and green may give the impression of a flashy, artistic type of industry and culture, such as a high-tech software design or graphic art firm. By contrast, a site with more subdued colors such as white and soft blue or gray might be perceived as a more conservative or traditional organization.

Web developers must address these perceptions when selecting a color scheme for a company Web site. Which colors are most complementary? How many colors should be present? Background design also plays a role, even after the color scheme has been chosen. Should you use basic horizontal or vertical lines? Will other geometric objects be included, such as triangles or other polygons? These and other questions must be addressed to best represent the image a company wants to portray to the audience.

 

**OBJECTIVE**
3.3.7: Image colors and audience cultures

## Cultural perceptions

Because colors and images convey information about the organization that created a Web site, you must take care to evaluate the effectiveness or appropriateness of the colors you choose based on your intended audience.

**NOTE:**
How important is color to business image? Think of examples of color schemes used to represent businesses. For example, some airlines and fast-food chains use color schemes that are instantly recognizable. What do these color schemes say about these businesses?

Certain color schemes may have gained negative connotations on the Web. For example, red text on a black background is often associated with hostility or hackers. Other color schemes — such as the colors used in a specific country's flag — may suggest geographic or cultural biases. Images portrayed in one color scheme may convey a different message in another (consider again a country's flag colors, or a puddle of liquid shown in blue compared to the same puddle shown in red).

As you consider your audience, make sure that you identify the following:

- Color combinations that might be attractive or acceptable to specific audiences or cultures
- Color combinations that might be unattractive to specific audiences or cultures
- Symbols, objects or images that may attract or repel an audience

Remember that colors and images that attract one audience might offend another. Also, be ready to consider and adopt different perspectives. Otherwise, your design efforts will be less successful. For example, the previous example suggesting that certain color schemes might be associated with hackers tends to assume a European/North American perspective. If your site is intended for an audience that will not include this perspective, then you may have different results with this color combination.

## Additive color display

**pixel**
Short for "picture element." A unit of measure that represents a minimum amount of graphical information as a single dot on a display screen.

A computer monitor consists of thousands of picture elements called **pixels**. Each pixel can display only one color at a time. When viewing an image onscreen, you see hundreds or thousands of pixels that each have a particular color and combine to create the image you see.

Colors that create black when mixed together are called subtractive colors. In print media, all colors are a combination of cyan, magenta, yellow and black; this color scheme is referred to as CMYK. Adding more colors to the mix with CMYK results in the movement of the color toward black.

Colors that create white when mixed together are referred to as additive colors; this color scheme consists of red, green and blue, and is called RGB. The computer monitor displays additive colors. Adding more colors to the mix with RGB results in the movement of the color toward white.

## Color formats

Colors on your computer screen are standardized in two numeric formats:

- Red, green and blue values (RGB)
- Hexadecimal code

Both RGB and hexadecimal colors can produce any color in the visible spectrum when combined in various proportions. These color formats are each capable of displaying 16,777,216 colors (256 times 256 times 256).

 

To comply with XHTML, a Web designer should use hexadecimal values exclusively. However, for discussion purposes and to help you learn hexadecimal values, this lesson will consider the use of both.

### RGB color values

RGB values are formatted in base-10 numbers ranging from 0 to 255. Base 10 refers to the use of the digits 0 through 9 in the decimal system; when the digit 1 is reached, the value increases from 0 to 1 (the next whole number), and so forth. Using the RGB scheme, the color white is stated as follows:

R (red) = 255

G (green) = 255

B (blue) = 255

Thus, the RGB value for white is written as 255,255,255, which represents the maximum presence of red, green and blue.

The RGB value for the color green is stated as follows:

R=0

G=255

B=0

Thus, the RGB value for green is written as 0,255,0, which represents no presence of red, maximum presence of green, and no presence of blue.

You can declare the RGB value for green in XHTML code as follows:

```
<body bgcolor="0,255,0">
```

**NOTE:**
The color-value sites listed in the Tech Note are very useful for anyone designing pages or graphics for the Web. You can bookmark these sites in your browser for quick access.

RGB value is a 24-bit coloring scheme that forms 1 byte (8 bits) for each RGB value:

8 bits (red) + 8 bits (green) + 8 bits (blue) = 24 bits


*For a complete listing of RGB colors and their corresponding hexadecimal values, visit the Browser-Safe Web Palette page www.lynda.com/resources/webpalette.aspx (provided by Lynda Weinman) or the VisiBone Webmaster's Color Laboratory at www.visibone.com/colorlab/ (provided by Bob Stein).*

### Hexadecimal color values

**OBJECTIVE**
3.1.3: Hexadecimal color values

Hexadecimal code values range from 00 to FF (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F). Hex code correlates to the base-10 values but is stated in hex (base-16) values. The value 00 represents no presence of a color, and the value FF represents maximum presence of a color.

The color white is represented in hexadecimal code as follows:

Red=FF

Green=FF

Blue=FF

Thus, the hexadecimal value for white is written as FFFFFF, which represents maximum presence of red, green and blue.

 

The color green is represented in hexadecimal code as follows:

Red=00

Green=FF

Blue=00

Thus, the hexadecimal value for green is written as 00FF00, which represents no presence of red, maximum presence of green, and no presence of blue.

As you can see, hex code assigns each color a two-character code for each red, green and blue value, whereas the RGB scheme uses digits between 0 and 255 for each red, green and blue value. RGB values are also separated by commas, whereas hex values are not. Table 5-2 shows some examples.

**NOTE:**
Be sure you understand how to read hexadecimal and RGB values. Most graphic design applications use these values for color. You can test your understanding of these code conversions in **Activity 5-2: Identifying numeric color formats**.

*Table 5-2: RGB and hexadecimal color value examples*

| Color | RGB Value | Hex Code |
|---|---|---|
| **RED** | 255,0,0 | FF0000 |
| **GREEN** | 0,255,0 | 00FF00 |
| **BLUE** | 0,0,255 | 0000FF |
| **WHITE** | 255,255,255 | FFFFFF |
| **BLACK** | 0,0,0 | 000000 |

When hex-code values are used in HTML, they are preceded by the # (number) symbol, which is not required but is part of the HTML 4.0 specification. In the <body> tag, for example, the background color green is specified as follows:

```
<body bgcolor="#00FF00">
```

## Color on computer monitors

To display color, a common cathode ray tube (CRT) computer monitor uses three electron guns. Each gun is responsible for a single color: red, green or blue. Various combinations of guns and intensities of electron streams form all colors in the full palette.

**NOTE:**
If you have taken art classes and mixed paint, this color model may seem contrary to the subtractive color model used for print media (CMYK). Remember that colors combine differently when mixing light (for electronic monitor display) rather than pigment and dyes.

The simultaneous full-intensity firing of these guns produces white on the screen. Firing the red and green guns produces yellow. Firing the green and blue guns produces cyan. The combination of red and blue produces magenta. Figure 5-13 illustrates these color combinations and the relationships between them.

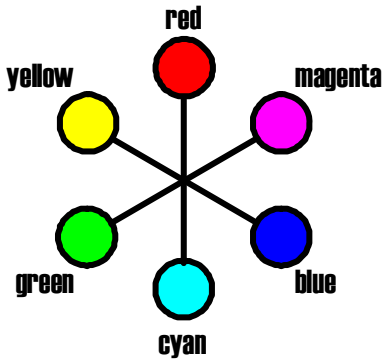


*Figure 5-13: Basic color combinations*

 

Several inconsistencies exist among monitor displays. These variables include monitor type and design, graphics cards, computer configurations, and even ambient room lighting.

Liquid crystal display (LCD) monitors — such as those used in laptop displays or flat-panel screens — present another complexity. LCDs use transistors to determine the color and brightness of the images on the screen. Although the quality of LCD has improved dramatically in the last few years, images and colors on LCD screens will look different than on CRTs. You should always test the Web pages you design on both flat-panel monitors and CRTs.

## Browser-safe colors

Most personal computer systems today offer 24-bit or 32-bit true color, allowing the monitor to display 16 million colors. In the late 1990s, however, when the browser-safe color palette was developed, the majority of Internet users owned computer systems with 8-bit video cards capable of displaying only 256 colors. Any browser running on an 8-bit system could display a maximum of 256 colors, with 40 of those colors used by the operating system, and 216 colors remaining that could be guaranteed to display without dithering.

**dithering**
The ability for a computer to approximate a color by combining the RGB values.

**Dithering** is the process by which the browser approximates a color to the closest browser-safe color it supports. Table 5-3 lists the RGB and hexadecimal values that will render safely in multiple browsers in a 256-color environment. If you used values other than these in your page designs, the browser would dither them to the nearest values it could determine.

*Table 5-3: Browser-safe color palette*

| RGB Value | Hex Code |
|---|---|
| 0 | 00 |
| 51 | 33 |
| 102 | 66 |
| 153 | 99 |
| 204 | CC |
| 255 | FF |

**NOTE:**
Lynda Weinman's Browser-Safe Web Palette page (*www.lynda.com/resources/webpalette.aspx*) and Bob Stein's VisiBone Webmaster's Color Laboratory page (*www.visibone.com/colorlab/*) both list only browser-safe (i.e., non-dithering) color values.

Each of these values corresponds to the matching value. For example, using a value of 51 in RGB is the same as using the value of 33 in hexadecimal code. In other words, an RGB value of 51,153,204 is the same as the hexadecimal value of #3399CC.

Using any combination of these values will result in a browser-safe color that will render consistently across platforms.

The intensity of each red, green and blue combination determines the color to be displayed. Table 5-4 represents the intensity in percentages for each of the browser-safe color values, from least to greatest.

 

*Table 5-4: Browser-safe color intensities*

| Hex Code | Intensity in Percentage | RGB Value |
|---|---|---|
| 00 | 0% | 0 |
| 33 | 20% | 51 |
| 66 | 40% | 102 |
| 99 | 60% | 153 |
| CC | 80% | 204 |
| FF | 100% | 255 |


*The Browser-Safe Web Palette page (www.lynda.com/resources/webpalette.aspx) and the VisiBone Webmaster's Color Laboratory page (www.visibone.com/colorlab/) provide complete listings of browser-safe RGB and hex color values.*

**NOTE:** With the abundance of colors and choices available for Web design, it may seem boring to conform to a black-text-on-white-background scheme. Have you ever visited a site that was distracting or difficult to read because it used a different color combination? What other color combinations do you think might work well?

## Color combinations

Color combinations should complement each other and, more importantly, allow the user to easily discern and read any text that resides on the page. Black text on a white background provides the highest possible contrast, and usability studies have shown this to be the most readable text.

Most situations allow for the use of this black-text-on-white-background scheme, and it should be used whenever possible. Many sites have colors that represent the company (its branding colors), which will not always conform to the black-on-white scheme. Generally, the only place that a site can venture away from black-and-white without repercussions to usability would be the site's home page. Beyond the home page, content becomes more abundant, and the site should aim to make the user feel comfortable. Business or branding colors can be used in other page elements, such as images and borders, to give the desired look and feel.

As previously discussed, audience and cultural issues should also be considered when choosing color combinations.

**NOTE:** You can experiment with color combinations in **Optional Lab 5-1: Using Web page colors and fonts to convey a message**.


*You can test different background and text color combinations at the VisiBone Webmaster's Color Laboratory (www.visibone.com/colorlab/).*

## Color transitions

Color transition describes the way in which adjacently placed colors blend together or stand apart from each other. Color transitions are especially noticeable between text and background colors, and can be used to help separate various parts of a Web page. However, transitions become more of an issue when colors are introduced to the page in images. Although smooth color transitions are desirable in images, they require higher color support, which in turn requires longer download times.

**NOTE:** Keep in mind that some Web users may be colorblind. You should consider this fact if your design depends on the user's ability to distinguish between certain colors. For more information, color-deficiency simulations and links to color-blindness tests, visit *www.visibone.com/colorblind/*.

# Fonts and Web Design

As the Web evolves, styles change as much as technologies. Two fonts are most commonly used on the Internet. The first is Times New Roman for the PC, which is equivalent to Times on the Macintosh platform. The second is Arial for the PC, equivalent

 

to Helvetica on the Macintosh platform. Technologies such as dynamic and embedded fonts are rapidly emerging to offer more choices.

However, these common fonts provide a site with a clear, attractive presence. If you have used the Web for some time, you probably do not notice these fonts as you look at them. On occasion, you may see a site with a different font that catches your eye simply because it is not widely used.

## Limitations

One of the limitations of font usage is that the chosen font must be registered on the user's system to be rendered in the browser. If the user does not have that font, the browser will render its default font instead (typically Times New Roman for the PC and Times for the Mac). If you intend to use an obscure font, the source of the font should be made available to users so they can download and install it on their systems. In this way, you can ensure the intended browsing experience.

## Typography

Because fonts are a necessary component to any site, choose a font and color that make a nonverbal statement along with the other elements of the page. Much like anything you read, too much text can be overwhelming, distracting or tedious. A clear font choice properly laid out on the document speaks to the users, even if they take only a quick glance.

### *Serif fonts*

Serifs are the small decorative strokes added to the ends of a letter's main strokes, as shown in Figure 5-14. Times New Roman is an example of a serif font.


*Figure 5-14: Serifs*

Serifs improve readability by leading the eye along the line of type. However, they are more difficult to read in small scale (smaller than 8 point) and very large sizes. Therefore, serif fonts are best suited for body text.

Serif form contains four designs called Old Style, Transitional, Modern and Slab Serif designs.

### *Sans-serif fonts*

Sans-serif fonts do not have serifs, as shown in Figure 5-15. Arial is an example of a sans-serif font.

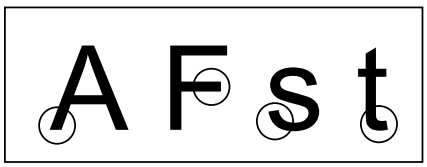


*Figure 5-15: Sans serifs*

 

**NOTE:** Readability is the key consideration in font choice. You can experiment with fonts in **Optional Lab 5-1: Using Web page colors and fonts to convey a message**.

The letters' appearance is reduced to the essential strokes. Traditionally, sans-serif fonts are used for small (smaller than 8 point) and very large-scale text, such as footnotes and headlines respectively. However, sans-serif fonts such as Verdana and Georgia have been specifically designed for reading on the screen, and today are often used for body text as well.

After you have selected a font, it should be used consistently throughout the site. More than one font can be present in the site, but data or information of the same type should be represented by the same font. For example, all navigation text should look the same. Normal text within paragraphs should look the same. But text that needs to be differentiated from other text (such as numbers or headers or facts) works well with a different font.

However, avoid using a large mix of fonts within a page because it tends to make the page busy and difficult to read. The ideal page is consistent and provides the user with easy viewing. Font colors should also remain consistent so the user has an understanding of what the text and colors represent.

### *Font size*

All Web browsers have a default font size. If you do not specify a font size in your XHTML or CSS documents, then this default size will be used. Although users can control the default font size, most users do not change it. As a result, the default font size is usually set to Medium, which is typically 12-point text.

A common problem relates to font-size display differences between the PC and Macintosh. Macs display images at 72 dots per inch (dpi), whereas PCs displays at 96 dpi. This disparity will result in the Macintosh displaying fonts smaller than the PC display for any given size. For this reason, if you are designing on a PC and the font looks small, remember that it will look even smaller when displayed on a Macintosh.

### *TrueType*

Many fonts are known as TrueType, which means they can be rendered in any point-size value without degradation of letter quality. TrueType is a digital technology developed by Apple Computer, and is now used by both Apple and Microsoft operating systems. Times New Roman is a TrueType font, as is Arial. Some relatively new TrueType fonts appearing more frequently are Verdana and Georgia. These fonts render nicely and provide a richer look on the page.

### *Anti-aliasing*

**NOTE:** Anti-aliasing must be performed in a graphics creation and editing application.

The anti-aliasing process maintains rich-looking letters that do not have jagged edges. Often, graphics are used to represent letters, words or sentences. The anti-aliasing process makes the text look smooth by blurring the lines between text and background. This technique removes the harsh, jagged edges of the letters, which are especially noticeable with large fonts. One drawback to anti-aliasing is that it adds more colors to the image, resulting in larger file sizes and longer downloads. Figure 5-16 shows an example of normal text next to text that has had the anti-aliasing process applied.

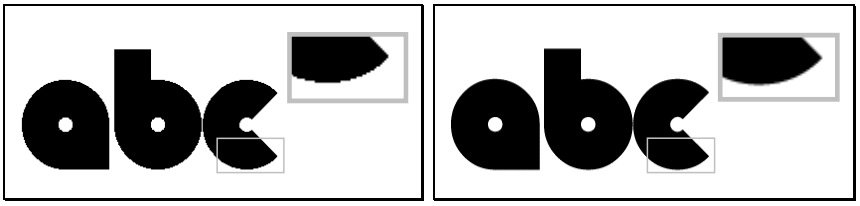


*Figure 5-16: Plain text next to anti-aliased text*

 

### Horizontal line length

To make reading easy, avoid long lines of text that span the entire browser window. It is difficult to read line after line, returning to the left margin each time, if the lines are long. It is advisable to keep the lines in your paragraphs no more than 10 to 12 words long for normal reading and browsing.

### Other considerations

To find the best font to fulfill your purpose and match your general concept, you need to recognize a font's scope for variation and its range of expression. You must use all techniques and materials in the best ways. The following considerations can help you avoid common mistakes, and you will develop a personal style over time.

- Always consider an individual font's contributing factors and how that font relates to the whole design.
- No single font can serve all purposes at once.
- Design elements, such as size and proportions of format, margins, line spacing, background color and foreground color, all help determine the end result. Even a relatively neutral typeface such as a sans-serif font can produce a rich variety of forms simply through different arrangement.

## Typographical issues in printable content

**OBJECTIVE**
2.1.9: Typographical issues in printable content

Web pages have quickly become a way to distribute and present printable content. However, content that appears properly in a browser window will not necessarily appear the same when printed on paper.

If you expect that users will print content from your Web site, you must be aware of certain issues and differences between the Web and paper media, and then design your site with printing in mind.

When a user clicks the Print button on his or her browser, the browser will attempt to scale the width of the current Web page to paper size (about 650 pixels for 8.5x11-inch paper). If the page consists mostly of text, it can usually print well without a problem. However, if the design is rigid, includes large images or contains objects positioned outside the printable area, then the browser will generally crop the page, and the right side of the page will not print past the paper width.

Also consider that many users will be printing your pages using a black-and-white printer. If your site makes extensive use of typographical effects such as various font colors and backgrounds, this information may be lost when users print the page.

To make your Web pages usable in a printed format, you can design printable versions of pages that you think users are likely to print. Printable versions of Web pages are typically simplified and slimmed versions of the page. They usually contain all of the content, but none of the navigation and other elements that are not useful when printed. These pages should also use standard fonts such as Times New Roman or Arial, and UTF-8 coding. For maximum usefulness, printable versions of your Web pages should include the full URL of the page and any important links so that users of the print version can reference and return to the source or referenced sites.

Alternatively, you can offer printable content in a different, print-friendly format, such as a word-processing document, presentation slides or Portable Document Format (PDF). File types such as these allow you to distribute content from your Web site by providing files that users can download, view and print with other applications or plug-ins. For example, PDF documents (which you will learn more about in a later lesson) require

 

users to install a browser plug-in, but this file type ensures that the content's original formatting is retained in display and print, and not interpreted differently by various browsers.

## Case Study

# Compromising Positions

Fabulous Design Company has an admittedly uncreative slogan: "The customer is always right." So when a potential customer named Tex said that he wanted the Web site for his car dealership to be "shaped like Texas," "have barbed wire and rifles," and "use a lot of cool fonts," the Web design team was concerned — they did not want to be involved with the design of such a tacky Web site.

The design team's project manager, Wendy, met with the potential customer and explained to him that although the customer is always right, the job of a Web designer is to create a site that will help the customer achieve his goals. So, rather than focusing on the customer's ideas for the look of the site at the beginning of the project, Wendy suggested that they start by analyzing the goals that Tex wanted the Web site to achieve. Tex agreed, but insisted that he knew exactly what the Web site should look like, and he just needed someone to build it.

After Wendy and Tex had defined the goals and vision for the site, Tex realized that perhaps his original design idea was a bit elaborate and might cause some customers to look elsewhere. During her research and talks with Tex, Wendy discovered that car dealership sites — particularly in Texas — are often very colorful, that Texas themes tend to be very important to some buyers, and that being Texan is an important part of this business's brand identity.

With her understanding of the project, and with Tex's new flexibility regarding the site's appearance, Wendy turned the job over to the production team. The designers interpreted Tex's vision and filtered it through their knowledge of design, branding, layout, fonts and colors.

After seeing the comps, Tex was very happy with the results, and he thanked Wendy and her team for doing so much more than simply creating the site that he had originally requested.

* * *

Consider this scenario and answer the following questions.

- Do you feel that the customer in this scenario should have compromised with the Web design team he was hiring? Should the design team have compromised with the customer? Was the compromise appropriate? Why or why not?
- Suppose either party in this scenario had not been so flexible. How else might this situation have turned out?
- Suppose you are a Web development project manager dealing with a customer whose ideas you do not agree with. On what issues do you think a Web designer should stand firm? On what issues should you compromise? What would you do if the customer insists on a design you do not like?

 

# Lesson Summary

## Application project

This lesson discussed several layout elements that help make Web pages visually appealing, and easy to scan and understand. Although your site should be designed to deliver all your content efficiently, the goals of Web design focus in many ways on the first impressions of new users.

What Web sites have you visited for specific information, only to find that the design was displeasing or difficult to use? Did you remain at that site long enough to obtain the information for which you initially visited? Or did you seek out a competitor whose site was designed better?

What sites have you found whose designs are so enjoyable or easy to use that you return repeatedly, even if that site is not the best source for information?

Visit at least one site that fits each of these descriptions, and as you browse, list page layout elements that contribute to your overall impression of the site. If you do not know of any such sites offhand, go to a search engine such as Yahoo! and enter keywords related to a hobby, favorite food or other topic that interests you. Visit some sites that match your keywords and see what you find. In general, what percentage of sites seems to use good Web page layout practices?

## Skills review

In this lesson, you examined the elements of Web page design and ways to use them to your advantage. You learned how white space, tables and frames can be used in page layout. You learned about branding, and ways to convey a site's message and tone. You also studied color application and formats, and you learned about font styles and how to choose them.

Now that you have completed this lesson, you should be able to:

- ✓ 1.1.14: Apply branding to a Web site.
- ✓ 2.1.1: Define and use common Web page design and layout elements (e.g., color, space, font size and style, lines, logos, symbols, pictograms, images, stationary features).
- ✓ 2.1.2: Determine ways that design helps and hinders audience participation (includes target audience, stakeholder expectations, cultural issues).
- ✓ 2.1.3: Manipulate space and content to create a visually balanced page/site that presents a coherent, unified message (includes symmetry, asymmetry, radial balance).
- ✓ 2.1.4: Use color and contrast to introduce variety, stimulate users and emphasize messages.
- ✓ 2.1.5: Use design strategies to control a user's focus on a page.
- ✓ 2.1.6: Apply strategies and tools for visual consistency to Web pages and site (e.g., style guides, page templates, image placement, navigation aids).
- ✓ 2.1.7: Convey a site's message, culture and tone (professional, casual, formal, informal) using images, colors, fonts, content style.
- ✓ 2.1.8: Eliminate unnecessary elements that distract from a page's message.
- ✓ 2.1.9: Design for typographical issues in printable content.

 

- ✓ 2.1.10: Design for screen resolution issues in online content.
- ✓ 2.2.1: Identify Web site characteristics and strategies to enable them, including interactivity, navigation, database integration.
- ✓ 2.2.9: Identify audience and end-user capabilities (e.g., lowest common denominator in usability).
- ✓ 3.1.3: Use hexadecimal values to specify colors in X/HTML.
- ✓ 3.3.7: Evaluate image colors to determine effectiveness in various cultures.

 

# Lesson 5 Review

1. Studies have found that most users do not read Web pages — instead, they scan them looking for key words and phrases. How does this user habit affect Web page layout?

2. Web users demand speed. How can you design your Web pages to fulfill this demand?

3. What are the two numeric formats used to define color values on the Web?

4. What is the main limitation of font usage on Web sites?

5. Name two layout elements you can use to create white space in your Web page design.

6. What is branding, and how can a Web site contribute to it?

 