

# **Going On Grid**

## 3D Grid Scene

### **Learning Objectives**

- 1.Understand how to navigate on the X, Y, Z axes
- 2.Identify the keyboard shortcupts for the 3D grid
- 3.Describe the tools available in the 3D grid

# 3D Grid Scene

Now that you've mastered the panels and the menus, it's time to step onto the actual Stage. The 3D Grid (located in the Scene Panel) is where the "flat" 2D images you've imported finally enter a world with height, width, and depth.

## The 3D Grid: Your Digital Sandbox

Until now, you've been looking at your work through the Preview Panel—which shows you what the user sees on their phone. The 3D Grid, however, is where you stand as the creator. It's like stepping behind the scenes of a movie set to see where the props are actually placed.

## Navigating the XYZ World

In a normal drawing app, you have two directions: Up/Down and Left/Right. In Lens Studio, we add a third direction to create a "3D" space. We track these using three colored lines:

- *Red Line (X)*: Moves things Left and Right.
- *Green Line (Y)*: Moves things Up and Down.
- *Blue Line (Z)*: Moves things Forward and Backward (closer or further away from the camera).

## A New Way to Move

In the Grid, you aren't just a spectator. You are a navigator!

- *Panning*: Think of this as sliding your chair left or right to see a different part of the table.
- *Orbiting*: This is like walking in a circle around a statue to see it from every angle.
- *Zooming*: This is leaning in close to see the tiny details or stepping back to see the whole "stage."



Think of the 3D Grid like a Physical Stage. The Preview Panel is the audience's view from their seats, but the 3D Grid is the view from the rafters! You can walk around the props, see how far apart they are, and make sure everything is exactly where it needs to be for the "show."

## Why does the Grid look so big?

You might notice the grid looks like an endless floor. This is to give you plenty of room to build. Most of your work for this project will happen right in the center, where the colored lines meet. This "Center Point" is called the **Origin**.

To move around the 3D Grid, you have to learn how to control your view. It's a lot like playing a first-person game—once you learn the controls, you'll be flying around your project in no time!

**The Default View:** If the world feels upside down, look for the View Cube (the little cube in the corner of the Scene Panel with the Snap Ghost icon) and click one of its faces (like "Front") to snap back to a straight-on view.

## Navigation: The "Three-Button" Dance

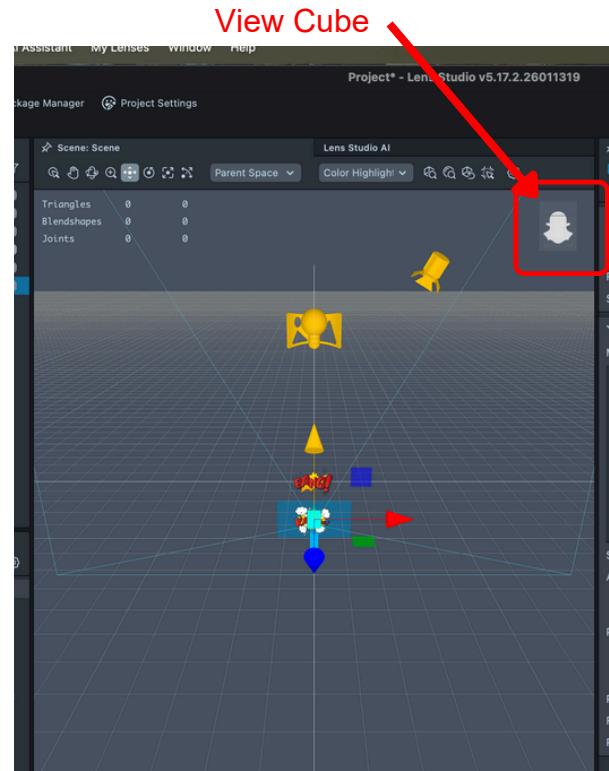
If you are using a mouse, these three movements will be your best friends. Try each one in the Scene Panel right now:

- ***The Scroll Wheel (Zoom):*** Roll it forward to zoom in close; roll it back to step away.
- ***The Right-Click (Orbit):*** Hold down the right mouse button and move your mouse. You are now "orbiting" or spinning around the center of the world.
- ***The Middle-Click / Scroll Wheel Press (Pan):*** Press the scroll wheel down like a button and move the mouse. This "slides" the camera left, right, up, or down without turning it.

## Pro-Tips for "Lost" Creators

It is very common for beginners to accidentally zoom too far out or spin until the grid disappears. If you get lost in "outer space," use these shortcuts to find your way home:

- ***The "F" Key (Focus):*** Select an object in your Objects Panel and press F on your keyboard. Lens Studio will instantly teleport your camera right in front of that object!



Not everyone uses a mouse! If you are working on a laptop, navigating the 3D Grid with a trackpad feels a little different, but it is just as fast once you get the hang of the gestures.

## Trackpad Navigation

Since you don't have a middle-click or a scroll wheel, Lens Studio uses common "pinch" and "swipe" motions to help you fly through the scene.

### Zooming (The Pinch)

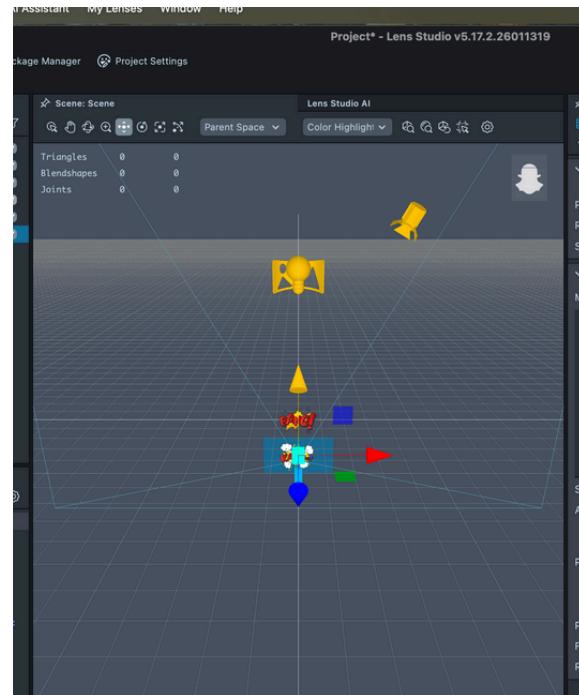
- The Action: Use two fingers on the trackpad.
- The Movement: Pinch your fingers together to zoom out, or spread them apart to zoom in.
- Pro-Tip: You can also use a two-finger swipe up or down (like scrolling a webpage) to zoom.

### Orbiting (The Right-Click)

- The Action: Click and hold with two fingers (or hold Alt/Option while clicking with one finger).
- The Movement: Drag your fingers across the trackpad to spin the camera around your object.

### Panning (The Spacebar Trick)

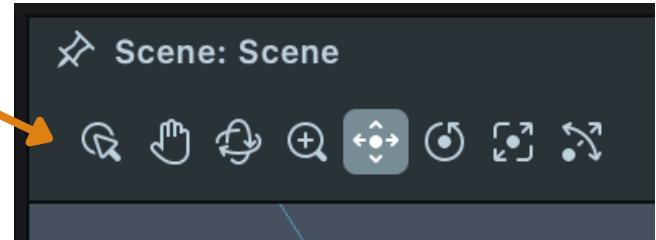
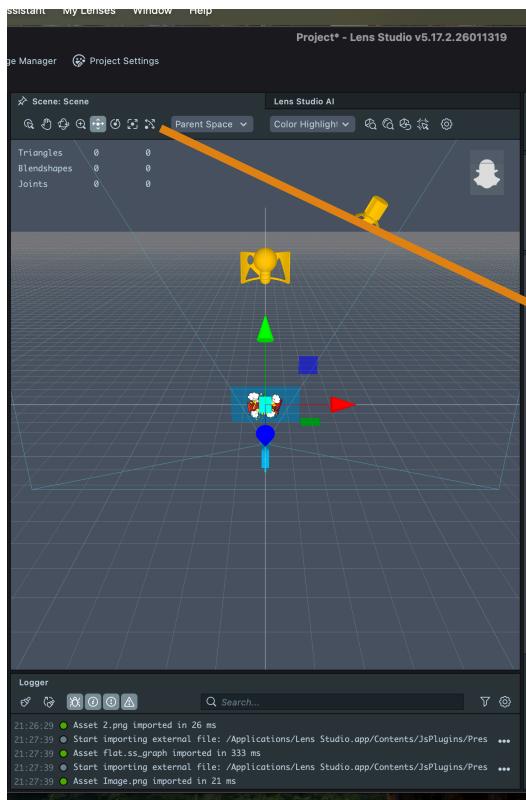
- The Action: Hold down the Spacebar on your keyboard.
- The Movement: While holding Space, click and drag with one finger on the trackpad.  
This "grabs" the air and slides your view left, right, up, or down



## Essential Keyboard Shortcuts

When you don't have a mouse, your keyboard becomes your best friend. Keep these three keys under your left hand:

- **F (Focus):** The most important key! If you wander off-screen, select your object in the list and tap F to snap back to it.
- **Spacebar:** Your "Pan" tool. Hold it and move your finger on the trackpad whenever you need to slide the camera without rotating it.
- **Alt / Option:** Use this as a modifier to help you turn your single-click into a "right-click" for orbiting.



**Tip:** Hover each icon to see the name of it.

To truly master the 3D Grid, you need to know the tools available. At the top of the Scene Panel is the Toolbar. These icons are the remote control for your mouse and determine how you interact with the digital world.

### The Scene Toolbar: Your Master Controls

Think of these icons as the different "modes" your mouse can be in. You can click them with your mouse, but pro creators use Keyboard Shortcuts to switch between them instantly.

- **Selection:** Your "safe" mode. Use this to click on objects without accidentally moving them. It hides all the colorful arrows.
- **Pan:** Moves your view left, right, up, or down (like sliding a piece of paper on a desk).
- **Orbit:** Spins your view around a center point (like walking in a circle around a statue).
- **Dolly:** Moves your view forward and backward (zooming in for detail or stepping back for the "big picture").
- **Move:** Shows the Arrows. Use these to slide your image along the Red (X-axis), Green (Y-axis), or Blue (Z-axis) lines.
- **Rotate:** Shows the Rings. Use these to spin your images or 3D objects to any angle.
- **Scale:** Shows the Cubes. Use these to make your image giant, tiny, or stretched.
- **Unified:** The "All-in-One" tool. This combines Move, Rotate, and Scale into one single Gizmo.

## Pro-Creator Secret

Since you now know what the tools do, it is time to unlock the "Pro-Creator" secret: Keyboard Shortcuts.

While you can always click the icons at the top of the screen, using your keyboard allows you to keep your focus on your art rather than the menus.

### The Q-W-E-R-T Row: Your "Home Base"

If you look at your keyboard, you'll notice a row of letters that perfectly matches the order of your tools in Lens Studio. Professional creators keep their left hand resting on these keys at all times.

### Transformation Shortcuts

These keys change what the Gizmos (the colorful arrows and rings) on your object look like:

- Q — Select: Clears all gizmos away so you can see your art clearly.
- W — Move: Brings up the Arrows for sliding your image.
- E — Rotate: Brings up the Rings for spinning your image.
- R — Scale: Brings up the Cubes for resizing your image.
- T — Unified: Shows all tools at once for quick adjustments.

### Navigation Shortcuts

If you are working on a trackpad or need a quick way to find your way around the 3D world, these are your "Emergency" keys:

- F — Focus: If you lose your image in the big 3D grid, select it in the Objects Panel and tap F. You will instantly "teleport" right in front of it!
- Spacebar — Pan: Hold this down to "grab the air" and slide your view without rotating.
- Ctrl + Z (Cmd + Z) — Undo: Your best friend. If you move something and don't like it, tap this to go back in time.



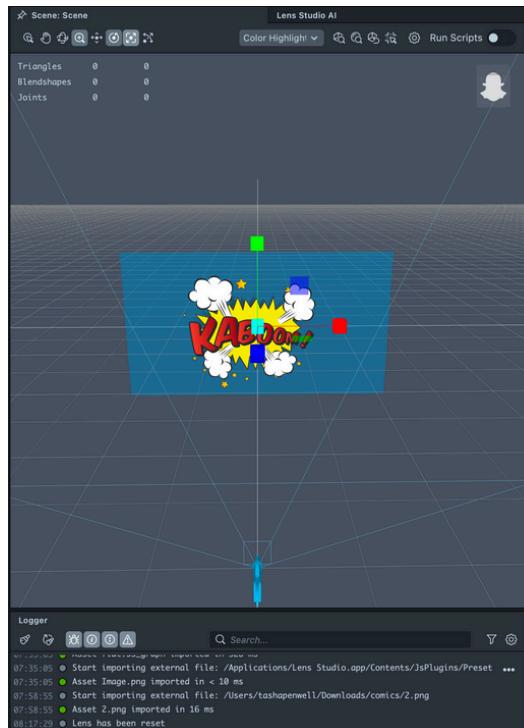
Using shortcuts is like playing a musical instrument. At first, you have to look at your fingers to find the right notes. But eventually, your hand just "knows" where W is when you want to move something, and you can "compose" your AR Lens without ever looking away from the screen!

Select on an image in the grid. You can see it's selected when you see the blue shaded rectangle is around it as shown here in this image to get started using the keyboard shortcuts.

### Quick Practice: The Finger Dance

Try this "finger dance" in the Scene Panel right now to build your muscle memory:

1. Click on one of your Image Objects.
2. Tap W (look at the arrows).
3. Tap E (look at the rings).
4. Tap R (look at the cubes).
5. Tap Q (watch them all disappear!).



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**At this point in our activity, you have two image objects. Spend some time with their appearance (rotation and scale) and their placement with the move tool.**

## **Challenge: The Final Touch**

Before we do a knowledge check, let's add one more image to complete your AR experience. This is your chance to use everything you've learned to make the scene your own!

### **Steps:**

1. *Add*: In the Objects Panel (top left), click the + and add one more Image object. Be sure to rename the object for organization.
2. *Texture*: With your new object selected, go to the Inspector Panel and click the Texture box. Choose your third and final graphic.
3. *Arrange*: Use your Keyboard Shortcuts (W, E, R) or the Transform settings in the Inspector to move, scale, and rotate your image into the perfect spot.
4. *Polish (Optional)*: Want to get fancy? Try changing the Alpha (transparency), Color Tint, or Blend Mode in the Inspector to see how it changes the "vibe" of your artwork.

# Unplugged Activity

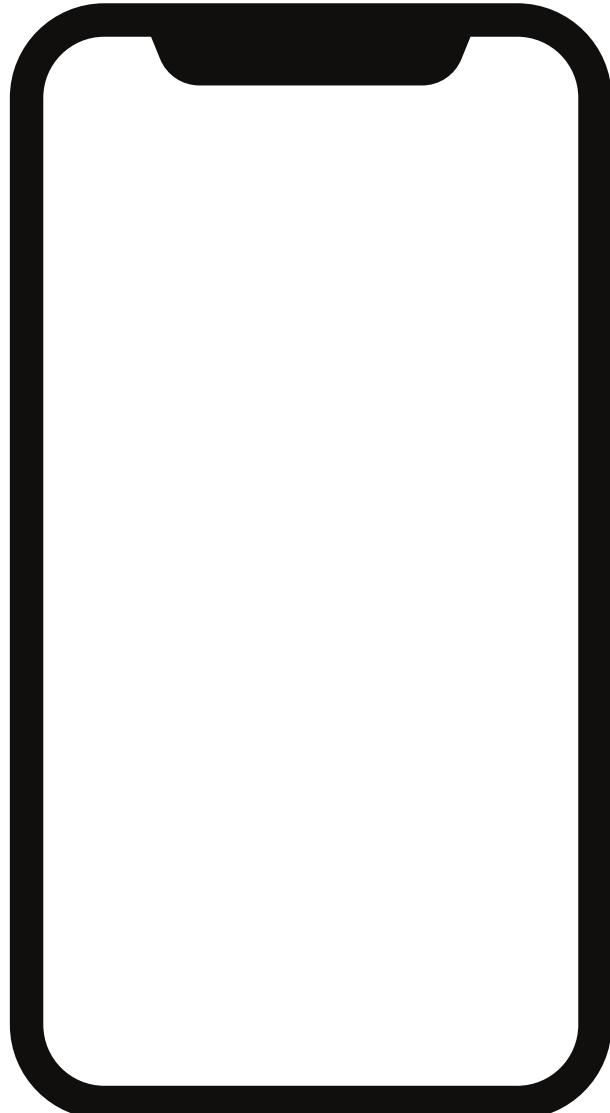
## Ideation Station: Sketch Your Scene

Before you lock in your final object, take a moment to ideate and think of what you would like your lens to look like. Use the space below or a separate piece of paper to doodle a quick sketch of how you want your three stickers to look together.

- *Placement:* Where will the images go?
- *The Vibe:* Will they be giant like billboards or small like desk stickers?

Doodle your layout here! (Don't worry about being a perfect artist—even professional engineers use "stick figure" sketches to plan their work.)

**Pro-Tip for Success:** Look at your sketch, then look at your Objects Panel. Does the order of your list match your drawing? Remember, the items at the top of your list will be the ones "closest" to the user!

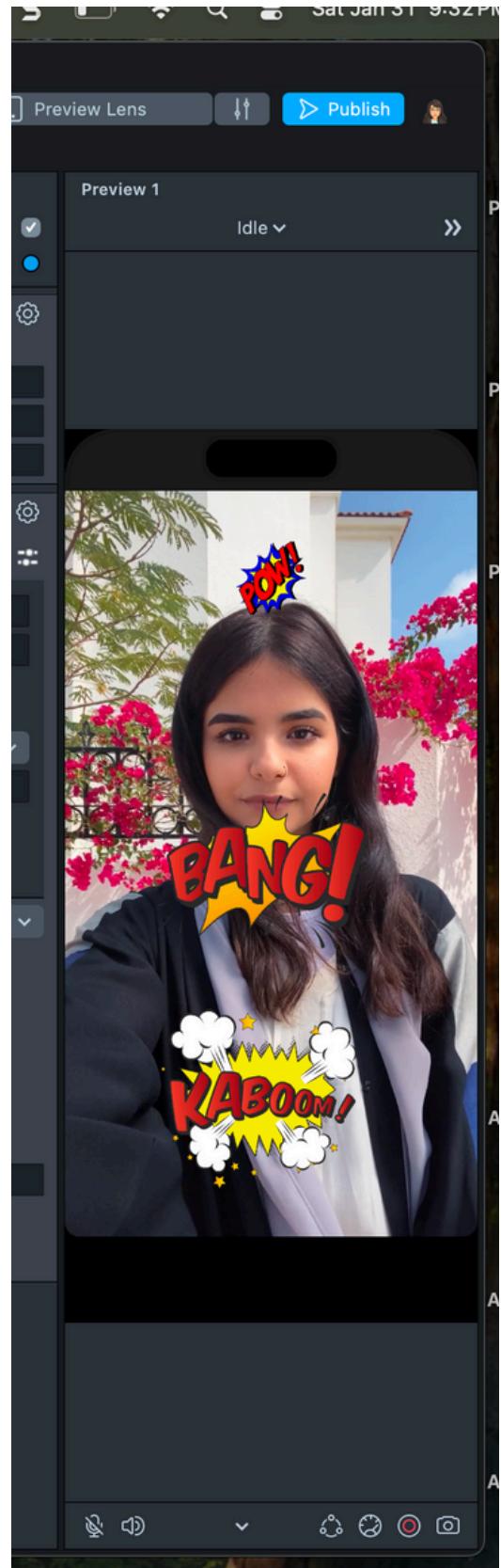


# Plugged In Activity

## The "Creator's Challenge"

Now that all three of your images are on the stage, take a moment to look at the Preview Panel.

- Are the layers in the right order?
- Is anything overlapping in a way you don't like?
- Hint: If you need to "leapfrog" an image to the front, just drag its name to the bottom of your Objects Panel list!



# Knowledge Check

## 3D Grid and Navigation

**Instructions:** Answer the following questions based on your understanding of the 3D workspace and keyboard shortcuts.

### 1. The Color of Space

In the 3D Scene Panel, which color traditionally represents the Y-axis (Vertical/Up-and-Down movement)?

- A. Red
- B. Green
- C. Blue
- D. Yellow

### 2. Mastering Depth

If you want to move your sticker closer to or further away from the user's camera, which axis are you adjusting?

- A. The X-axis
- B. The Y-axis
- C. The Z-axis
- D. The W-axis

### 3: The Tool Match-Up

Match the Keyboard Shortcut to the Action it performs on the 3D Grid:

Shortcut	Action
W	Scale (make object bigger or smaller)
E	Selection (Safe mode / Hide)
R	Move (Arrows for sliding)
Q	Rotate (Rings for spinning)
F	Focus (Find and focus to the object)

