

7. Graphics à la "the Web"

Sending text over the Internet is just old fashioned e-mail. People have been doing it for decades! When you can include **Pictures**, your message can be much more informative! *Is the going rate still 1000 words per picture?*

Objectives

After this lesson, you will be able to:

- Identify the graphic formats for the World Wide Web.
- Discuss key points to consider when including graphics in WWW documents.
- Download a graphic file to your computer.
- Use the correct HTML format for including pictures in your web page.

Lesson

Lean back and relax! This lesson is mostly an introduction to graphics for the Web. But we'll have you do a little activity below.

The Web's Graphic Format

There are numerous file formats for computer graphics... PICT, GIF, TIFF, PNG, not to mention EPS, BMP, PCX, JPEG...

It sounds like cryptic poetry. Bad poetry. Geek poetry!

The way a web browser displays graphics in HTML format indicates the location of a graphic file in a single format that can be interpreted by different types of computers. For example, when the information in that format is received by your Macintosh computer, the web browser knows to display it as a picture format for Macintosh. However, when that same information is received by your Windows browser, it is displayed as a Windows graphic.

In technical jargon, we would say that this picture format is **platform independent**. HTML itself is platform independent, since plain text characters can be understood by any computer.

The standard format that can display **within** a web page is GIF or Graphics Interchange Format. The GIF

compresses the picture information (reduces the file size) and translates it to binary code that can be sent over the Internet. GIF compression is most effective on graphics that have contiguous areas of solid color, and compression is even greater when the color is continuous in the horizontal direction. GIF images have the feature of defining a color to be "transparent" so images can appear to have non-rectangular boundaries. They can also be saved in the "interlaced" format so that when you see a web page, the images start to appear soon and "dissolve" to the final image.

The other file format used on the web is JPEG (named after the [Joint Photographic Expert Group](#) that designed this format). In the early web years, JPEG images were **not** displayed in the page but were displayed in a separate window, using an external "helper" application. But most web browsers these days support JPEG images to be displayed right in the web page too.

JPEG compression is very effective for photographic images where the colors can vary spatially over short distances ("grainy" images). JPEG offers some dramatic compression in filesize, sometimes by a factor of 10 (e.g. a 1500 kb file reduced to 150 kb), which may be at a trade-off for some image quality. JPEG images do not have the ability to have transparency.

For more information about these file formats, see the SITO page on [Graphics File Compression](#). If you are in the mood for a great book, try Lynda Weinman's [Designing Web Graphics](#).

More and more graphics programs have built-in features to save files as GIF format. Newer ones such as ImageReady from [Adobe](#) and Fireworks from [Macromedia](#) have been specifically designed for creating web graphics. You can find other shareware programs/utilities for converting graphics to web format from [download.com](#).

Some Points to Consider When Using Graphics

For this tutorial, you do not have to use one of these graphics programs. We will show you how to get a copy of the images that you will need.

However, as you begin to develop your own web pages, you should become familiar with creating pictures in either GIF or JPEG format. If your web pages include graphics, consider the following:

- Large and numerous images may look great on a high-end computer, but they will frustrate users who must wait for images to be sent over the network. As a suggestion, keep the total file size of all images on a web less than 100k (we aim for less than 50k each).
- Not all of us have a 21-inch computer monitor! Keep graphic images no wider than 480 pixels and no higher than 300 pixels to avoid forcing users to scroll or resize their web browser window.
- Color gradients may look pretty but for GIF images they do not compress as much as solid color areas and they can sometimes come out "banded".
- Some graphics programs offer options for "no dithering" when converting to GIF -- this can

reduce the amount of "noise" in a solid background.

- Many dark grey tones on Macintosh computers are not discernible on Windows computers.
- Rather than displaying all of the images on the web page, have them linked as external images that are downloaded only when a viewer clicks on a hypertext item (this will be covered later in [lesson 8a](#) and in [lesson 8d](#)). If you have numerous pictures to display, try to break the web page into a series of linked pages.
- A single image (e.g. a small "bullet") can appear several times in a web page with little added delay each time you use that same image.
- Many web browsers "cache" images (storing them on your computer) meaning that using the same file in several web pages will load them from the viewer's computer rather than loading them across the Internet.
- Most importantly, make sure that the images are ones that **add** meaning to your HTML documents.

You may design a beautiful web page, loaded with large pictures, that may load nicely from your computer, but may be excruciatingly slow by a viewer using a slow modem over a busy network. The 'net is a busy place and getting busier every second.

Saving and Including Pictures in Your Web Page

For the next lesson you will first need to download a copy of a GIF image of a volcano.

Check Your Work

Check to see that the file, **lava.gif**, is saved in the same directory/folder as your HTML file, **volc.html**. If it is not there, check to see if you accidentally saved it in another directory/folder. Then, move it to the correct location.

Review Topics

1. What are the two graphic formats used for the World Wide Web?
2. How can a graphic file display on different computers?
3. What are some key points to consider when including graphics in web pages?
4. How did you save the lava graphic for use in your WWW document?

Independent Practice

Surf the web and browse for pictures. Try to download at least one image that might be useful for your page. Just a few places you might try:

- [ClipArt Connection](#)
 - [CoolText Online Graphics Generator](#)
 - [Ditto.com](#)
 - [Yahoo's Clip Art](#)
 - [Lycos' Picture Search](#)
 - [Yahoo's ImageSurf](#)
 - [The Free Site](#)
 - [Free Graphics Store](#)
 - [Barry's Clip Art Server](#)
-

Coming Next....

You have the image... Now, how in the **H T M L** do you display it in your document?

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Writing HTML: Lesson 7: Graphics à la the Web

7a. Inline Graphics

WWW Mathematics:

Text + Pictures = Multimedia
Multimedia + WWW = Global HyperMedia

Got it?

Objectives

After this lesson, you will be able to:

- Place an inline image within your HTML document.
- Select how the pictures align with surrounding text.
- Modify the inline image tag to account for viewers using a non-graphic browser.
- Specify the dimensions of inline image.

Lesson

Let's see how with HTML you can include pictures like the "Big M" in a web page...

HTML Tags for Inline Graphics



An "inline" image is one that appears within the text of a WWW page, such as picture of "Big M".

this

The HTML format for the inline **image** tag is:

```

```

where **filename.gif** is the name of a GIF file that resides *in the same directory/folder* as your HTML document. By "inline", this means that a web browser will display the image in between text.

Note how the text immediately follows the "Big M" above. What if we want the "Big M" sitting on its very own line? To force the image to appear on a separate line,



simply insert a **paragraph** tag before the **image** tag:

```
<p> 
```

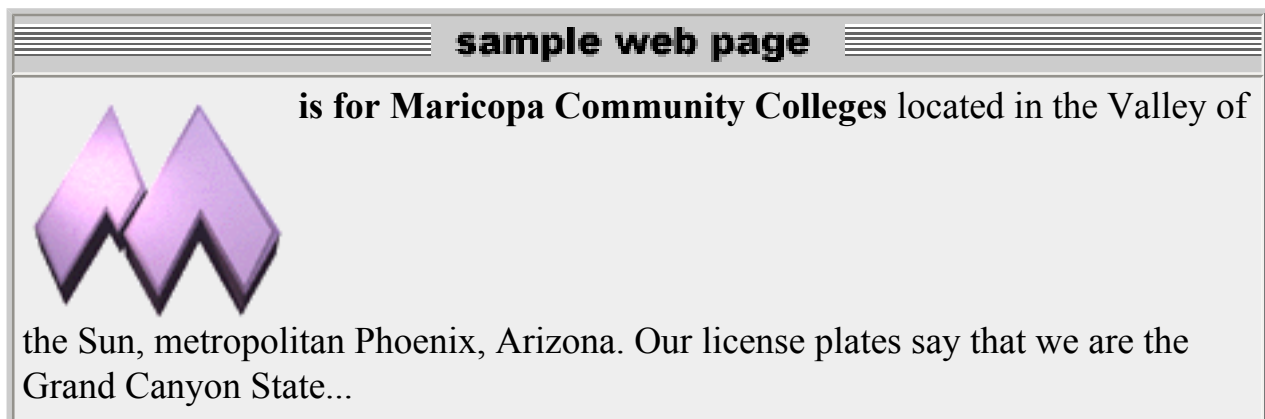
Alignment of Text and Inline Graphics

With an attribute to the **<img...>** tag, you can also control how text adjacent to the image aligns with the picture. The **align** attribute, added inside the **** tag, can produce the following effects:

align=top

```

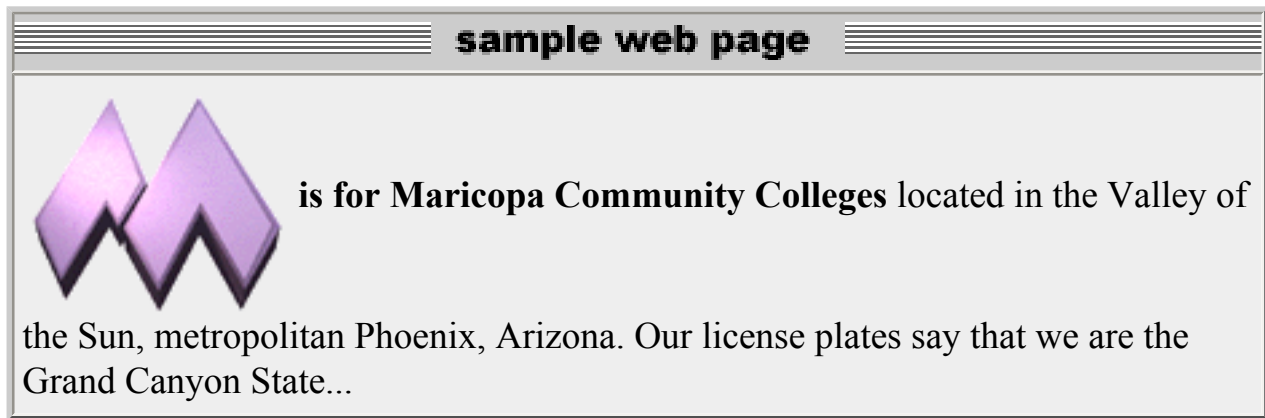
```



align=middle

```

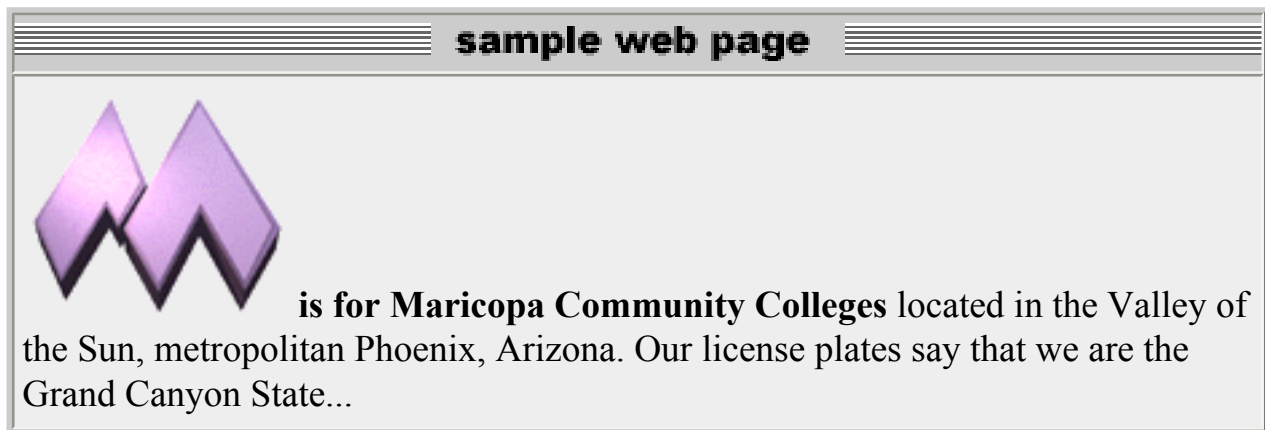
```



align=bottom (default)

```

```



Note how the text aligns only for one line... (shrink or stretch the width of your WWW browser window to see what happens.) In a later lesson, we will see a way to align blocks of text so that they flow around the side of an image.

Placing an Inline Image in Your HTML document

In this exercise, you will add an introductory picture of a volcano to your lesson.

1. Re-open your workspace (if not already open).
2. Open your **volc.html** document with the text editor.
3. Above the **<h1>Volcano Web</h1>** heading, enter the following:

```

```

This HTML format will insert, at the very top of your page, the lava picture that you [downloaded in the previous lesson](#).

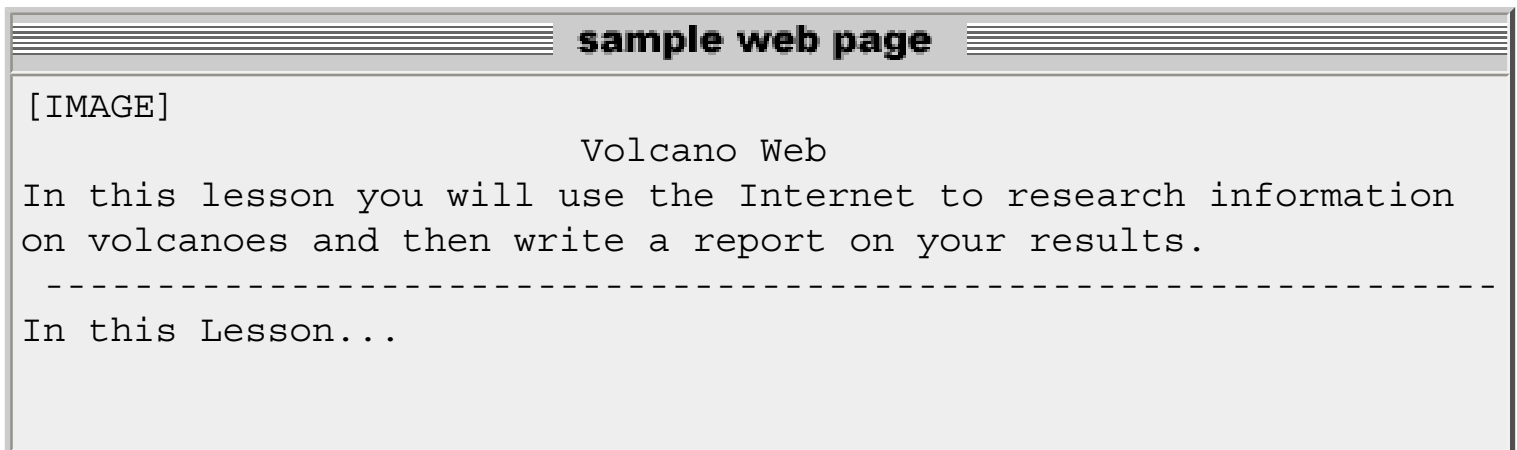
4. Save and reload in your web browser.

In placing the image, you may have wondered why we did not need to put a `<p>` tag after the image. This is because the following text was a header. A web browser **always** inserts a paragraph break before and after an `<h1,h2,h3...>` tag.

The `alt="..."` attribute

If your web pages will be viewed by users using a text-only browser (such as lynx), they will not be able to view any inline images. Or sometimes, users will turn off the loading of inline images to save time on downloading over slow network connections. An attribute for the `` tag allows for substitution of a descriptive string of text to hold the place of the image.

Under these conditions, a viewer with a text browser will see a place holder so that the top of our lesson page looks like:



This lets the viewer know that there is a graphic inserted at the top of this page. You could modify the `` tag so that rather than using the place holder, it displays a text string. For example, in our lesson we could add "A Lesson on:" by modifying the `` to read:

```

```

The `alt="..."` attribute replaces the place holder with a text string so that from a text-only browser (or when loading of images is shut off), it would now appear:

sample web page

A Lesson On

Volcano Web

In this lesson you will use the Internet to research information on volcanoes and then write a report on your results.

In this Lesson...

At this time, make this same edit to your HTML file for the `` tag that displays the picture of the volcano.

Height and Width attributes

Another option you may want to include in your `<img...>` tags are two attributes that give the dimensions of the image in pixels. Why? Normally, your web browser has to determine these dimensions as it reads in the image; the loading of your page can be faster if you specify these numbers in your HTML.

The format for including this option is:

```

```

where **X** is the width of the image and **Y** is the height of the image in pixels.

You can usually use some sort of graphics program or utility to determine these numbers. Another way to find the dimensions of an image is to load it into your web browser -- you may be able to drag and drop the icon for the image into your browser window -- and the height and width will be displayed in the title bar of the browser.

For our example in this lesson, the `lava.gif` image is 300 pixels wide and 259 pixels high. So you should edit your `volc.html` file to read:

```

```

NOTE: the order of the attributes inside the `` tag does not matter.

Often we are asked if you can alter the size of the image by inserting numbers other than the actual dimensions of the image. The answer is **yes** but the results may be undesirable. If you insert larger

numbers (to make the image bigger) the result will be a "blocky" picture. Sometimes this can be a useful effect on images with large areas of solid color. Take a look at our example of [Going from Small to Big](#). If you use lower numbers (to make the image smaller) the result may be a distorted picture. Also, the full size image still has to be downloaded, so there is no real savings in terms of time to download the image. Any re-sizing of the image requires extra "work" by the web browser to recalculate the page layout.

You could experiment and see for yourself. We just might be wrong!

You can also specify the size of an inline image in dimensions that are percentages of the current browser window size, so that the image will resize itself if the viewer expands or reduces the size of their browser window. Take a look at our example of [Percentage Scaling](#). *Caveat Emptor!* This may not work on all web browsers!

Check Your Work

Make sure you entered it as instructed in the **Placing an Inline Image in Your HTML Document** section of this lesson.

If you see a picture icon with a question mark:



first check that the HTML file and the image are in the same folder/directory. Then, you may want to make sure that the file name entered in the `` tag matches the name of the file.

Review Topics

1. What is the HTML format for an inline image?
2. What type of tag must you put before an image tag to make the image appear on a separate line?
3. How did you add the lava picture to your document?
4. What does the `alt="...."` attribute do? What does the `height="...."` attribute do?

Independent Practice

Add an inline image to your web page using a GIF picture file that is stored on your computer or one that you have downloaded from the Internet.

Coming Next....

Create links to other documents and files that you create as well as ones on the Internet.

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Writing HTML: Lesson 8d: Links to Sections of a Page

8. Linking it with Anchors

Relax... this lesson is quick and easy! In fact, it is just information for you to read...

What is a URL?

The real power of the web is the ability to create hypertext links to related information. That other information may be other web pages, graphics, sounds, digital movies, animations, software programs, contents of a file server, a log-in session to a remote computer, a software archive, or an "ftp" site.

The World Wide Web uses an addressing scheme known as **URLs**, or [Uniform Resource Locators](#) (sometimes also called "[Universal Resource Locator](#)"), to indicate the location of such items. These hypertext links, the ones [usually underlined in blue](#), are known as **anchors** (This should not be news to you as you followed several to get this far!).

In the next lessons we will:

- Review the concept of URLs.
- Find and copy URLs from your web browser to your HTML text document.
- Write an HTML anchor to link to another document in the same directory as our first document.
- Write an HTML anchor to link to another document in a different directory as our first document.
- Write an HTML anchor to link to another web document on the Internet.
- Write an HTML anchor that links to another section of the same document.
- Incorporate a graphic that acts as a "hyperlink" to another document.

Wow! That sounds like a lot to do! Don't worry -- it is no more complex than what you have done up to this point.

After all, without the hypertext, we would be only calling this "**Writing TML**" and not **Writing HTML**

Coming Next....

Using URLs to connect documents together via hypertext links.

Writing HTML: Lesson 8: Linking it with Anchors

8a. Linking to Local Files

Can my document talk to my document? Well, they can at least be linked!

Objectives

After this lesson, you will be able to:

- Create a link to an HTML document in the same directory/folder as your main document.
 - Create a link to display a graphic image.
 - Create a link to a file in a different directory/folder than your main document.
 - Reorganize the structure of your web.
-

Lesson

Now, you will take your first step of "anchoring" by creating a hypertext link to a second web page. These links are called "local" because they reside on the same computer as the working document (they do not have to venture out on the Internet). You will also be shuffling around the parts of your growing web site (do you see how this becomes more than just a "home page"?).

Link to Local Files

The simplest **anchor** link is one that opens another HTML file in the same directory as the presently displayed web page. The HTML format for doing this is:

```
<a href="filename.html">text that responds to link</a>
```

Think of it as "a" for anchor link and "href" for "hypertext reference".

The filename must be another HTML file. Whatever text occurs after the first > and before the closing symbols will be the "hypertext" that appears underlined and "hyper."

Now follow these steps to build an anchor link in your HTML document to a local file:

1. Open your HTML document, **volc.html**, in the text editor.
2. First, **under the Volcanic Places in the USA heading**, enter the following text which introduces the two volcanoes discussed in later sections.

Listed below are two places in the United States that are considered "active" volcanic areas.

3. Below the "Mount St. Helens" heading, enter:

On May 18, 1980, after a long period of rest, this quiet mountain in Washington provided [detailed observations](msh.html) on the mechanics of highly explosive eruptions.

The text "detailed observations" will link the viewer to a second HTML document called **msh.html**. This second HTML file does not yet exist; we will construct it in steps (5) and (6).

4. Save and close your HTML document
5. Now, with your text editor, open a window for a **New document**.
6. Enter the following text in the new window:

```
<html>
<head>
<title>Mount St Helens</title>
</head>
<body>
<h1>Mount St Helens</h1>
The towering pine trees of this once-quiet mountain
were toppled over like toothpicks.
</body>
</html>
```

7. Save this file as **msh.html** in the same directory/folder as your working HTML file (**volc.html**).
8. **Reload volc.html** in your web browser.
9. Test the hypertext link for the words "detailed observations". When selected, it should connect you to the new page about Mount St. Helens.

Anchor Link to a Graphic

In [lesson 7a](#), we learned how to display an "inline" graphic that would appear in your web page. With the **anchor** tag, you can also create a link to display a graphic file. When the anchor link is selected, it will download the image file and display the image by itself in an empty page.

The simplest anchor link is to a file in the same directory/folder as the document that calls it. The format for creating a hypertext link to a graphic is the same as above for linking to another HTML document:

```
<a href="filename.gif">text that responds to link</a>
```

where **filename.gif** is the name of a GIF image file.

Now follow these steps to add a link to a graphic file in your HTML document:

1. Download a copy of a GIF image.
2. Open the `msh.html` file in the text editor.
3. Modify the text to include a link to the image of Mount St. Helens.

```
The towering pine trees of this once-quiet mountain
were <a href="msh.gif">toppled over like toothpicks</a>.
```

4. Save the `msh.html` file and **Reload** in your web browser
5. Now click on the link you just created in step (3).
6. A picture of blown down trees should be displayed.

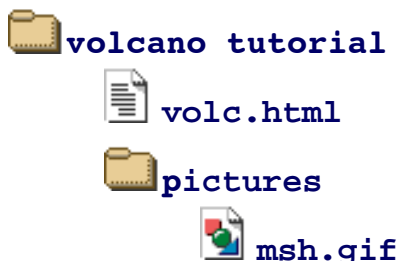
Links to other directories

The **anchor** tags can also link to an HTML document or graphic file in another directory/folder in relation to the document that contains the anchor. For example, in our lesson, we may wish to keep all of the graphics in a separate directory/folder called `pictures`. As you create more and more HTML files, keeping the image files in its own area will make things a bit more organized for you. Let's do that now:

1. From your computer system, create a sub-directory/folder called `pictures` in the same location where your `volc.html` file is stored.
2. Move the `msh.gif` file to this new sub-directory/folder.
3. Open the `msh.html` file in your text editor.
4. Edit the **anchor** tag for the graphic to read:

```
The towering pine trees of this once-quiet mountain
were <a href="pictures/msh.gif">toppled over
like toothpicks</a>.
```

NOTE: With HTML you can direct your web browser to open any document/graphic at a directory level *lower* (i.e. a sub-directory or folder within the directory/folder that contains the working HTML file) by using the `"/` character to indicate the change to a sub-directory called "pictures."



5. Save the HTML document and **Reload** in your web browser.

If all went well, the link in the sentence describing the blown-down trees should now call up the graphic file stored in the **pictures** sub-directory/folder.

Anchor Links to a Higher Level Directory

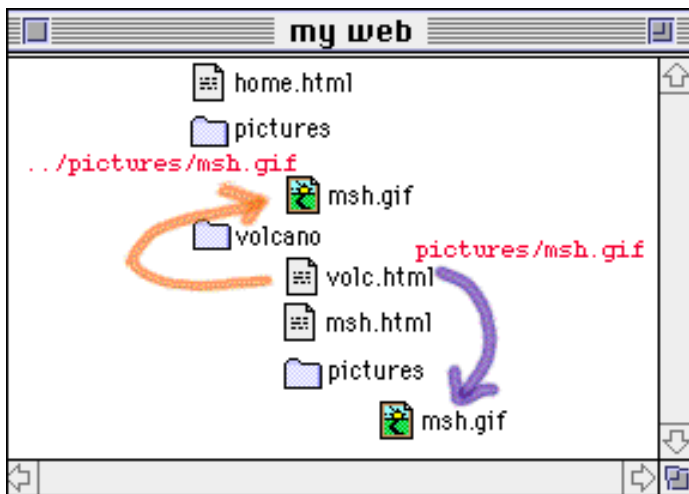
The types of links we have constructed here are known as "relative" links, meaning a web browser can construct the full URL based upon the current location of the HTML page and the link information in the `` tags. This is very powerful because you can build all your web pages on one computer, test them, and move them to another computer -- all the relative links will stay intact.

In this lesson we saw how to construct a hyperlink to a document that is stored in a directory **lower** than the working HTML page. Note that you can also construct a link that connects to a **higher** level directory as well by using this HTML:

```
<a href="../../home.html">return to home</a>
```

Each instance of `../../` the URL of an anchor link tells the web browser to go to a higher level directory/folder relative to the current page; in this case to go up two directory/folder levels and look for a file called **home.html**.

In our example, let's say that our **pictures** sub directory was not in the same directory/folder as the **volc.html** file but was actually one level higher.



In the previous section we constructed a link from the **volc.html** file to the **msh.gif** file in a subdirectory:

```

```

Now, we want to reorganize our web structure so that the pictures folder/directory is at a higher level. The link is now written:

```

```

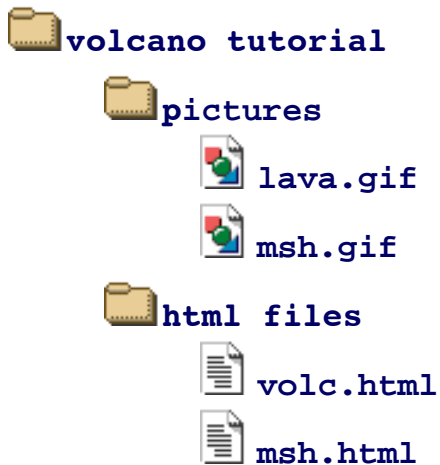
so the web browser looks for a folder called "pictures" that is stored one level up from our **volc.html** file.

An advantage of this structure is that it would be easier to store a large number of graphics in this upper folder/directory that can be shared in other web pages. We may do another lesson on landforms that makes use of the pictures stored in this folder/directory.

So now it is time to do a little re-organizing of our HTML files. This requires that you are familiar with moving files and directories around on your computer. **Read this carefully! It may be feeling like it's getting complicated, but it will all be clear soon!**

1. First, create a new folder/directory and name it **html files** (it is recommended to keep the file names in all lower case).

- Now, move the two HTML files **volc.html** and **msh.html** into this new folder/directory.
- Move the **pictures** folder/directory (along with the **msh.gif** file inside) so that it is in the **same** level as the new **html files** folder/directory. Also, move the **lava.gif** file that we added in [lesson 7a](#) into the pictures folder.
- So your entire **workarea** directory should now contain two subdirectories -- one that holds your HTML files (**html files**) and one that holds the graphics (**pictures**):



- We've moved some things around so now we will have to update the anchor links in our HTML files. First, look at the first local link we built in the **volc.html** file:

```

<h3>Mount St Helens</h3>
On May 18, 1980, after a long period of rest, this quiet
mountain in Washington provided <a href="msh.html">detailed
observations</a> on the mechanics of highly explosive
eruptions.
  
```

NOTE: Since the **msh.html** file is still in the same relative directory as **volc.html**, we do not have to change any of this HTML! Can you see how relative file linking is one of the powerful features of HTML?

- But now let's look at the link to the picture of Mt. St Helens that we created in the **msh.html** file:

```

The towering pine trees of this once-quiet mountain
were <a href="pictures/msh.gif">toppled over
like toothpicks</a>.
  
```

Open this file in your text editor and edit the link to read:

```

The towering pine trees of this once-quiet mountain
were <a href=" ../pictures/msh.gif">toppled over
like toothpicks</a>.
  
```

This relative link tells the web browser to go up one level from the current folder/directory (**html files**) and look there for another folder/directory called **pictures** that contains a GIF image called **msh.gif**

7. You will have to update the `<img...>` tag that displays the title graphic. Open the `volc.html` file in your text editor and modify the line just below the `<body>` tag to read:

```

```

8. Save your file. You should then **Open** the `volc.html` file in your web browser and test the link to `msh.html` and then try the link to the picture of Mount St Helens.

One More Small Change

This last small step may not be obvious, but we will explain it shortly. The last thing you should do in this lesson is to change the name of your working file from `volc.html` to `index.html`. You should do this using the normal way of editing a file's name from the computer desktop (on the Macintosh click on the file name; on Windows right-mouse click on the icon and select the option for **Rename**). Note also for Windows users that if you use a special editor program to create HTML files, you will not see the ".html" extension on the desktop file name, so in that case, you would **change the file name from `volc` to `index`** because under the hood, the computer knows that there is a ".html" at the end.

Why are we doing this? Let's say you have finished this lesson and are ready to store it on a World Wide Web server for the world to see. And let's assume that the Internet address for this server at Big University is:

```
http://www.bigu.edu/
```

And your file will be stored in a series of directories:

```
--= top level of server: www.bigu.edu
   /courses
     /science
       /geology
         /volc.html
```

so that the URL for the Volcano Web might be:

```
http://www.bigu.edu/courses/science/geology/volcano/volc.html
```

Pretty long, eh? Now here is the promised explanation -- on most WWW servers you can designate one standard name that is the "default" web page for that directory and on most systems that name is.... `index.html`. What this means is that the Internet address:

```
http://www.bigu.edu/courses/science/geology/volcano/
```

is equivalent to

```
http://www.bigu.edu/courses/science/geology/volcano/index.html
```

This might make you think that it is a lot of energy to cut 20 letters out of a URL! But it does tend to make your URL

look a bit more professional -- If you were creating the Longhorn Cheese Home page,

<http://www.cheese.com/longhorn/>

looks less redundant in print than

<http://www.cheese.com/longhorn/longhorn.html>

which comes into play when people read about your URL and are trying to connect by typing it into their web browser.

Note also that this special file name **index.html** is used on a most web servers but it might also be **default.htm**-- check with the people that run your web server.

Check Your Work

When you click on the hypertext for **detailed observations**, your web browser will display a new page. Finally, when you click on **topped over like toothpicks**, your web browser will display in an external window a picture file that is stored in a sub folder/directory.

Use the web browser's **back** button twice to return to this page. If your web page was different from the sample, review the text you entered in the text editor.

Review Topics

1. What were the steps you used in creating a link within your document to a local file?
2. What steps did you use to create a link which displayed a graphic in an external window?
3. How did you create a link to a file in a lower directory/folder than your main document? a higher directory?
4. What is the significance of a file called **index.html** on a WWW server?

Independent Practice

Create a second HTML document that uses the HTML formatting that you are familiar with at this point. Return to the first one you created and make an anchor that links to this new one.

Coming Next....

Wow! That was a lot of work! In the next lesson you will learn how use the HTML for linking to resources "out

there" on the Internet.

GO TO.... | [Lesson Index](#) | [previous: "Anchors"](#) | [next: "URLs"](#) |

Writing HTML: Lesson 8b: Linking to Local Files

8b. URLs: Pointers to the Internet

URL? Earl? Yurl? hurl? gyrl?

It's getting time to link to that Big Wide Web using the web's addressing scheme.

Objectives

After this lesson you will be able to:

- Identify the function of Uniform Resource Locators (URLs).
- Recognize the structure of a URL.
- Examine the URLs in the hypertext links of any web page.

Lesson

Note: For this lesson, you will not need your HTML text file. This is another low-effort lesson!

What is a URL?

The [Uniform Resource Locator \(URL\)](#) is what the WWW uses to find the location of files and documents from computers on the Internet. On your web browser screen, the URL for this document is typically displayed in the upper part of the Web browser window. **The URL includes:**

- an identifier for the type of Internet server;
- an Internet address; and
- a file path to the particular item of interest.

The URL is what you will need to build a link from the web page that you are creating to connect to some other piece of information available on the Internet. For more information, see [Curling Up To URLs \(v0.2\)](#)

How are URLs Structured?

The structure of a URL is:

```
type://in.ter.net.address/directory/sub-directory/.../filename
```

The "**type**" indicates the type of Internet server being accessed:

http
a web server, "Http" stands for **HyperText Transfer Protocol**

gopher
an Internet Gopher site or **menu driven directories of files and information**

ftp
an anonymous **File Transfer Protocol** (FTP) site, archives of files.

telnet
initiates a Telnet session to log on remotely to another computer. When selected, your web browser will launch a Telnet external program and connect to the specified site.

WAIS
Wide Area Indexed Server -- a site to search a collection of subject oriented documents by keywords

file
A file on your local computer system (hard drive, floppy, local file server)

The **type** is always followed by "**://**" and the Internet address of a remote computer. This is in the structure of:

```
host.domain.domain.domain
```

For example:

```
machine.department.college.edu  
123.45.6.78  
office.company.com  
agency.branch.gov  
machine.organization.country
```

If the URL is to the main level of this host (its "home page"), then the URL is terminated with a slash "/". If you are linking to a sub-directory or a file, you must also add the exact path to that item using the slash character to indicate the entire file path.

Note: For most web servers spelling does count! So does capitalization! File names on UNIX computers are case sensitive, meaning that a file named

SpiffyText.html

is a different file than

spiffytext.html

Experimenting With URLs

Note that URLs can link to any site, directory, subdirectory, text file, image, digital movie, or sound file on any Internet site that is set up for public access. The best way to see different URLs is just to move your mouse over any hypertext link in any web page -- if you look at the bottom of your web browser, it should display the URL that you would connect to if you clicked on that link. You could go to a big site such as [Yahoo](#) and "peek" at URLs (did you see the URL for Yahoo when you moved your mouse over the link in the this sentence?)

Here is an easy way to copy a URL for a link in any page. You first must access the "secret" pop-up menu from any hypertext link in a web page -- click and hold the mouse for Macintosh; click the right mouse button for Windows and Unix. From this menu, select **Copy This Link Location** (or similar menu item). After releasing the mouse button, jump to any text document and select **Paste** from the **Edit** menu. Voilà! You've just nabbed a URL from a link in the web page (this way, you can copy a URL without even visiting the page it links to!)

Review Topics

1. What purpose do URLs serve for the World Wide Web?
2. Where are URLs found on a WWW screen?
3. What is the basic structure of an URL?
4. How can you see the URLs that a hypertext link will jump to?

Independent Practice

Find some sites on the Internet that intrigue you. For each one, record its name and its URL displayed near the top of your browser window. See if you can copy and paste the URLs into a text document. You will use this list later to add links from your own web pages to these sites that you found.

Coming Next....

You will use URLs in **anchor** tags to create links to files on the Internet for your *Volcano Web* page.

GO TO.... | [Lesson Index](#) | [previous: " Links to Local Files"](#) | [next: "Links to the Internet"](#) |

Writing HTML: Lesson 8b: URLs: Pointers to the Internet

8c. Links to the World: Internet Sites

You've been revving your engines, and itching to hit the [Information SuperHighway](#), right? Here, we will extend our use of **anchor** tags to create links to resources out there on the Internet.

Objectives

After this lesson you will be able to:

- Create an anchor to link to an Internet site.
 - Quickly copy the URL for a site and use it in your HTML document.
-

Lesson

HTML for Anchors to the Internet

Linking to a site on the Internet combines what we have worked on earlier in the lessons on **Links to Local Files** ([Lesson 8a](#)) by incorporating what we have learned about **URLs** ([Lesson 8b](#)). The full HTML format for an **anchor** link to an item on the Internet is:

```
<a href="URL">Text to Activate Link</a>
```

where **URL** is the full Uniform Resource Locator, in quotes, the address for the Internet site where you want to send the viewer. The string **Text to Activate Link** is what will show up as hypertext in your web browser (usually but not always) underlined and in blue. When a viewer clicks on this hypertext, the web browser will link them to the Internet site indicated by the URL. Remember that a URL can be a link to another World Wide Web (WWW) server, Gopher server, FTP site, or any text, graphic, sound, video file on these servers.

Now, we will add a hypertext link to a site that has information about volcanoes on the planet Mars. Follow these directions to add anchor links on your HTML document:

1. Open your **index.html** file in the text editor.
2. Below the heading, **Volcanic Places on Mars**, enter the following text:

```
<a href="http://www.solarviews.com/cap/mars/olympus.htm">
Mars</a> has its fair share of volcanic landforms,
including the largest known volcano in the solar system,
<a href="http://mars.jpl.nasa.gov/gallery/atlas/images/
oly.jpg"> Olympus Mons</a>
```

Note: We've made a link to two different types of information. The first hyperlink connects to a web page that describes information about the planet Mars. The second is a link to a large JPEG image of a Martian volcano.

3. **Save and Reload** in your web browser.

Note: We have shown you how to link directly to an image from another web server. You could quite easily use an off-site URL in your **IMG tags for your own web pages. We strongly urge you to contact the site's creator and ask permission.**

A Quick 'n Easy Way to Enter URLs in Anchor Tags

As you navigate among different web pages, the URL of the currently visible page can be viewed at the top of the web browser window (You may have to look for a menu option to **Display URLs**). For example, in this document, the URL looks something like:

<http://www.mcli.dist.maricopa.edu/tut/tut8c.html>

You can use your mouse to select and **copy** a URL from the web browser display and then paste it in the **anchor** tag of your HTML document. This is much more efficient than writing URLs down on paper (some are quite long!).

Now we will add some links to other sites that we will list under the **References** section of our Volcano lesson. One such site that might offer relevant information is the US Geological Survey.

Follow these steps:

1. Open your HTML document **index.html** in the text editor

2. Under the heading "References", enter:

```
<ul>
<li> <a href="">Educational Resources from the
USGS</a>
</ul>
```

NOTE: We've constructed the hypertext link but we still need to enter a URL between the quotes.

3. Connect to the [US Geological Survey Education Index](#).
4. From the web page, use the mouse to **Select** the URL as displayed in the URL display field.
5. From the **Edit** menu, **Copy** the URL.
6. Now, return to your HTML document **index.html**
7. Click the mouse once between the two quote marks you inserted in step #2 and **Paste** the text you copied in step #5. The final **anchor** tag should look like:

```
<a href="http://http://education.usgs.gov"> Educational
Resources from the USGS</a>
```

Note: You have just set up the HTML structure for an Unordered List, with each list item a hypertext link to a site that offers information about volcanoes. For a review of lists, see [lesson 6](#)

For additional practice, **choose two from each** of the following Internet sites with resources on Volcanoes and Geology. Copy the URLs and construct the hypertext links to at least two more sites in your **References** section:

Sites with Information on Volcanoes:

[Alaska Volcano Observatory](#) * [Cascades Volcano Observatory](#) * [Michigan Tech Volcanoes Page](#)
 * [NASA Earth Observing System \(EOS\) IDS Volcanology Team](#) * [Volcano Information Center](#) *
[Volcano/Earth Science-Oriented Servers](#) * [Smithsonian Global Volcanism Program \(GVP\)](#) *
[Volcano Watch Newsletter](#) * [Volcanoes Online](#)

Sites with General Information on Geology:

[Yahoo: Earth Science](#) * [Earth Resources Observation Systems \(EROS\) Data Center](#) * [Tradewave Galaxy](#) * [NASA Observatorium](#) * [United States Geological Survey](#) * [WWW Virtual Library](#) * [US Geological Survey Volcanic Hazards Program](#)

Check Your Work

Note that your list of references may be different from the example.

Review Topics

1. What is the address for an item on the Internet?
2. What steps did you take for creating an anchor link to the NASA Internet Site?
3. What shortcut was identified for putting an URL into an anchor link?

Independent Practice

Create anchor links from your own web page that connect to some of the URLs addresses you have discovered.

Coming Next....

In the next lesson you will create links that connect to different sections of an HTML document.

GO TO.... | [Lesson Index](#) | [previous: "URLs"](#) | [next: "Named Anchors"](#) |

8d. Links to Sections of a Page

You have seen how to link to other web pages, whether they are ones you created or have found elsewhere on the Internet. What if you wanted to connect to a specific section **within** a document? YOU CAN!

Objectives

After this lesson you will be able to:

- Create a hidden reference marker for a particular section within an HTML file.
 - Build a hypertext link that will connect to a particular section within an HTML file.
 - Build a hypertext link that will connect to a particular section within another HTML file.
 - Create a hypertext table of contents for a web page.
-

Lesson

The Named Anchor

A **named anchor** is a hidden reference marker for a particular section of your HTML file. This might be used to link to a different section of the same page if it is long, or to a marked section of another page.

The HTML format for creating the named anchor is:

```
<a name="NAME">Text to Link To</a>
```

Notice how this subtly differs from the anchor link `<a href=...` that we learned about in [lesson 8a](#).

Writing a Link to a Named Anchor

When you want to create a hypertext link (or an "anchor link", see [lesson 8a](#)) to a named anchor, use the following HTML:

```
<a href="#xxxxx">Text to act as hypertext</a>
```

or for the link you just tried that sent you to the section below:

```
Go to <a href="#check">Check Your Work</a>
```

The "#" symbol instructs your web browser to look through the HTML document for a named anchor called "**xxxxxxx**" or in our example "**check**". When you select or click on the hypertext, it brings the part of the document that contains the named anchor to the top of the screen.

Adding Named Anchors to the *Volcano Web* Lesson

Now, we will build a table of contents for our lesson that will appear at the top of our *Volcano Web* page. The entries for this will be the headings we have already created. Each will act as a hypertext link to a particular section of our lesson.

The first step is to create a named anchor for each of the heading sections in your *Volcano Web* lesson:

1. Open your `index.html` file in the text editor
2. Find the heading for the **Introduction**. Change it from:

```
<h2>Introduction</h2>
```

so that it looks like:

```
<h2><a name="intro">Introduction</a></h2>
```

NOTE: You have just marked the line that contains the header "Introduction" with a hidden reference marker, the named anchor "intro".

3. In a similar manner, change all header `<h2>` tags for the other sections:

```
<h2><a name="term">Volcano Terminology</a></h2>
```

```
<h2><a name="usa">Volcanic Places in the USA</a></h2>
```

```
<h2><A NAME="mars">Volcanic Places on Mars</a></h2>
```

```
<h2><A NAME="project">Research Project</a></h2>
```

- If you **Reload** now from your web browser, you will not notice any visible change. The named anchor tags we have just added are hidden from the user's view.

Adding Links to a Named Anchor in the Same Document

Now we will set up a table of contents that will appear at the top of the screen. We will use an unordered list (see [lesson 6](#) for more on lists) to create this list:

- If not already open, open your **index.html** file in the text editor.
- Below the first sentence under the **Volcano Web** heading enter the following text:

```
<hr>
<b>In this Lesson...</b>
<ul><i>
<li>Introduction
<li>Volcano Terminology
<li>Volcanic Places in the USA
<li>Volcanic Places on Mars
<li>Research Project</i>
</ul>
```

NOTE: This index is marked off above and below by a solid line using the `<hr>` tag. The *Italic* style is used on the entries for the text. At this point we have only entered the text of the index entries. Below we will add the HTML to make the links active.

- Save and **Reload** into in your web browser.

Finally, we want to make each item of the list act as a hypertext link to another section of the document. To do this, we will use a variation of the basic anchor link [lessons 8a](#). Rather than linking to another file, we link to one of the named anchors (the hidden markers that you created above) within the same HTML file. We indicate a named anchor by preceding the reference marker name with a "#" symbol:

- Open your **index.html** file in the text editor
- Go to the first list item in your index section. Change it from:

```
<li>Introduction
```

to look like:


```
<li><a href="#intro">Introduction</a>
```

3. You should now be able to fill in the other links to named anchors so that the section looks like:

```
<hr>
<b>In this Lesson...</b>
<ul><i>
<li><a href="#intro">Introduction</a>
<li><a href="#term">Volcano Terminology</a>
<li><a href="#usa">Volcanic Places in the USA</a>
<li><a href="#mars">Volcanic Places on Mars</a>
<li><a href="#project">Research Project</a></i>
</ul>
```

4. **Save** and **Reload** into your web browser. When you click on an item in your index, the browser should display the associated section at the top of your screen.

Adding Links to a Named Anchor in Another Document

You can create a link that jumps to a section of another HTML document that is marked by a named anchor. The HTML for building a link to a named anchor in another local HTML document is:

```
<a href="file.html#NAME">Text to activate link</a>
```

and if the document exists on another web site:

```
<a href="http://www.cheese.org/pub/recipe.html#colby">Colby Cheese</a>
```

In [lesson 8a](#) we created a hypertext link that jumped from the section of our lesson on Mount St. Helens to **msh.html**, a separate HTML file. Now we will add a link in that second document that will return to the original section of the main Volcano page.

1. Open your **msh.html** file in the text editor
2. Near the bottom of the HTML (but above the **</body>** tag) enter the following text:

```
<hr>
<a href="index.html#usa">Return to <i>Volcano Web</i></a>
```

NOTE: We have included the *Italic Style* tag **<i>...</i>** within the text marked by the named anchor "usa".

3. **Save** and **Reload** into your web browser. When you click on one of the hypertext links at the bottom of the **msh.html** page, you should jump back to the "Volcanic Places in the USA" section of the

Volcano Web lesson.

In this case the link is just the name of another HTML file, **msh.html**, in the same directory as the **index.html** file. However, you can use a full URL (see [lesson 7](#)) to link to a named anchor in an HTML file on a remote computer. For example, to create a link to the "Introduction" section of an HTML file stored on the MCLI WWW server, the syntax would be:

```
<a href="http://www.mcli.dist.maricopa.edu/tut/final/index.html#intro">
  Introduction to Volcano Web</a>
```

The reference marker "**#anchor_name**" is tacked onto the end of the URL.

Review Topics

1. How do you identify a named anchor?
2. What are the steps for creating a link to a different section within a document?
3. How do you modify an anchor link to connect to a named anchor in another HTML document?
4. How do you create a table of contents for a web page?
5. What is the difference in function between the tags `` and ``?

Independent Practice

Create named anchors for the headings in your own web page and build an index that will link to these sub-sections.

Coming Next....

In the next lesson you will learn how to make a picture act as a hypertext link.

GO TO.... | [Lesson Index](#) | [previous: "Links to the Internet"](#) | [next: "HyperGraphics"](#) |

Writing HTML: Lesson 8d: Links to Sections of a Page

8e. HyperGraphics



Text does not have a monopoly on being "hyper"... expand the versatility of your web pages by having **pictures** act as hyperlinks (Just try clicking the cube!).

Objectives

After this lesson you will be able to:

- Insert a graphic button in your web page that links to another HTML document.
- Insert a small graphic that acts as a "postage stamp" button for a link to display a larger copy of the image.

Lesson

A HyperLink Button

From the previous lessons, you have (hopefully) become comfortable with creating hypertext, text within your documents that connects a viewer to related information. You can also use inline images (see [Lesson 7a](#)) to act in a "hyper" manner. If you recall, in an earlier lesson we linked some text in our **Volcano Web** page, [index.html](#), to a second page, [msh.html](#), that described Mount St. Helens. Now in the latter page, we want to add a button that when clicked will link a reader back to the main lesson page.

The way to do this is to put the HTML tags for inline images *within* the hypertext portion of the anchor tag:

```
<a href="fileX.html">   
Go to Document X</a>
```

In your web page, this HTML code will display an inline image and the text **Go to Document X**. Both will act as hyperlinks; clicking on either the text or the picture will tell your web browser to go to

the HTML file `filex.html`. The image alone could be a hyperlink. In the World Wide Web, a "HyperGraphic" generally is surrounded by a colored box matching the color of hypertext on your web page, so you know that it is "active".

NOTE: Many browsers can alter the color of hypertext and some pages have suppressed the display of the outline around HyperGraphic links. Generally, you can identify a hyperlink area on a web page by looking for a change in the cursor as it passes over a "hot" region. The cursor usually changes from an arrow to a hand when it passes over an active link.

From a design standpoint, we recommend that if you use pictures to act as hyperlinks that you offer also a text link or use the ALT= attribute in the <IMG...> tag in case the viewer has turned off the loading of images.

Now we will create a "hyper" graphic button. First, you need to get a copy of an arrow button.

You should now have a copy of the image file somewhere on your computer (You should move it to the `pictures` folder/directory in your workarea).

Next, add the HTML to make the button work:

1. Open the second HTML file, `msh.html` in your text editor.
2. At the bottom, modify the last line to:

```
<hr>
<a href="index.html#usa"> 
Return to <i>Volcano Web</i></a>
```

Note: The `inlineimage` tag (<img...>) is completely within the anchor between the > that marks the end of the URL and the that marks the end of the hypertext. Also note how the <i> tag is used within the active hypertext to emphasize the title of the lesson. And finally, we have used the <hr> tag to put a horizontal rule or a line above the button graphic (for more on this tag see [lesson 4](#)).

3. Save the HTML file.
4. Return to your web browser, and select **Open Local** from the **File** menu to read in the `msh.html` file.
5. Select **Reload** from the **File** menu to update the changes.
6. Test the hyperlink to the Mount St. Helens page and the new button that should return you to the *Volcano Web* page.

"Postage Stamp" Images

Previously, we advised against using large inline images in your web pages because viewers might have to wait a long time for images to download to their computer. One way around this is to create miniature-size copies of the graphic, or "postage stamps" which are displayed as inline graphics. Then, using the same steps as above, you can make the "postage stamp" image act as a hyperlink that links to the full size image. In this way, the large images are downloaded **only** if the viewer decides to see it.

First, you need to **get a copy of the two image files.** (These files should be stored in your **pictures** folder/directory of your workarea).

Next, create the postage stamp link in your main text file:

1. Open the **index.html** file in your text editor.
2. **Under the heading Long Valley** enter the following:

```
This field seismometer measures earthquakes associated
with subsurface volcanic forces and may help to predict
future events. It sits on a plateau known as the "Volcanic
Tableland" formed by a major eruption 600,000 years ago.
<p>
<a href="../pictures/seismo.jpg">
  
  -- [full size image, 55k] --
</a>
```

The inline image, **stamp.gif** acts as a hyperlink to a larger image, **seismo.jpg**. When a user clicks on either the "postage stamp" or the text "-- [full size image, 55k] --", your web browser will display the larger image in a browser page.

Note the use of the dimensions of the **stamp.gif** image in the **<img...>** tag as well as the **ALT=...** attribute.

In our hypertext link we provide information that this image is 55k in size. By doing this, you provide the viewer the choice if they want to download an image of that size... If the link leads to something that is 1.6 Mb, as a viewer you might want to know that before you tried to view such a large file size.

3. **Save and Reload** in your web browser.

Check Your Work

Some of the more common mistakes are discrepancies between spelling of the file names and the HTML code for the anchor links or not having the image files in the same directory as the HTML files. If you see an icon of a broken picture:



then it usually means the HTML does not match the file listed in the `` tag or that the image is not in a GIF or JPEG format.

Review

Review topics for this lesson:

1. How did you create the graphic button in your web page?
2. How are "postage stamp" links useful in including graphics in your web page?
3. How did you create your "postage stamp" link in your document?

Independent Practice

Try to add buttons that link two web pages to each other. In a later lesson we will learn how to avoid the "box" around a hypergraphic.

Coming Next....

Use the **preformat** tag to create a table of text in your Volcano lesson.

GO TO.... | [Lesson Index](#) | [previous: "Named Anchors"](#) | [next: "Preformatted Text"](#) |

Writing HTML: Lesson 8e: HyperGraphics