Type in Motion
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Handout 04
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Topic: Sound

Resources for sound files:
Note: if you use royalty free downloads of music from the web, be sure to credit the creator and or source. It is a professional courtesy, and may be part of a license agreement. Format: © date, by Licensee.
1. Sounddogs.com
2. Microsoft's Design Gallery www.microsoft.com/gallery/files/sounds - click on the link for Free sounds on Design Gallery Live.
3. Earshot SFX Library: http://www.earshotsfx.com/ - click on the "sample sfx" for the free ones.
4. Creative Support Services: http://www.cssmusic.com/.
5. You can search for sounds on the Macintosh system using a search or find files tool. The extensions you would look for are .mp3, .wav, and .aiff.
6. Can type in "free music" within www.google.com search engine for more.

Sound Qualities that affect file size:

Sampling rate: When analog sound is coverted to digital sound, it is sampled so many times per second. The larger the sampling rate, the higher the file size and the better the quality. Music CDs bought in stores are 44.1 kHz. Multimedia CDs usually have 22 kHz sound. Your text recommends 11 kHz sound. I suggest that if you are using music – go with 22 kHz. Anything below 20 kHz will not be stereo. Voice can be reduced down to 8 kHz.

Bit depth: Similar to resolution of bitmap images. The higher the bit depth, the better the quality. 8-bit sounds are thin or tinny, like a telephone signal. 16-bit sounds are music CD quality. I recommend going with 16 bit for music you use in your project.

Channels: 1 channel is mono, 2 channels is stereo. Audio files can have up to 6 channels, though.

Compression: MPEG and AIFF/C use compression. MPEG is lossy, just like JPEGs are in the imaging world. MPEGs are excellent for the web. They strip out sound that the human ear can not hear, and maintain original sound quality. I recommend that you use MPEG 3s (.mp3). Although you can also use .WAV and .AIFF files within Flash.

Sound file formats used in Flash 5:

WAVE (.wav): Waveform Audio File Format developed for Windows operating system. It can be read on a Macintosh.

AIFF (.aif, .aiff): Audio Interchange File Format developed for Macintosh. It can be read by Windows.

MPEG (.mpa, .mp2, .mp3): Moving Picture Experts Group format. Supports video, audio, and streaming (synchronized audio and video).

Categories of sound within Flash:

Event or Static sound: Use for very short (1 second) sounds such as: hand claps, clicks, bells, pops. The browser will play after the entire sound is downloaded, but this won't be long if it is a very short sound. Flash will start an event sound when the keyframe it is attached to is reached. The sound will play out, even if the graphics of the movie end before the sound, as long as your movie does not loop. If the movie loops, and you have an event sound that goes on, it will reset when the movie hits the keyframe it is attached to again. The sound will become an awful cacophony. This technology doesn't require special server software. May include long waits for all of the movie to download.

Streaming sound: Use for longer sounds (2 + seconds). The browser will begin to play before all of the movie is downloaded. Warning: on slower connections, this may cause interuptions. Flash will break the sound into smaller soundclips assigned to various frames. The sound stays with the graphics of the movie. Some streaming servers, such as Windows Media ASF, RealNetworks RealAudio, and Xing Technologies Streamworks will protect the file from being stored/saved on the browsers hard disk. This will prevent theft. However, Macromedia's shockwave (.dcr) and Flash (.swf) files, and Quicktime's .mov files can still be "grabbed" out of a computer's cache folder by the browser and copied to a different location for permanent storage. The server software that prevents theft is a bit more expensive to implement than Macromedia's or Quicktime's streaming technology.

To place a sound in a Flash movie:
You can first add the sound to the movie's library by going under <File> <Import> and browsing to the sound folder. On a Mac, you'll need to select the sound file and click on the <Add> button, then <Import>. You can import more than one sound at once on the Mac. Once added to your movie, you can preview the sound by clicking on the Play icon (the forward arrow) at the top right of the Library window.
You can also add sounds by <File> <Open as Library> another Flash movie's Library with sound files. Then, just drag the sounds from that library to the current movie's library. Or, you can open the Common Library of sounds by going under <Window> <Common Libraries> <Sounds>. Then you can drag whichever sounds you want from that library into your current movie's library.
To then add the sound to a specific frame of the movie, you'll need to create a keyframe and then drag the name of the sound file from the Library to the Stage to create an instance of the sound at that frame. Or, click on the keyframe in the layers window, go to the Sound panel and select the sound name from the drop down menu.

It is a good idea to create separate sound layers for your sounds. Flash can add a sound to a graphics layer, but you'll probably be able to find them better if they have their own layers. You can add more than one sound to a layer if they have their own keyframes. You can't add two or more sounds to one keyframe. To have sounds start at the same frame/time in the movie, put them on separate layers with their own keyframes.

The Sound panel offers you options for editing the sound. Effect, Sync, and Loops. There are several automatic effects Flash can apply to your movie. If you don't like the automatic effects, you can create a custom effect. Beside the Effect drop down menu is an "edit" button. By clicking on this button, you can edit the sound's volume, creating custom fade-ins, and fade-outs. You can also clip off the beginning or ending of a sound for playback in the movie. Note: although you may crop the sound file in this editing window, the movie will store the entire sound file-adding to movie size. If you need to do a lot of sound editing, it is better to do this in SoundEdit 16 or SoundForge, then import the files. This "edit" window will also allow you to view the sound's waveform over the span of "frames" or "seconds."

In the Sync option you can set the sound to be an "Event" sound, or a "Streaming" sound. There are also options for "Start" and "Stop". If you choose "start" Flash will not start the sound again until it has played out once. If the sound is longer than the movie, it will play out completely, while the movie loops, and then be silent until the movie hits the keyframe where the sound is initiated again. The "stop" option will stop an "event" sound from playing completely. It will stop at whatever keyframe you apply the "stop" option to. You will have to set the name of the sound that will stop in the Sound Panel.

If a sound is set to "streaming" it will stop automatically at the last frame of the movie, even if it is a longer sound. Or, it will stop when it encounters a new keyframe within its layer.

Looping will loop/repeat both "event" and "streaming" sounds. Select the name of your sound, and then set the number of times you wish it to loop within your movie.

Setting a Sound symbol's properties:
On the Mac, option-click the name of the sound within the Library window. Select "properties." You get information about the sound, such as its sampling rate, bit depth, length, and file size. You also have options for setting its compression. ADPCM is recommended for very short sounds, like a hand clap. It gives you options to set the sound to mono, adjust sample rate, and bit depth. MP3 will allow you to set bit rate (don't go below 20 kbps if you don't want stereo will convert to mono), and select the amount of compression. Fast is the most compression, Best is the least. Choose RAW if you don't want any compression. Then set its sample rate and whether it should be stereo or mono.

Note: when you set a sound symbol's properties in this manner, when the movie is Published, Flash will use these individual settings rather than overall settings you choose for "event" and "streaming" sounds in the Publish Settings under the Flash tab.