Building: Playing With Shapes Different Ways to Rez Basic Shapes



LEVEL: 3 MODULE: BUILDING: SHAPES - MISSION I

3-1.1 Introduction

All building starts with putting together basic shapes. Just like a real set of wooden building block, different shapes can be stacked and put together to form new shapes.

However, in Second Life, you can start with a **basic shape** and **change** it into something very different.

Before you learn how to change, or edit, basic prim shapes, let's review the different ways you can rez these basic shapes.

3-1.1.1 Instruction

There are two main ways you can rez a basic shape. You can use the Edit window to create a basic shape or you can create a default cube and then change its shape. Let's practice both ways now.

3-1.1.2 Practice



TRY THIS:

Step 1: Using the Edit window to rez a basic shape In earlier missions, you became very familiar with R-clicking (Cmd-click) on the ground, choosing Create from the pie menu and rezzing many cubes!

However, you can choose which shape you want to rez by opening the Edit window **before** you create a prim.

TRY THIS NOW:

Open the Edit window from the top menu bar. Select the Create button. Select one of the shapes you see.

Tools > Edit > Create button > Shape button



Now, click on the ground to create that shape. Using this method, practice selecting and rezzing each of the basic shapes shown.

Note: You will not be able to rez the plant shapes unless you own the land on which you are building.

Step 2: Changing a cube to another basic shape

You can also begin by rezzing the default cube and then changing it to another basic shape.

With a cube in Edit mode, open the Edit window to the Object tab.



In the Edit window, on the left side of the Object tab, is a dropdown menu: **Building Block Type**.

Clicking on the down arrow will show a menu of basic shapes. Clicking on one of those shapes will change the cube to that shape!

TRY THIS NOW:

R-click (Cmd-click) on the ground, choose Create from the pie menu and rez a cube. With the Edit window open to the Object tab, choose the **Building Block Type** drop-down menu and choose another shape.

Now click through the **other** shapes to see what happens.

If you try to go back to your original shape, you may find it has changed. Try clicking back on the Box shape to see what it looks like now.

Note: A Sculpted prim shape is a special kind of prim that will be covered in a later building module. For now, just explore the basic shapes.

3-1.1.3 Action Plan

SHOWING OFF YOUR NEW POWER:

Make sure you take the time to play around with all the shapes. Spending some time now will make you a better and more creative builder in the long run.

Building: Attachments Attachment Points



LEVEL: 3 MODULE: BUILDING: SHAPES - MISSION 2

3-1.2 Introduction

Building is just going to get cooler and cooler. What if you could just cut a "chunk" or a "wedge" out of a shape?

3-1.2.1 Instruction

You can cut different sized chunks out of shapes using the **Path Cut Begin and End** control. You will experiment with different basic shapes to see how this control affects each of them. Let's begin!

3-1.2.2 Practice

TRY THIS:



Step 1: The Path Cut Begin and End control The **Path Cut Begin and End** control is located below the Building Block Type dropdown menu.

The **Path Cut Begin and End** control will cut a section out of any shape you rez.

The **path** it cuts is along the Z axis (the blue axis).

The width of the slice, or chunk, that is removed depends on the **Begin (B)** and **End (E)** number values you choose. Values can range from 0.000 – 1.000.

TRY THIS NOW:

Rez a cube. Make sure your cube is in Edit mode. With the Object tab of the Edit window open, use the up/down arrows of the **Path Cut** control to change both the B (Begin) and E (End) number values.

Do you see how your choices affect the size of the "chunk" that is removed? Selecting a small value will look like a small slice has been cut out of your prim. A large value will leave **only** a slice.

TRY THIS NOW:

Try removing slices or chunks from each of the other basic shapes. Experiment with different number settings to see if you can make a shape exactly the way you want it. Take your time!

3-1.2.3 Action Plan

SHOWING OFF YOUR NEW POWER:

Naming and saving favorite shapes is a real timesaver when you build. Good builders don't recreate a common shape each time they build; they take it out of their inventory.

Take a few moments to rename and save some of the great new shapes you think you will use in your future building projects.

You might also take a few minutes to practice your texturing. Slightly changing the color of a cut face can really improve the look of an object.

Building: Playing With Shapes Hollow and Hollow Shape



LEVEL: 3 MODULE: BUILDING: SHAPES - MISSION 3

3-1.3 Introduction

What if you could cut a hole in the middle of a shape and hollow it out. You can!

3-1.3.1 Instruction

Every basic shape can be hollowed out. In fact, even the shape of the hole can be changed. For example, you can put a square hole in a sphere or a round hole in a pyramid.

3-1.3.2 Practice

TRY THIS:



Step 1: Making a default hole

When you first rez any basic shape, it is not hollow. To hollow a shape, choose the **Hollow** control, which is usually right underneath the **Path Cut Begin and End** control.

A shape can be hollowed up to 0.95%. It is usually hollowed along the Z axis (blue axis).

TRY THIS NOW:

Rez a cube. Using the **Hollow** control, select the up/down arrows to hollow the cube. Do you see how the higher numbers make the hole in the cube larger?





Step 2: Changing the default hole shape

Once you begin to make even a small hole in a shape, the **Hollow Shape** drop down menu will become active. Now you can change the shape of the hole to a circle, square or triangle.

TRY THIS NOW:

Rez a cube and hollow it. Rotate it so you can see the shape of the hole. It should be square to match the square shape.

Select the **Hollow Shape** drop down menu and select **Circle** or **Triangle**. Notice how the shape of the hole changes instantly!

Step 3: Hollowing other shapes

Actually seeing what happens to other shapes can inspire you with new building ideas.

TRY THIS NOW:

Select other shapes and experiment with hollowing them. Change the shape and size of the holes.



Note: The Ring, Torus and Tube shapes hollow much differently than the other shapes. Make sure you take the time to really look at them.

Step 4: Combining Hollowing with Cutting

When you begin to **combine** different building controls, you can really come up with some interesting shapes.

TRY THIS NOW:



Look at the bench in the photo. It is made of three basic cubes. The texture is the Old Wood texture in your default Library Inventory.

You've already learned everything you need to recreate it. Can you?

*Hint: You can find the steps below if you get stuck.

3-1.3.3 Action Plan

SHOWING OFF YOUR NEW POWER:

Using all the building knowledge you have so far, make something wonderful. You are going to be a fabulous builder!

*Hint: How to make the bench

Rez a basic cube. Stretch and flatten it to make the bench seat.





Rez a second cube, and cut it to make a "V" shape for the legs. (You may need to rotate it at this point.)



Narrow the width of the legs to your liking.



Hollow the second cube to your liking and change the Hollow Shape to circle.

Apply a texture to both the seat and leg section.



Select the leg section and shift-drag to make another leg section. Position the legs and top so they look like a bench.

Link the three prims together and rename. Nice job!

Building: Playing With Shapes Taper, Top Shear and Dimple



LEVEL: 3 MODULE: BUILDING: SHAPES - MISSION 4

3-I.4 Introduction

You have already come a long way in learning how to edit and change basic prim shapes. Now things are about to get really interesting.

Different shapes can react much differently to the same control. Two of those controls are **Taper** and **Top Shear**.

3-1.4.1 Instruction

When you taper something, you usually make it smaller at one end. When you shear something, it usually looks a little lopsided – like it's leaning over a bit.

However, how **Taper** and **Top Shear** look with different basic shapes can be very different! For this mission, your job is to really experiment with all the different basic shapes to see what happens.

Note: As you follow along, you will notice that different shapes show Taper and Top Shear in different places in the Object tab of the Edit window.

3-1.4.2 Practice

TRY THIS:

Step 1: Taper

When a prim is tapered, the top end usually becomes smaller. A prim can be tapered from 0.00 to 1.00 percent on both the X (red) and Y (green) axes.



If you can choose negative taper values, such as -0.01 to -1.00, [for a prim, the bottom end will be tapered.

TRY THIS NOW:

Rez a cube and a cylinder. For both, use the **Taper** control up/down arrows to taper both the X and Y axes to 1.00.

Did you get a pyramid and a cone? Experiment to see what happens if you use smaller taper values.



Step 2: Tapering other shapes While a sphere cannot be tapered, the other shapes can. The results can be really surprising!

TRY THIS NOW:

Rez all the other shapes (except for the sphere and half sphere). Really experiment with the amounts of X and Y taper. What is the most surprising shape you have discovered so far?



Step 3: Dimple

Spheres and half spheres cannot be tapered. Instead, they can be dimpled Just like the dimples on someone's chin, a dimple on a sphere makes a small dent, just at the end.

TRY THIS NOW:

Rez a sphere. Change the numbers in the **Dimple Begin and End** control to see what happens. What might you make if you also **hollowed** that sphere?



Step 4: Top Shear

For some prims, such as cubes and cylinders, the **Top Shear** control will make them look like they are leaning to one side.

For other prims, such as toruses, or rings, **Top Shear** will distort them in unexpected ways!

You can use Top Shear on the X (red) or Y (green) axis - or both!

TRY THIS NOW:

Rez **each** basic prim shape and experiment with the **Top Shear** control. Change the settings for both the X an Y axes and see what happens.

3-1.4.3 Action Plan

SHOWING OFF YOUR NEW POWER:

Are you beginning to see how much you can change those basic prims? It can really be fascinating to play with shapes.

At this point, you are probably surrounded by your strangely-shaped objects. Take a moment to clean up. Name and save shapes you really like and delete the rest.

Now travel around Second Life, and R-click (Cmd-click) on objects you see and choose Edit. The prims will be outlined and you can see what kinds of shapes are being used in some of your favorite builds.

Building: Attachments Attachment Points



LEVEL: 3 MODULE: BUILDING: SHAPES - MISSION 5

3-1.5 Introduction

When you began this module, you may never have dreamed you could make these kinds of shapes. But wait – there's more! You can twist prims, too.

3-1.5.1 Instruction

In this last mission on shapes, you will learn to twist different shapes in different ways. Much like twisting a towel or crumpling a piece of paper, twisting prims will lead to some very interesting shapes.

Take your time and fully explore how the "twisting" controls affect each different shape. For some shapes, you will have additional twist controls, which will be explained along the way.

3-1.5.2 Practice

TRY THIS:

Step 1: Simple Twist Some shapes, such as cubes and cylinders, have only a simple **Twist Begin and End** control.

To really twist these shapes, choose a large beginning number and a large **negative** ending number.



TRY THIS NOW:

Rez both a cube and a cylinder and experiment with twisting them using the **Twist Begin and End** control. To really see the twists, you may want to stretch them into columns first.



Other shapes that are based on the cube and cylinder shape will act much the same way. Try twisting pyramids, triangles and cones.

Step 2: Twisting Spheres

Like cubes and cylinders, spheres have only the Twist Begin and End control. However the results of using that one control are really neat!

TRY THIS NOW:

Rez a sphere. Change the numbers on the Twist Begin and End

Tip: Combining the control with hollow and dimple can make amazing flower petal-like shapes.



Step 3: Toruses, Tubes and Rings

As you've seen all along, these shapes always seem to do unexpected and surprising things. Twisting them is no exception. You can easily make springs and curl shapes.

In fact, these shapes have additional "twist" controls you can change. In addition to Twist **Begin and End**, you can control the:

- Hole Size The size of the hole in the middle of the spring.
- Radius Delta The extent to which each individual coil becomes smaller or larger.
- **Revolutions –** How many coils are in a spring shape.
- Skew How flat or rounded each coil appears.

Play with these and you will end up with some amazingly complex shapes. This is one reason that many plant-like and hair prims begin with toruses or tubes – they can be changed in radical ways.

TRY THIS NOW:

Rez a torus. Begin by changing the Twist Begin and End controls.

Now, experiment with the **Hole Size**. Do you see the size of the hole in the middle of the spring changing?

Finally, change the **Radius Delta** and **Revolutions** controls to see what they will do. As you change the **Radius Delta**, each individual coil in your spring will get smaller and smaller, like a pyramid of coils. The higher the **Revolutions**, the more coils in your spring!

Tip: Expert builders spend a lot of time learning how to make exactly the "right" shape. There is just no shortcut to figuring these shapes out.

If you find you've made something unique and beautiful, name and save it!

3-1.5.3 Action Plan

Learning about shapes never ends. Just when you think you've seen it all, you learn something new. The best builders never stop learning!

What would happen if you were to combine "twists" with all the other techniques you've learned in this module?

TAKE ACTION:

Shelter – a house - is a basic need for each person on this planet. However, shelters in different parts of the world can look very different. Each part of the world designs shelters to meet the specific needs and resources of that area and culture.

Using all of your new building skills, design and build a shelter for people in an area of the world unfamiliar to you.

SHOWING OFF YOUR NEW POWER:

Blog about your shelter. Include a snapshot! Why did you choose that area of the world? Does your shelter look like actual shelters in that area? Why did you make the building choices you did? How is it similar or different from your own home?