


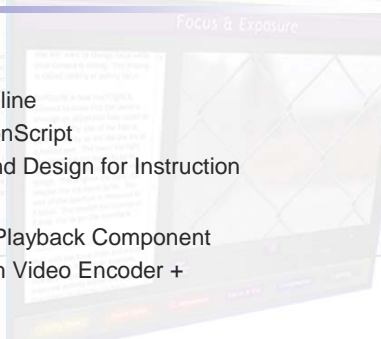
Sound and Video



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Topics

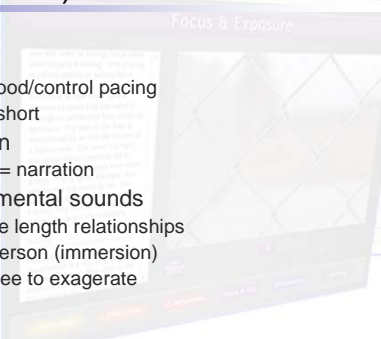
- Sound
 - Timeline
 - ActionScript
 - Sound Design for Instruction
- Video
 - FLVPlayback Component
 - Flash Video Encoder +



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Sound design (Bishop & Cates, 2001)

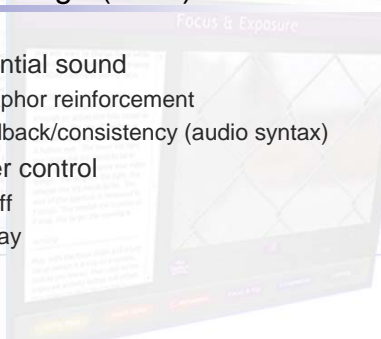
- Music
 - Set mood/control pacing
 - Keep short
- Narration
 - Text <= narration
- Environmental sounds
 - Inverse length relationships
 - First person (immersion)
 - Feel free to exaggerate



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Sound design (cont.)

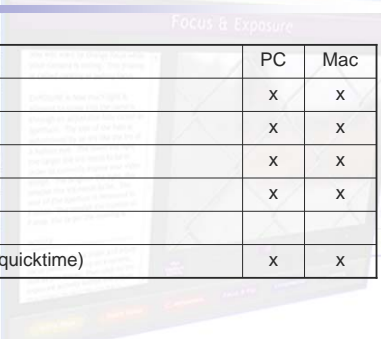
- Referential sound
 - Metaphor reinforcement
 - Feedback/consistency (audio syntax)
- Learner control
 - On/off
 - Replay



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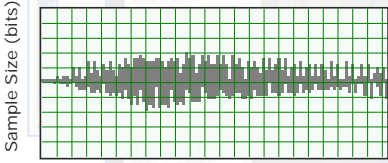
Sound formats supported by Flash

Type	PC	Mac
.mp3	x	x
.wav*	x	x
.aiff*	x	x
.au	x	x
.midi		
.qta or .mov (quicktime)	x	x



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Impacts on file size



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Sound compression in Flash

Compression	Use
ADPCM	Good for short sound effects (correct/incorrect response, button clicks, etc . . .)
MP3	Ideal for music, best general purpose choice
Speech	Great for voice only
RAW	No compression = huge file sizes, but best quality

Adapted from CS3 help file

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Issues with sound

- Action Script is preferred control mechanism.
- Event vs. Stream

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Sound in the timeline

- Effects (mostly custom effects)
- Export settings/compression

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Sound using ActionScript 3.0

- Embedded sounds
 - Linkage names
- Custom class
- Sound class
- SoundChannel class
- SoundTransform class
- Alternative:
 - Loaded Sounds (Sound class)

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Things to know about sound

- Limited to 32 sound channels
- If importing at run time, has to be .mp3
- Embedded can be .mp3, .wav, .aiff . . .
- Still worth the effort.
- Sandbox issues

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Sound using ActionScript 3.0

■ Example (simple)

```
// create a new instance of an embedded sound
// that uses the linkage name "quietlySnd" (this is
// your custom class)
var backMusic:quietlySnd = new quietlySnd();

// if you're happy with the sound as is:
backMusic.play();
```

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Sound using ActionScript 3.0

- Example (if you need to tweak things)

```

var quietlySound:quietlySnd = new quietlySnd();

// associate the sound with a sound channel, tell it to play:
var quietlyChannel:SoundChannel = quietlySound.play();

// associate that sound channel with a SoundTransform.
var quietlyTransform:SoundTransform = new SoundTransform();

// update things like the volume with that sound transform.
quietlyTransform.volume = .5;

// apply the sound transform to the channel.
quietlyChannel.soundTransform = quietlyTransform;

```

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Sound object (linkage name)

- Example (if you need to tweak things)

```

var quietlySound:quietlySnd = new quietlySnd();

// associate the sound with a sound channel, tell it to play:
var quietlyChannel:SoundChannel = quietlySound.play();

// associate that sound channel with a SoundTransform.
var quietlyTransform:SoundTransform = new SoundTransform();

// update things like the volume with that sound transform.
quietlyTransform.volume = .5;

// apply the sound transform to the channel.
quietlyChannel.soundTransform = quietlyTransform;

```

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Sound object instance

- Example (if you need to tweak things)

```

var quietlySound:quietlySnd = new quietlySnd();

// associate the sound with a sound channel, tell it to play:
var quietlyChannel:SoundChannel = quietlySound.play();

// associate that sound channel with a SoundTransform.
var quietlyTransform:SoundTransform = new SoundTransform();

// update things like the volume with that sound transform.
quietlyTransform.volume = .5;

// apply the sound transform to the channel.
quietlyChannel.soundTransform = quietlyTransform;

```

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Sound Channel instance

- Example (if you need to tweak things)

```

var quietlySound:quietlySnd = new quietlySnd();

// associate the sound with a sound channel, tell it to play:
var quietlyChannel:SoundChannel = quietlySound.play();

// associate that sound channel with a SoundTransform.
var quietlyTransform:SoundTransform = new SoundTransform();

// update things like the volume with that sound transform.
quietlyTransform.volume = .5;

// apply the sound transform to the channel.
quietlyChannel.soundTransform = quietlyTransform;

```

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Sound Transform instance

- Example (if you need to tweak things)

```

var quietlySound:quietlySnd = new quietlySnd();

// associate the sound with a sound channel, tell it to play:
var quietlyChannel:SoundChannel = quietlySound.play();

// associate that sound channel with a SoundTransform.
var quietlyTransform:SoundTransform = new SoundTransform();

// update things like the volume with that sound transform.
quietlyTransform.volume = .5;

// apply the sound transform to the channel.
quietlyChannel.soundTransform = quietlyTransform;

```

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Supported Video

File type	Extension	PC	MAC
Active Streaming Format	.asf	•	?
Audio Video Interleaved	.avi	•	•
Digital Video	.dv	•	•
Motion Picture Experts Group	.mpg, .mpeg	•	•
Motion Picture Experts Group 4	.mpg4	•	?
QuickTime Video	.mov	•	•
Windows Media	.wmv	•	?

-Direct X 9.0
-Quicktime 7 (mac), Quicktime 6.5 (pc)

Adapted from CS3 help file

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Video

- Live stream
- Flash Communication Server MX
 - <http://www.macromedia.com/devnet/mx/flashcom/articles/odopod.html>
- .FLV (external/internal)
- Factors that affect video size
 - Frames per second
 - Picture quality
 - Dimensions (height/width)
 - Compression Algorithm

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Video compression in Flash

Compression	Use
Sorenson Spark	Slower end user machines
On2 VP6	Faster end user machines (results in smaller files sizes)

Adapted from CS3 help file

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Video and Sound

- FLV component plays and persists
- Sound Channels play until stopped
- Timeline controlled sounds

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