

Apple Motion 5

Apple Motion is a real-time motion graphics application that is used to animate objects and text using keyframing (path movement) and animation tools known as behaviors. Motion is a 3D space application, not a 3D modeling application.

Motion terms:

Behaviors-Tools that Motion uses to create more organic movements in your animations. Behaviors will be applied directly to either the timing pane, layers pane, or timeline.

Object-anything you drop into a new Motion project such as a still image, footage, text, shape, or something you create within the program itself. These objects inhabit layers.

Layers-Containers that hold all the objects in your project.

Group-The container that layers reside in. You can organize multiple layers together to create a group.

Replicators-Replicates objects into a pattern. Can repeat anything such as video files or still images.

Parameters-Unit of control for an object or layer

Rig-a tool used to create editable parameters in a project using widgets.

Widgets-tools used within a rig system to manipulate parameters.

Particle System-a system made up of sprites (reference objects), particles, an emitter, and emitter cells.

Filter-alter layer (known as effects)

Cameras-tools used to simulate real cameras

Lights-tools used to simulate real lighting

Composite-the combination of objects, layers, and groups. Basically layering things together to create one end result.

Blend Mode-mathematical calculations for how pixels of different layers and groups interact or blend.

Key-method to remove part of an image based on luma, alpha, or color channels.

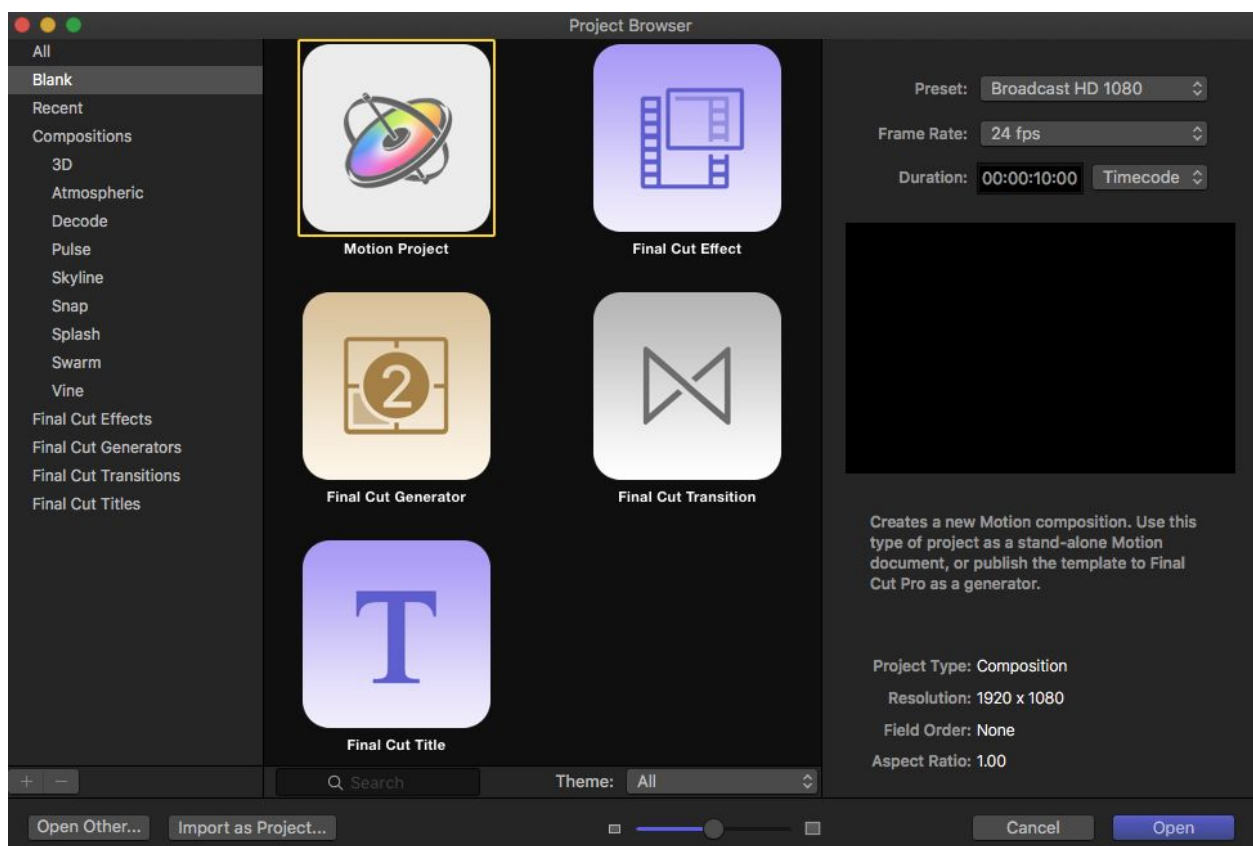
Matte-a black and white image. White remains, black becomes transparent.

Alpha Channel-4th channel of an image. Represents the transparency of an object, layer, or group.

Mask-tool used to hide or reveal parts of an object, layer, or group.

Diving into Apple Motion

Open Motion



Select Motion Project

Preset Broadcast HD1080

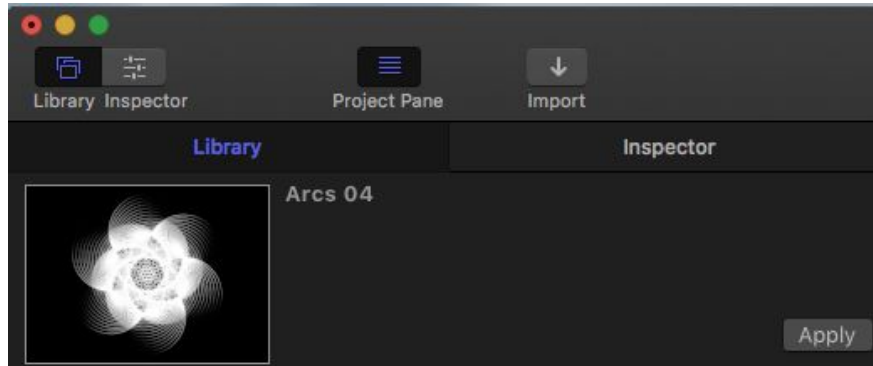
Frame Rate 24fps (*Important-Cannot be changed later)

Duration-set duration of animation. 10.00 is 10 seconds.

Motion Interface (Panels)

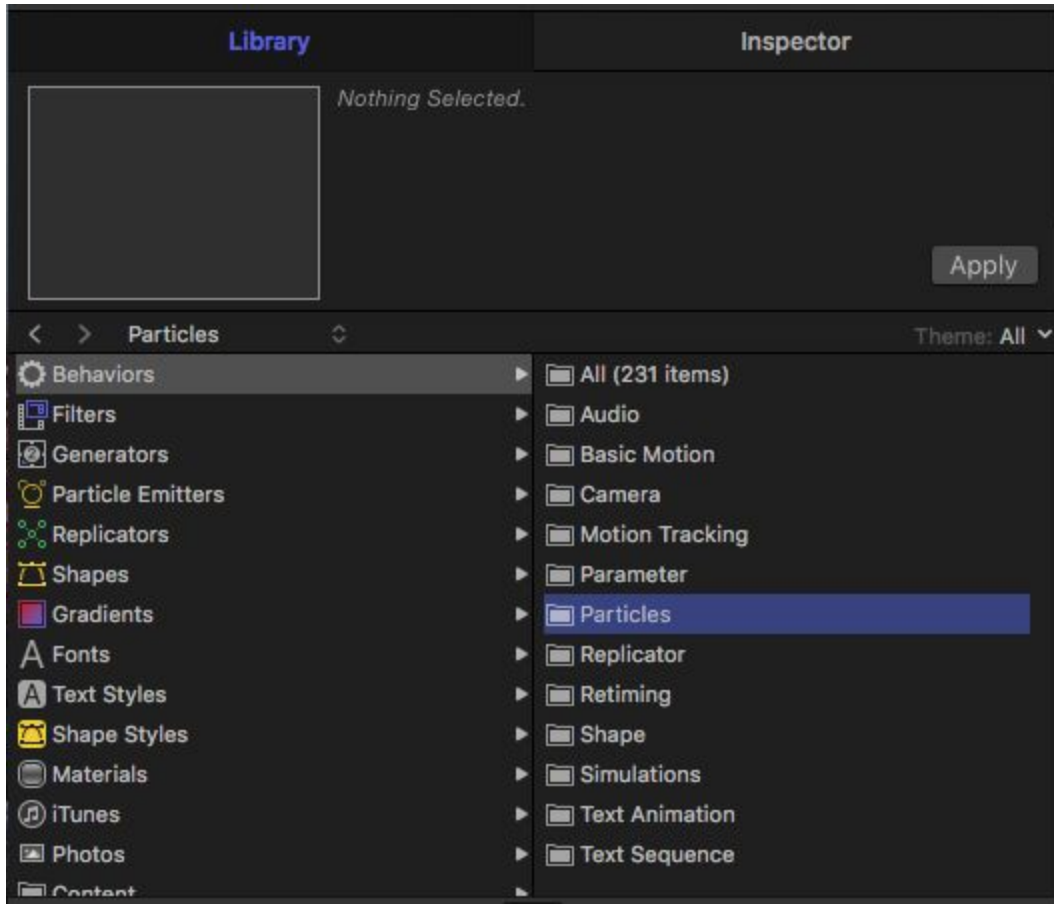
Library-contains Presets (can open/close library to make more space)

Project Pane will reveal/hide layers to make more space



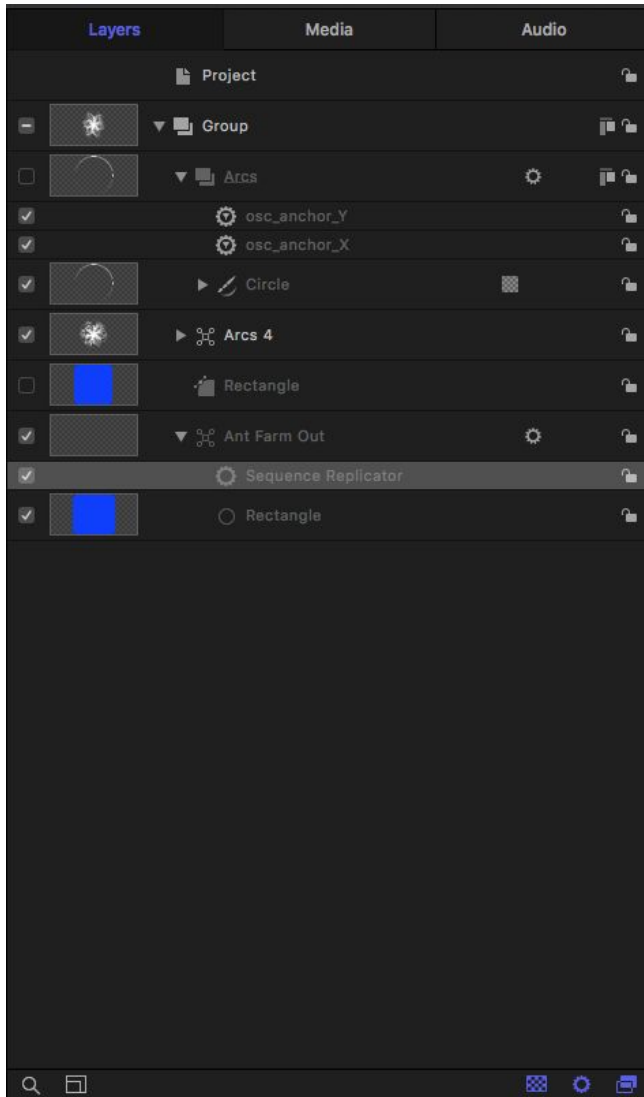
Inspector-Reveals any and all information pertaining to the clip you have highlighted. Import button will allow you to import metadata.

The library contains **Behaviors, Filters, Generators, Particle Emitters**, etc.

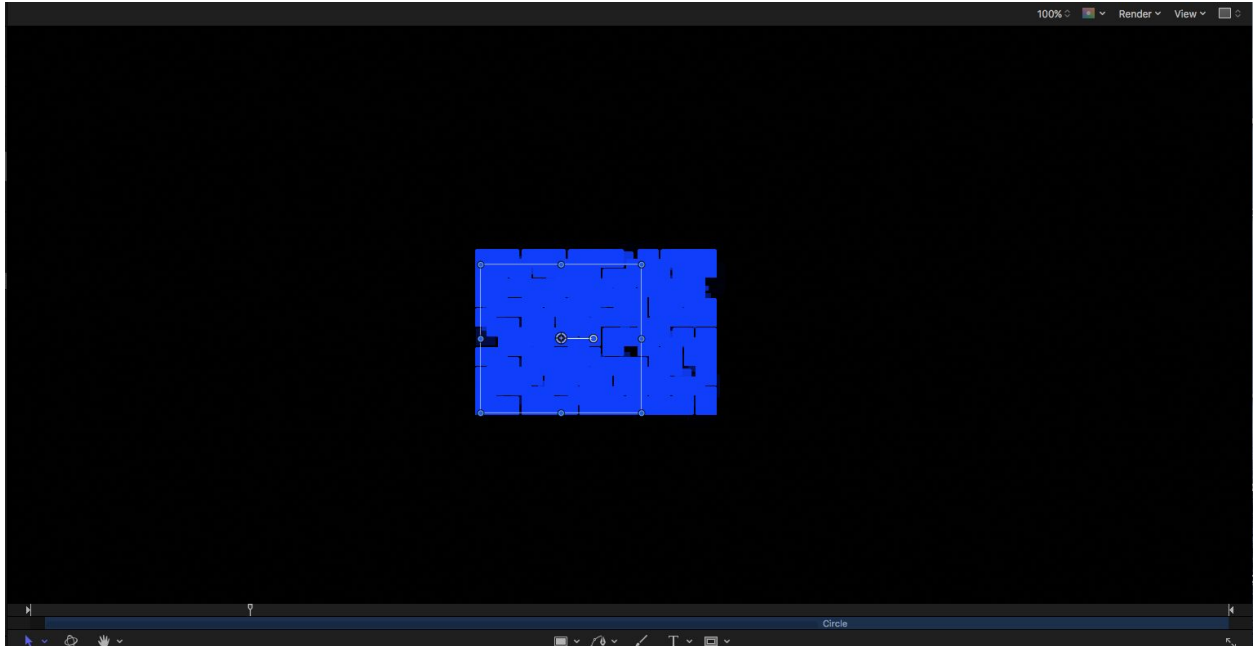


The Inspector allows you to view/change the Properties, Behaviors, Filter, Shape associated with the object you have highlighted.

Project Panel (F5) containing layers, media, and audio



Canvas

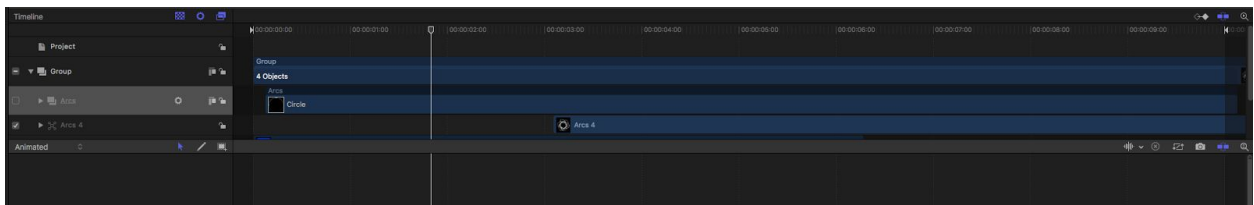


Other areas within the Timing Pane:

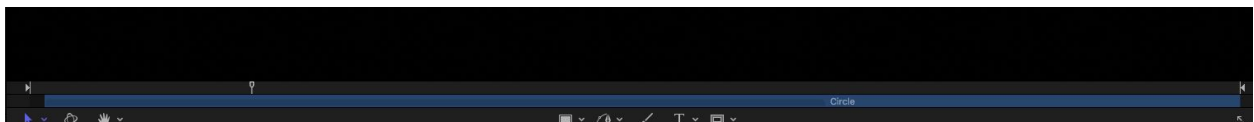
Go to Windows to open these:

KeyFrame Editor
Audio

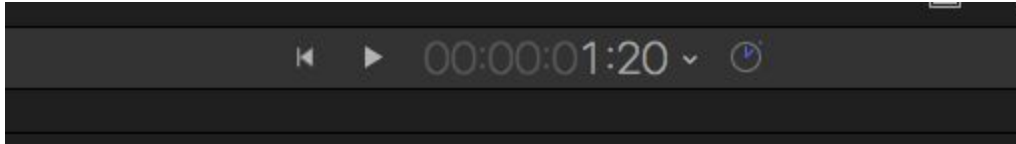
Timeline



Minnie Timeline (located at bottom of Timing Pane)



Timing Window



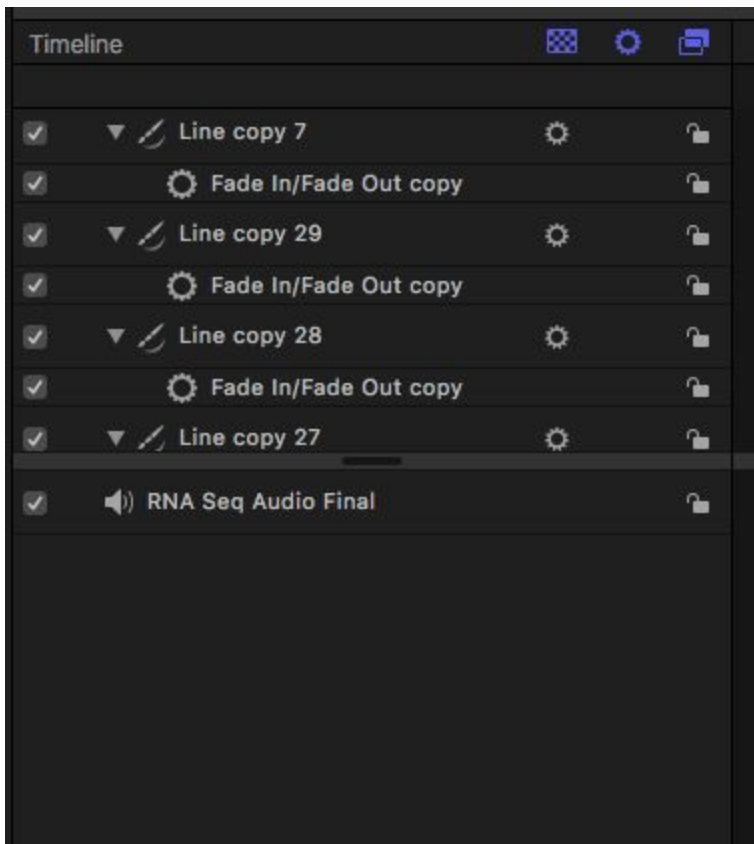
Just above Timeline. Can view time as **frames**, **timecode**, **seconds**, **current time**, **project duration**. The Timing Window also shows the length of the Composition.

Tool Bar



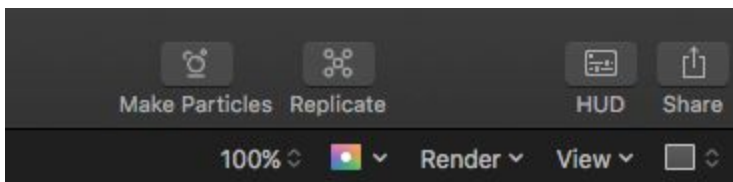
The Tool Bar is located directly above the Timing Window.

Timing Pane



The Timing Pane is directly to the left of the Timeline

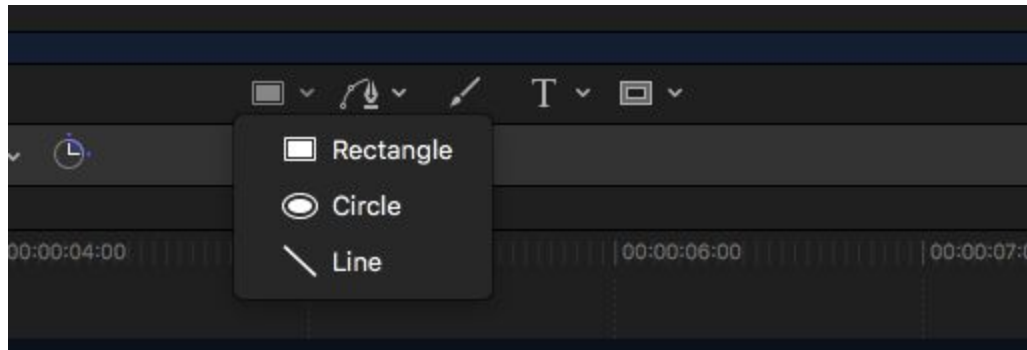
HUD-Head's Up Display



Works best when you're selecting a clip, affect, or behavior. It's designed to give you quick access to most of (if not all) the parameters associated with whatever you've clicked on. Works especially well with Behaviors. Can animate within the Canvas, not with keyframes, in a very easy to use interface. Similar to the Inspector.

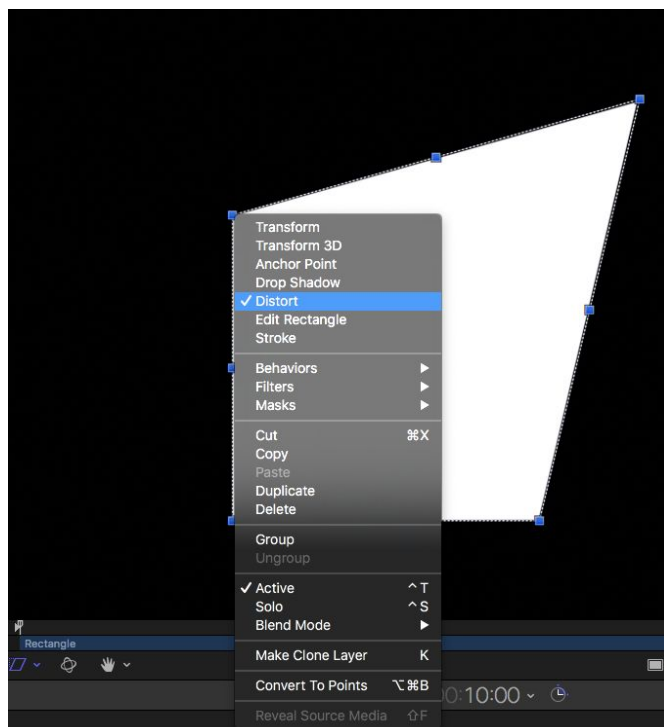
Working in the Canvas

Select Rectangle in the Tool Bar



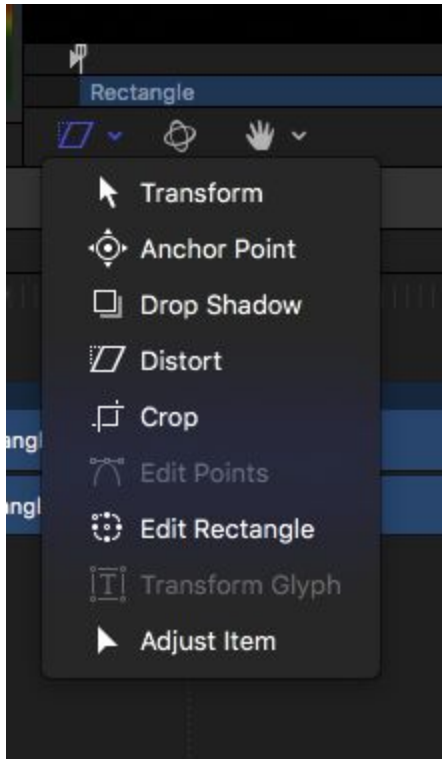
Click inside the canvas and make a rectangle.

If you hold down the **Shift** key while stretching your rectangle, the constraining of those parameters will be locked.



If you hold down the **Control** key while clicking on one of the blue rectangles, you can further manipulate the rectangle as shown here.

Now click on **Distort** to manipulate the object.



When finished go back to the Transform tool.

Importing Footage

Can import mov, psd(drag and drop directly onto the canvas), illustrator files, stills.

Practice Exercises

Exercise 1:Red Circle

Select a circle in your tool bar and draw it in your canvas

Hold your shift key down while drawing the circle to maintain the circles parameters.

Color the circle red (Use the Inspector for this. The Shape panel.

Add a behavior to the red circle.

Behavior>Basic Motion>Fade In/Fade Out

Now add a second

Behavior>Basic Motion>Motion Path left to right.

Exercise 2: Imprinted Chromosome Elimination: Maternal Disomy

Create a circle. Hold your shift key down while drawing the circle to maintain the circles parameters.

Color it light blue

Add two smaller circles inside the larger circle

Color these pink

Create one final circle and color it white

Create a motion path on the circles

Behaviors>Basic Motion

Adjust the Basic Motion Path accordingly

Add a Randomize Effect (Shake Effect)

Select object

Go to Inspector>Properties Panel

Mouse over the "Position" line of the Transform section.

NOT the individual X, Y, Z parameter, the "Position" parameter as a whole.

You'll see to the far right a tiny downward arrowhead.

That's the Animation Menu.

Open it, go to "Add Parameter Behavior".

Select the "Randomize" parameter behavior.

Adjust the properties to your liking.

Copy paste all of the layers in layers panel.

And slide duplicated circle to the right.

Highlight the copy in layers and drag your playhead about 3 seconds in and press your "I" key on the keyboard.

Delete the white circle.

Object>New Group. Call it Arrow

Position your playhead to where the arrow should appear

Go to Library>Shapes>Select Arrow

Drag the arrow onto the canvas.

Use your keyframes to create motion on the arrow.

Highlight the arrow

Go to Inspector>Properties>Transfor>Position

Highlight the first keyframe shaped like a diamond to the right of position

Move your Playhead slightly to the right

Slide your arrow to the right until it almost touches the second blue circle.

The keyframe should have taken effect.

Now slide your playhead slightly to the right a few frames

Copy and paste the arrow

Repeat this step one more time

This will create a Replay effect on the arrow.

Exercise 3:Chromosomes

File>New>Motion Graphic

Library>Shape Styles>Chromosomes

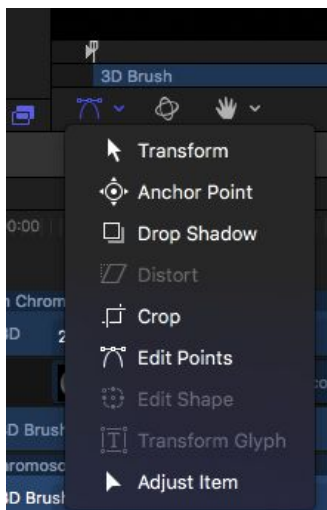
Create a single chromosome

Library>Shape Styles>3D Brush

Create two of these.

In tool bar click on Edit Points (or highlight object, ctrl click>Edit Points to reveal Control points)

Click on Control Point Red Line, Control Click to add Edit Points. Control click to delete Edit Points.



Position your 3D brush into a Chromosome shape.

Apply the Randomize Behavior Effect

Select object

Go to Inspector>Properties Panel

Mouse over the "Position" line of the Transform section.

NOT the individual X, Y, Z parameter, the "Position" parameter as a whole.

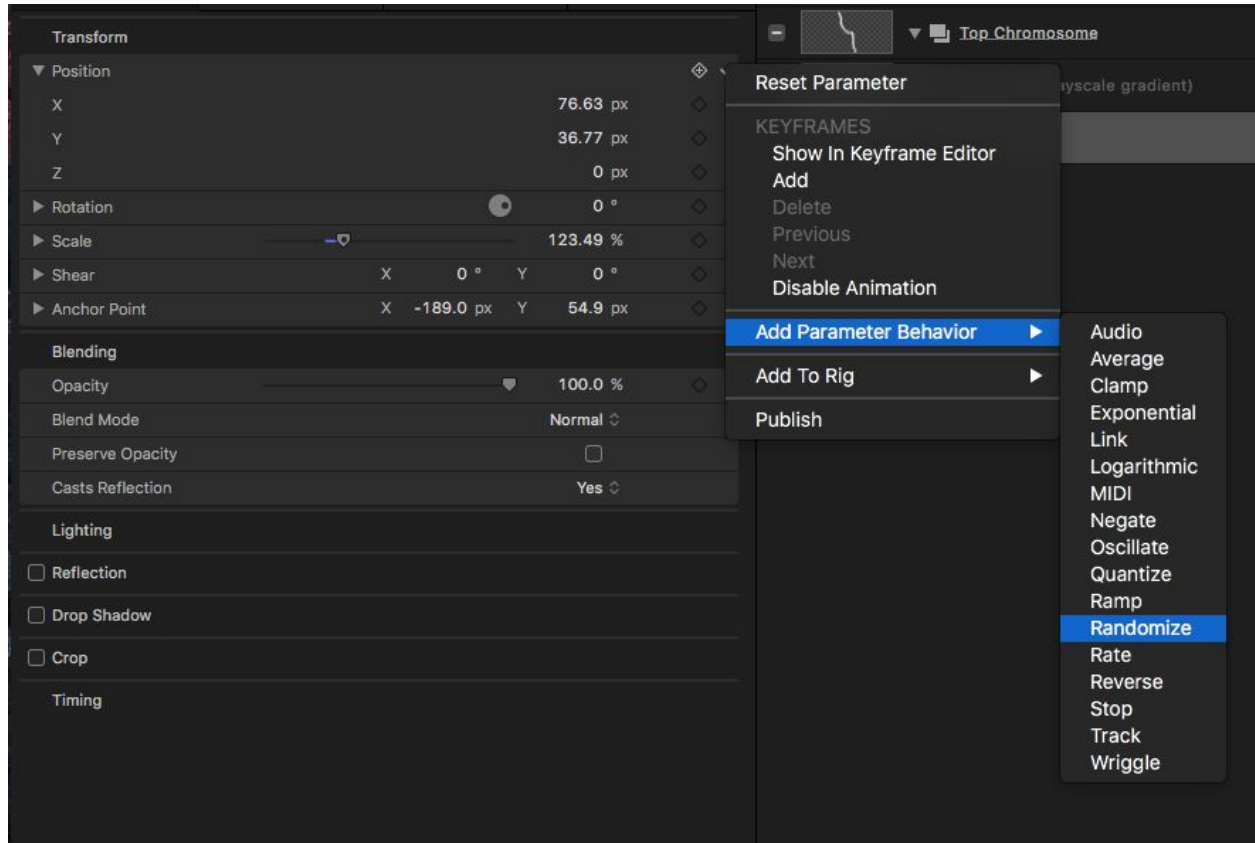
You'll see to the far right a tiny downward arrowhead.

That's the Animation Menu.

Open it, go to "Add Parameter Behavior".

Select the "Randomize" parameter behavior.

Adjust the properties to your liking.



Now let's apply and fade in/out behavior.

Library>Behavior>Basic Motion

Apply this to both objects or simple copy/paste one to the other object.

Adjust the fade in/out timing to your liking within the Inspector.

Blend Modes-Blending an object into the background. Blending into the layers below.

Inspector>Blending>Blend Mode

Screen gets rid of black pixels

Multiply gets rid of white pixels

Last layer of Blend Modes are composite modes

Behaviors

Are like expressions.

Command 2 open library>Behaviors

Exercise 4: Behavior Exercise

Create an background using Library>Generators>Color Solid

Select a shape>Circle

Create 4 circles in the canvas of various sizes

Make each circle a different color

Go to Behaviors>Shape>Randomize Shape

Now highlight the Randomize Behavior in the Layers tab and go to the Inspector>Behavior Tab

Adjust the amount of of Randomization as well as the Frequency and Noisiness to make the Randomization look more natural.

Press the spacebar to play the animation as you adjust the settings so you can see the impact they are making in real time.

Apply Mode by default set to Add. This will add an amount of 14 units to the position of x or y of an one of these points that make up this shape.

If we choose Add and Subtract, it will double the amount; 14 one way, 14 the other way.

If you select a behavior in the Layers tab, opt + drag, you can apply the same behavior to another object or you can copy/paste.

Notice after you applied the behavior to all 4 circles, they don't look very realistic moving exactly the same way. To make this look more natural, go to Random Seed >Generate and this will generate a random seed number.

Parameter Behavior

Select the largest circle in your canvas

We want the circle to sway left to right.

Highlight circle, go to Inspector>Properties and open up the Position Disclosure Triangle And control, right click on the x parameter to open drop down menu. Click Add Parameter Behavior>Oscillate.

Adjust Amplitude to limit the sliding duration as well as other adjustments under Oscillate

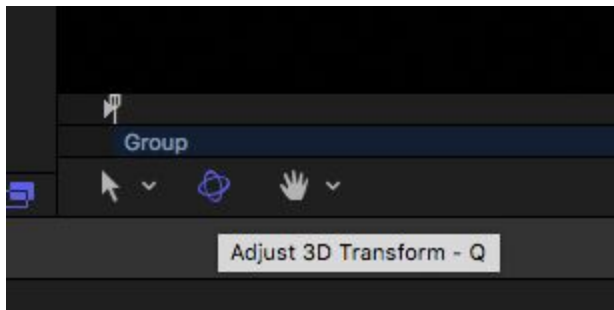
Adjust each circle to give it its own identity

Use the Blend Mode on the circles so they look more like bubbles than circles.

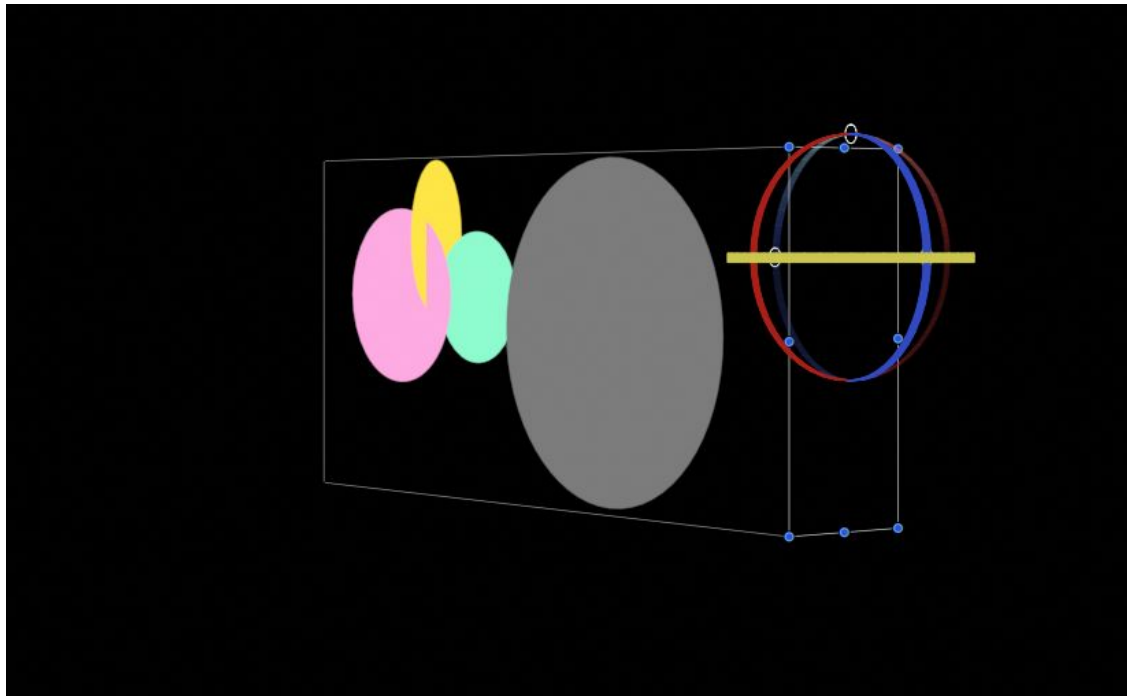
Basic 3D Animations

Excercise 1: Moving 2D objects in a 3D space

Highlight the group of circles you just created in the timeline.
Activate the Adjust 3D Transform icon within the Tool Bar.

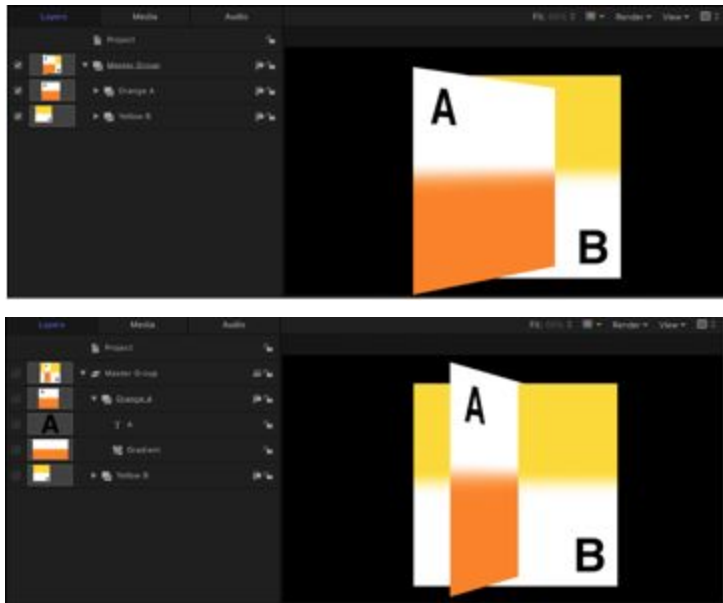


Now you can move 2D objects within a 3D space using the X, Y, Z Axis
X rotation is left/right
Y rotation in up/down
Z rotation is depth of field, circular motion

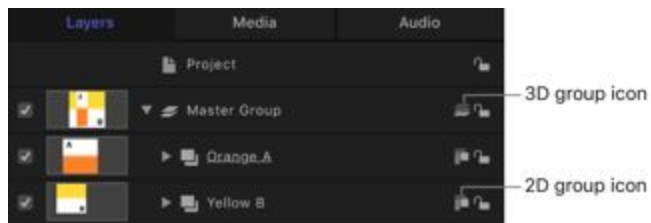


Excercise 2: Convert a group from 2D to 3D to enable intersection

Follow this example using the circles you just created.

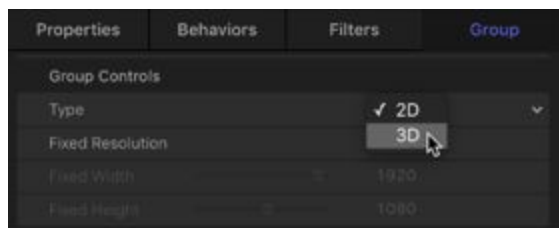


In the Layers list, select a 2D group, then do one of the following:
Click the 2D icon to the right of the group in the layers list.



Choose Object>3D Group (Control D)

In the Group Inspector, click the Type pop-up menu, then choose 3D.

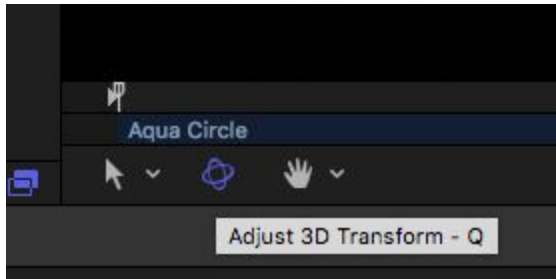


Now move the objects so they intersect.

Exercise 3: Stylizing shapes

Create a new project. Call it 3D

Create a rectangle and activate the Adjust 3D Transform



Rotate the rectangle to act as a floor.

Now create 2 different sized/colored circle on top of the floor.

One should be partially behind the other.

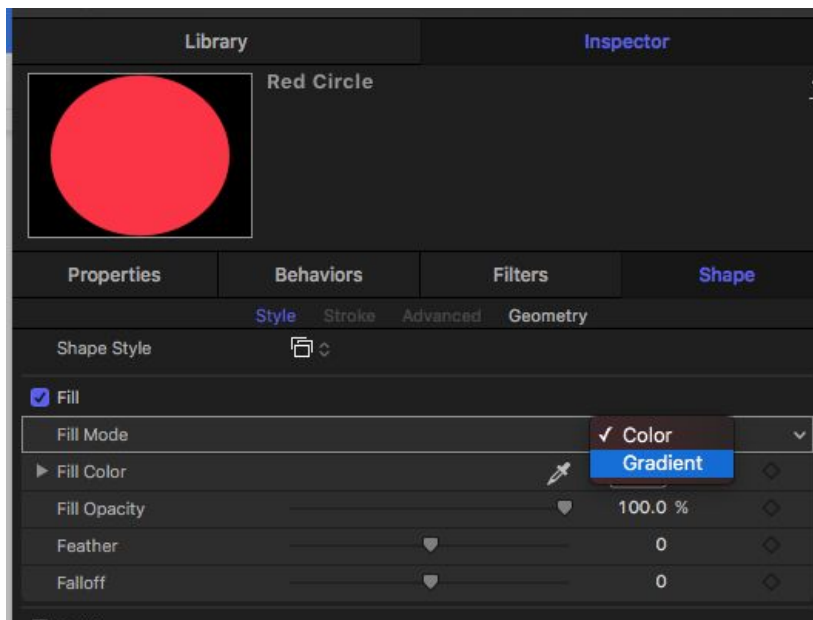
They should be positioned on top of the floor.

Import a Starry Sky background from Videoblocks.

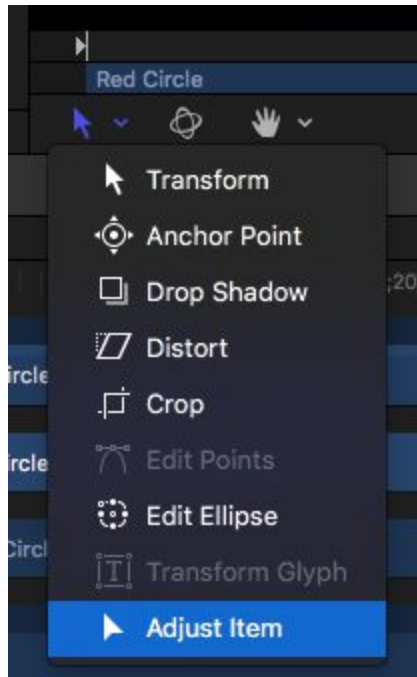
Adjust the object's texture by adding a gradient effect.

Library>Generators>Gradient

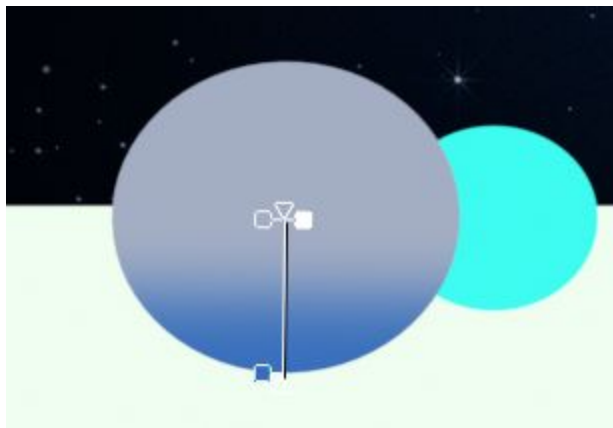
Inspector>Shape>Fill Mode>Gradient



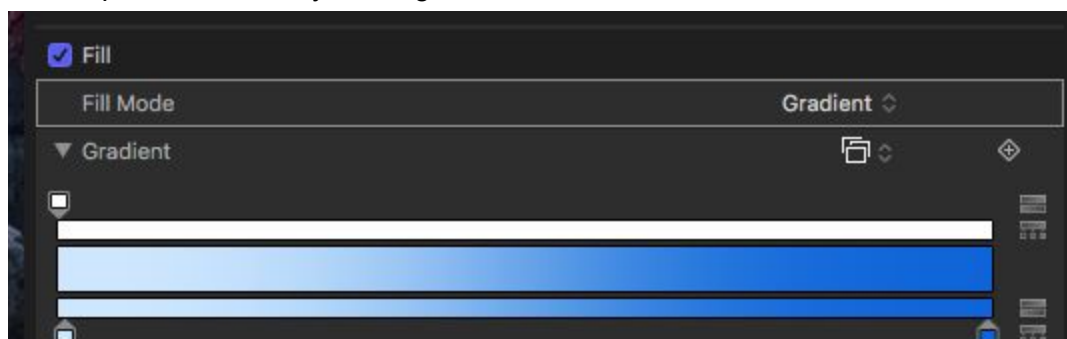
Now let's control the start/stop of the Gradient by clicking on the Adjust Item Tool in the Tool Bar.



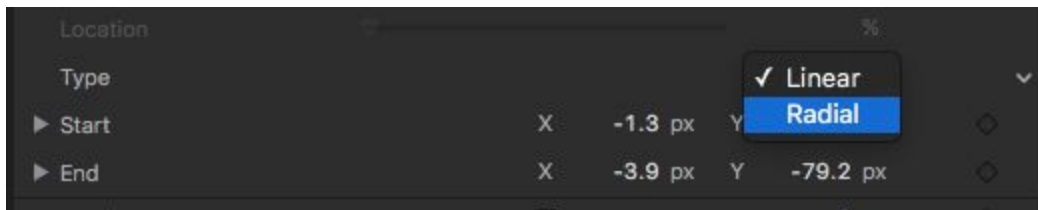
A line will appear over the object. Drag the top of the line to the center of the object and the bottom of the line to the edge of the object.



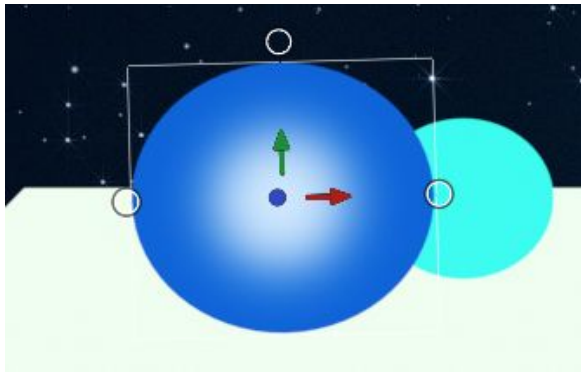
Now expand Gradient by clicking on the arrow



Next scroll down to Type and change Linear to **Radial**.

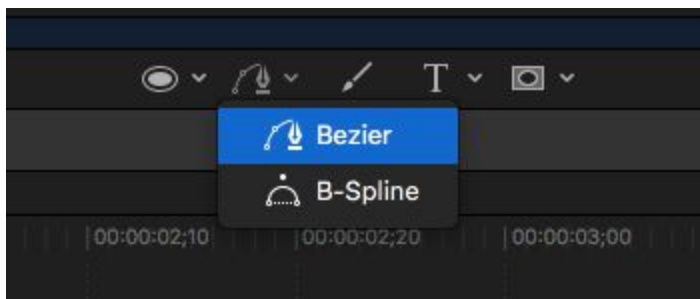


The Gradient now reflects a radial pattern.



Adjust the Gradient slider bar and Location to your liking.
Do this to the other circle.

Creating Custom shapes using the Bezier Tool in the Tool Bar

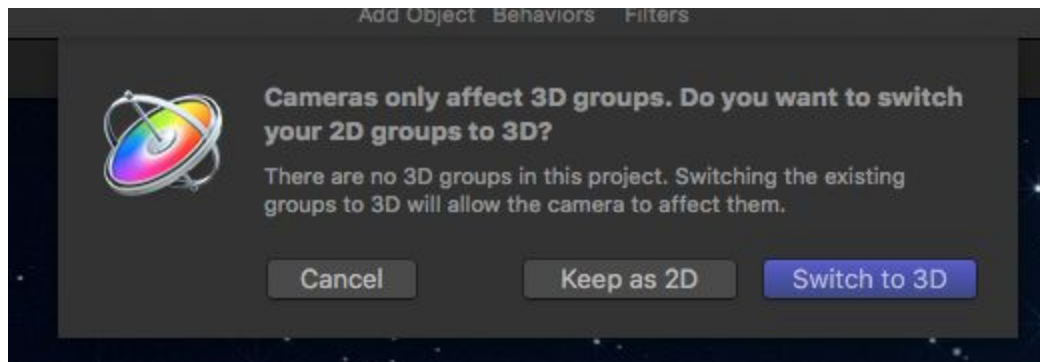


Click along the canvas to create shape. Click first marker to close off shape.
Inspector>Shape>Geometry for adjustments.

Working with Cameras

Exercise 1-Add a Camera to your Motion project

Go to Add Object>New Camera (Option Command C)
Switch to 3D



Active Camera will appear in the upper left-hand side of the Canvas.

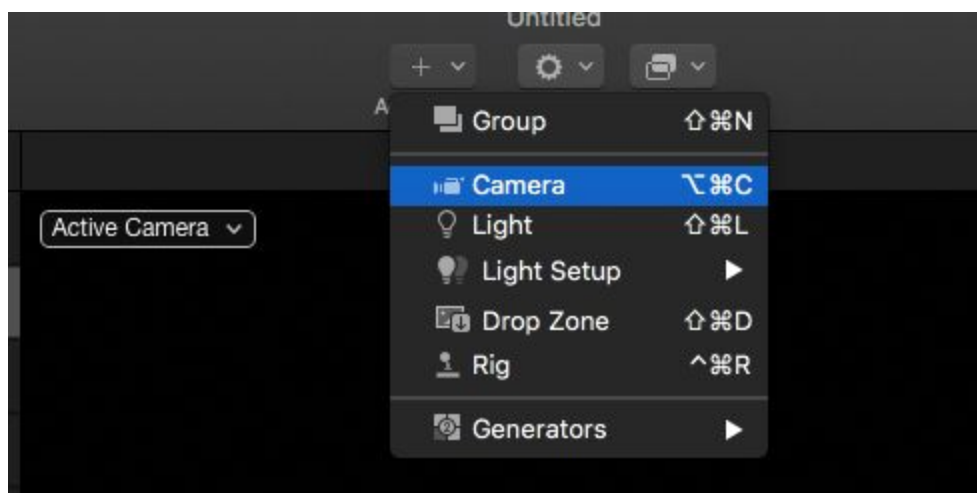
The following happens:

A camera object is added to the Layers list and canvas (represented there by a wireframe icon).
The 3D Transform tool in the canvas toolbar is selected.

The Camera HUD becomes available (if it isn't visible, press F7).

The Camera Inspector becomes available.

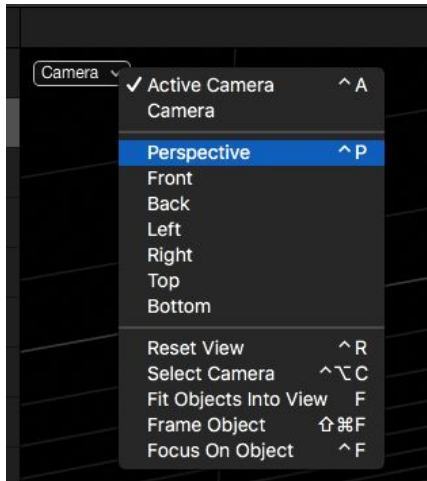
The Camera pop-up menu (set to Active Camera) becomes available in the upper-left corner of the canvas.



There are two views:

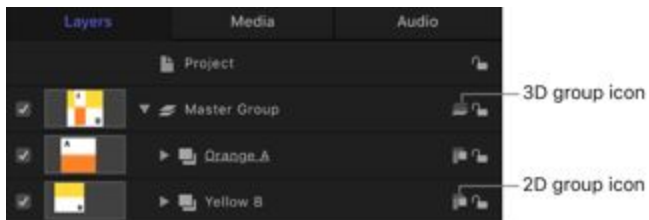
Perspective View and Orthographic Views (Front, Back, Left, Right, Top, Bottom/X,Y, Z Axis)
Perspective View-Views the scene with perspective distortion, the way a real-world camera would.

*Orthographic View-Views the scene by looking straight down one of the world axes: X, Y, or Z.
In a 3D workspace, everything is seen from the viewpoint of a camera.*



In the Layers list, select a 2D group.

Click the 2D icon to the right of the group in the layers list. This will make it 3D.



Working with Lighting

Object>New Light

Under Inspector>Light, you can change the dynamics of the light as well as the type of light. Or you can open your HUD.

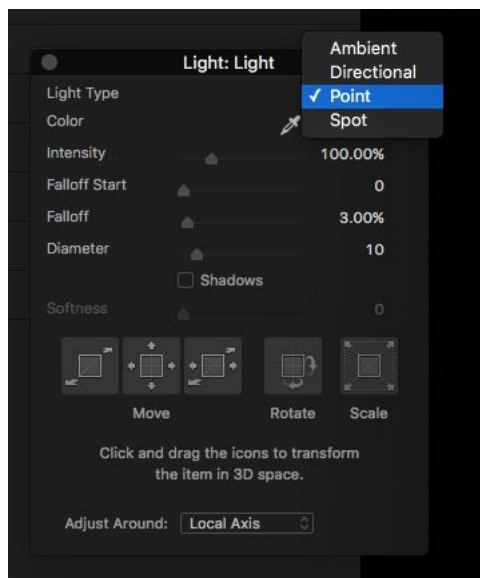
There are 4 different types of lighting in Apple Motion

Directional-An open-ended cylinder of light casting light in any direction.

Spot-Just like a theatre spotlight. You can adjust the cone and softness of the edges.

Ambient-Light in the entire scene all the way around. There is no light icon to grab hold of in the Canvas. Similarly, you can only adjust the color and intensity.

Point Light-similar to a light bulb without a lamp shade. Light is cast in 360 degrees.

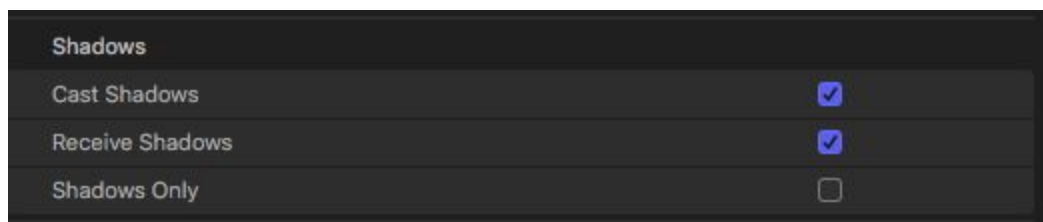


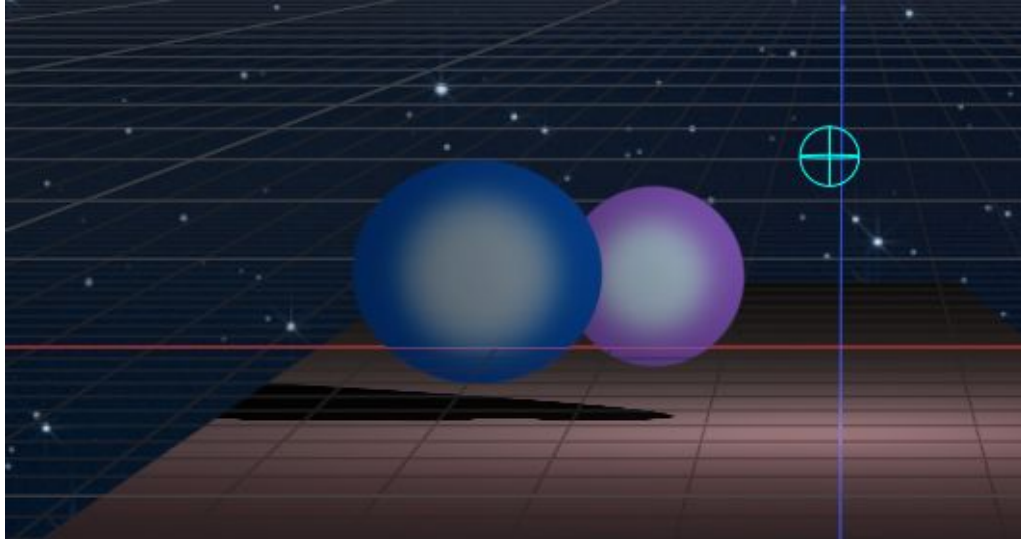
Intensity controls the brightness of the light

Falloff Start determines how far the light can travel before it starts to decay. The larger the number, the brighter the scene.

Falloff is how fast that transition happens once the Falloff Start occurs.

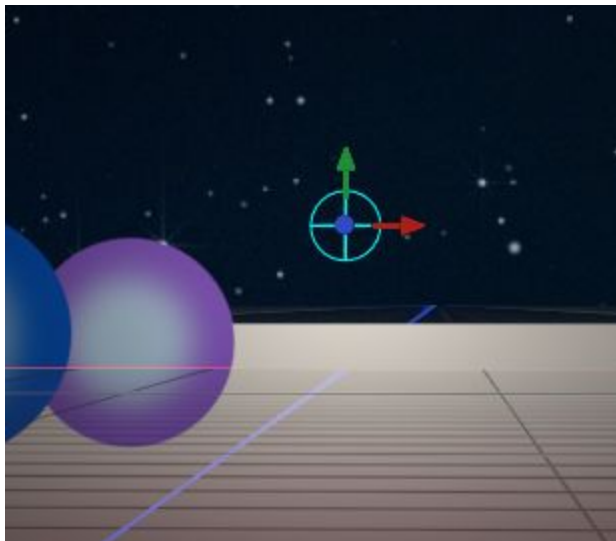
Shadows will cast, if selected.





Adjust shadow opacity.

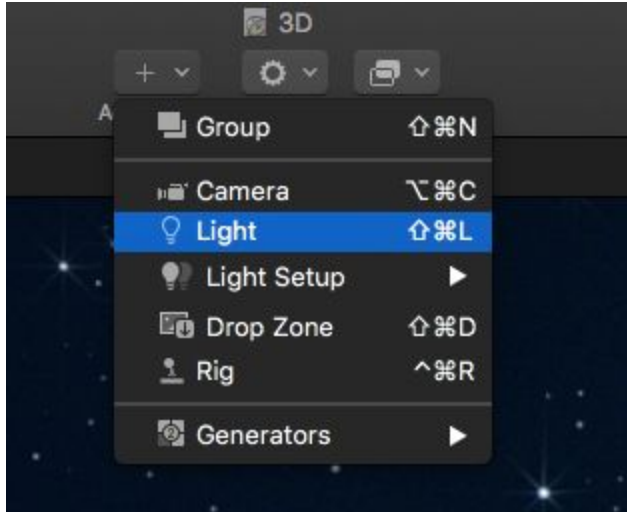
The blue circle within the Canvas with X,Y, Z Axis is the light.



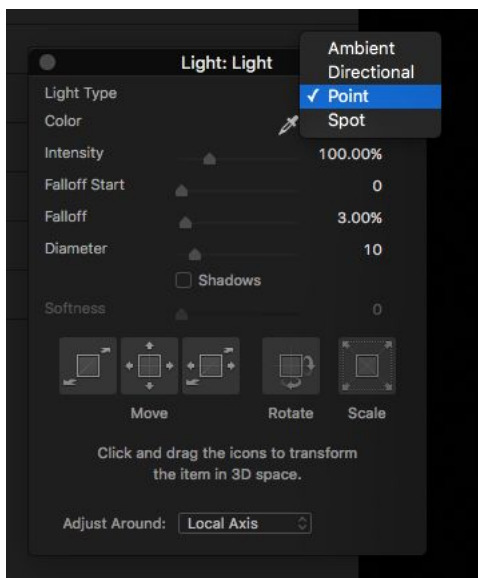
Can add multiple lights to create a variety of tones.

Exercise 2: Adding lights to our 3D Scene

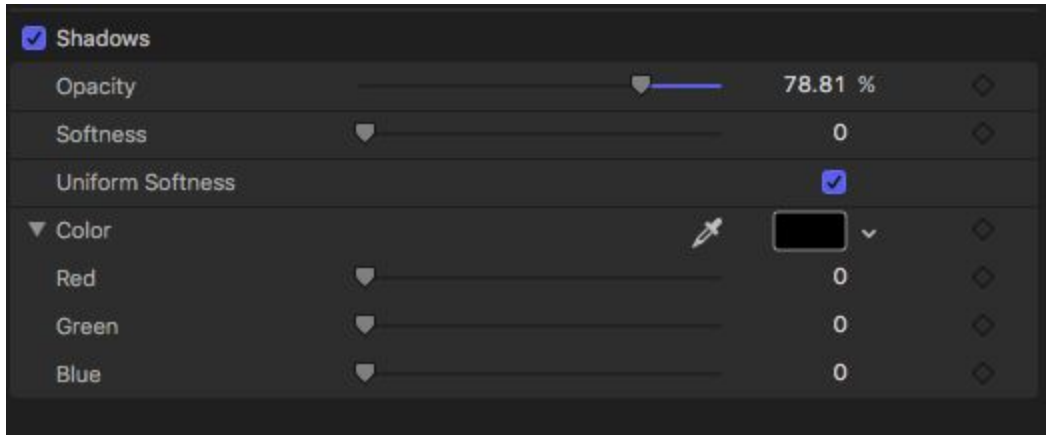
Add Object>New Light



Within the Inspector>Light change the Light Type to Point
Adjust the Intensity, Falloff Start, and Falloff



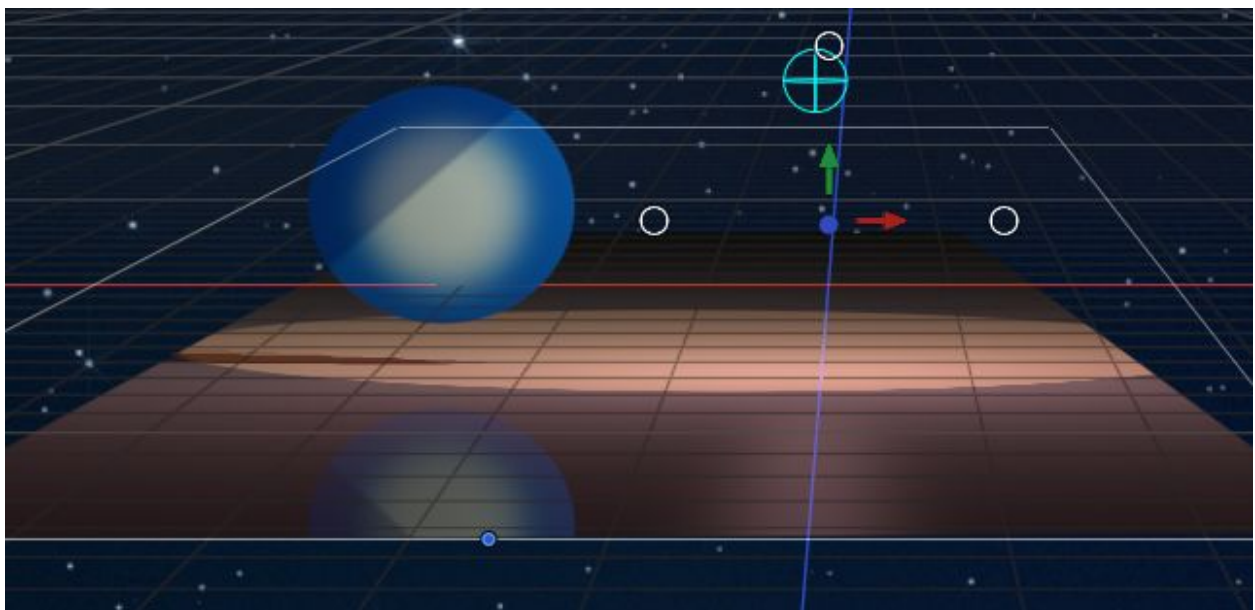
Activate Shadows
Adjust the Opacity, Color, and Softness



Add a second light and make this one a Spot light.
Adjust the Intensity, Cone Angle, Falloff Start, and Falloff
Activate Shadows
Adjust the Opacity, Color, and Softness

Exercise 3: Adding reflections to our 3D scene

Highlight the Floor object in the Layers Tab
Underneath Properties active Reflection
Objects in the scene with reflect off the floor such as the circle.
Adjust the amount of reflectivity and blur amount.
This add to the believability of the 3D scene.



Also within Properties>Lighting, you can activate Highlights and adjust the Shiness of the Highlight.

Exercise 4: Creating Particles in 3D

Library>Particle Emitters>Sparkes>Heavy Sparkles

Place Heavy Sparkles underneath the Camera

Inspector>Emitter>Activate 3D

This will allow you to see the Sparks in 3D

Change the shape as well

Adding a Camera Behavior (If you want the camera to orbit around your scene as it plays)

Select Camera in Layers

Library>Behaviors>Camera

Drag on top of the Camera and drop

Go to Inspector>Behaviors

Change End

Command R-Ram Preview

Exercise 5: Animating Text in 3D

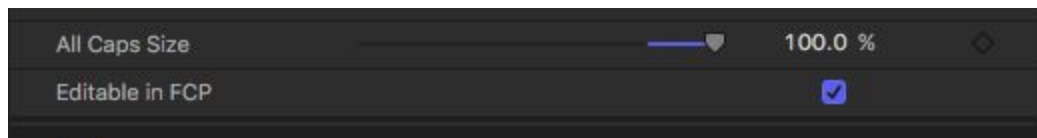
To create text simply type the “T” key on your keyboard. Do this over the Canvas area.

Type your text and hit enter.

Use the HUD or Inspector to change font, size, blending, opacity, etc.

Select the 3D text in HUD

Within the Inspector, make sure Editable in FCP is activated. It is by default.



Now go to Library>Behaviors>Text Animation

Drag Sequence Text to the Text within your Layers.

Position your Playhead at the very beginning of your Timeline.

Under Inspector>Behaviors, you can manipulate color, drop shadow, etc.

