Final Project

Using 3D space plus effects to create a show's opening title.

## ▽ In This Lesson

▽ Getting Started

The project file and sources are contained in the **Lesson 12-Final Project** folder on this book's disc; copy this folder to your hard drive. Some steps will also benefit from having Adobe Illustrator on your computer as well as the Cycore effects (which are not bundled with the Tryout version of After Effects).

You've learned a lot in the previous 11 lessons. It's time to put some of that newfound knowledge to work by building a sample video promo. In this lesson you will build a series of elements employing movies, still image artwork, effects, and 3D space to create a pair of scenes that will be edited together in a final widescreen composition. Along the way you will also work with animated text, shape layers, expressions, and music.

To see what you will be building, open the project file **Lesson_12.aep**. Twirl open the **Finished Movie** folder and play **Lesson 12_final.mov**. In addition to creating some cool graphics, you'll learn some real-world considerations – such as designing widescreen material to focus on the center of the screen so that a "center cut" version for older television sets will also look good, and giving editors rendered elements with additional "handle" to provide more flexibility.

Dirtboard Devil

Hangliding Hero

Tonight 8pm ET
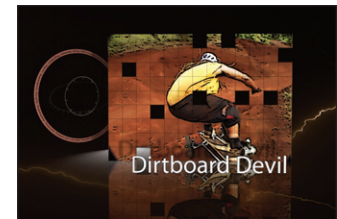
Part 1: Creating Elements

First you will create a series of elements, each in its own composition. These in turn will be used to build a pair of Main Comps. If you've been poking around the project file before getting started, select Close All from the Comp panel's dropdown menu. Then in the Project panel, select the **Comps > MyPrecomps** folder so that the new comps you create will be sorted into it.

Creating the Grid Floor Comp

Your first task will be creating a floor for your 3D world. It's best to make it larger than needed so that it appears to go off in the distance on all sides.

1 Select Composition > New Composition. In the Composition Settings dialog, set the size to 2000×2000 pixels with Pixel Aspect Ratio set to Square Pixels. Set the Frame Rate to the NTSC video standard of 29.97 frames per second (fps), and Duration to 10:00. Enter the name "**Grid Floor**" and click OK. Zoom your view down to see the entire comp, and set Composition > Background Color to white.
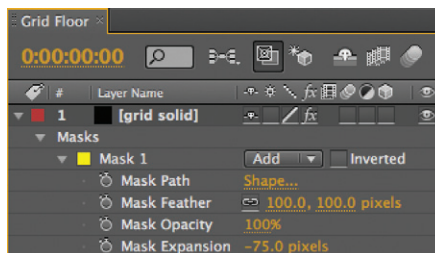
2 Choose Layer > New > Solid. Click on the Make Comp Size button to make it also 2000×2000 pixels, and set the Color to black (eventually, this will set the color of your grid lines). Name it "**grid solid**" and click OK.

3 With **grid solid** selected, add Effect > Generate > Grid. In the Effect Controls panel, change the Color to Black. Set the Size From popup to Width Slider and the Width to 50 pixels. (You'll further tweak the grid's appearance later.)
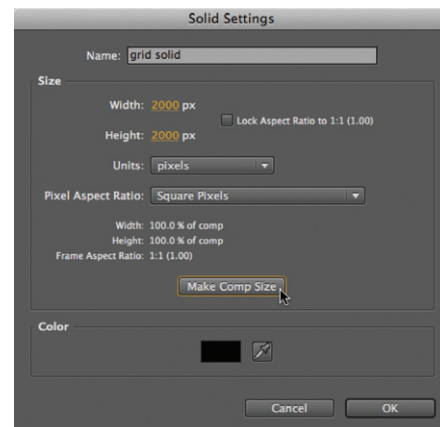
4 One problem with using elements like this as a floor in 3D is that you often see the hard-edged corners. Therefore, next you'll soften the edges of the floor.

• Choose the Ellipse shape tool. With **grid solid** selected, double-click on the Ellipse tool, which will create a mask the same size as the layer. The mask is drawn first, followed by the grid effect which is ignoring the layer's alpha. In the Effect Controls panel, set the Blending Mode popup to Stencil Alpha. Now the grid will draw only inside the layer's alpha channel, using the color of the solid.
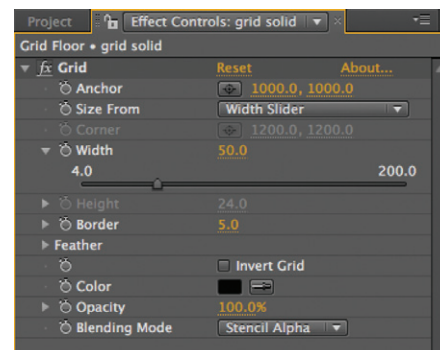
• In the Timeline panel, twirl down Mask 1 and set Mask Feather to 100 for a nice soft edge. The feather extends beyond the mask's boundary, which means it is getting cropped by the layer's edge. Reduce Mask Expansion until the feather ends just inside the composition's edge.
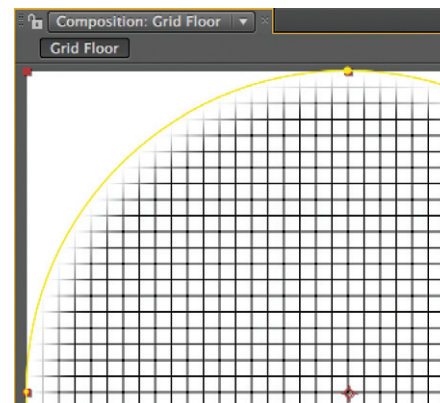

2 Create a large solid to serve as a floor in your 3D world.

3–4 Add Effect > Generate > Grid to the solid (above). The thick default grid (below) makes it easier to see; you'll refine its settings later in context with other layers.

4 Give your mask a generous feather.

Creating the Radar Comp

In **Lesson 12_final.mov**, did you notice the rotating light element that projects across the floor in the finished movie? We call that the "radar." It is created by rotating a shape layer with a stylized gradient:

5 In the Project panel, make sure **Comps > MyPrecomps** is still selected so that the next new comp you create will be sorted into it.

Type ⌘ N on Mac (Ctrl N on Windows) to create a new comp. Set its size to 1200×1200 pixels, and keep the other parameters of 29.97 fps, 10:00 duration, and Square Pixels as before. Change its name to "**Radar**" and click OK.

Change the Background Color to a dark blue or other color of your choice – just not white or black. This will help you better see the transparencies in your composite. Remember, the background color will be transparent when you nest this comp into another comp.

Create a Gradient

6 Choose the Rectangle shape tool. Then double-click this tool to create a shape layer that fills the entire comp.

7 With **Shape Layer 1** still selected, click on the word Fill in the Tools panel to open the Fill Options. Click on the Radial Gradient button along the top, set the Mode popup to Normal, and Opacity to 100%. Then click OK.

You don't need a stroke, so press ⌥ (Alt) and click on the Stroke Color swatch until it has a red slash going through it.

8 In the Timeline panel, twirl down **Shape Layer 1** > Contents > Rectangle 1 > Gradient Fill 1. Make the gradient larger by scrubbing the End Point value to X = 550, Y = 0. Then scrub the Highlight Length to 100% so the highlight is biased all the way to the right. You can delete the Stroke 1 section as it is disabled.

9 You're probably not seeing any of your background color yet. If so, your gradient layer is fully opaque. Click on Colors > Edit Gradient in the timeline (or on the gradient swatch in the Tools panel) to open the Edit Gradient dialog. First you'll edit the gradient's color, then its opacity:
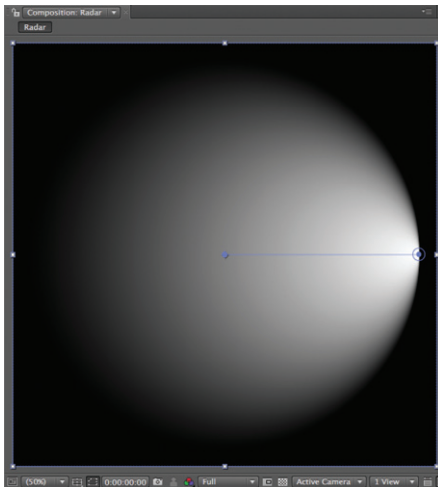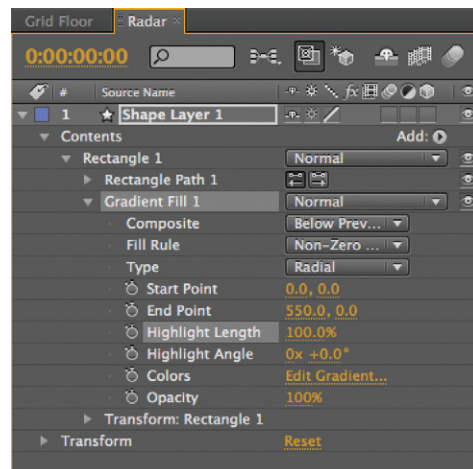
Second Chance Fill

If you create a shape layer with a Solid fill color instead of a gradient, simply delete the Fill element in the Timeline. Then with the Rectangle 1 group selected, click on the Add button and select the Gradient Fill option.

6–7 Create a full-frame Rectangle shape and set it to use a Radial Gradient fill, with Stroke disabled (signified by the red slash).

8 Set up the gradient to extend from an edge of Shape Layer 1 to its center. Increase the gradient's Highlight Length to 100% to give the appearance of a spotlight shining on the floor, starting at the right edge (above and right). We deleted the Stroke 1 section since we were not using it.

• Click on the lower left pointer to select it. This is your first color stop. Choose white in the color picker below.

• Click on the lower right pointer, and set this color stop to black (we like the smoky fall-off this white-to-black transition creates).

• Delete any other color stops by dragging them away from the gradient bar.

• Click on the upper left pointer; this is the first opacity stop. Scrub the Opacity value to 100%.

• Click on the upper right pointer, and set the value for this opacity stop to 0%. You should now see your background color behind **Shape Layer 1** in the Comp.

• Delete any other opacity stops, and click OK.

10 Now let's rotate that gradient to create a radar effect:

• With **Shape Layer 1** selected, press R to reveal its Rotation parameter.

• Press Home to move the current time indicator to 00:00, and click on the animation stopwatch for Rotation to create a keyframe with a value of 0°.

• Press End to jump to the end of the comp, and change Rotation to a value of 2x +0.0°. RAM Preview, and save your project.

Cue the Lightning

To add excitement, let's composite some lightning onto the radar animation:

11 In the Project panel, locate **Sources > Movies > Curly Lightning.mov** and add it to **Radar Comp**. Rescale it to fill the entire comp using Layer > Transform > Fit to Comp. Scrub the current time indicator to get a sense of the action.

12 To create a sepia look, apply Effect > Color Correction > Tritone to **Curly Lightning.mov** and set the Midtone color to a dark neutral beige (we used R = 90, G = 85, B = 70, but you can set it to taste).

13 Press F4 to reveal the Mode column in the Timeline. Set the Blending Mode for **Curly Lightning.mov** to Screen to "project" it on top of the shape layer.

14 The lightning movie is fully opaque. To have the shape layer's transparency imposed on the movie, set the Preserve Underlying Transparency switch (the "T" icon) for **Curly Lightning.mov**. Now it will be visible only inside the alpha of the radial gradient layer below.
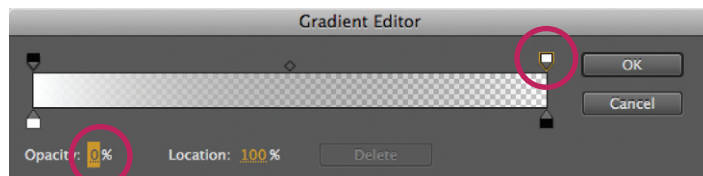
9 Set up the gradient to transition from the color white to black (the lower stops), fading from 100% to 0% opacity (the upper stops). The upper right pointer (circled) should be set to 0% Opacity.
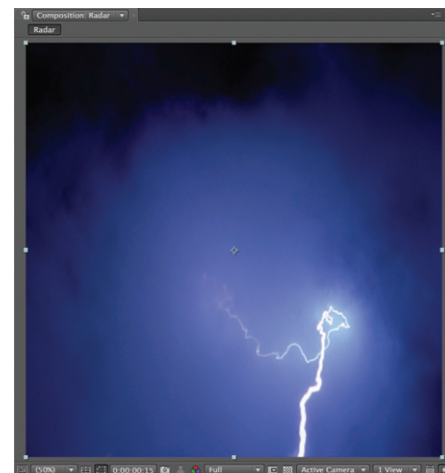
11 Add **Curly Lightning.mov** to the comp, and stretch it to fill the entire comp. Footage courtesy Artbeats/Lightning & Clouds.
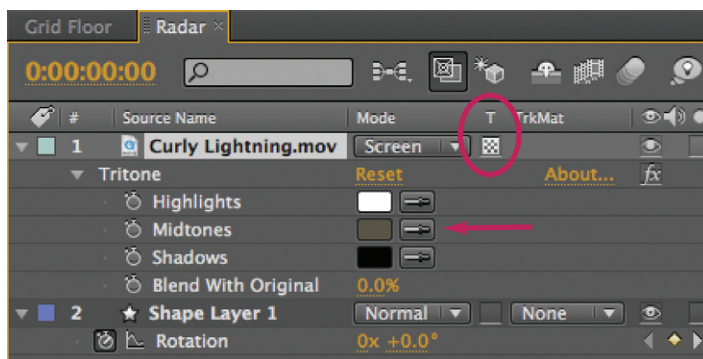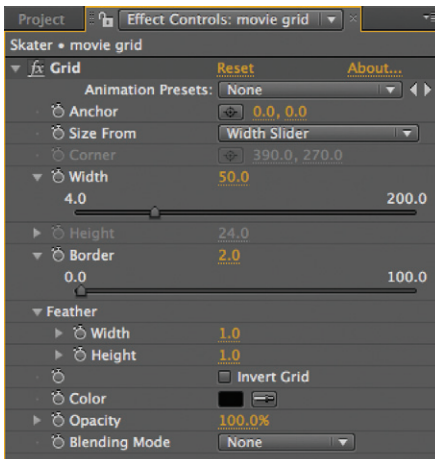

12–14 Apply the Tritone effect and change the Midtone color to give the lightning a sepia tint and composite it using Screen mode. Enable its Preserve Transparency switch to use the shape layer's alpha channel.

Creating the Skater Comp

Next you will build one of the video panels. The central element is moving footage treated with various effects including a grid and a block dissolve. This panel will also be used later to create a reflection of itself.

In the next several steps, you will be taking this footage and stylizing it with effects. The resulting composition will be used as a template for two other videos. Footage courtesy Artbeats/Recreational Sports 1.

15 Select **Comps > MyPrecomps** in the Project panel, and create a Composition > New Composition. You're going to create a 50-pixel grid as you did for the floor, so make the comp size a multiple of 50 pixels in each dimension: 650×450. Change the duration to 05:00, name it "**Skater**", and click OK.

16 In **Sources > Movies** folder, locate **Skater.mov** and add it to the **Skater** comp. It is a little taller than the composition, so you can position it to taste.

17 To create the grid effect, first make a Layer > New > Solid. Click the Make Comp Size button, set the color to black, name it "**movie grid**", and click OK. Apply Effect > Generate > Grid, and use the following effect control settings:

• Set the Anchor value to 0,0. This starts the grid boxes from the top left-hand corner of the layer.

• Change the Size From popup to Width Slider, so that the size of the boxes will be determined by the Width value below.

• Set the Width value to 50 (the Height will automatically use the same value).

• To make the lines black, either change the Color popup to black, or set the Blending Mode popup to Stencil Alpha so the color is determined by the color of the layer (in this case, the black solid).

17 Apply Grid to a solid and create a pattern of 50-pixel blocks (above) to use as a graphical overlay on top of the footage (right).

• The goal is to create a subtle indication of a grid without distracting too much from the movie. To accomplish this, adjust the Border to 2.0. Twirl down Feather, and set the Feather Width and Height to 1 to antialias the line.

18 Next you'll add a block dissolve transition that will affect the composite of all layers below. First, create a Layer > New > Adjustment Layer. This creates an empty full-frame layer for you to apply effects to.

• Apply Effect > Transition > Block Dissolve. In the Effect Controls panel, scrub the Transition Completion to around 50%.

• The default settings create one-pixel blocks. Change the Block Width and Block Height values to 50, which exactly matches the size used for the grid.

• Toggle off the Soft Edges option in the effect to get hard-edged blocks.

• To animate the Block Dissolve, at 00:00 turn on the stopwatch for Transition Completion and set it to 100%. Move in time to 1:12 (which times nicely with the music – trust us for now), and set Transition Completion to something like 9% – not 0%. This will leave a few holes in the movie for added interest.
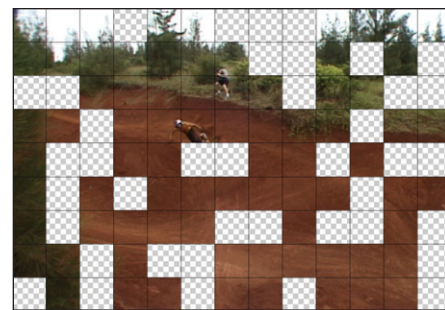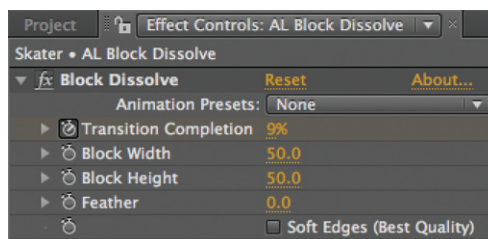
18 Apply the Block Dissolve transition effect to an adjustment layer to create a dynamic pattern of 50-pixel blocks (left). To better see the result of your transition, enable Toggle Transparency Grid at the bottom of the Comp panel.

19 Tidy up your comp by renaming the adjustment layer to indicate which effect is applied to it. Select it, choose Layer > Solid Settings, and rename it "**AL Block Dissolve**".

20 We want the grid to be visible from the start of the comp, with the block dissolve filling in the image behind the grid. To achieve this, drag the **AL Block Dissolve** layer below the movie grid layer.
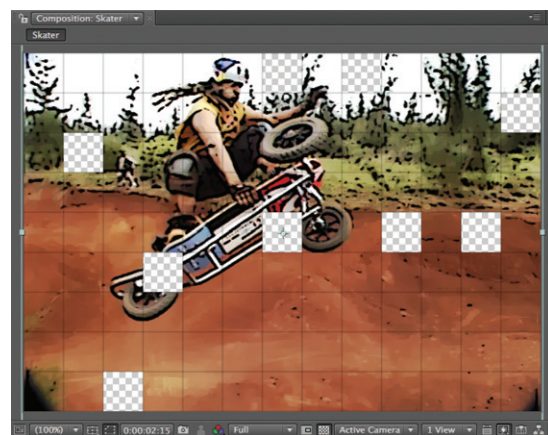
Note that by keeping the movie separate from the effects, you can easily reposition the movie layer at any time without affecting how the grid and blocks relate to the comp as a whole.

21 Finally, feel free to liven up the movie layer some more. For example, you can use the Cartoon effect and blend it with the original:

• Select **Skater.mov** and apply Effect > Stylize > Cartoon. Tweak to taste.

21 Give the movie a hyper-realistic look by applying Cartoon and CC Composite (above). The final **Skater** timeline (below).

• Apply Effect > Channel > CC Composite, and set the Composite Original popup to Color Dodge. This will add the original movie back on top of the cartoon version of the movie, yielding a brighter and more saturated result. Tame it by reducing CC Composite's Opacity value.
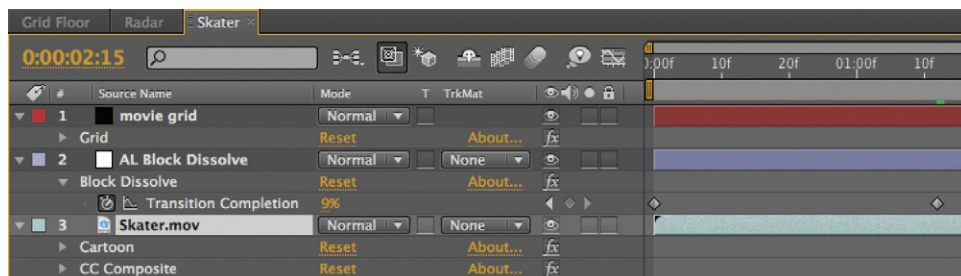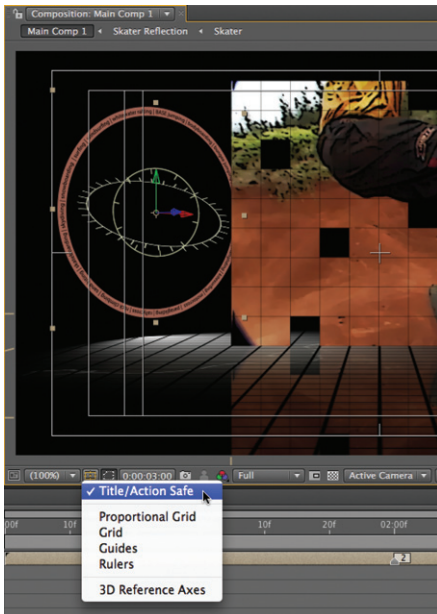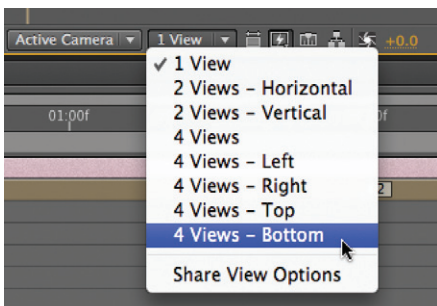
50–51 Enable the Action/Title Safe grids to help you frame your shot. The **Dial** layer is repositioned behind and to the left of the **Skater** layer.

53 Choose one of the multiple view options, and then reframe each of the orthogonal views (for example, Top, Front, and Right) so that you can clearly see your camera and all of the layers.

Crafting the Camera Move

Now for the fun part: arranging your layers and moving a camera around them! Bring **Main Comp 1** forward, and place the time indicator at around 03:00.

50 Click on the Choose Grid And Guide Options button along the bottom of the Comp panel and enable Action/Title Safe (the shortcut is ❓). This overlay shows you what are the "safe areas" where you know your viewer will see your images and text with minimum obstruction or distortion (see the sidebar in Lesson 5). Particularly interesting is the innermost box, which is the Title Safe area on a non-widescreen television. The left and right edges of widescreen content are often chopped off ("center cut") when viewed on a non-widescreen set; you need to be careful not to place important imagery out there.

51 Arrange the **Dial** and **Skater** layers to create a nice, balanced ending frame. We moved the **Skater** layer to the right to a Position of 510, 400, 500 so it just sits inside the inner safe area guides, as we want the viewer to see the entire video. For the **Dial** layer, we reduced its Scale to 75%, and moved it to the left and behind the video to a Position of –20, 160, 850. Rotate it on its Y axis to taste. As the dial is eye candy, it is okay if it extends beyond the inner safe areas.

52 Create a Layer > New > Camera. Open the Preset popup: Shorter lens lengths create more exaggerated 3D perspective. Choose 28mm and click OK.

This wide-angle preset causes the layers to appear farther away than the default comp camera did. To re-create your original framing, select the Track Z Camera tool (you can press **C** to toggle around to it). In the Comp panel, click and drag to the right to move the camera closer to your layers. If you like, select the Track XY Camera tool and drag downward to better frame the video.

53 It is easier to work in 3D if you can see multiple views of your scene at once. Set Magnification to Fit Up To 100% so that your comp viewers will automatically resize. Then click on the Select View Layout button along the bottom of the Comp panel, and choose one of the multiple view layouts (2 Views – Horizontal is a good default, or use 4 Views – Bottom if you have a large monitor).

Resize the Comp panel to maximize your viewing area, and use the Camera tools to reframe the three non-Active Camera views until you can clearly see all of the layers plus the camera. A good starting point is to select a view and choose View > Look At All Layers.

54 Click on the Active Camera viewer; it will have yellow triangles in its corners. Switch to the Orbit Camera tool, and drag the cursor downward in the comp – the **Skater** layer quickly rotates off the top of the viewer. What's going on?

Select **Camera 1**, and press **P** followed by **Shift A** to reveal both its Position and Point of Interest properties. After Effects defaults to using a two-point
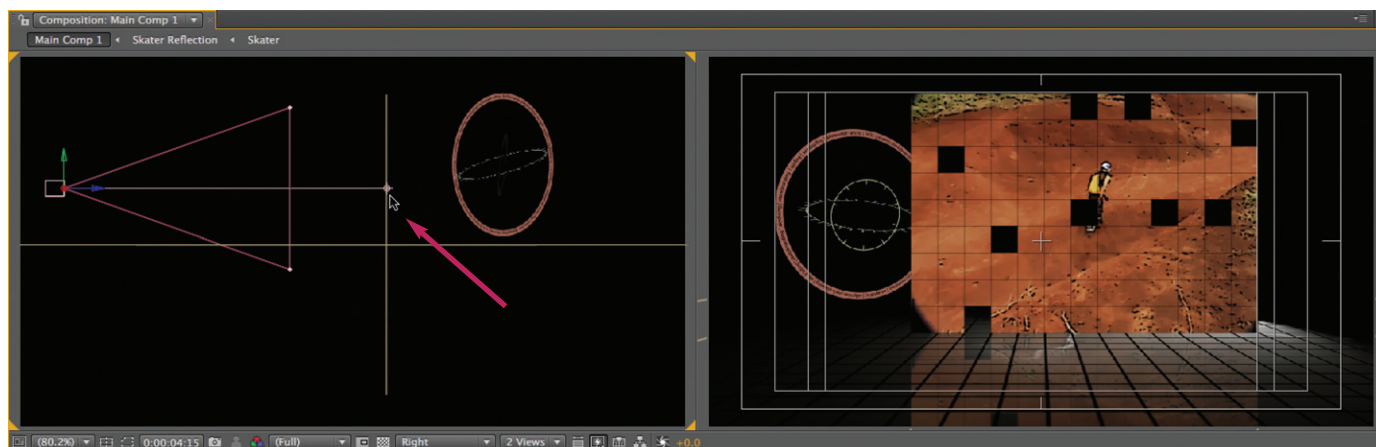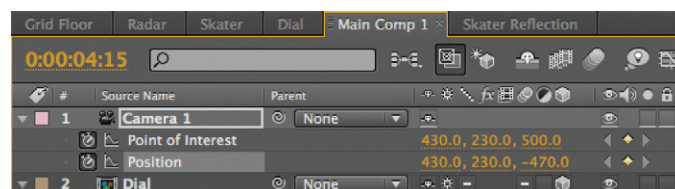
camera, with separate coordinates for its Position (the camera's location) and its Point of Interest (where it is aiming). When you orbit the camera, it pivots around the Point of Interest. If you look at the Top, Left, or Right viewers, you will see that the Point of Interest is far in front

of the **Skater** layer. In one of these views, scrub the Point of Interest's Z value until the Point of Interest is even with or a little behind the **Skater** layer. If you like, return the camera to a straight-on view by editing its X and Y Position to be the same as the Point of Interest.

54 Move the Point of Interest so that the camera will pivot around a point just behind the video screen it is focusing on (top). At 4:15, enable keyframing for the Point of Interest and Position properties above).

Place the time indicator at 04:15 (which aligns with a marked beat in the audio track). Enable keyframing for **Camera 1**'s Position and Point of Interest; this is your ending pose.
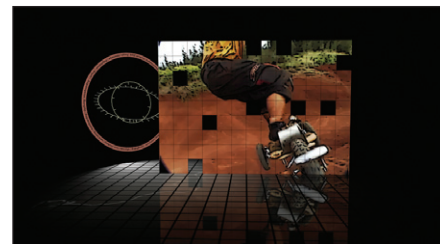
55 Move the time indicator to around 00:15, where the **Skater** layer is partially visible. Reposition the camera to a nice starting pose. We moved the camera back, up, and slightly to the right, causing it to look down on our scene at an angle (see figure to the right). You can optionally animate the Point of Interest; we left it alone. (Note that using the Camera Track tools may move the Point of Interest; we manipulated the camera directly in the Top and Right views.)

56 Slide the first keyframe back to 00:00, and optionally select the last keyframe and press **F9** to "easy ease" into it. RAM Preview your move. If the preview is taking too long, hold down **Shift** when you press **0** on the numeric keypad to preview every other frame (or **Shift**+click the RAM Preview button). Tweak your camera's animation by editing its keyframes, including tugging on the Bezier handles for those keyframes to create a more graceful arc to the movement. Our version is in **Finished Comp > Main Comp 1_finished**.
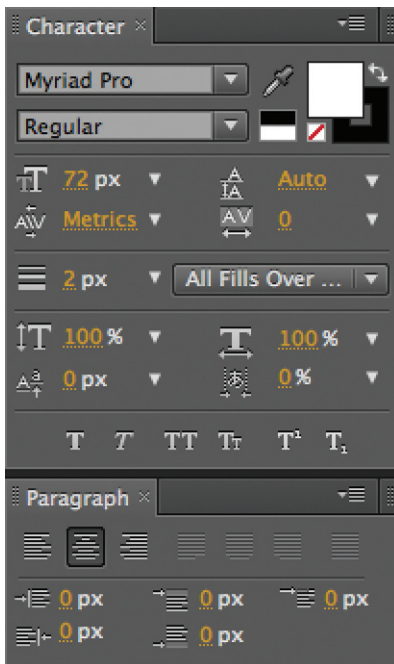
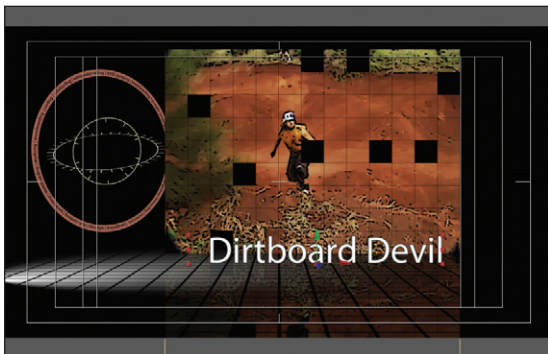When you're happy with your camera move, save your project.

54–56 Create a camera animation that explores your 3D set in a dramatic fashion.

57–58 The Character and Paragraph settings for your text.

59 Place the title on the floor, centered in front of the video panel. Turning off the camera (or setting the View to Front) will give you a straight-on view, which may help you place elements in a scene where the camera is animating.

Creating and Animating a Title

Time to add the title for this segment. This title will sit in front of the video panel and reflection layers (the plan is to eventually have the text cast shadows onto the video). You will then add an Animation Preset to make it "fly on" in 3D.

57 Reset the View popup to 1 View. Turn off the **Camera 1** layer for now, so that you are guaranteed to be looking at the composition straight on (alternatively, you can also use the Front View). Then set your Workspace to Text, which should reveal the Character and Paragraph panels on the right – if not, select Reset "Text" from the bottom of the Workspace menu. To create your title layer:

• Enable the Center Text button in the Paragraph panel.

• Click the arrow in the top right of the Character panel to open its Options menu, and select Reset Character.

• In the Character panel, choose a font such as Myriad Pro Regular (which comes bundled with After Effects); you can choose a different one if you like. Change the font size to 72. The Fill Color should be white.

• Now that you have your initial settings, choose Layer > New > Text. The text cursor will be placed in the middle of the Comp viewer. Type "**Dirtboard Devil**" (no, we don't know what it means either…). Press *Enter* when you're done.

58 To improve the legibility of the text, add a stroke to the title. With the layer still selected:

• Click the Stroke Color swatch to bring it forward, and use the eyedropper to set the stroke color to black.

• Set the Stroke Width to 2.

• To the right of the Stroke Width value, click on the Stroke Style popup and change it to All Fills Over All Strokes. Now, no matter how thick you make the stroke, the white fill will always draw in front.
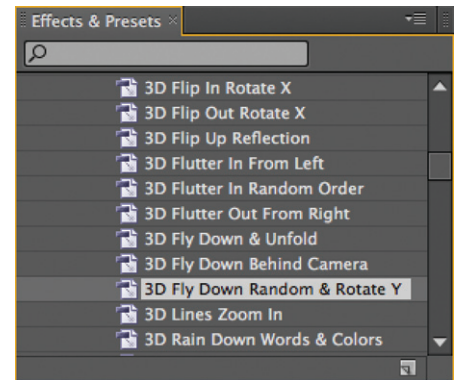
59 Next, position the title in 3D so that it sits in front of the video:

• Enable **Dirtboard Devil**'s 3D Layer switch.

• Center the text horizontally in front of the **Skater** by using the same X Position value for the text as you used for **Skater** (we used X = 510).

• The floor is at Y = 400, so use that value for the text's Y Position value to make the text rest on the floor (if your title had descenders, like a lower-case "g" or "y", you would need to move it a little higher so it clears the floor).

• The **Skater** layer is at Z = 500. Scrub the Z Position for your title to a value of about 300 so that it sits in front of the movie. (When you add a light, you may decide to change this value depending on how the shadows from the text fall.)

60 In Lesson 5 we demonstrated applying Text Animation Presets (including how to view animated previews in Bridge). Since we have a 3D scene in progress, take advantage of the Per Character 3D feature so that the characters animate in 3D space by picking a preset from the Animation Presets > Text > 3D Text folder. We suggest that you pick a preset where the text "falls back" or flies in from the front (not behind) so that the text doesn't come through the **Skater** layer!

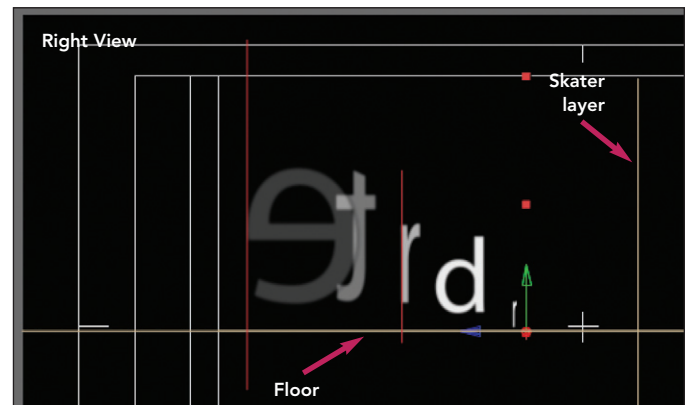Our choice was the preset titled **Fly Down Random & Rotate Y**:

• Press (Home) to return to 00:00 (preset animations start at the current time).

• With the text layer selected, in the Effects & Presets panel, twirl down the Animation Presets > Text > 3D Text folder.

• Double-click the preset **Fly Down Random & Rotate Y** to apply it. Scrub the timeline to see the characters fly down in position.

61 Animation presets are a great jump-start, but they often need to be edited to work with a design. For instance, move to 01:00 where the characters are flying in; they appear to intersect with the floor! This is easy to fix:

• In the Timeline panel, twirl down the text layer until you reveal the settings for Text > Animator 1. Position is one of the properties in the Animator, but its Y value is at 0. This might be okay if Scale wasn't set to 400%, but with this design the larger characters are intersecting the floor.

• Scrub the Y Position value for Animator 1 until the characters rise well above the floor (setting the 3D View to Left or Right will give you a clearer look).

• Feel free to change any of the other animator property values in Animator 1. For instance, we increased Scale to 800% for a more dramatic effect. Feel free to toggle on Motion Blur (discussed in Lesson 3) as well.

62 The text animator keyframes range from 00:00 to 02:00. Scrub the timeline carefully and you'll probably find that the first character doesn't appear until a few frames into the animation. Place a layer marker at that point in time where it appears. Now slide the text layer so that this marker hits at 00:27, which coincides with when the music starts to "swell." Delaying the animation also allows time for the **Skater** layer to build on before the title flies down and steals its thunder. Turn back on the Camera layer, RAM Preview and adjust the animation to taste.

60 Choose a 3D Text Animation Preset that flies down into place.

61 Tweak Range Selector 1's parameters so that the text starts larger and does not travel through the floor. An alternate 3D view such as Right can help you confirm this (above). Increase Scale and toggle on Motion Blur for a more dramatic look (below).
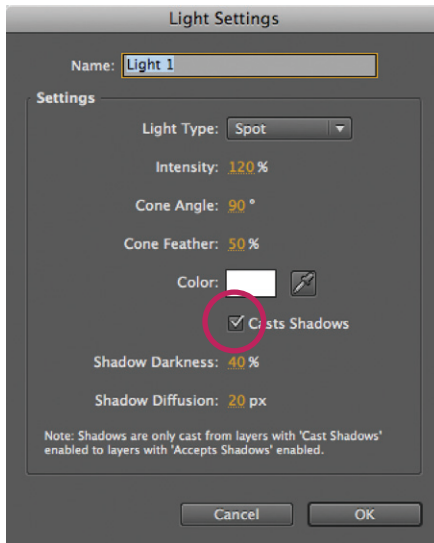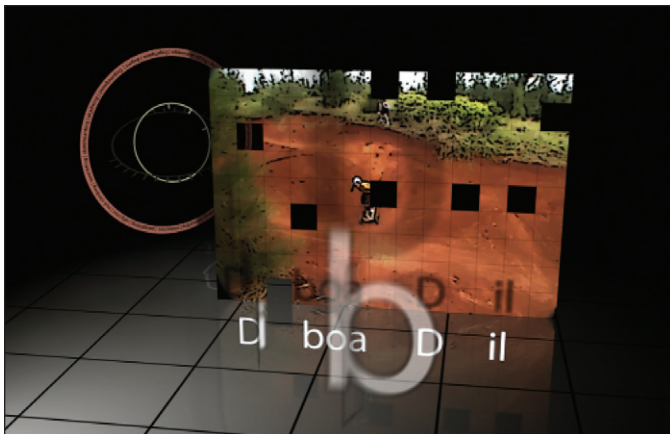
63–64 To see shadows, both the light (above) and appropriate layers (right) must be enabled to Cast Shadows.

▽ **factoid**

Shadow Size

If a light is closer to a layer than the camera is, the resulting shadow will be larger than the original layer.
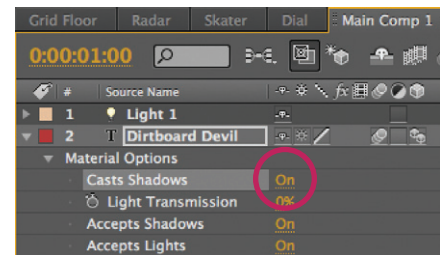
Adding a Light and Shadows

One of the benefits of working in 3D space is that it lets you use 3D lights to enhance the mood of a scene, including casting shadows.

63 With **Main Comp 1** still forward and in Active Camera View, choose Layer > New > Light. A Light Settings dialog will open, defaulting to the last settings entered. Make the following adjustments (you can later tweak them to taste):

• Set the Light Type to Spot. This allows you to control how large a cone of light you will be projecting.

• To brightly illuminate the scene, set the Intensity to 120%.

• Set the Cone Angle to 90° and Cone Feather to 50% – a good starting point.

• Make sure the Color of the light is white.

• Enable Casts Shadows. Then set the Shadow Darkness to 40% and the Shadow Diffusion to 20 pixels, which will yield a soft, subtle shadow. Then click OK.

64 Casting shadows increases rendering time, so carefully consider which layers need to cast shadows onto others. For example, the title is in front of the video panel, so it is a candidate. Select **Dirtboard Devil** and press **A A** to reveal its Material Options in the Timeline panel, and toggle its Casts

Shadows parameter to On. Who else? The **Skater** layer is in front of **Dial**, so do the same for it. You can leave Casts Shadows disabled for the other layers.

65 Shadows add to the impact of the text flying into position. Also note the shadow falling on the dial from the video panel.

65 Positioning lights takes a mentality similar to positioning a camera: Think about where you want your focus to be, then frame your shot. In this case, the focus is the title, and you want it to cast shadows on the video behind.

Select **Light 1**, and press **P** followed by **Shift A**. Set its Anchor Point to be the same as the text (remember you can copy and paste values between layers). Then edit **Light 1**'s Position until you get a nice shadow pattern, also paying attention to the interaction between the **Skater** and **Dial** layers. We ended up with a Position of 650, 450, –600.

66 A side effect of our low lighting position is that the floor is no longer illuminated. Reveal **Radar**'s Material Options, and toggle its Accepts Lights parameter to Off (after all, it's sort of its own light!).

Final Tweaks to Main Comp 1

Your composition is looking pretty good; it needs just a few more tweaks to finish it off.

67 The **Grid Floor** layer is looking a bit chunky. To make it more subtle, use the trick you learned in step 49 to edit the Grid effect in this precomp. We ended up setting its Border and Feather settings all to a value of 2.

68 The background could use another element to help fill in the atmosphere:

• In the Project panel, locate **Horz Lightning.mov** in the **Comps > Sources > Movies** folder. Add it to **Main Comp 1**. As you want it to be a background that always fills the composition regardless of the 3D camera's movements, drag it to the bottom of the layer stack, and leave it as a 2D layer.

• This movie has a 4:3 aspect ratio, whereas your comp is widescreen. Scale up the movie to fill the comp; the shortcut is Layer > Transform > Fit to Comp. The resulting softening and distortion is acceptable for this abstract background image.

• To tie in its color with the other elements, apply Effect > Color Correction > Tritone. The image still looks a bit washed out, so apply Color Correction > Levels, and increase its Input Black Point to roughly 30 to improve the contrast.

• The music starts with rumbling thunder. To complement this, press (Home) and slide this movie earlier in time until you see a nice lightning flash to match.

• Set the **Radar** layer to Screen mode to better interact with the lightning layer.

69 Tidy up your composition by twirling up the layers in the Timeline, and re-ordering the layers in some logical fashion (such as the music track on top, followed by the camera and light, all 3D layers, then the 2D background layer).
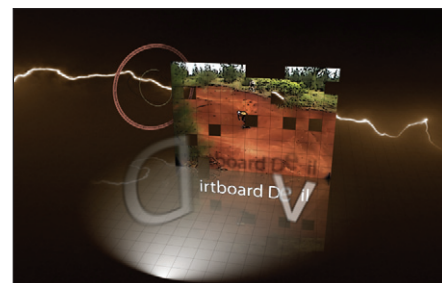
68 To add a background of lightning to **Main Comp 1** (top), add a 2D movie to the bottom of the layer stack, and use effects to improve its color and contrast (above). Footage courtesy Artbeats/Lightning & Clouds.

69 The final timeline for **Main Comp 1**. After re-ordering the layers, we selected them all then pressed *U* to view animated properties only. Note how few keyframes are used in this Main Comp!