Images

Basic concepts

Images are not text – stored separately from HTML files – image file formats
Pixels – equal sized squares – rectangular grid – larger dimensions mean more pixels
Color depth – storage per pixel – higher values mean more colors, but also more storage
Optimization – striking ideal balance of image quality and file size
    Reduce bandwidth expenses and wait time for users

Image file formats for the Web

Compression – storing same data with fewer bits – helps in optimization
    Lossless – compressed image is identical to pre-compression image
    Lossy – compressed image is reduced quality approximation of pre-compression image
    Image file formats without built in compression, such as BMP, are not suitable for Web use
JPEG – Joint Photographic Experts Group – .jpeg or .jpg extension
    Lossy compression – amount selectable when file is saved – more lost on each save
    True color – 16,777,216 simultaneous colors available
    Ideal for photographic images
GIF – Graphic Interchange Format – .gif extension
    Lossless compression
    256 maximum simultaneous colors from a true color palette – fewer colors, smaller file size
    Supports both animation and transparency – one color chosen as transparent
    Ideal for diagrams, line art, logos, cartoons, and other images that will not tolerate lost info
PNG – Portable Network Graphic – .png extension
    Lossless compression – somewhat more efficient form than GIF uses
    Up to true color support – fewer max colors results in smaller file size
    Supports alpha channel transparency – 256 levels of transparency
    Suitable for all image types, but most commonly used as alternative to GIF

Obtaining images

Copyright – legally protects creator's rights – virtually all images are copyrighted by somebody
    Images on the Web are not necessarily free for the taking!
Self-generated – image editor, digital camera, scanner
    Generally, you automatically own the copyright on any original images you create
    Beware derivative works – reproducing a copyrighted work doesn't give you the copyright
Other-generated – image archives (not search engines!), stock image suppliers
    Terms of use – if you don't accept the terms, don't use the image – free vs. royalty free
    Request permission – if you don't get explicit permission, don't use the image – credit source
    Always make and publish a local copy unless explicitly directed otherwise – use a relative URL
        Inline linking (aka, hot linking, bandwidth theft, etc.)
        To grab an image off a Web page, right-click it and choose Save Image As…
Best practice: Use only locally published copies of images accessed with relative URLs
Best practice: Use only images for which you are confident you have proper permission

Manipulating images

Crop first to get most relevant portion
Scale to smallest size necessary to serve its purpose – keep variety of screen resolutions in mind
Filter and fine tune as desired
Convert to appropriate image file format – JPEG for photos, GIF or PNG for everything else
Save a copy to publish – retain original
Best practice: Optimize every image prior to publishing it

Inline images

Images that appear as part of the structured content of a Web page – inserted with HTML
Best practice: Use only inline images that contribute to the content's message
img element – empty, replaced element – ends with slash
    src attribute – URL browser should use to retrieve image file – almost always a relative URL
    alt attribute – textual alternative to image – primarily for screen readers – accessibility
    height and width attributes – dimensions of image in pixels – image will scale to match
Best practice: Always use truthful height and width values
Inline images may be used as link labels – place img element as content of the a element
Best practice: Use alt attribute of clickable images to describe where link will take the user
Best practice: Use empty quotes for the alt value of images that do not require an alternative

Background images

Images that appear in the background of an element's content area and padding – inserted with CSS
Best practice: Use background images for any purely decorative images
Best practice: Always use a background color as a backup for a background image
background-image property – value in url() functional notation
background-repeat property – repeat, no-repeat, repeat-x, repeat-y
background-position property – takes two space-separated values
    first value is horizontal – left, center, right, length unit, or percentage of box width
    second value is vertical – top, center, bottom, length unit, or percentage of box height