

week::seven

Introduction to Animation in Adobe Animate

Document Basics

Document Settings

- Adobe Animate has a primary document settings box called Document Settings.
- Some of the options can also be changed using the Property Inspector, specifically the background color and frame rate.
- Can be access using Modify > Document (Command-J).
- In Document Settings, you can set a number of options for your animation:

Property	Description
Dimensions	The width and height in pixels of the project. It is important to set this correctly in the beginning. Changing dimensions later can wreak havoc on the positioning of your objects.
Match Contents	Sets your dimensions to either the size of the current selected paper size (Printer), crops the document to fit current drawing objects (Contents), or the default movie size (Default).
Background Color	Select a color from the Color Box. By default, only web-safe colors are available (which is weird). To use a specific hexadecimal color, enter it in the text field in the Color Box, or select the Color Pickers to the top-right.
Ruler Units	Set the unit of measurement for the project. Using pixels as your ruler units is generally the best for most projects.
Frame rate	The number of frames per second Adobe Animate attempts to play when playing the animation. Changing the frame rate at a later time allows you to speed up or slow down an animation, but can mess with the timing of your animations.

Frame Rates

- Example frame rates:

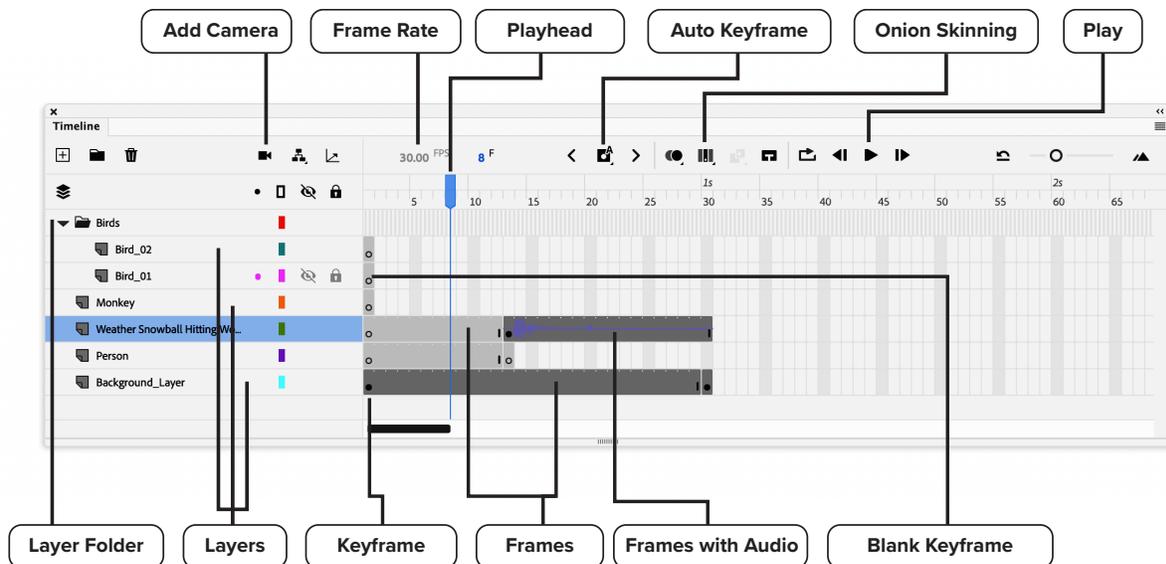
Film	24 fps
TV	30 fps
High-Frame Rate 3D Movies (like <i>Avatar: The Way of Water</i>)	48 fps
Common shooting framerate for action (benchmark is 4k/60fps)	60 fps

- At high frame rates, motion appears smooth and life-like.
- At lower frame rates, motion appears less-smooth.
- The human eye perceives frame rates above 20 fps as smooth.
- Animations with frame rates higher than 30 fps may look smoother than animations set at between 24 and 30 fps, but there are tradeoffs.
- The higher the frame rate, the more difficult it is for a computer to display an animation at the specified frame rate when saved to non-rendered formats (SWF and HTML/CSS, for example).
 - For our class, since we will be exporting our animations to rendered H.264 movie files, they should play back at the specified frame rate on any device.

Animate Animation Basics

The Timeline

- The Timeline is the heart of all time-based activity in Adobe Animate.
- When creating animations, the Timeline is the panel you'll use most often.

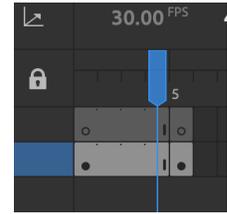


Element	Description
Keyframe	Defines a moment where animation changes occur. Keyframe content does not change over time until another keyframe occurs.
Blank Keyframe	Frames in a timeline mark where changes in artwork can occur but are currently empty. These frames have no artwork.
Frames	The “filler” of the timeline: Either are empty space (light grey in above screenshot) or carry forward content from prior keyframes (dark gray frames)
Frame with Audio	A Keyframe and subsequent frames that contain an audio clip that was placed onto the Stage.
Auto Keyframe	A toggle to allow Animate to auto-create a keyframe whenever artwork is changed on the current frame.
Playhead	Indicates the frame currently being viewed. You can drag (scrub) the Playhead back and forth to quickly preview your animation. You can also move forward and backward in the Timeline using the comma (,) and period keys (.).
Play	Plays the animation (Return key)
Current Frame #	The current frame number of the Playhead.
Frame Rate	Displays the number of frames per second (fps) at which the movie attempts to play at. This can be changed by either clicking on the fps display or changing the fps in the Property Inspector.
Add Camera	Toggles the visible and use of the Camera layer, allowing dynamic control of the framing of the animation composition.
Layers	Similar to layers in Illustrator. Required for any animated work. Helps keep animation elements separate and allows ordering of objects front-to-back. Each layer can be locked, hidden or selected.
Layer Folder	A collection of layers. Be sure to give these meaningful names.

Introducing Frames and Keyframes

Overview

- An important thing to learn in Adobe Animate is the concept of **Frames** and **Keyframes**.
- Animate animations, just like in TV and film animation, use a series of still images displayed in succession to give the illusion of motion.
- Unlike hand-drawn animation, Animate takes care of presenting frames that do not change over time, or frames that change in a mathematically-predictable manner.



Keyframes

- Define a moment where animation changes occur.
- Keyframes contain content (unlike Blank Keyframes and Frames).
- Keyframes are represented by a solid circle in the Timeline ().
- Keyframe content does not change over time until another keyframe or blank keyframe occurs.
- When inserting a keyframe into a layer that already contains a prior keyframe with content, Adobe Animate **copies that content** into the new keyframe.
 - This makes creating cell-based animations easy and eliminates copy/pasting between frames.

Blank Keyframes

- Blank keyframes are keyframes that contain no content.
- Once content is created in them, they become standard keyframes.
- They are helpful when the next frame in your animation does not contain any artwork from the previous keyframe.
- Blank keyframes are represented by a hollow circle in the Timeline ().

Frame Types

Dark Gray Frames	These frames contain no visual content display nothing and are simply filler in the Timeline. Generally, they act as “spacers” between keyframes.
Light Grey Frames	These frames carry over the display of objects contained in prior keyframes (to the left in Adobe Animate). They continue the display of objects over time. To edit the content visually displayed in these frames, the frames must first be converted to keyframes.

- Frames contain no content—they only *carryover* content from keyframes.
- A *span* of either frame type ends with a short dark vertical line.
 - *Note:* Depending on the interface color you select, frames may have a different gray appearance. No worries—you’ll be able to figure it out.

Shortcut Keys

- Learning the shortcut keys can save you a great deal of time in Adobe Animate.
 - On our iMacs, you might need to press the function key AND the *fn* key to trigger a shortcut.

Frame Shortcuts	
Insert Frame	F5
Remove Frame	Shift-F5
Convert to Keyframe	F6
Clear Keyframe	Shift-F6
Convert to Blank Keyframe	F7

Timeline Shortcuts	
Play	Return
Forward 1 Frame	.
Backward 1 Frame	,
Fwd/Bwd Next Keyframe	Option-. & ,
To 1 st Frame / Last Frame	Shift-, & .

Layers & Layer Folders

- Use layers to keep animation components separated.
- **In general, place each animated element on its own layer.**
 - This is required as we begin to use tweening next week.
 - Keeping to this strategy will greatly reduce frustration in trying to animate objects.
- Locking layers works as expected (and is incredibly useful).
- However, hiding layers only hide in Preview mode.
 - When you publish your animation, the hidden layers become visible again—weird.
- Use **Layer Folders** to further organize your animation timeline.

Layer Masking

- Artwork on a layer can be used to create a mask of the artwork on the layers beneath it.
- To create, simply create a new layer over the ones you want to mask, then draw the shapes/objects that will make up the mask.
- Once ready, right-click on the layer and select Mask from the menu.

Onion Skinning

- Allow you to view multiple frames at the same time.
- Frame content other than the current frame is displayed at varying levels of transparency.
- By altering the onionskin marker, you can select exactly which frames you want to view.
- Example: A simple animation with onion skinning turned on.
 - Note the onion skin markers in the Timeline (the left and right brackets)
 - This screenshot shows that frame 30 is selected, and frames 5 through 58 are being previewed using onion skinning.
 - The actual fill color of the shape is blue, but due to the translucency used in displaying onionskins the fill appears gray.

