



Toon Boom Studio 8 Getting Started Guide

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Contents

Toon Boom Studio 8 Getting Started Guide	1
Legal Notices	2
Avis Légal	2
Contents	4
Chapter 1: Introduction	7
Chapter 2: Creating a Project	9
Chapter 3: Drawing Basics	11
Chapter 4: Painting Basics	13
Chapter 5: Importing Images	15
Chapter 6: Animating	17
Rough Animation	17
Clean Animation	19
Chapter 7: Instant Motion	23
Chapter 8: Creating a Cut-out Puppet	27
Drawing the Pieces	27
Ordering the Layers	29
Parenting Pieces	29
Ordering Parented Layers	30
Adding a Master Peg	30
Setting the Pivots	31
Chapter 9: Bones Basics	35
Adding Bones	35
Setting Up Bones	37
Zones of Influence	38
Animating Bones	38
Chapter 10: Animating a Cut-out Puppet	43
Chapter 11: Scene Setup and Motion Paths	45
Positioning Elements	46
Duplicating Layers	46
Animating Objects	47
Animating the Camera	48
Chapter 12: Adding Sound and Lip-sync	51
Importing Sound	51
Lip-Sync	52

Chapter 13: Animating in Stop-motion	57
Camera Settings	57
Colour Keying	58
Capturing	59
Chapter 14: Adding Effects	61
Previewing Effects	61
Blur Effect	63
Adding Forces of Nature Effects	64
Adding Blockbuster Effects	65
Chapter 15: Storyline and Transitions	69
Scenes	69
Transitions	70
Chapter 16: Exporting a Movie	73

Chapter 1: Introduction

Studio is a complete animation package allowing you to do endless creative projects. It comes with a very wide variety of tools and features. In the Getting Started guide, you will learn about the main top features allowing you to cover the basic concepts and features found in Toon Boom Studio to quickly bring you up to speed with the software.



Refer to the complete Toon Boom Studio Online to learn about all the tools and options as well as advanced techniques. You can find the Online Help at docs.toonboom.com.

This guide is divided as follows:

- [Creating a Project](#) on page 9
- [Drawing Basics](#) on page 11
- [Painting Basics](#) on page 13
- [Importing Images](#) on page 15
- [Animating](#) on page 17
- [Instant Motion](#) on page 23
- [Creating a Cut-out Puppet](#) on page 27
- [Bones Basics](#) on page 35
- [Animating a Cut-out Puppet](#) on page 43
- [Scene Setup and Motion Paths](#) on page 45
- [Adding Sound and Lip-sync](#) on page 51
- [Animating in Stop-motion](#) on page 57
- [Adding Effects](#) on page 61
- [Storyline and Transitions](#) on page 69
- [Exporting a Movie](#) on page 73

Chapter 2: Creating a Project

When Toon Boom Studio starts, the Welcome Screen appears. This screen is also accessible once you are inside a project. To display the Welcome Screen from within the application, you must close the current project by selecting **File > Close**. This command closes the scene which is currently open.



To create a project from the Welcome Screen:

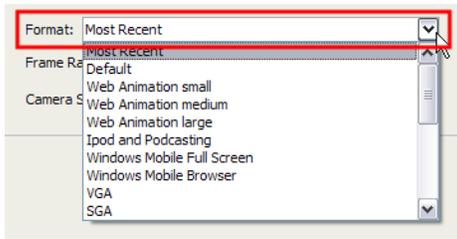
1. In the Name field, type a name for your new project. Make sure to give it a name which easily identifies the project, such as *JumpingFrog*. That way, when you have several projects, you can locate specific ones more easily.



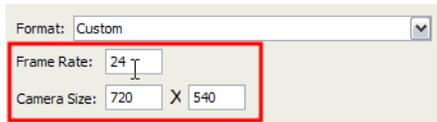
2. In the Format list, select the format in which you want to produce your project.

You can choose from a wide variety of presets such as Web, iPod and DV. By default, the option selected is Most Recent. This means that it will use the last setting you chose when creating your last project.

When you create a project for the first time, it will use the settings marked in the Frame Rate and Camera Size field. By selecting any of the presets, the Frame Rate and Camera Size fields will be automatically populated with the corresponding values.



3. If you prefer to use your own settings, you can type the Frame Rate and the Camera Size directly in the fields.



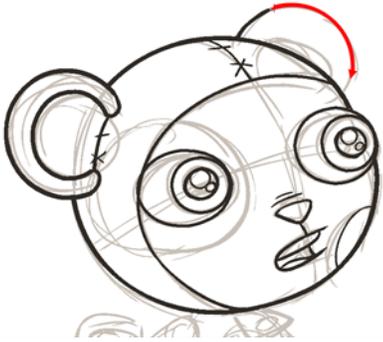
4. Once the information is in place, click **Create** to make your project.

The new project opens.

Now that you have created a new project, the next step is to save it to the correct location.

It is a good idea to follow a structure when saving your work, so that your files are not scattered all over your computer.

Chapter 3: Drawing Basics



As soon as Toon Boom Studio is started, you can immediately start drawing using the drawing layer which is already available.

How to draw:

1. Click the Drawing View  button in the top-right corner of the main window.
2. In the Drawing Tools toolbar, select the Brush  tool or press [@].
3. In the Timeline or Exposure Sheet view, select the first cell in the drawing layer.



4. In the Drawing view, start drawing.



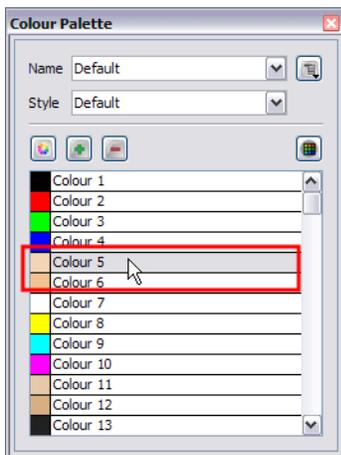
You can also draw directly in the Camera view without switching to the Drawing view.

Chapter 4: Painting Basics

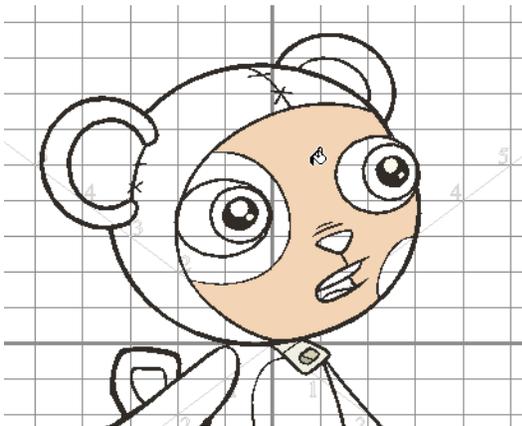
Follow these very simple instructions to learn how to paint your drawings. Once you master this operation you will be able to try all the tools and features explained below.

To paint your drawings:

1. Do one of the following:
 - ▶ In the Drawing Tools toolbar, select the Paint  tool.
 - ▶ Select **Tools > Drawing Tools > Paint**.
 - ▶ Press [#].
2. In the Colour Palette view, select a colour from the palette.



3. In the Camera or Drawing view, start painting the colours on your drawing.



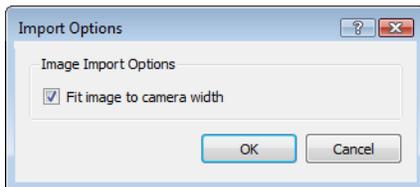
Chapter 5: Importing Images



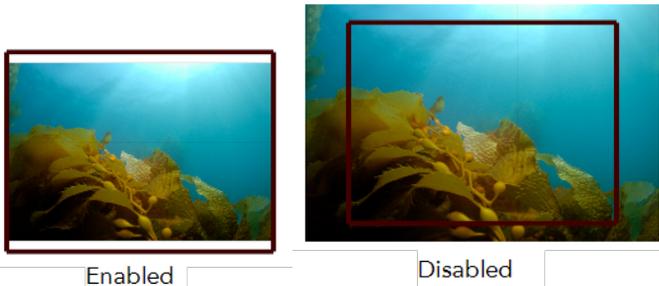
Images can come in many different file formats. Some formats are able to preserve transparency or transparent layers. Toon Boom Studio supports the following formats: GIF, JPEG, JPEG 2000, PICT, SGI, BMP, PNG, PSD, TIFF, TGA, MacPaint, QuickTime, and FlashPix.

To import bitmaps:

1. Select **File > Import File**.
The Open browser opens.
2. Browse for your bitmap image file and click **Open**.
The Import Options dialog box opens.



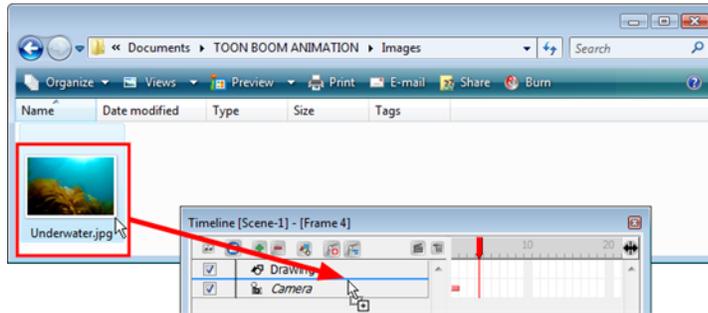
3. In the Import Options dialog box, set the Image Import Option:
 - **Fit Image to Camera Width**
By default this option is enabled, meaning that your image is resized to fit the width of the camera frame. You can disable this option to import the image at its original size.



4. Click **OK**.



You can also select a bitmap file directly from your operating system browser and drag it in the Camera, Drawing, Top, Side, Timeline or Exposure Sheet view.



Chapter 6: Animating

This topic is divided as follows:

- [Rough Animation](#) below
- [Clean Animation](#) on page 19

Rough Animation

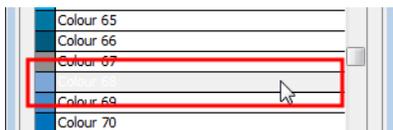


The first step to complete is the rough animation, which is the skeleton of your animation. You would usually start with the main action. For example, to animate a walk-cycle, you will start with the torso moves and the legs. The head, arms, and clothes are added later, during the secondary animation.

For a satisfactory animation, complete the main action before adding all the details. If you start animating the details right away, you lose a lot of time if you have to do corrections, and your animation often looks too rigid.

To animate:

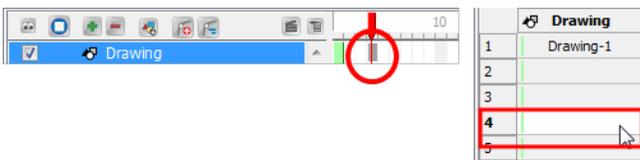
1. In the Timeline view, create a new drawing layer and name it **Rough**.
2. In the Drawing Tools toolbar, select the **Brush**  tool or press [@].
3. In the Colour view, select the colour you will use to draw. It is a good idea to choose a light colour for your rough animation to help for the following task, the clean up process.



4. In the Timeline or Exposure Sheet view, select the cell where the first drawing will appear.
5. In the Drawing or Camera view, draw the first key drawing.



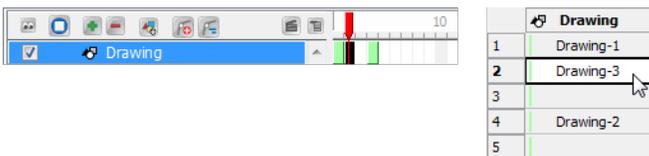
6. In the Onion Skin toolbar, click the Enable Onion Skin  button.
7. From the Onion Skin toolbar, click the onion skin's Previous  or Next  drawing buttons and from their drop-downs, select the number of previous and next visible drawings that you think you will need.
8. In the Timeline or Exposure Sheet view, select the cell where your next key drawing will appear.



9. In the Camera view, draw your second key drawing.



10. In the Exposure Sheet View, select a cell between your two key drawings.



11. Draw your new drawing.



12. In the Timeline or Exposure Sheet view, select a new cell and repeat these steps for the new drawings.

Clean Animation



When your rough animation is ready, it is time to clean it up and ink it. The clean-up is also called *tracing*. It consists of tracing solid and clean lines over the rough animation to get closed zones. This is the final paperless animation step before the ink and paint step.

You need to add a new drawing layer to draw your clean drawings. This is the equivalent of adding a sheet of paper and tracing over the rough using the animation disk.

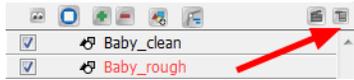


If you plan on tracing your animation in the Drawing view, you need to turn on the **Light Table**  feature in order to display all the layers of your project.

To trace your animation in a new layer:

1. In the Timeline view toolbar, click the Add Drawing Layer  button.
2. Rename your new layer **Clean**.

3. In the Timeline view, select your rough layer,
4. Click the Menu  button, and select **Lock > Lock**. This is to prevent any accidental changes.



5. In the Timeline or Exposure Sheet view, select the cell on the clean layer corresponding to the first key drawing of your rough animation.
6. In the Drawing Tools toolbar, select a drawing tool.
7. In the Colour view, select the colour to trace your animation. Pick a bold dark colour, such as black to make sure it contrasts well with the light colour of your rough animation.
8. In the Camera view, start tracing the first key drawing.



9. If you have some other layers in the way, you can deselect them temporarily so that only your rough animation and your clean-up layer are displayed. You can do this in two ways, by deselecting these layers in the Timeline to affect what is seen in the Camera view, or by disabling them in the Exposure Sheet view to affect the Drawing view.
10. In the Onion Skin toolbar, select the Enable Onion Skin  button and extend the previous and next drawing numbers.
11. In the Timeline or Exposure Sheet view, select the next cell corresponding to a rough drawing.
12. In the Drawing or Camera view, trace your next drawing.



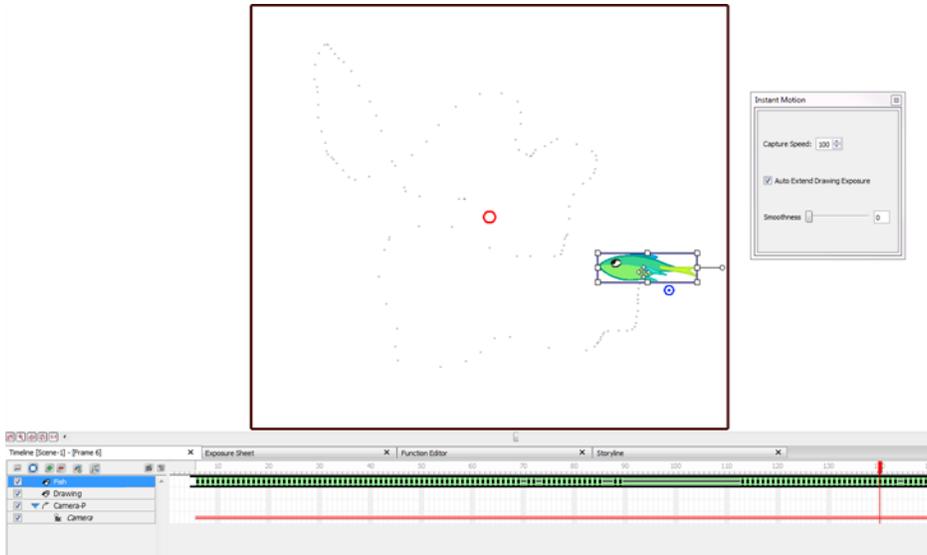
13. Repeat these steps for the rest of your rough drawings until you have a full set of clean ones.

This method allows you to keep the roughs and the cleans intact. You only need to disable the rough layer to prevent it from appearing in the scene.

Chapter 7: Instant Motion

With Instant Motion, creating animation could not be easier. First, you create a drawing and then you translate, scale, or rotate it. As you manipulate your drawing, small dots are created, representing keyframes. The slower the movement, the more dots are created.

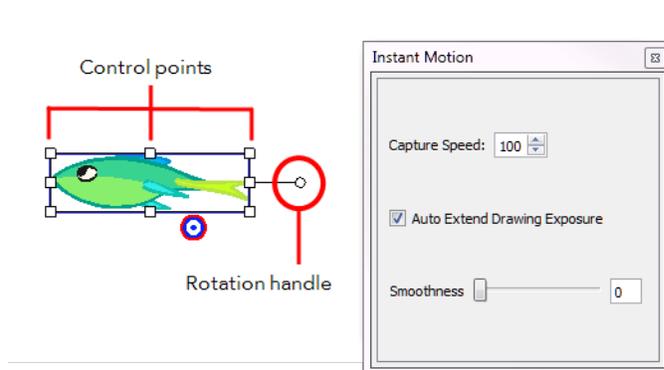
Once you release the pointer, your animation is created. It is represented on the Timeline view as a path. Your animation can be as long or as short as you like. As you continue to move your drawing, by default, the path is automatically extended. You can create more motion paths, one after the other. Each one is automatically added to the end of the last one.



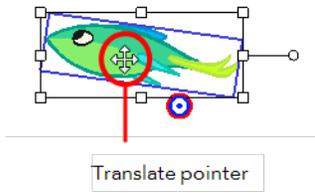
To create instant motion:

1. Create a drawing.
2. In the Animation toolbar, click the Instant Motion  button.

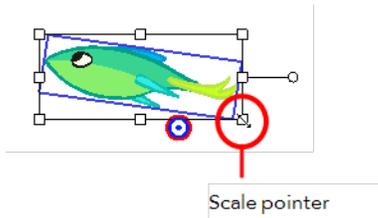
A bounding box with control points and a rotation handle appear around your drawing, and the Instant Motion box opens.



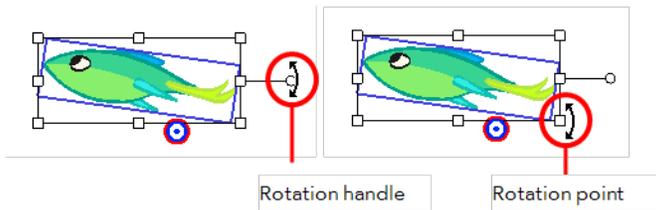
3. Do one of the following to animate your drawing (only one single transformation type is possible per motion recording):
 - **Translate:** To move the drawing, position the pointer over your drawing and drag it to a new location on the screen.



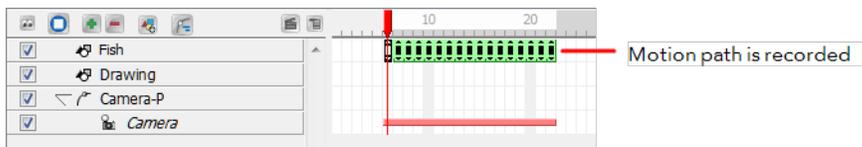
- ▶ **Scale:** Position the pointer at one of the bounding box points, and drag to scale your drawing.



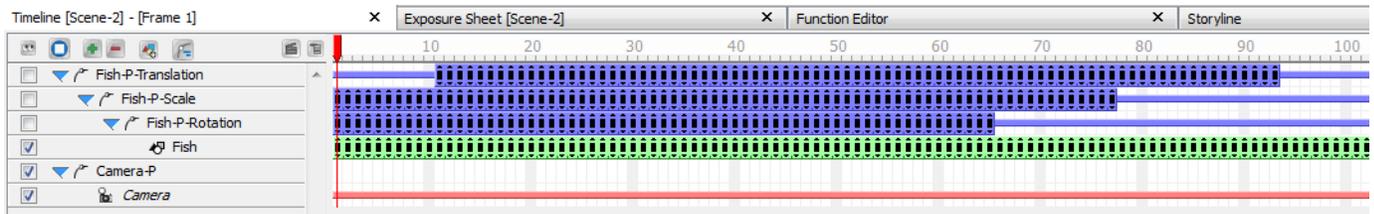
- ▶ **Rotate:** Position the pointer on the rotation handle or rotation point at a corner of your drawing. Drag to rotate the drawing.



As you translate, scale, or rotate your drawing, small dots are created to represent the keyframes of your animation. When you release the pointer, the speed path of your animation is recorded.



4. Click the **Play** button to view your animation.
5. If you want to combine different motions such as a rotation and a scale, you can record the motions separately using parented pegs. The first peg can be used for the rotation and the second one for the scale. In the Timeline view, select your drawing layer and click on the Add Parent Peg button to attach a peg to it. Select that peg and move it around with the Instant Motion tool like you did previously for your drawing layer. You can add as many parented pegs as you want to decompose your motions. It is always better to have the main translation (trajectory) as the top parent peg to avoid a conflict with rotation and scaling motion that you affect your entire trajectory rather than the drawing only.





If you want to change a section of your animation once it is recorded, you can move the Timeline playhead to the frame where you want to start overriding the exiting keyframes with a new recording and move your drawing again using the Instant Motion tool.

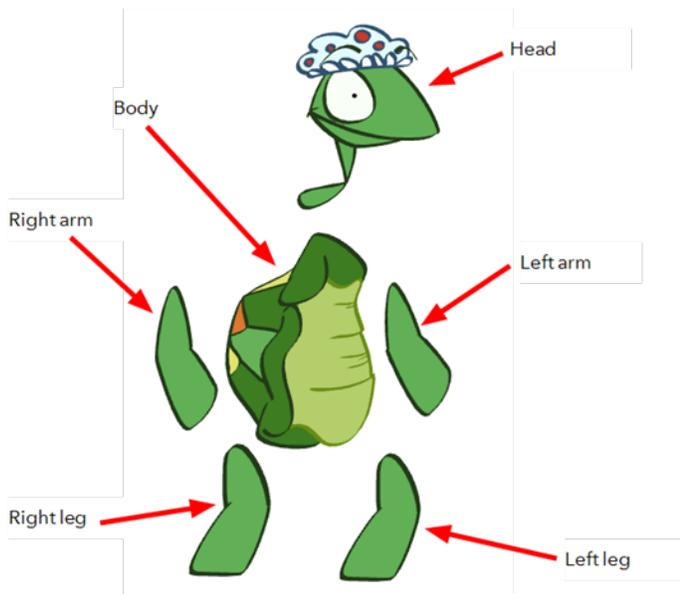
Chapter 8: Creating a Cut-out Puppet

This topic is divided as follows:

- [Drawing the Pieces](#) below
- [Ordering the Layers](#) on page 29
- [Parenting Pieces](#) on page 29
- [Ordering Parented Layers](#) on page 30
- [Adding a Master Peg](#) on page 30
- [Setting the Pivots](#) on page 31

Drawing the Pieces

To cut up your character into pieces, you must first decide which parts of the final character will move.



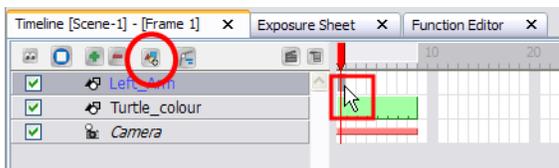
If you are building your first puppet, start with a very simple breakdown. Most of the time, you will want to animate the arms, legs and head. It is not necessary to separate all the facial features from the head or to break down the knees and elbows to get a working puppet. Breaking down the character into six pieces is enough to produce a basic animation.



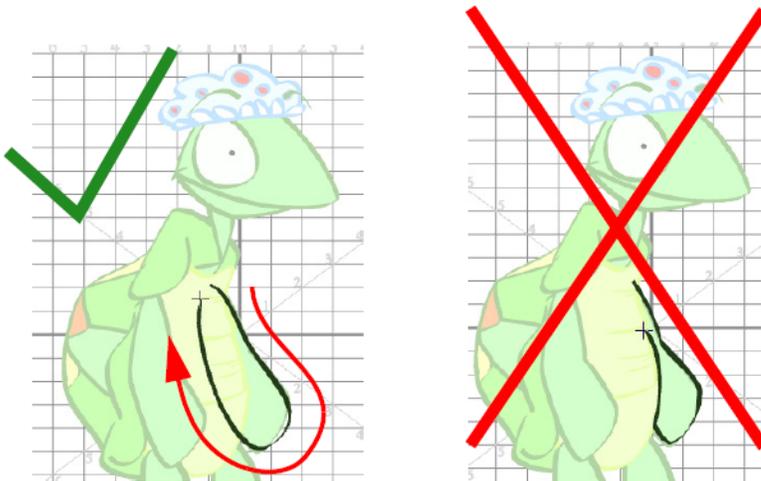
If you like, you can extend the amount of the puppet's articulation. You can bend the arms and legs, and separate the head into several different pieces to animate the eyebrows and make the eyes blink.

To draw your pieces:

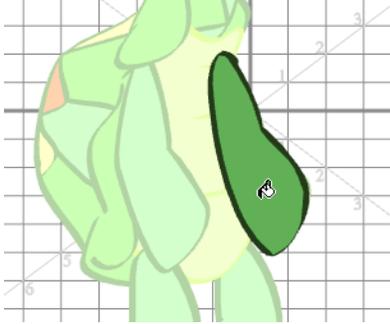
1. In the Timeline view, click the Add Drawing Element  button and rename the new layer corresponding to the new piece you want to create.



2. On the right side of the Timeline view, select the new layer's first cell.
3. In the Drawing Tools toolbar, select the drawing tool of your choice. The Brush  tool is recommended.
4. In the Onion Skin toolbar (Top toolbar on Mac OS X), click the Light Table  button to see your original drawing while you draw.
5. In the Drawing view, trace the new piece. Make sure to draw a complete shape overlapping with the other body parts.



6. In the Tools toolbar, select the Paint  tool.
7. In the Colour Palette view, select the colour needed.
8. In the Drawing view, paint your new drawing.



9. Save your project.
10. Repeat the same process for each new piece to create.

Ordering the Layers

Once you have finished drawing all your pieces, you may find that your drawings need to be reordered. You can place these pieces in the correct order before attaching your pieces to each other.

To reorder your layers:

1. In the Timeline view, select the drawing to bring in front of the others.
2. Drag the selected layer and drop it **BETWEEN** the existing layers. Do **NOT** drop it onto a layer because it will connect them, and in this case, you do not want to connect them.



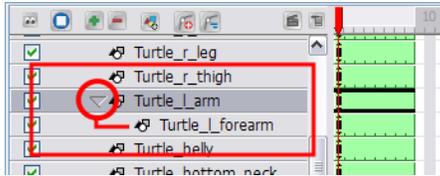
3. Repeat this process until the entire character is in the correct order.

Parenting Pieces

To attach a layer to another one, drag the layers one onto the other in the Timeline view.

To attach a layer to another one:

1. In the Timeline view, select the layer you want to attach to another one. For example, select the forearm layer to attach it to the upper arm.
2. Drag the selected layer **ONTO** the one you want to attach it to.
Once the layer is attached to another one, it is pushed to the right.

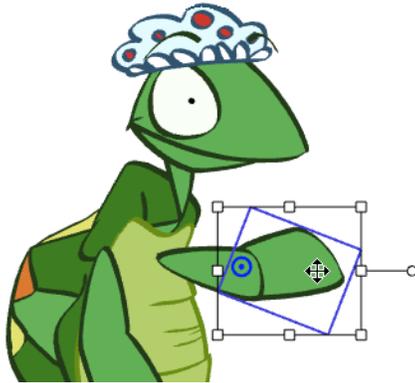


3. Repeat this process until every piece is connected.

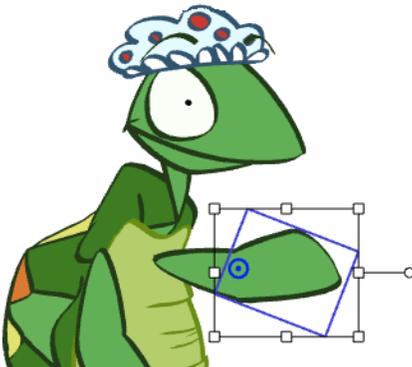
Ordering Parented Layers

To reorder parented layers:

1. If the piece you connected is supposed to be in front of the layer it is attached to, you can push it in front using a keyboard shortcut, which is explained below.
 - ▶ In the Animation Tools toolbar, select the Transform  tool.
 - ▶ In the Camera view, select the part to bring in front.



- ▶ Hold down the [Alt] key and press the [Down Arrow] key to nudge the drawing forward. Doing so moves the drawing very slightly forward. If you press on the key several times, the drawing will move forward even more. You can also use the [Up Arrow] key to send the drawing backward.



Adding a Master Peg

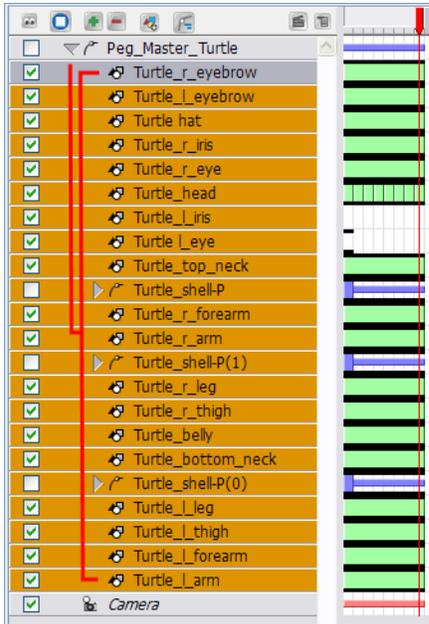
A good element to add to your puppet is a Master Peg. This is a trajectory on which you attach your puppet to make it travel through your scene. It is also used when you want to scale the entire character up or down without

doing it on each individual piece. For example, you could animate your puppet walking on the spot then use the Master Peg to get it to move from left to right.

To add a Master Peg:

1. In the Timeline view, click the Add Parent Peg  button.
2. Double-click the new Peg and name it **myCharacterName-Peg**.
3. In the Timeline view, select all your puppet's layers.
4. Drag the selection ONTO the new peg.

All the layers are connected to the peg and moved slightly to the right.

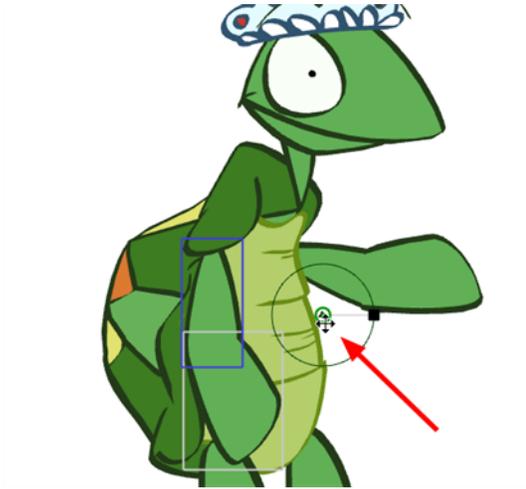


Setting the Pivots

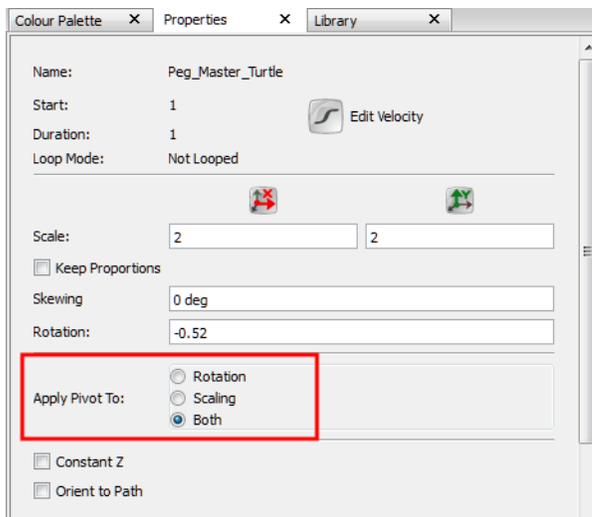
In order for your pieces to rotate properly, it is important to set the pivots at the right location. The pivot is the point from which the body part will rotate; they generally correspond to an articulation. To know where to position a pivot point, think of your own body. If you are moving an arm, notice that your own arm rotates from the shoulder. So, the pivot point for the puppet's arm must be located at the shoulder. The pivot point for the forearm will be the elbow, etc.

To position the pivots:

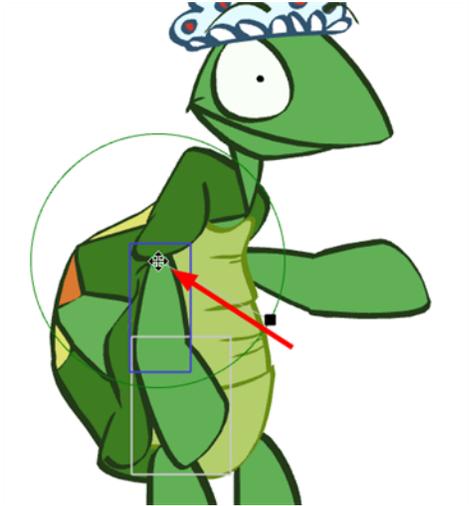
1. In the Animation Tools toolbar, select the Rotate  tool.
2. In the Timeline or Camera view, select the first layer on which to set the pivot.
The green pivot point appears.



3. In the Properties view, select the **Properties** tab. In the Properties, decide how you want to apply the pivot:
 - **Rotation:** The pivot point applies to rotation only.
 - **Scale:** The pivot point applies to scaling only.
 - **Both:** The pivot point applies to both rotation and scaling.



4. In the Camera view, click the green pivot point and drag it to a new position.



5. In the Camera view, rotate the part to see if the point is well positioned. If not, relocate it.
6. Repeat this process for each piece. Do not forget to set a pivot for the eyes and mouth. This is generally located at the centre of the drawing.

Do not forget to do this for your master peg. Positioning the pivot between the feet is often a good option.

Chapter 9: Bones Basics

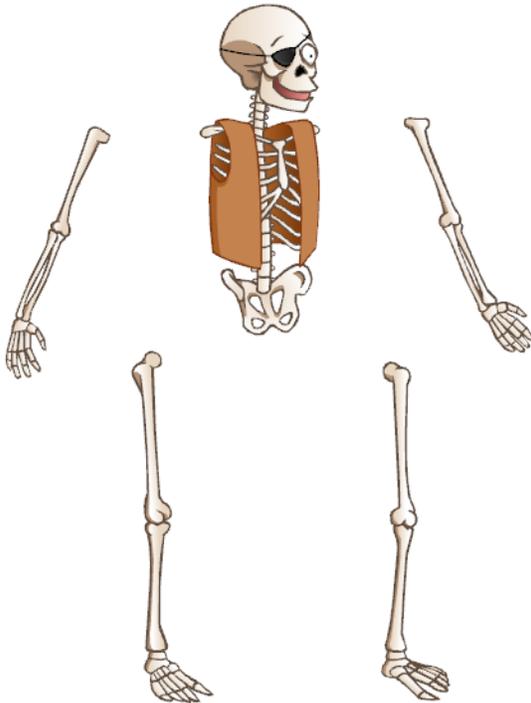
This section is divided as follows:

- [Adding Bones](#) below
- [Setting Up Bones](#) on page 37
- [Zones of Influence](#) on page 38
- [Animating Bones](#) on page 38

Adding Bones

To add bones to your character:

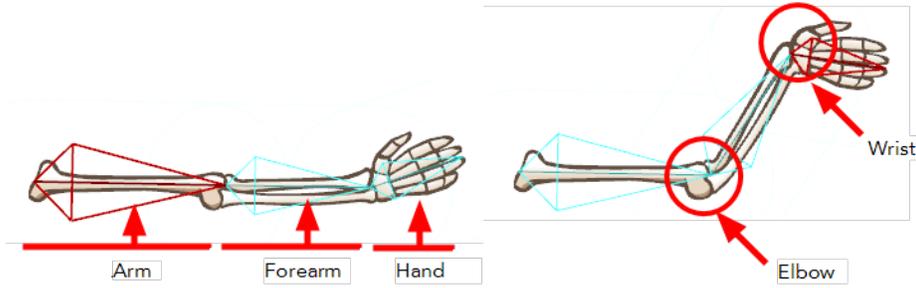
1. Make sure you are working in the Camera  view.
2. In the Timeline view, select the layer that contains your artwork.
3. From the Bone Tools toolbar, select the Bone Creator  tool or press [U].
4. Take a look at your character or object, and decide which parts will be at the back (hidden behind other parts). These are the parts you should start creating bones for first.



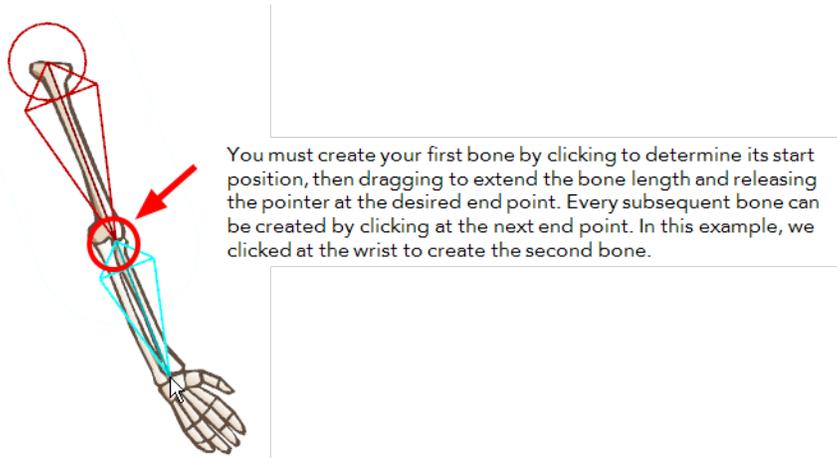
The bones and bone chains that are created first will be at the top of the Timeline layer stack when you are finished; therefore, they will be located at the front of the visibility hierarchy.

5. In the Camera view, click and drag to create the first bone, following your design.

When creating the bone structure, think about where you want the image to bend. In this example, we want to have two bends (one at the elbow and one at the wrist). Therefore three bones should be created: the arm, forearm and hand.



- Once you have created a bone, it automatically becomes selected and appears in red. The next bone you create is automatically linked and parented to the currently selected bone. This creates a chain linked by a joint.



- Once you have created a full bone chain for one limb, you can, for example, start a new freestanding bone or bone chain for a different part of your character or object. Hold down the [Shift] key to do this.

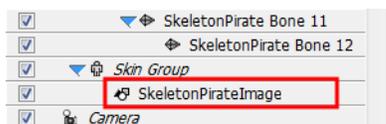


Be sure to let go of the [Shift] key if you want to create a connected chain, otherwise, you will create a series of unconnected bones.

- Take a look at the Timeline view. As you create a bone chain, notice that a new bone layer is automatically added for each bone in the chain under the Bone Group. The bones in a chain are organized in a hierarchy, while freestanding bones are just below the main Bone Group.



Notice also that the drawing layer with your character or object artwork is automatically connected to the Skin Group of your new Skeleton effect group. This auto-parenting occurs because you started creating your bones with this layer selected.



Setting Up Bones

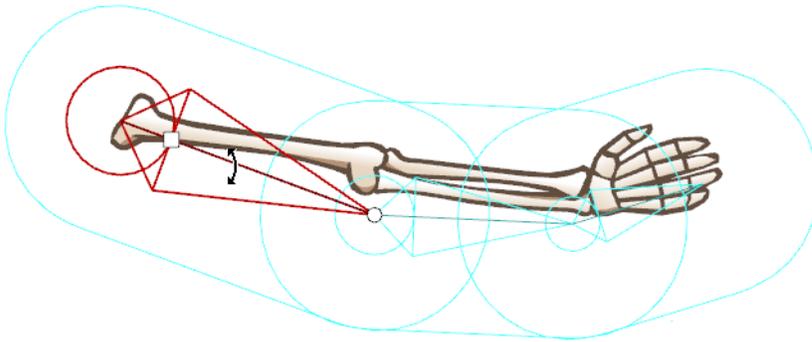
Once you start creating bones you can, at any time, modify them in Setup mode to optimize their positioning without creating an animation.

To modify bones using the Bone Setup tool:

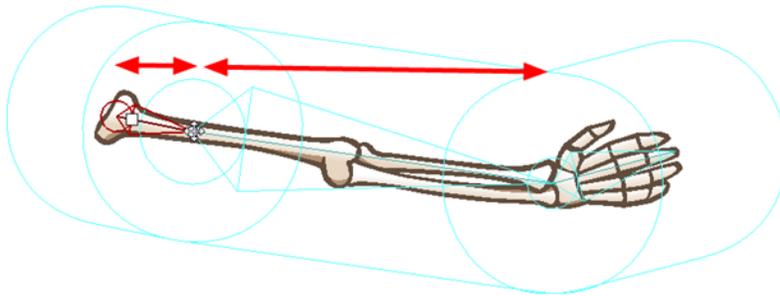
1. From the Bones Tools toolbar, select the Bone Setup  tool or press [J].
2. In the Camera view, select the bone you want to modify.

The selected bone turns red and two control handles appear.

- ▶ To rotate the bone, place the pointer over the bone until you see the rotation cursor. Click and drag to rotate the selected bone. You can change the rotation angle of any bone in the chain.



- ▶ To shorten or lengthen the bone, click on the round handle at the tip of the bone and either drag it towards or away from the root of the bone. You can lengthen or shorten any bone in your chain. You can also rotate as you scale, creating two transformations in one step.



Note how the scaled bone affects the length of the bone directly connected to it, but not further down the chain

- ▶ To reposition the bone, click the square handle and drag it to the desired position.



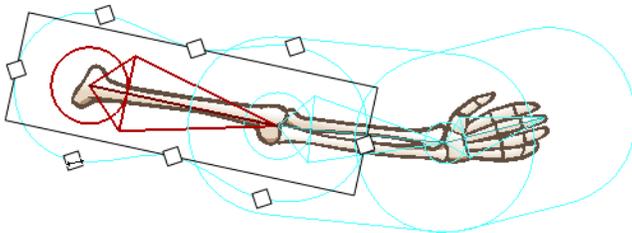
You should only reposition the first parent of the bone chain to avoid creating gaps in your joints that could result in an unwanted distortion of the art.

Zones of Influence

If you set the influence area of a bone to Elliptical, meaning it is bound within an ellipse shape, you can modify that shape. To modify the size and form of the ellipse, simply manipulate the square points around its bounding box.

To modify the influence area using the Bone Influence tool:

1. From the Bone Tools toolbar, select the Bone Influence  tool.
2. In the Camera view, select the bone whose influence area you want to modify. Make sure that in the Properties view, the zone of influence is set to Elliptical.
The selected bone appears in red and a black bounding box is displayed around the influence area.
3. Click and drag the square points to resize or reshape the influence area.



Animating Bones

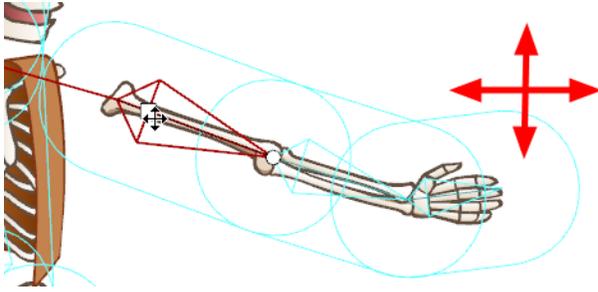
Now that the Skeleton puppet is ready, you can start animating it.

To animate bones:

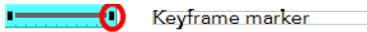
1. From the Bone Tools toolbar, select the Bone Manipulator  tool.
2. In the Timeline view, go to the frame where you want to set the first pose of the puppet.



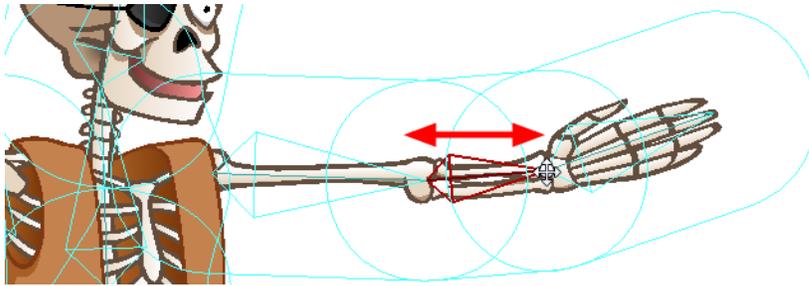
3. In the Camera view, select the bone you want to animate.
4. When a bone is selected you can:
 - Use the square handle to drag the selected bone to a new position. Note that this handle is only available on the parent bone of a chain.



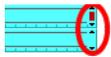
Repositioning a bone will create a square black keyframe marker in the Timeline view, on the layer of the selected bone.



- ▶ Use the circle handle to squash and stretch the bone. In the example below, notice how the parent bone is unaffected, but the child bone becomes squashed and stretched.



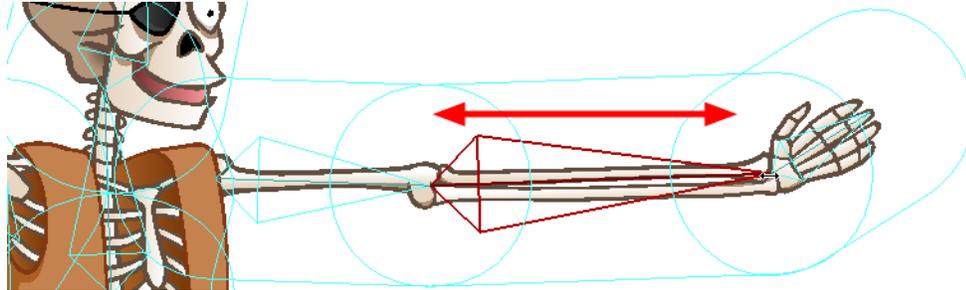
Scaling a bone with the Bone Manipulator tool will create up and down arrow-shaped keyframe markers in the Timeline view, on the layer of the selected bone, as well as on the layer of the child bone. The reason this manipulation produces the same types of keyframe markers that you would typically see for a scale and a rotation, is because the Bone Manipulator tool allows you to scale and rotate in the same movement.





You can also use the Scale  tool from the Animation tools toolbar to perform a different type of

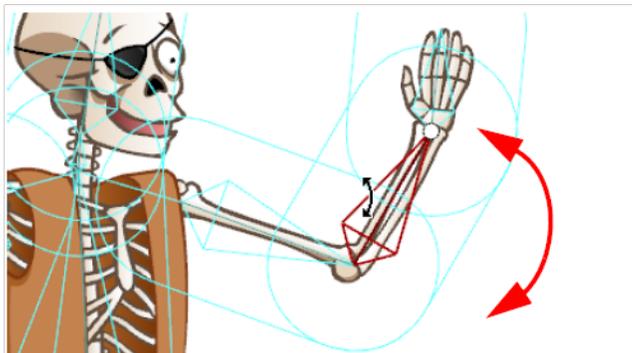
scaling. Grab the tip of the bone to squash and stretch it. In the example below, notice that the parent and child bones are unaffected by the scaling, but the child's position changes relative to the scaling of the selected bone.



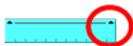
Scaling a bone with the Scale tool will create a down arrow keyframe marker in the Timeline view, on the layer of the selected bone.



- ▶ With the Bone Manipulator  tool, click directly on the bone and drag the cursor to rotate it.



Rotating a bone will create a tiny up arrow keyframe marker in the Timeline view, on the layer of the selected bone.



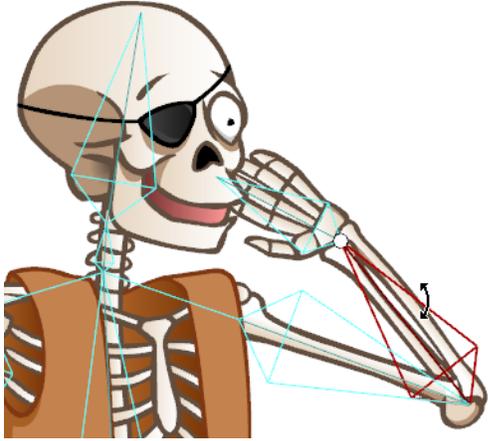
- ▶ If the Skeleton Effect is collapsed, note that you will not see the keyframe marker. If you expand the puppet's elements by clicking on the arrow next to the master peg element, notice a red square on the parent element of the bone you moved. This indicates that a child of this bone has a keyframe.



5. In the Timeline view, go to the frame where you want to set a second keyframe.



6. In the Camera view, animate the character.



7. Repeat this process until all the poses are done.

Chapter 10: Animating a Cut-out Puppet

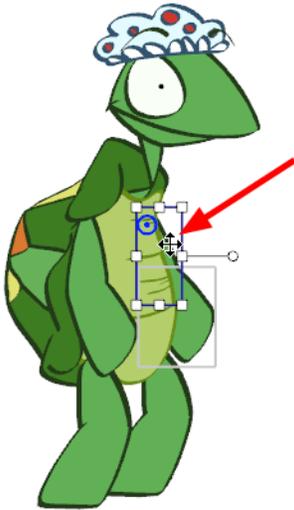
Once you import your cut-out puppet into your Studio project, you can start animating it.

To animate a puppet:

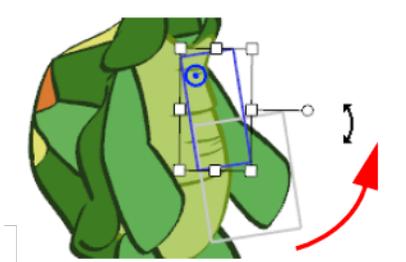
1. In the Animation Tools toolbar, select the **Transform**  tool or select **Tools > Animation Tools > Transform** or press [7].
2. In the Timeline view, go to the frame where you want to set the first pose of your puppet.



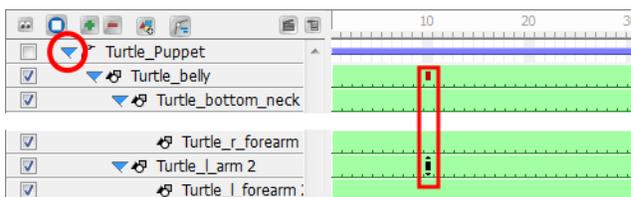
3. In the Camera or Timeline view, select the parts to animate.
 - If your puppet is collapsed, click the top layer arrow to expand it.



4. Use the Transform tool to rotate, skew, scale or translate the selection to its new position.



A keyframe is created in the Timeline view. If your puppet is collapsed, note that you do not see the keyframe on the master peg layer.

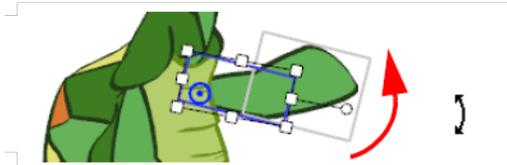


- ▶ If you expand the elements of your puppet by clicking the arrow next to the master peg element, you will notice a red square on the parent element of the element you moved. This is an indication that a child of this element has a keyframe.
- ▶ A black square on the element you moved represents the keyframe.

5. In the Timeline view, go to the frame where you want to set a second keyframe.



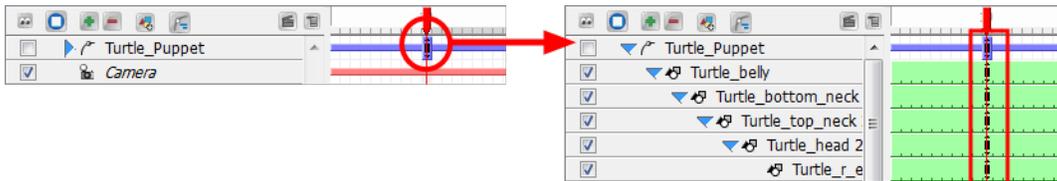
6. In the Camera view, animate your character.



Once you position your puppet, you can create a keyframe for all the elements of your collapsed puppet and block the complete body at a specific frame.

To block the entire body position:

1. In the Timeline view, on the master peg, select the frame at which you want to block your puppet's position.
2. Select **Element > Peg > Add Keyframe** or press [I].



Chapter 11: Scene Setup and Motion Paths

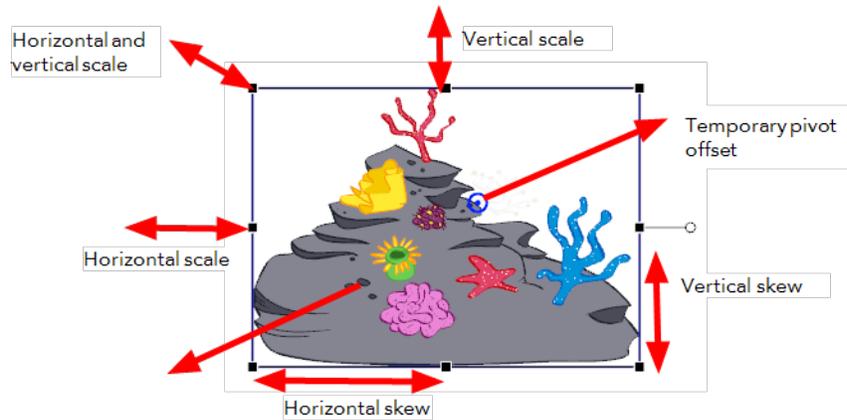


This chapter is divided as follows:

- [Positioning Elements](#) on the next page
- [Duplicating Layers](#) on the next page
- [Animating Objects](#) on page 47
- [Animating the Camera](#) on page 48

Positioning Elements

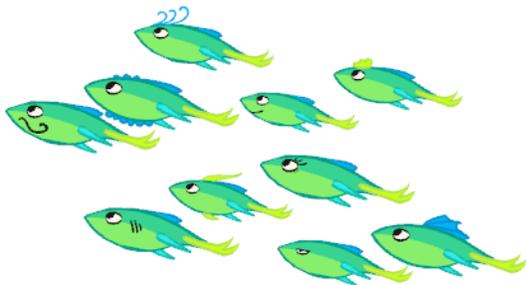
Using the Select  tool, you can position, scale, rotate, and skew elements directly in the Camera view without creating a keyframe.



To use the Select tool:

1. In the Animation Tools toolbar, click the **Select**  tool, select **Tools > Animation Tools > Select**, or press [6].
2. In the Camera or Timeline view, select the element you want to position.
3. Use one of the bounding box handles to position and transform your element.
 - Hold down the [Shift] key as you scale to keep the ratio when using the corner handles.
 - Hold down the [Shift] key as you rotate to lock the rotation every 15 degrees.

Duplicating Layers

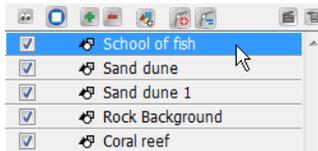


Duplicating a layer provides you with an independent copy of the drawings and their exposure. You can modify anything you want in the duplicated layer without affecting the original one.

You can use duplicated layers if, for example, you want to reuse an animation of a fish to create a school of fish but you still want to modify some of them to give them their own personality.

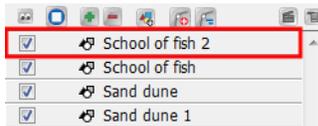
To duplicate a layer:

1. In the Timeline view, click the layer you want to duplicate.

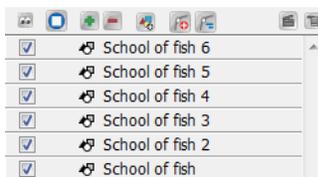


2. In the Timeline View menu, select **Duplicate Element** or in the top menu select **Element > Duplicated Element** or right-click the row header and select **Duplicate Element**.

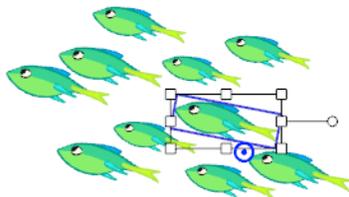
The duplicated layer appears in the Timeline view. In the Camera view, an identical element appears at the same exact place as the original one.



3. Repeat step 2 until you have all the duplicated layers you need.



4. In the Camera view, you can reposition and transform your duplicated layers by using the Animation Select  tool.



5. In the Drawing view, modify your drawings if needed.

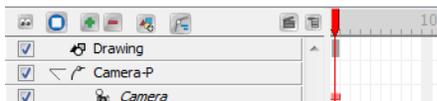


Animating Objects

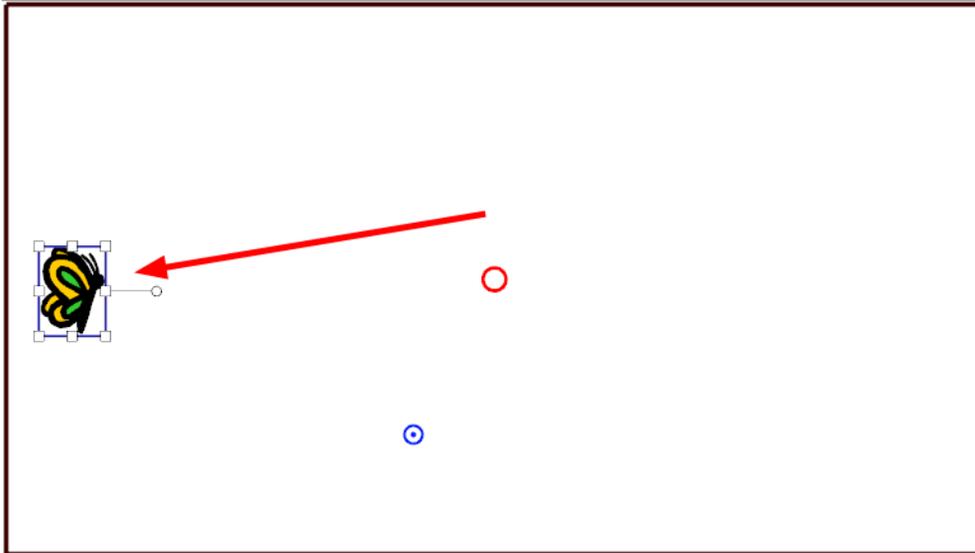
This section describes the basics of animating objects on a layer. Studio's wide range of features let you produce accurate trajectories. However, before reaching this level you must learn how to create a simple motion.

To animate a layer:

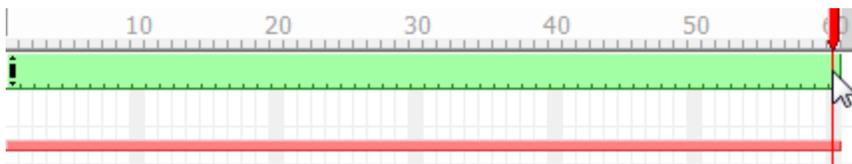
1. In the Animation Tools toolbar, select the Transform  tool.
2. In the Timeline view, go to the first frame.



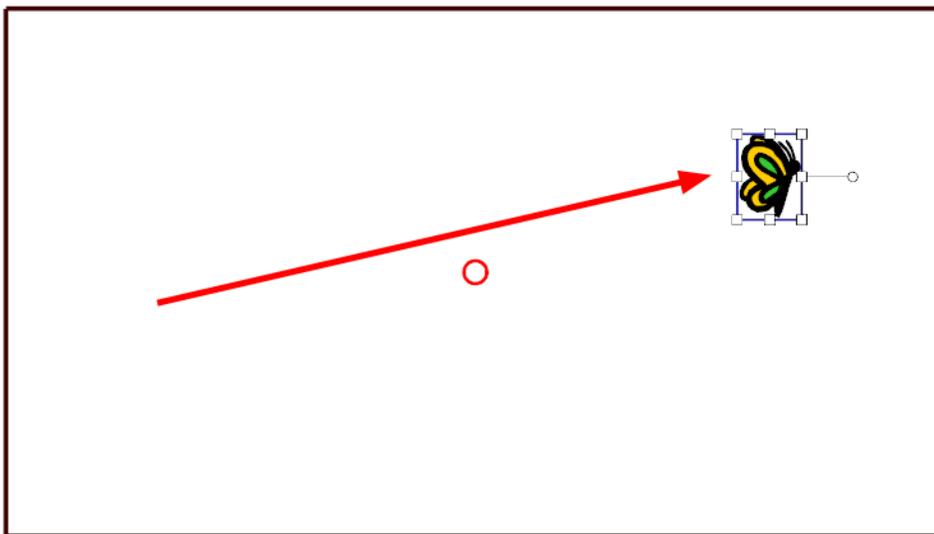
3. In the Camera view, select the element to animate and move it to its first position.



4. In the Timeline view, go to the frame on which you want to set the second position.



5. In the Camera view, move the selected element to its new position.



6. In the Playback toolbar, click the Play button to view your animation.

Animating the Camera

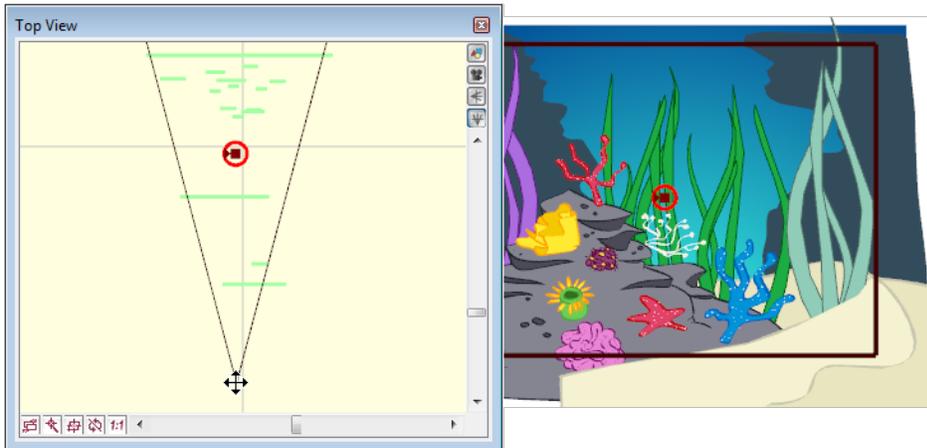
To animate your camera:

1. In the Animation Tools toolbar, select the Motion tool.

- In the Timeline view, select the camera peg layer on the first frame where you want your camera motion to start. It can be the first frame of the scene or any other frame.



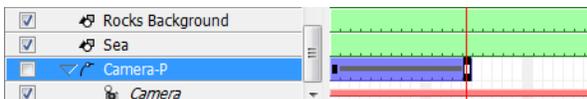
- Right-click and select **Add Keyframe** or press [I].
- In the Top view, select the camera and move it to the desired position. You can refer back to the Camera view to see how this camera moves the frames in your scene.



- In the Timeline view, click on a cell in the Camera Peg layer where you want the camera move to end.



- Right-click and select **Add Keyframe** or press [I].
A keyframe appears in that cell.



- In the Top view, select the camera and move it to the desired position.



A second keyframe appears and a line is created between the two frames to indicate that Studio created a non-constant segment, meaning that it will automatically interpolate the movement.

Chapter 12: Adding Sound and Lip-sync

This chapter is divided as follows:

- [Importing Sound](#) below
- [Lip-Sync](#) on the next page

Importing Sound

When you decide that you want to add sound to your movie, you must prepare this sound outside of Toon Boom Studio. Then, in Studio, you add a Sound element to organize sound files in your animation.

A sound will play in the movie until it reaches the end of the file or a stop frame created in the Sound Element Editor. If the sound extends into multiple scenes, it will continue to play.

You can import as many sound files as you like. However, if you will be delivering your movies over the Internet, the more sounds you add, the larger the file size of your final movie.

Toon Boom Studio imports, exports and plays sounds using QuickTime. Studio only supports the sound formats recognized by Qt®, with one exception: Flash ADPCM format, which is supported natively.

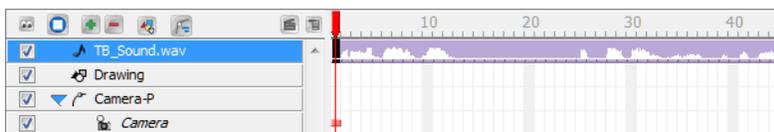
To import a sound file:

1. Do one of the following:
 - ▶ From the Sound toolbar (Top toolbar on Mac OS X), click the Import Sound  button.
 - ▶ From the top menu, select **File > Import File**.
 - ▶ In the Exposure Sheet view, right-click on any cell and select **Import Sound File**.
 - ▶ In the Timeline view, click on the **Add New Elements** button. In the dialog box, select the Sound type, name the layer and click on OK. In the Properties view, click on the Import Sound File button.
 - ▶ In the Exposure Sheet view, in the top toolbar, click on the Sound button. In the Properties view, click on the Import Sound File button.

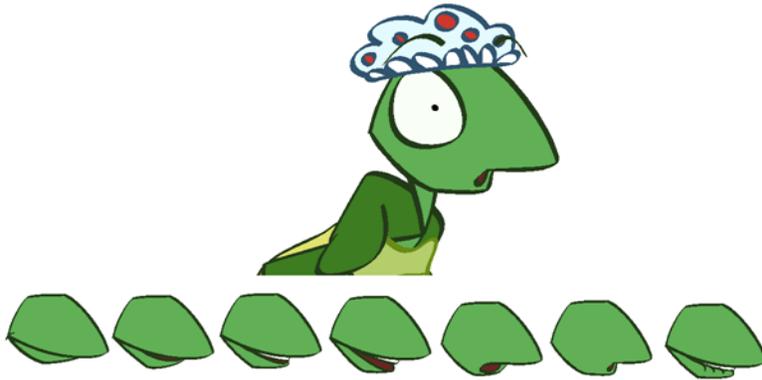
The Open dialog box displays.

2. From the Open dialog box, browse for your sound file (*.aiff, *.mp3, *.wav, or *.m4a) and click **Open**.

The sound layer appears in the Timeline view and is displayed as a waveform. The sound file also appears in Exposure Sheet view.



Lip-Sync

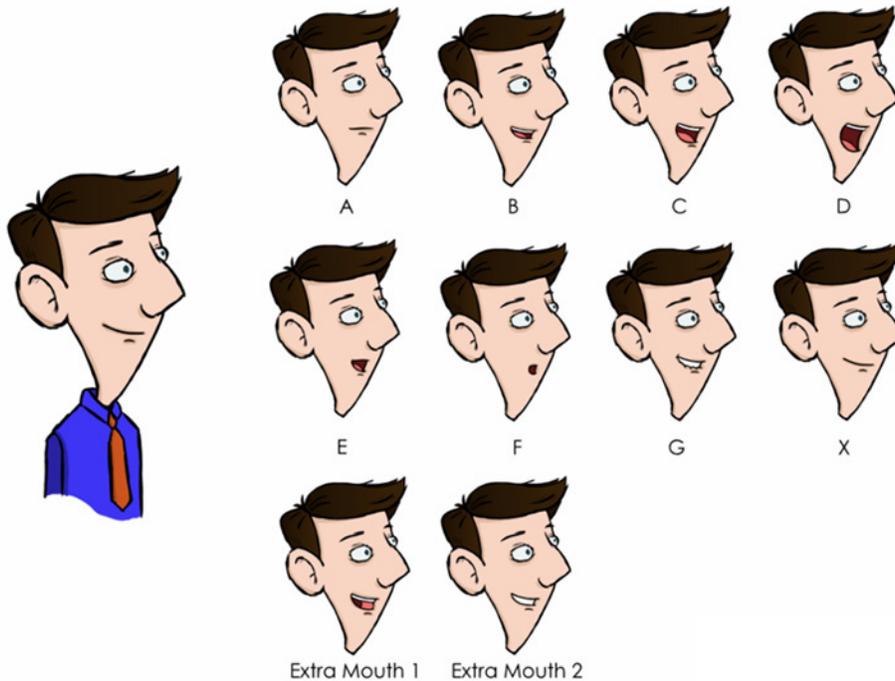


Adding a lip-sync to a project can really enhance its quality and storytelling. However, it can be difficult to shape a character's mouth so it matches the sound at the precise frame. To solve this problem, Studio provides a lip-sync feature which analyzes the content of a sound element and generates a mouth chart based (see below) on the eight animation phonemes (A, B, C, D, E, F, G, and X, which is used to represent silence). You can lip-sync the traditional way or let the Studio automatically create the basic detection.

The mouth shapes used by Studio are based on the conventional mouth chart used in the animation industry. The letters used to represent the shapes do **NOT** correspond to an actual sound.

Here is an approximation of which sound each mouth shape can produce:

Mouth Shape	Approximate sound the mouth shape matches to
A	b, m, p
B	d, h, i, j, k, s
C	a, e
D	A, E
E	o
F	oo, u
G	f, ph
X	Silence, undetermined sound



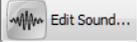
You can refer to the mouth chart positions as you draw the shape of your character's mouth.

Studio comes with a variety of mouth templates that you can play and experiment with on your characters. You can create a lip-sync and use an existing sound layer or create the lip-sync and then import the sound.

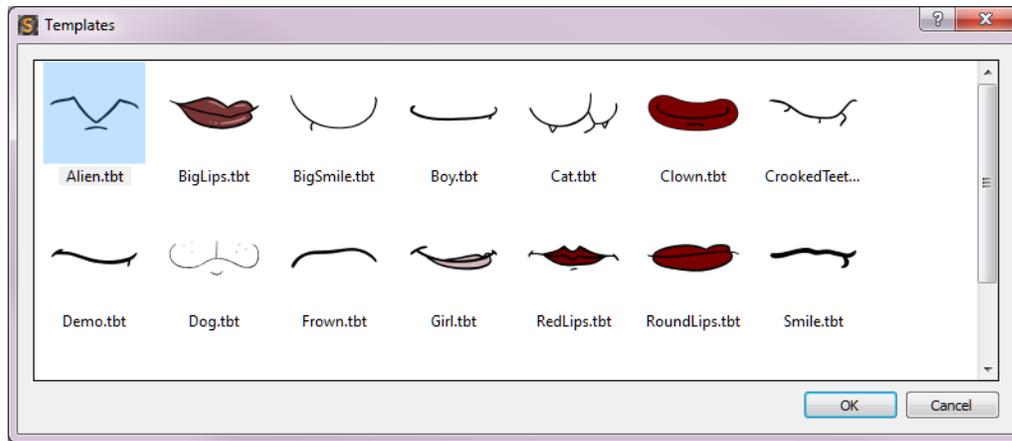
To create a lip-sync using a mouth template:

1. From the Sound toolbar, click the Lip-sync  button (Top toolbar on Mac OS X).



2. Do one of the following to add sound:
 - ▶ Click the Import Sound  button. From the Open dialog box, select a sound file and click **Open**.
 - ▶ From the Sound list, select a sound file you have already imported.
3. If needed, edit the sound by clicking the Edit Sound  button and making any adjustments in the Sound Element Editor.
4. Click the Import Template  button.

The template dialog box opens to display the mouth templates.



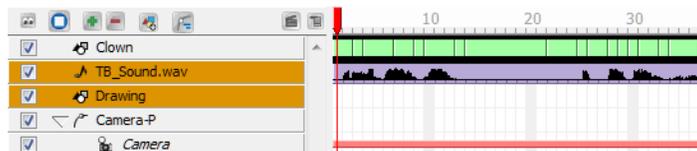
5. Select a mouth template and click OK.

In the Timeline view, a Drawing layer is created containing eight mouth drawings.



6. In the Lip-Sync view, click **Apply** to generate the lip-sync with the sound file.

The mouth shapes are synced with the sound file.



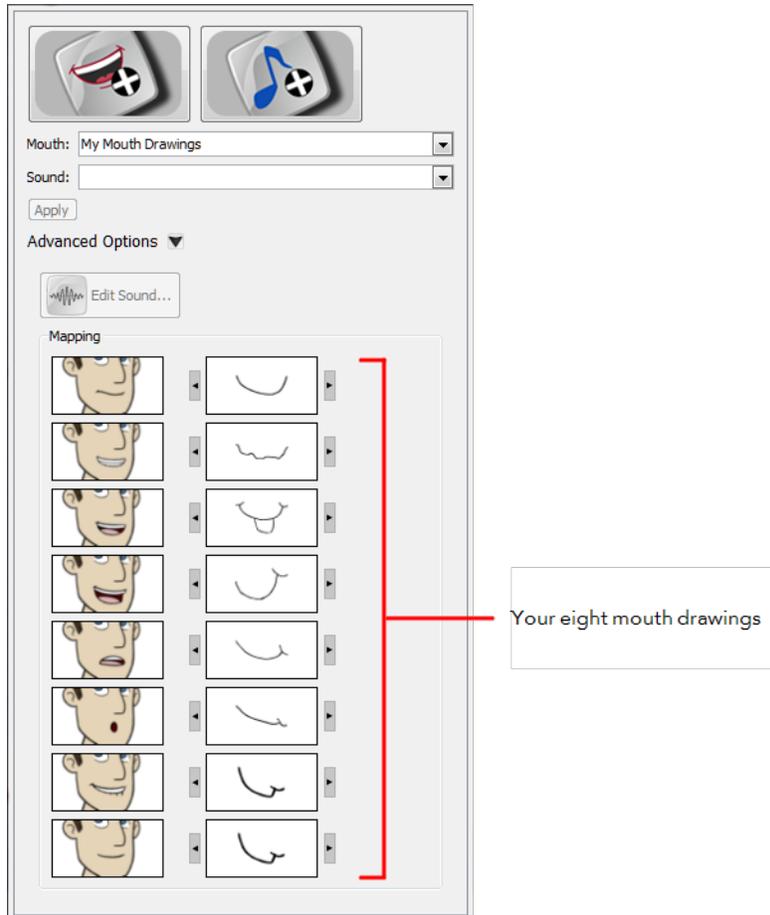
7. In the Drawing view, use the Select tool  in the Animation Tools toolbar to scale the mouth drawings on the layer.
8. In the Camera view, place the mouth at the correct location on your character.

You can use your own drawings to generate a lip-sync.

To create a lip-sync using your own drawings:

1. In the Timeline view, select the drawing layer that contains your eight mouth drawings.
2. From the Sound toolbar (Top toolbar on Mac OS X), click the **Lip-sync**  button.

The Lip-sync view displays. Your eight mouth drawings are automatically mapped with the animation phonemes.

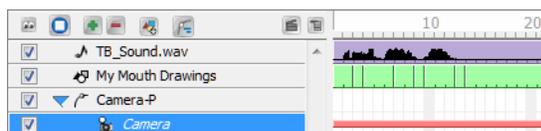


3. Do one of the following to add sound:
 - ▶ Click the Import Sound  button. From the Open dialog box, select a sound file and click **Open**.
 - ▶ From the Sound list, select a sound file you have previously imported.
4. If needed, edit the sound by clicking the Edit Sound  button and making any adjustments in the Sound Element Editor.
5. If needed, you can adjust the mouth mapping by clicking the Previous Drawing and Next Drawing arrows beside any of the mouths.



6. Click **Apply** to generate the lip-sync with the sound file.

The mouth shapes are synced with the sound file.



Chapter 13: Animating in Stop-motion



Depending on whether you want a 2D or 3D environment, you have to set up your background accordingly. If you prefer a 3D background, then you would treat the elements in the same manner that you treat your stop-motion characters. If you would like a 2D cartoon background, then you need to set up what is known as either a blue or green screen.

A blue or green screen is a solid-coloured piece of fabric that you can easily select and block out in the software. This process is known as *colour keying*. You can then superimpose another background, such as a 2D drawing created in Studio or a 3D photograph or a piece of video footage.

An important element to consider when setting up either a green screen backdrop or a stop-motion setting, is the lighting. In the case of a green screen, soft, flat lighting can be the key to making the material look smooth and shadowless. The fewer variations in tone, the easier it is to key out the colour later on. Lighting does not necessarily mean a multi-lamp setup; a well-lit room with natural daylight is often best.

This section is divided as follows:

- [Camera Settings](#) below
- [Colour Keying](#) on the next page
- [Capturing](#) on page 59

Camera Settings

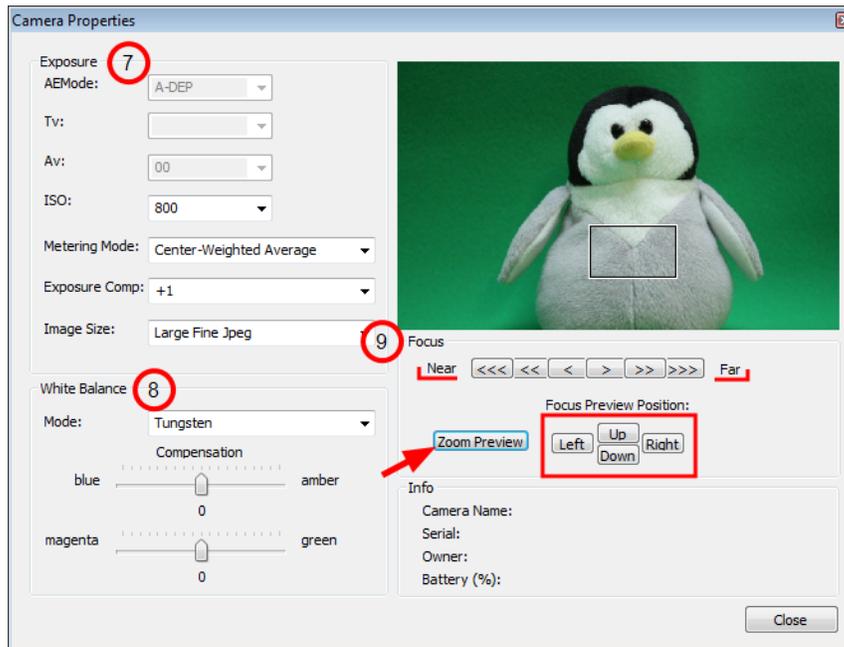
To set up for image capture:

1. From the File menu, select **Acquire > From Capture Device**.
The Image Capture window appears.
2. In the Options section, select the **Source** tab. Find and select your recording device from the Device list.
3. From the Source list, select **Full-Resolution Photo** if it is available for your recording device (some devices, such as webcams may not allow for this option). Otherwise, select **Live Preview** if you prefer to take faster, lighter images for a rough test.
4. If you want to smooth out some of your colours, select the **Noise Reduction** option. If you want to capture more detail, leave this option deselected.
5. Click **Properties**.
The Camera Properties window appears.

This is an example of a typical Camera Properties window.



The Camera Properties page is different for every capture device. The information displayed on that page comes from the device itself and therefore contains different options for each device.



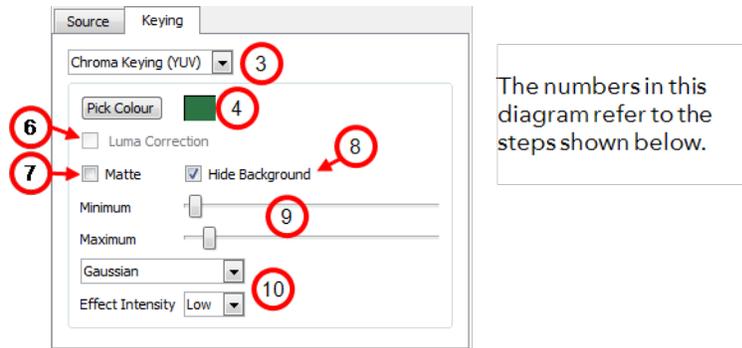
The numbers in this diagram refer to the following steps.

6. Most of the settings that you see in the Exposure section are set manually on your camera. If you change a setting in the software, such as the ISO, it is changed on your camera. If you change a setting on your camera, it is also changed in the software.
7. In the White Balance section, play with the options from the Mode list and select the one relating to your lighting set up, or until the colours in the preview window displays evenly balanced colours. Make fine adjustments with the colour sliders.
8. In the Focus section, use the Near and Far increments to bring the preview image into focus. For greater focal detail, use the **Left**, **Right**, **Up** and **Down** buttons to move around the Zoom Preview rectangle in the preview window. When you find a good section to examine, such as an area of high contrast, click **Zoom Preview** to view that section in detail. Use the Near and Far increments to make finer adjustments.
9. Click **Close**.

Colour Keying

To key out your coloured background:

1. If it is not already open, from the File menu, select **Acquire > From Capture Device** to open the Image Capture window.
2. Select the **Keying** tab.

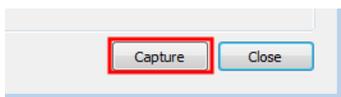


3. From the first list, select a Keying type. It is recommended that you select the type that shows the most sensitivity to your background. This might not be obvious until you pick the colour that you want to key out. You can gauge sensitivity by the amount of dancing pixels seen in the preview window.
4. Click **Pick Colour**.
5. Use the eye dropper to select your background in the preview window. If there are some unavoidable highlights and shadows on your green screen, try to select a mid-tone area. The selected colour appears in the swatch area beside the Pick Colour button.
Your preview window comes alive with dancing pixels.
6. If you selected Luma Keying as the keying type, you can also select Luma correction to help even out the image so it is easier to extract a drawing from the background.
7. If you selected one of the chroma keying types, select the Matte option if you want to render the preview window achromatic. This option makes the keying process visually easier by seeing the selected portion being reduced to black and the keyed out portion being reduced to white.
8. Select the **Hide Background** option, if you want to see which part of the image is rendered transparent.
9. Play with the **Minimum** and **Maximum** sliders until your background disappears into a solid white (or transparent depending on which options were selected).
10. If there are still green areas remaining, try selecting one of the effects from the drop-down menu and chose the degree of Effect Intensity until you see a clean white or near clean white background in the preview field.

Capturing

To perform an image capture:

1. If it is not already open, select **Acquire > From Capture Device** from the File menu to open the Image Capture window.
2. Set up your first pose. Use the preview window and the recording device viewfinder to make sure that it is correctly framed.
3. When you are ready, click **Capture**.



4. Reposition your character and/or other elements on the stage. The smaller the movement, the smoother the animation.
5. Click **Capture**.

At this point, the Timeline view looks something like this. Each frame represents an image capture.



6. Repeat this process until you have completed your motion sequence.
7. When you are finished, click **Close**.

Chapter 14: Adding Effects

The most important part of animation is creating lifelike movement, followed by telling a good story and the creation of memorable characters. However, when all that is done, it is nice to add a little icing on the cake. Enhance your animation by giving it some subtle atmosphere or by turning up the wow factor. Toon Boom Studio offers eleven different pre-installed effects to choose from.

This chapter is divided as follows:

- [Previewing Effects](#) below
- [Blur Effect](#) on page 63
- [Adding Forces of Nature Effects](#) on page 64
- [Adding Blockbuster Effects](#) on page 65

Previewing Effects

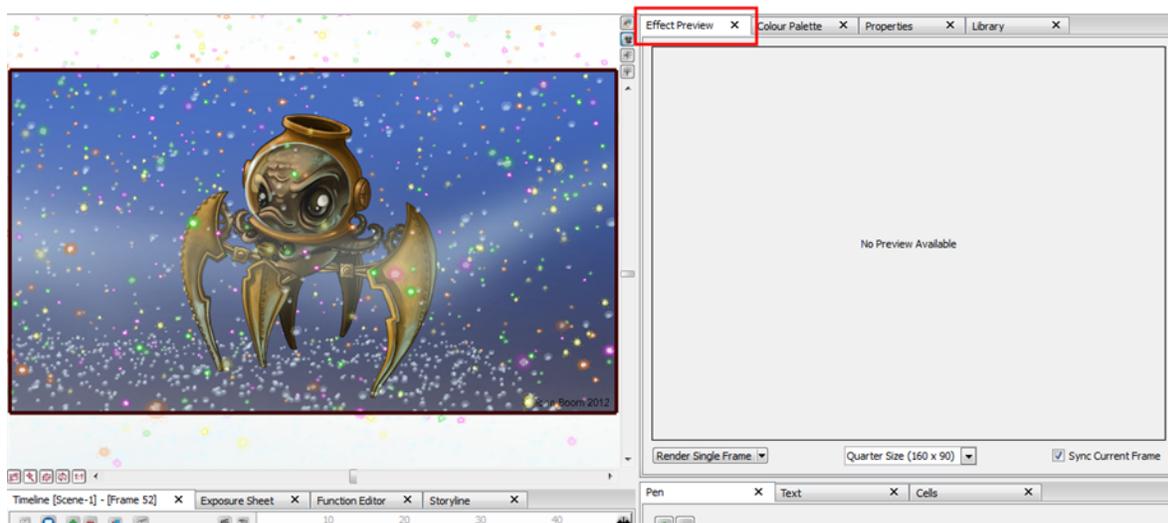
To see the final look of some of your effects such as the blur, the system needs to calculate and render them. The Camera view shows a simple version of your effects so you can play back your animation quickly. Therefore, to see your final effects as you adjust them, you need the Effect Preview view which gives you the ability to render the current frame and display it in a window.



Toon Boom Studio will keep in memory 200MB of rendered images. (~25 frames in HD, ~100 is half HD and ~400 in quarter HD).

To open the Effect Preview view:

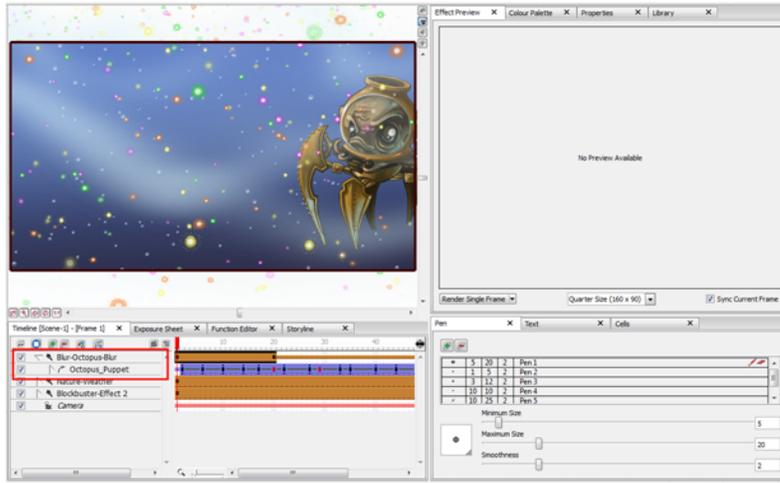
1. Select **Window > Effect Preview**.
2. Grab the floating view and dock it beside your Camera view.



The Effect Preview view allows you to render a single frame, a frame range or your whole scene to see your effects. You can render the images to a quarter, half or full size of your project depending on how much memory you want to use.

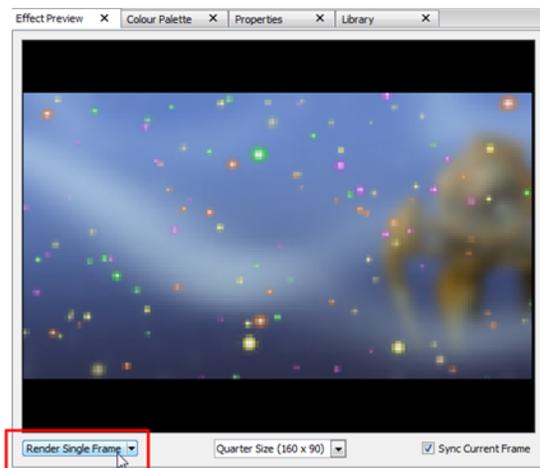
To preview a blur effect:

1. In the Special Effects toolbar, click the Blur Effect  button.
2. In the Timeline view, parent the drawing layers that you want to blur to the Blur effect.

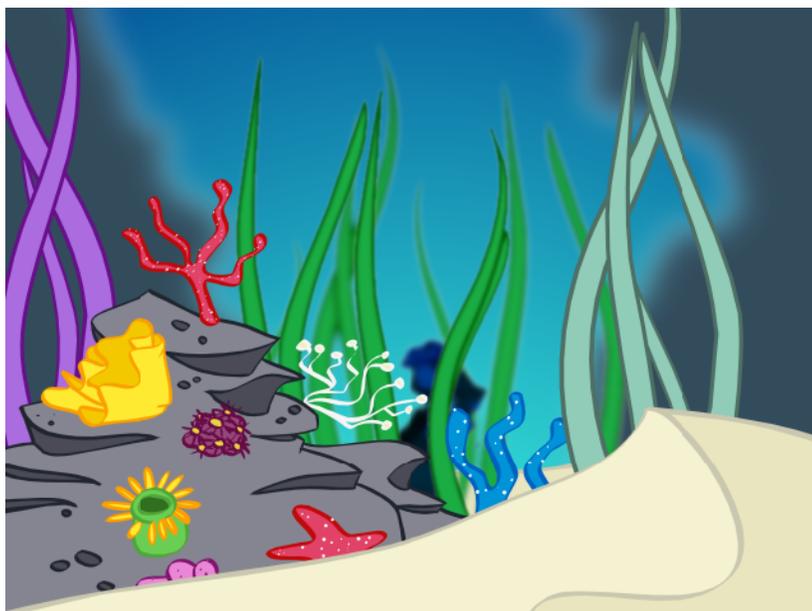


3. In the Effect Preview view, click **Render Single Frame**.

The current frame preview appears at a quarter of the project's size.



Blur Effect



If you are animating an image that is visible from a great distance, or through adverse weather conditions such as fog, you can use the Blur effect to give a soft-focus look to your image. With the Blur effect, you can alter the overall blurriness of an element and then set keyframes to animate the blurriness over time. In this way, you can both increase and decrease the level of blurriness throughout the animation.

To create a Blur effect:

1. In the Special Effects toolbar, click the Blur Effect  button.

You can also add the Blur effect from the Timeline toolbar.

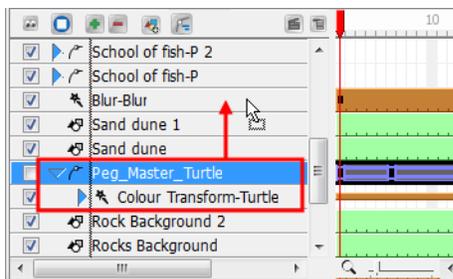
- ▶ In the Timeline view, click the Add New Element  button.

The New Elements dialog box opens.

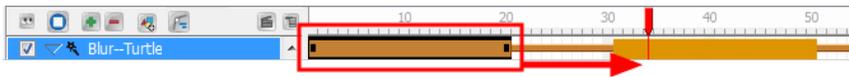
- ▶ From the Type list, select **Blur Effect**.
- ▶ In the Name field, rename the effect appropriately.
- ▶ Click OK.

A new Blur layer appears in the Timeline view.

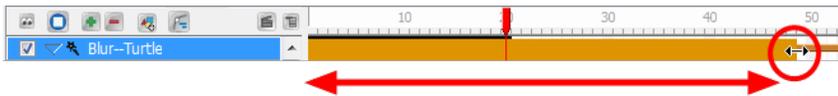
2. In the Timeline view, select the drawing layer that you would like to attach to the Blur effect and drag it onto the Blur effect layer.



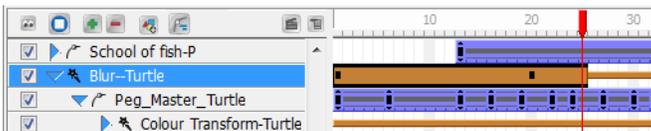
- If you do not want the Blur effect to start at the first frame, you can select the effect's cells and drag them to the starting frame that you prefer.



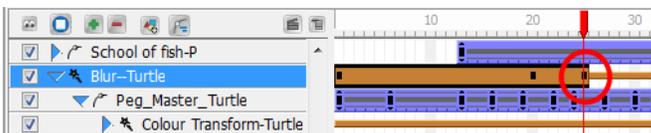
- If you want the transition to be shorter or longer, select the end of the group of frames, wait until you get the double arrow cursor and then pull towards the left or right.



- In the Timeline view, drag the red playhead to the frame on your effect layer where you would like to add a keyframe.

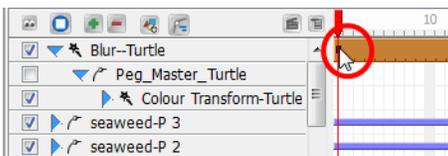


In the Tool Properties panel for the Blur effect, click the Add Blur Effect Keyframe  button.



A new keyframe is added to the chosen location.

- In the Timeline view, go to the frame containing your first keyframe and select the Blur effect layer.



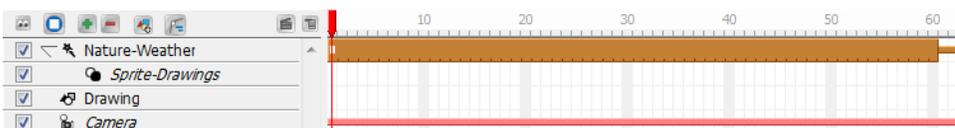
- In the Properties view, move the Radius slider to increase or decrease the Blur Radius, or simply enter a value directly into the field. You can enter decimal increments for more precision.

Adding Forces of Nature Effects

To add a Forces of Nature effect:

- In the Special Effect toolbar, click the Forces of Nature Effect  button.

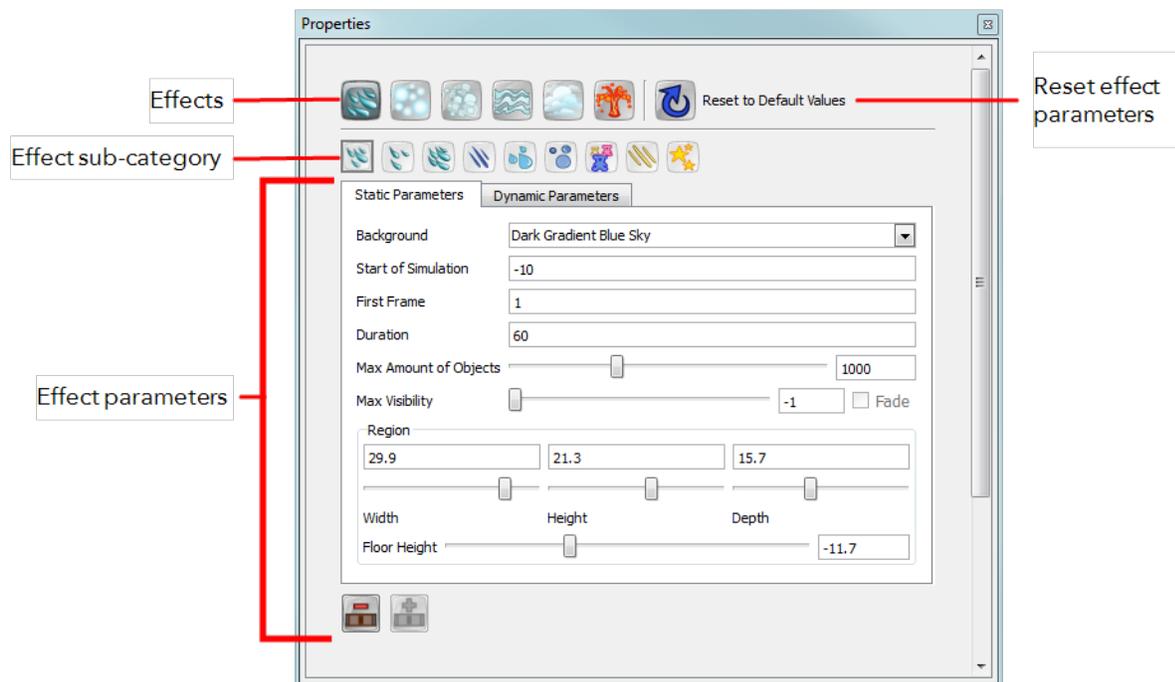
A Forces of Nature effect layer, as well as its child, a Sprite-Drawing layer, is added to the Timeline view. A Sprite is the particle multiplied and generated by the Forces of Nature effect. In the example below, a drawing of a raindrop is used as the Sprite.



By default, the Rain effect is selected and visible in the Camera view.



To customize and animate your Forces of Nature and Blockbuster effects, you must adjust the parameters in the Properties panel. Use the Static Parameters to customize the general settings for the effect. Any frame of the effect layer can be selected in the Timeline view when modifying values in this tab. If you want to animate the properties of the effect, add keyframes accordingly, then change the keyframe values in the Dynamic Parameters tab.



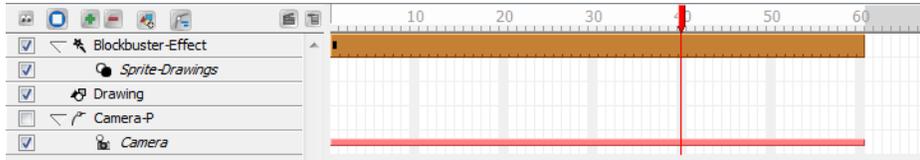
Adding Blockbuster Effects

To add a Blockbuster effect:

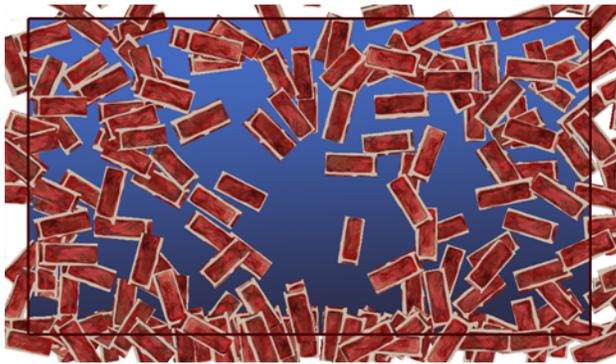
- Do one of the following:
 - In the Special Effect toolbar, click the Blockbuster Effect  button.
 - Select **Element > Add > Blockbuster Effects**.

- ▶ In Timeline View toolbar, click the **Add New Elements**  button and select **Blockbuster Effect** from the Type list.

A Blockbuster effect layer, as well as its child, a Sprite-Drawings layer, is added to the Timeline view. A sprite is the particle multiplied and generated by the Blockbuster effect. In the example below, a drawing of a brick is used as the sprite.



By default, the brick wall shatter effect is selected and visible in the Camera view.



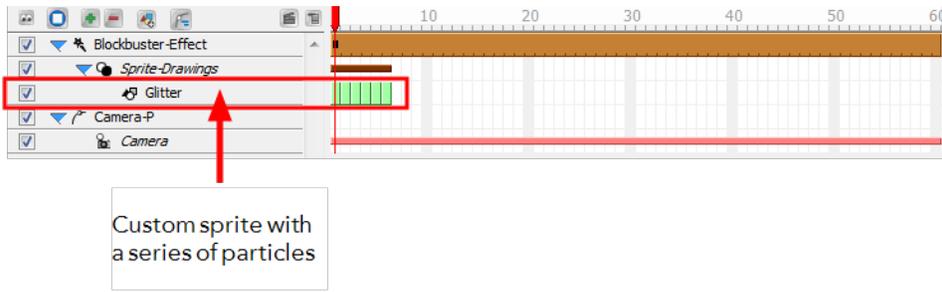
2. You have the possibility to create your own effect and customize it as you want. Create your own particle on a drawing layer, or import an image to use as a sprite (particle to multiply in the effect). Then you can attach that drawing to the existing Blockbuster effect and it will override the default content.

In the case of the Blockbuster Shatter effects, the first image will be used as the image to break to pieces and the second drawing will be used as the pieces and area to break in the first drawing—see the [Online Help User Guide](#) for more details.

For the Magic and other Blockbuster effects, traditionally animated drawings will be treated as multiple versions of the same particle type. For example, a traditionally drawn walk cycle appears as a series of frames on the same layer. Each frame contains a slightly modified version of a character's legs and arms moving. If this layer were to be used as a sprite, all those different drawings would be randomized and appear as non-sequential, static, singular particles in the effect. Therefore, if you draw a glitter particle in the first cell, a different colour glitter particle in the second cell and a different one of another colour in the third frame, you will obtain a multicolour glitter effect.

You can use this behaviour to your advantage; for example, in the event that you want to create five types of stars to be multiplied and generated. Simply create five different drawings on the same layer, but drawing each on their own frame.

3. Drag your newly created Sprite layer onto the Sprite-Drawings layer to parent it. The Blockbuster effect Sprite (unseen in the Timeline view) is automatically overridden by your custom Sprite.



If no sprite is created for a Blockbuster effect, the default sprite will be visible.

Chapter 15: Storyline and Transitions

This chapter is divided as follows:

- [Scenes below](#)
- [Transitions on the next page](#)

Scenes

The Storyline view is where you can manage your scenes, view scenes in a sequence, and add transitions between scenes.



To access the Storyline view:

1. Do one of the following:
 - At the bottom of the Studio screen, click on the Storyline view tab.
 - Select **Window > Storyline**.
 - Press [Ctrl] + [Shift] + [M] (Windows) or [⌘] + [Shift] + [M] (Mac OS X)

The Storyline view is displayed.

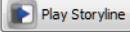
To zoom the Storyline view:

1. In the upper-left corner of the scene area, drag the zoom control right to zoom in on the scene area. Drag right to zoom out.



A group of scenes occurring in the same location about the same action or event is called a *sequence*. Once you have constructed your scenes into a sequences and inserted transitions, you can preview your sequence to see the result.

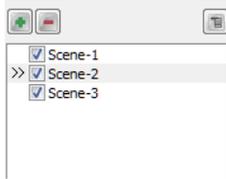
To play a sequence:

- In the Storyline view, click the Play Storyline  button.

To create scene:

2. In the Storyline view, go to the Scene Manager section and do one of the following:

- ▶ In the top area, click the New Scene  button.
 - ▶ Click the Menu  button and select **New Scene**.
 - ▶ In the Scene list, right-click on a scene and select **New Scene**.
- The new scene appears in the scene list.



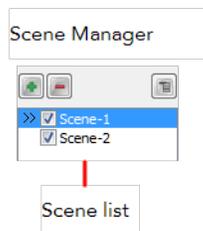
3. To open a scene from the list, double-click on the scene's name.

To select a scene:

1. Do one of the following:
 - ▶ From the Storyline view, select a scene.



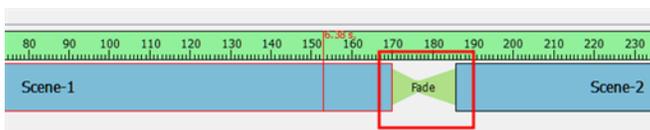
- ▶ In the Scene Manager, select a scene from the list.

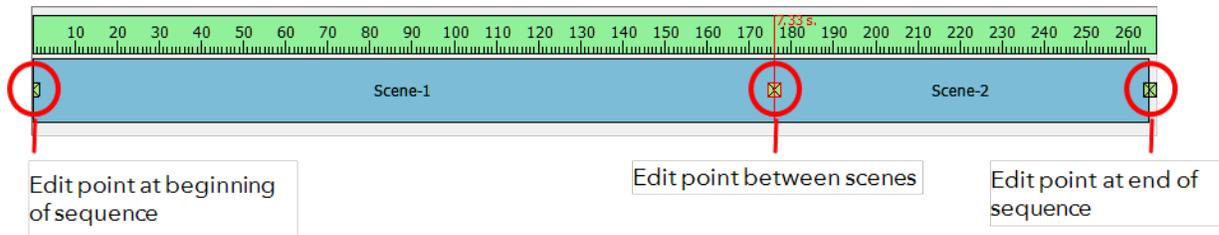


Transitions

To apply a transition:

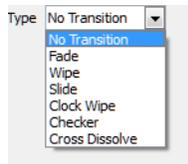
1. In the Storyline view, select the transition to modify between the scenes. If you removed the existing transition, select the edit point at the beginning or end of the scene, or between two scenes.



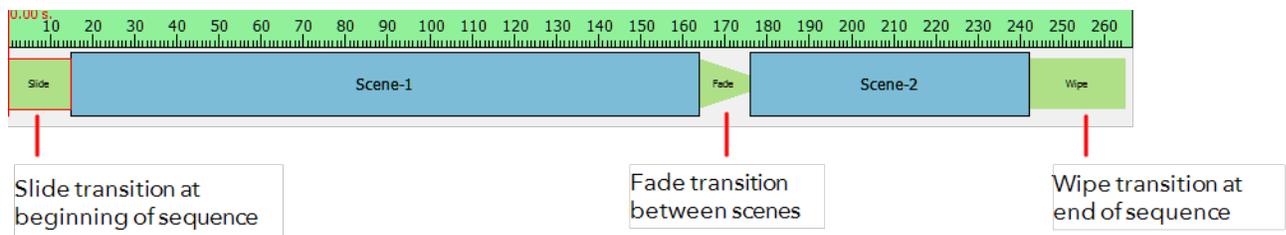


The edit point is highlighted and red playhead snaps to the location you clicked.

- In the Properties panel, select a transition from the Type list. By default, Fade is the default setting.



- In the Properties panel, edit the transition properties.
- Enter the Duration (in frames) for the transition. If you select the Fade transition, you must enter the **Left Duration**, **Blank Duration**, and **Duration Right**.
- The transition appears in the Storyline view.



- In the Storyline view, click the Play Storyline  button.

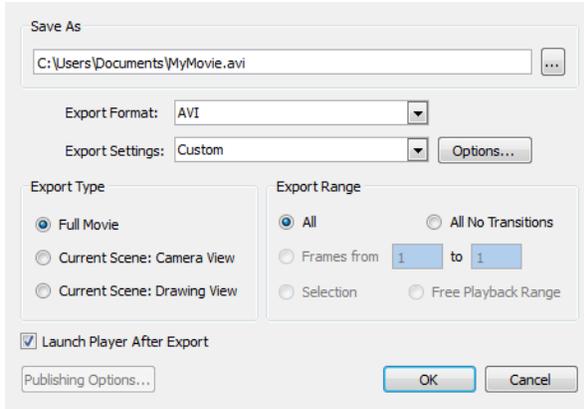
Chapter 16: Exporting a Movie

The format and settings that you decide upon when wanting to export your animation often depends on what you intend to do with it next. Do you plan to bring your project into a third-party software for post-production editing or put it up on the web?

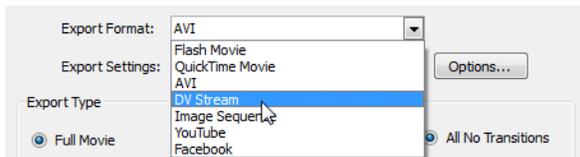
To export your movie:

1. Select **File > Export to Movie**.

The Export dialog box appears.

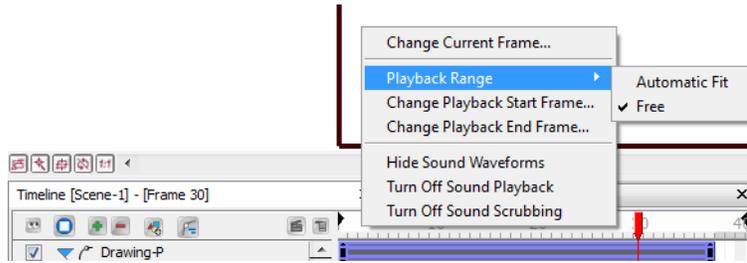


2. In the Save As section, click on the Browse button at the end of the path field and browse for the location where you intend to save your rendering.
3. In the **Export Format** list, select a format. The Export Settings Options changes depending on the format selected from this section.



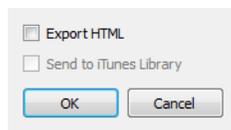
4. Click **Options** to customize the format settings.
5. In the Export Type section, choose from the following options:
 - ▶ **Full Movie:** Renders all scenes and all layers that are enabled, from the first to last frame, including all effects.
 - ▶ **Current Scene: Camera View:** Renders all layers that are enabled in that specific scene that can be seen in the Camera view with the option to choose a frame range.
 - ▶ **Current Scene: Drawing View:** Renders only what exists on a single layer in that specific scene. This can be a good option for running tests on a specific character or object's motion, or to bring one animated element into a third party software.
6. From the Export Range Section, choose from the following options:
 - ▶ **All:** Renders your entire project.
 - ▶ **All No Transitions:** Renders the entire project without transitions.
 - ▶ **Frame Range:** Allows you to select a specific section of your project to render by frame number.
 - ▶ **Selection:** Renders whichever layer or element that you selected before starting the export process.

1. **Free Playback Range:** In the Timeline view, right-click on the timeline ruler (top) and select **Playback Range > Free**. Two black diamonds appear at the start and finish of your project. Drag these markers to select a range. Note: This must be done before you open the Export Dialog window.



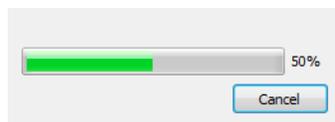
2. Select or deselect the **Launch Player After Export** option.
3. Click **Publishing Options**.

The Publishing dialog box appears.



4. From the Publishing dialog box, select the option to Export to HTML if your project is destined for the web and/or if you would like to send a copy to your iTunes Library.
5. When you are finished, click OK.
6. In the Export dialog box, when you are through, click OK.

A progress bar appears.



7. Browse to the location on your computer where you saved your movie and double-click on the file to view your export.