Activity

Timing: 2 to 4 hours
Level: Ages 15 and up

Working with animation techniques

Activity Overview

Now that students understand the basics of animation, they can begin to get creative by using filmmaking techniques and animated characters to make their projects visually interesting and engaging. Use this activity to introduce how to create interesting visual effects and transitions using the Timeline, classic tweens, motion tweens, graphic filters and motion presets. Additionally teach your student how to create character animations using inverse kinematics and sprite sheets.

Note: Portions of this activity align to the Adobe Certified Associate objectives. Within the instruction steps and technical guides, the specific learning objectives for the exam(s) are referenced with the following format: 1.1

Activity Objectives

Technical Skills

Flash

- Using animation methods
- Creating Timeline effects
- Creating character animations
- Using sprite sheets
- Using motion presets

Project Assets

- *Flash guide:* How to use filmmaking techniques 4.10
- *Flash guide:* How to create visual effects 4.2, 4.6, 4.8
- *Flash guide:* How to create transitions with motion tweens 3.6, 4.10
- *Flash guide:* How to create character animations 4.10
- *Flash guide:* How to use sprite sheets
- *Electronic file:* bounce_example.fla
- *Electronic file:* bounce_example.swf
- *Electronic file:* pan-zoom_example.fla
- *Electronic file:* pan-zoom_example.swf
- *Electronic file:* fade_example.fla
- *Electronic file:* fade_example.swf
- *Electronic file:* character_anim_sample.fla
- *Electronic file:* character_anim_sample.swf

Background preparation resources

Technical and content information

ISTE NETS*S Standards for Students

Adobe Certified Associate objectives

Activity Steps

1. Explain that depending on the complexity of their animation students may want to consider using some filmmaking techniques as their animations transition from one scene to the next or to create visual effects. Discuss the differences between the classic and motion tweening methods and explain why classic tweening is advantageous for certain animations. Discuss the use of motion presets to save and reuse animations. Discuss the benefits of saving custom animations and being able to reuse them by easily applying them to objects. [2.1]
2. Distribute the technical guides and using the "I do, we do, you do" method and the electronic files, demonstrate the following:
   - Pan, tilt, and zoom effect
   - Camera angles
   - Cross fades
   - Bounce effect
   - Transitions
   - Using classic tweens to create a filmmaking technique
   - Using motion presets to save animations

   Note: If your students have not worked with animation before it is recommended that you begin with the *Getting started with animation* activity.

   Flash guide: How to use filmmaking techniques [4.10]

   Flash guide: How to create visual effects [4.2, 4.6, 4.8]

   Flash guide: How to create transitions with motion tweens [3.6, 4.10]

   Electronic file: bounce_example.fla

   Electronic file: bounce_example.swf

   Electronic file: pan-zoom_example.fla

   Electronic file: pan-zoom_example.swf

   Electronic file: fade_example.fla

   Electronic file: fade_example.swf
3. As you demonstrate, you should highlight some technical aspects of Flash you are asking students to use when creating the effects:
   - Frame rate and how it affects playback, timing, and published movie size [3.3]
   - Frame labels and the benefits of using them when transitioning to a new scene [4.10]
4. Discuss creating character animations in Flash. Explain that inverse kinematics (IK) is a method for animating an object or set of objects in relation to each other using an articulated structure of bones. Bones allow symbol instances and shape objects to move in complex and naturalistic ways with a minimum of design effort. Next discuss sprites, a two-dimensional image, graphic or animation that is integrated into a larger scene. Explain that sprites can be static objects, but are typically used for characters and other moving objects in video games, such as a running or jumping character.
5. Distribute the technical guides and using the "I do, we do, you do" method along with the electronic files, demonstrate how to use inverse kinematics to move body parts and sprite sheets to make characters run, jump, and climb.

Flash guide: How to create character animations [4.10]

Flash guide: How to use sprite sheets

Electronic file: character_anim_sample.fla

Electronic file: character_anim_sample.swf

6. Explain that students will now animate at least one graphic. Have students use the sample electronic files or their own graphic(s) for a project they are currently working on to apply what they have learned to create an animation. Ask students to do one or more of the following:
   - Apply at least one filmmaking technique to animate graphic. Students can make the graphic(s) bounce, tilt, pan, zoom, or transition.
   - Apply at least one character animation technique that makes either a body part move or the entire character move.

   Note: If students are completing *Project 3: Building a Flash Game* it is recommended to use this activity to allow them to create the animated graphics and characters necessary for their respective games.
7. Ask students to share their animated graphics with the class, explaining the techniques they used.

Assessment

	0 – Does not meet expectations	3 – Meets expectations	5 – Exceeds expectations
Animations	Absent or incomplete.	A graphic is animated with a filmmaking technique (bounce, pan, tilt, zoom, transitions and so on) or character animation (body parts move or the character moves).	Two or more graphics are animated, at least one using a filmmaking techniques (bounce, pan, tilt, zoom, transitions and so on) and at least one is an animated character (body parts move or the character moves).

Background preparation resources:

- To view video tutorials aligned with the skills required to complete this project, visit Adobe TV: http://tv.adobe.com.
- For more teaching and learning resources on the topics in this project, search for resources from the community on the Adobe Education Exchange: http://edex.adobe.com/
- For an overview of the interface and for more information on the technical aspects of *Adobe Flash Professional*, see *Flash* Help.

ISTE NETS*S Standards for Students

This project is aligned to the ISTE NETS*S Technology Standards. Depending on the subject and content area the student selects you may research your own state content standards to see how this project aligns to your state requirements.

ISTE NETS*S: Curriculum and Content Area Standards – NETS for Students

1. Creativity and Innovation

   Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

   a. apply existing knowledge to generate new ideas, products, or processes.

6. Technology Operations and Concepts

   Students demonstrate a sound understanding of technology concepts, systems and operations. Students:

   a. understand and use technology systems.

   b. select and use applications effectively and productively.

   c. troubleshoot systems and applications.

   d. transfer current knowledge to learning of new technologies.

Adobe Certified Associate Exam Objectives

Adobe Certified Associate, Interactive media objectives

3.6 Use the Motion Editor.

4.2 Use tools on the Tools panel to select, create, and manipulate graphics and text.

4.6 Create objects and convert them to symbols, including graphics, movie clips, and buttons.

4.8 Edit symbols and instances.

4.10 Create animations (changes in shape, position, size, color, and transparency).

For more information

Find more teaching materials for using Adobe software in your classroom on the Adobe Education Exchange: http://edex.adobe.com/.

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