Intro to Roblox Studio - Designing an Obby

Required Previous Lessons/Knowledge: *Students should have Roblox accounts and know their passwords*
Lesson running time: *approx. 40 minutes - 1 hour*
Optional handouts: *Roblox Studio Cheat Sheet, Play an Obby Worksheet*
Learning objectives and outcomes: *Students will practice working in 3D space to create the first level of an Obby. While doing so they will be introduced to the Explorer and learn how to move, rotate, and scale parts. As they create their game, they will be asked to playtest their work and consider the end-user experience. Student will also learn basic keyboard and mouse controls to control a character.*

What's an Obby

Discussion Topic
Ask if anyone has ever played an Obby or a platforming game before. If they have, have the student describe it to the rest of the class.

Obby is short for obstacle course. Players have to jump from one place to another while avoiding obstacles to get to the end of a level.

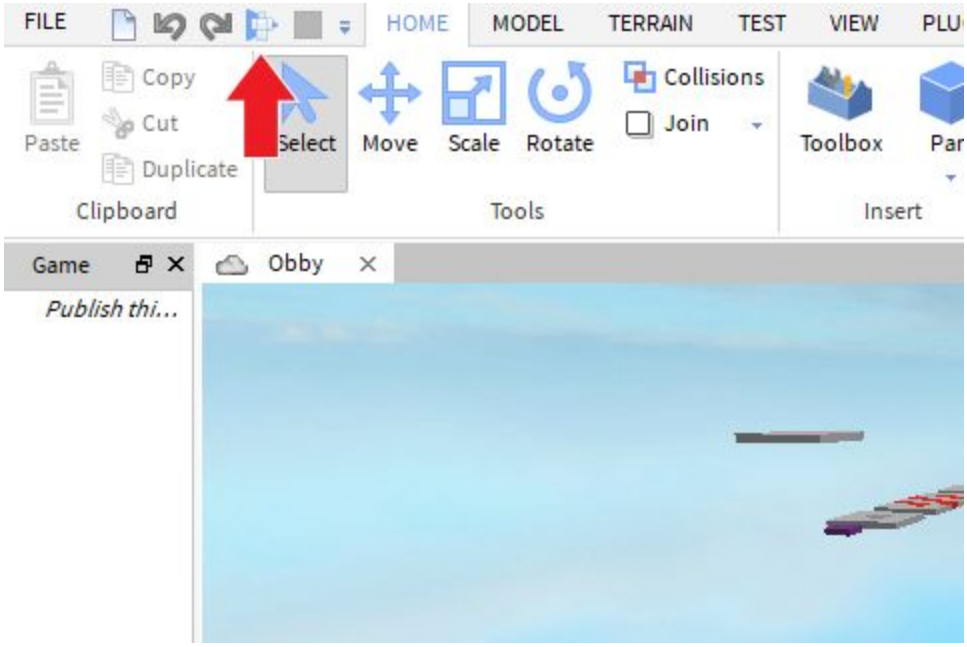
Select the Obby Template

Templates are pre-built projects in Roblox you can use as a start for your own games. One of the templates is an Obby. Open the obby template to get an idea of what you will be making.

1. Open **Roblox Studio**.
2. Scroll until you see the template named **Obby**.
3. Click *once* on the template to open it. Clicking multiple times will open multiple windows.

Play the Template Obby

- Press the **Play** button in the top-left corner.



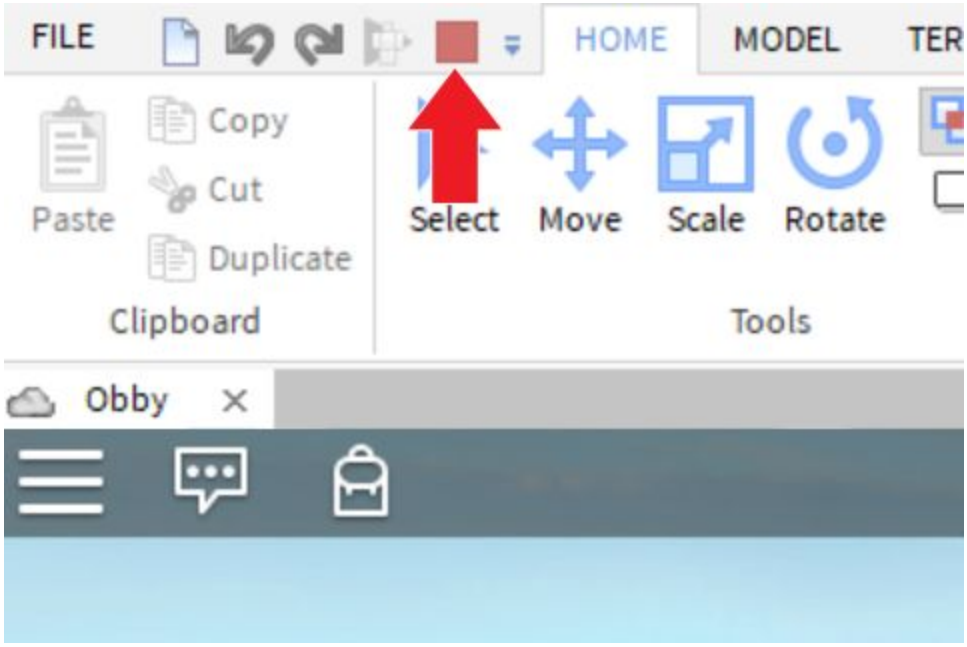
Teaching Tip
Allow students to play 3-5 minutes. This will give your students an idea of what they are working towards without having to go online. Let students know from the start how much time they have and give a one minute notice before time's up.

In-game Controls

- Use **WASD** or the arrow keys to move your character around.
- Use **Spacebar** to jump.
- Hold the **right mouse-button** to look around.

Stop Playtesting

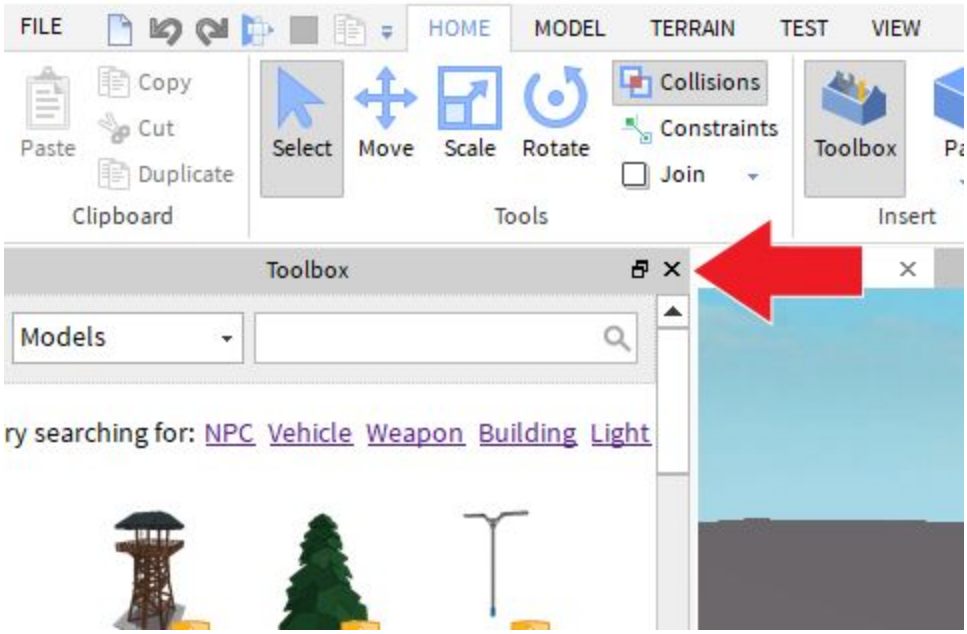
- To **stop** playtesting, press the red stop button.



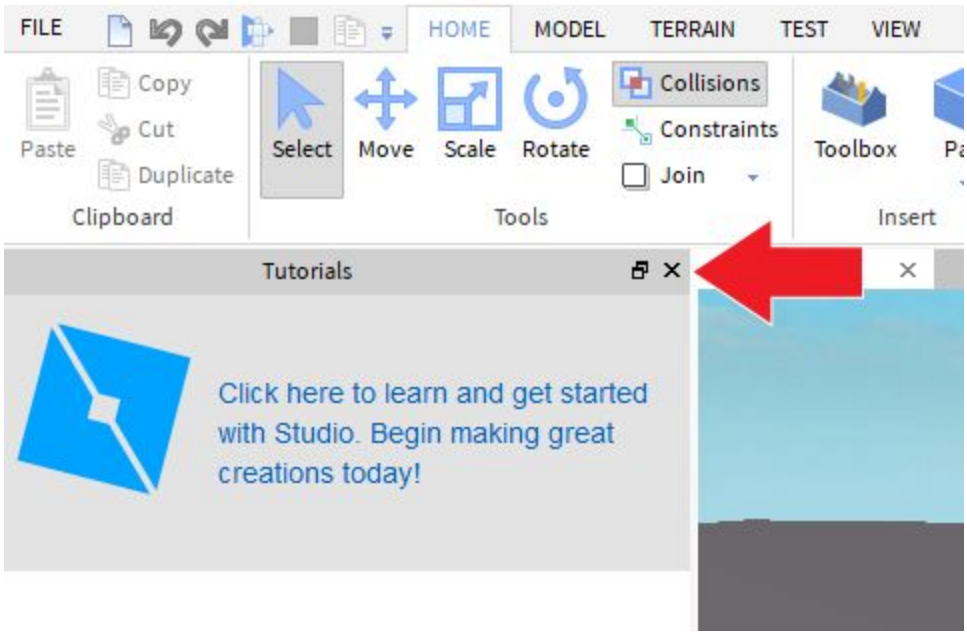
Customizing Your Workspace

When you first open up Roblox Studio, it will most likely look like the picture below. You'll want to close a couple of windows so that you can better follow along with the tutorials and have more room to work on your game. You can always open these windows again later.

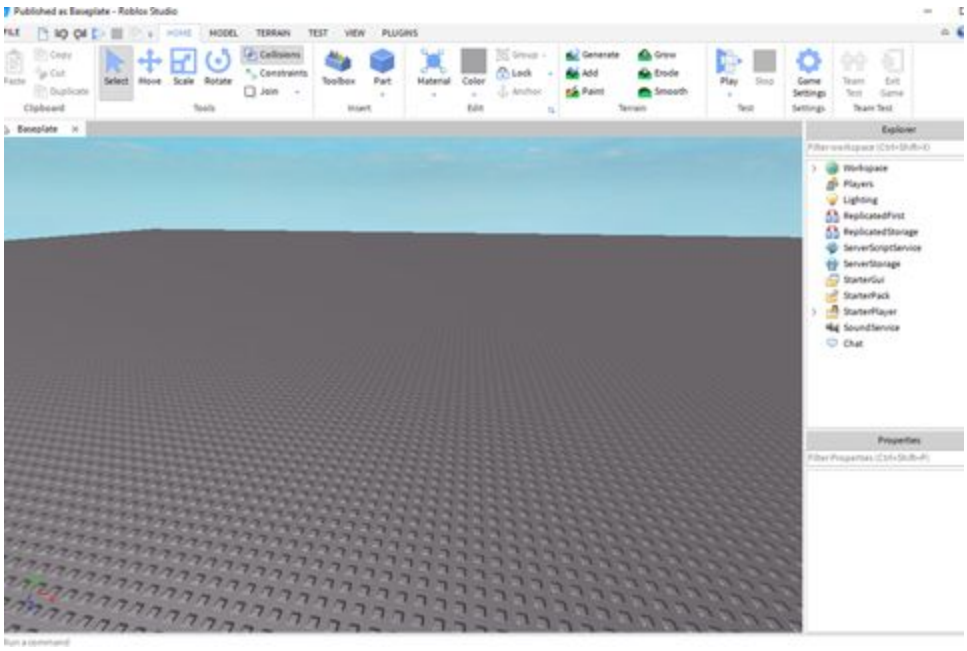
1. Close the **Toolbox** by clicking the **X** in that window



2. Close the Tutorial window.



Your workspace should now look like this.

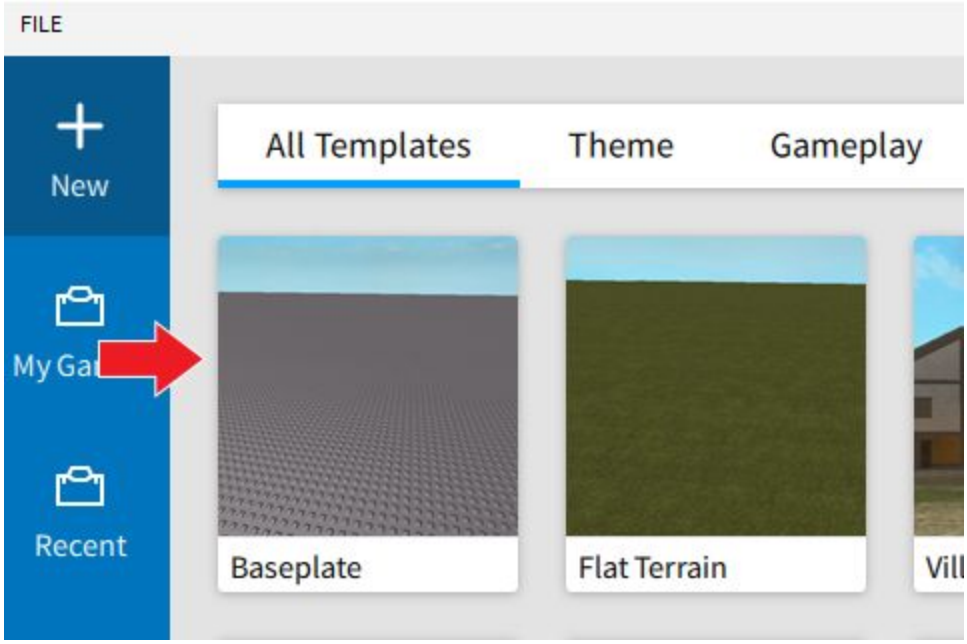


Bringing Windows Back
If you want to reopen a Window you closed, go to the **VIEW** tab and click on the name of the window you want to open.

Creating a New Project

Now that you know what an obby is, you can begin creating your own. Start from a brand-new empty project file.

1. Click the **X** to exit out of the Obby template if you haven't already.
2. Relaunch Roblox Studio.
3. Single-click the **baseplate** template.

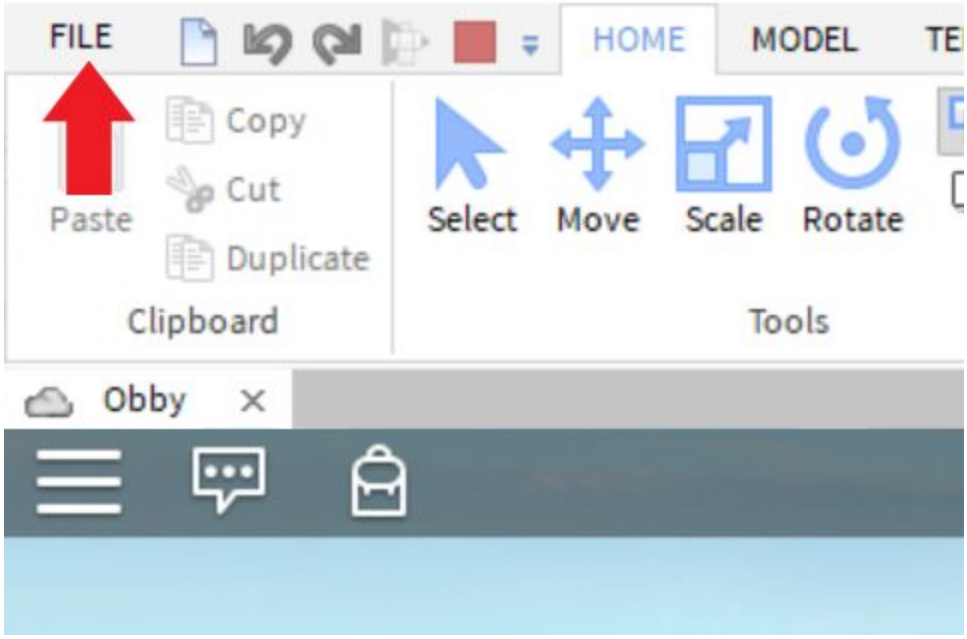


Saving Projects

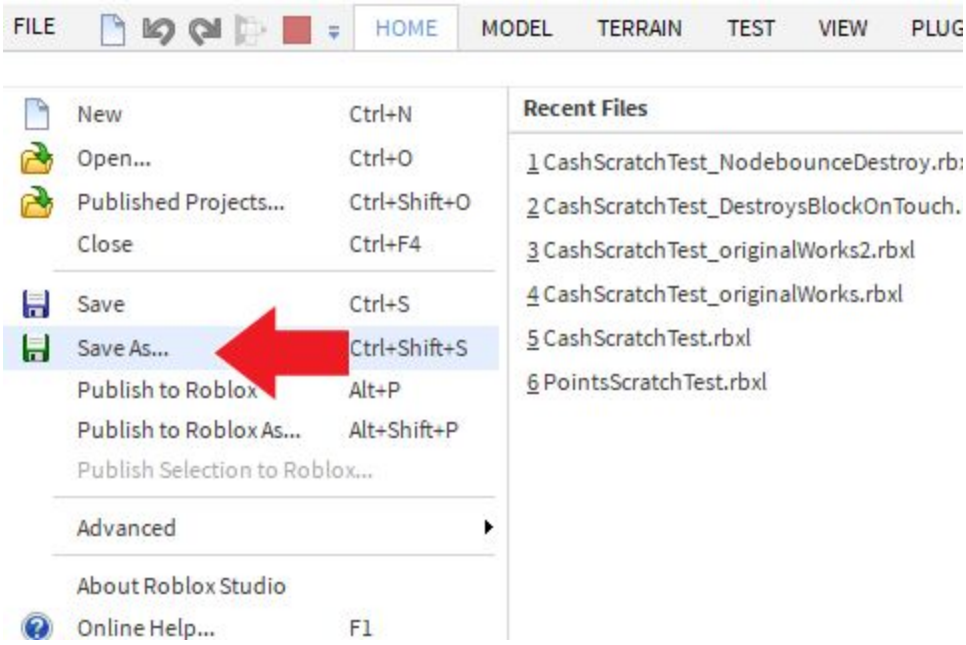
Whenever you are working on a game, **save every 10 minutes**. That way if there's a sudden event like an alien invasion or a power outage, at least you haven't lost much work.

Save your work

1. In Roblox Studio, click **FILE** in the upper-left corner.



2. Click **Save As...**



3. Select where you would like to save the files.

Teaching Tip
• Before running the class determine if you want students to create their own folders or if you will set up folders for them. • Visually walk the students through where you would like them to save their files

4. Name your file **FirstnameObby_01**.

Teaching Tip
Before moving on, confirm every student in your class has the file named and saved appropriately. You can walk around the class if it is small enough, or have students check each other's work. Drilling home good saving practices early will prevent upset students with lost work later.

Save Different Versions

Whenever you make new versions of your save file, change the number at the end of your file name. This way if something goes wrong with your file you can go backwards to a version where everything is ok.

Even professional game designers lose work once in awhile. Be prepared and it'll be easy to get going again.

Opening Your Files

Roblox Studio creates .rbxl files in the folder you selected.

- Double-click your file to launch it in Roblox Studio.

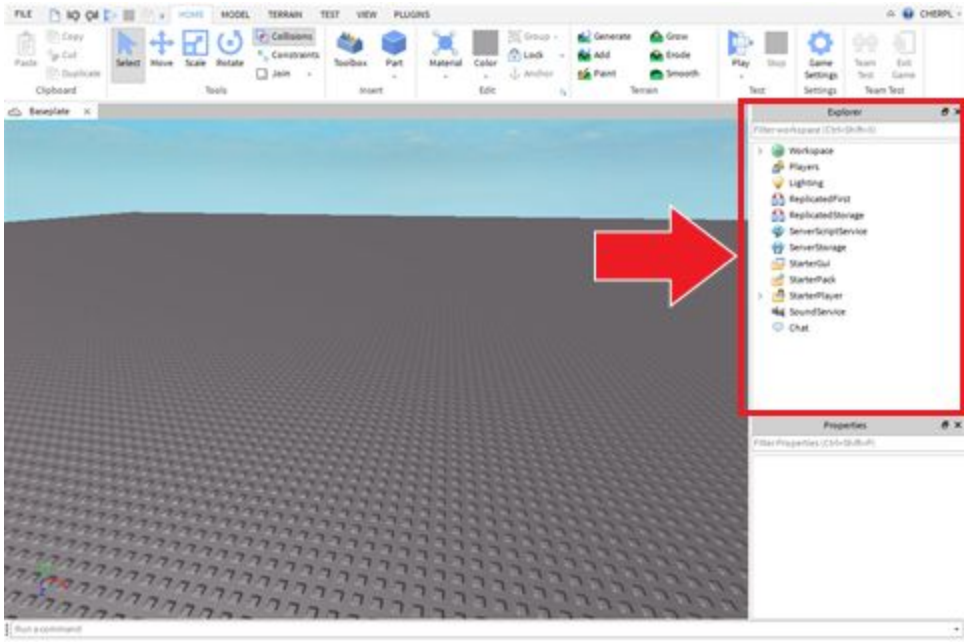
Finding Lost Files

Studio will save a temporary backup of your work every so often. If for some reason you can't find your file, go to:

1. FILE > Advanced > Recent.
2. Open your file and resave it someplace you'll be able to find it.

Using the Explorer

The **Explorer** window lists all the objects within your game. You can use the Explorer to select and work with parts in your game even if you can't find them in the 3D view.

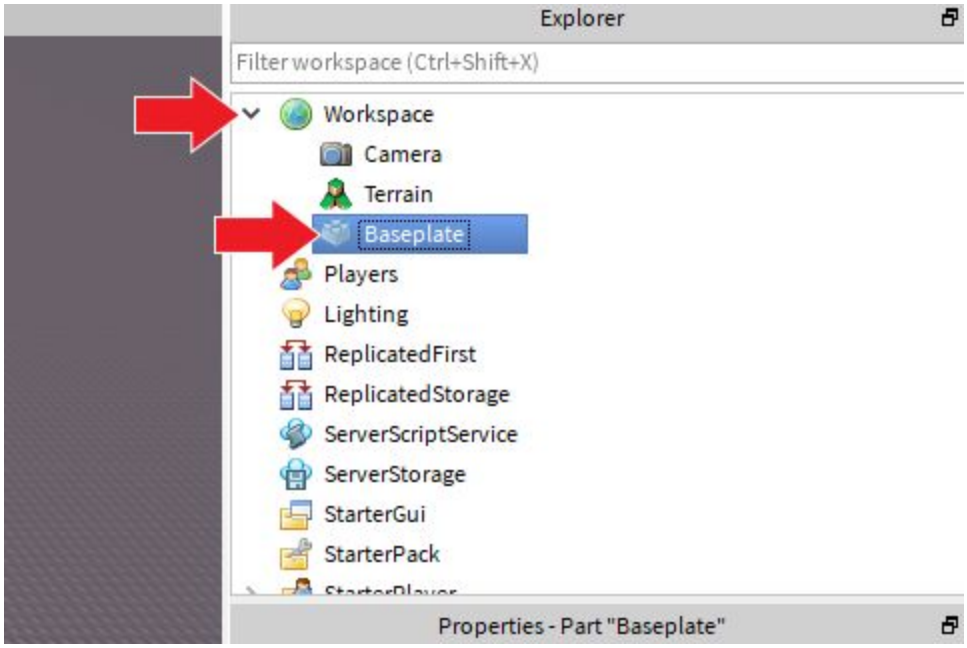


Delete the Baseplate

If you start building your obby above the baseplate, your player will just fall harmlessly onto the baseplate rather than dying when they miss their jump. You'll need a completely empty world to start building your Obby.

To delete the baseplate:

1. Click the arrow next to **Workspace** in the Explorer window.
2. Select **Baseplate**.
3. Press **Delete** on the keyboard.



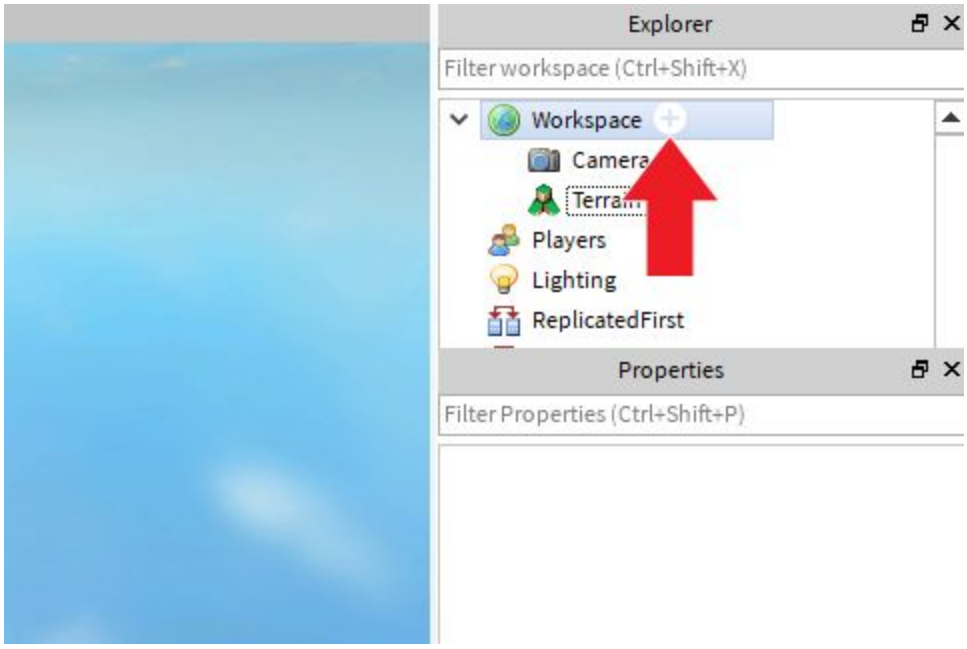
Teaching Tip
By starting with a blank space, students better learn how to manipulate camera and creation tools by adding and placing blocks themselves. Once they learn tools such as terrain creation, it's difficult to get students to go back to the basics of blocks.

Creating a SpawnLocation

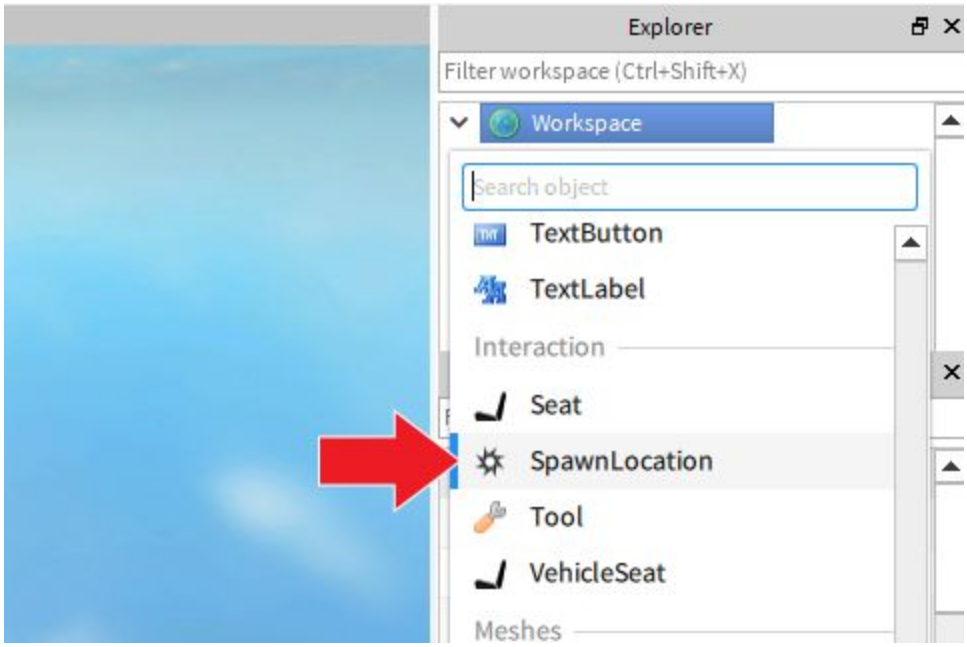
Where a player appears in the world at the start of the game or after dying is called the **SpawnLocation**. Without a designated place for your player to start, they might spawn in the middle of nowhere and fall to their doom.

Create a SpawnLocation

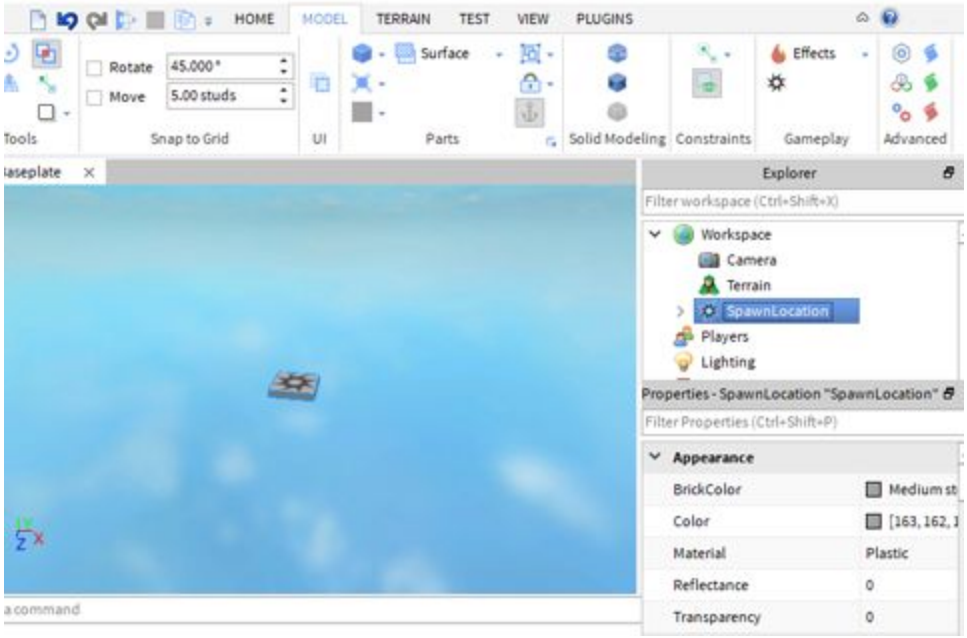
1. In the Explorer window, hover over Workspace and click the circle **+** button.



2. Scroll down the drop-down list until you find **SpawnLocation** and click on it.



The SpawnLocation will be created at the exact center of your camera view.



Teaching Tip

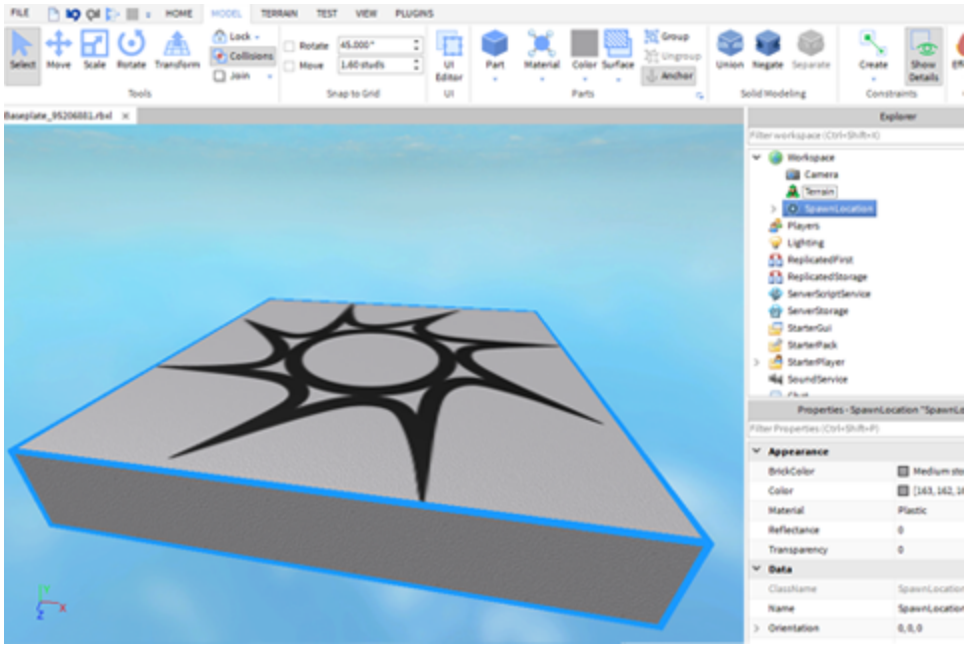
Creating the default spawnLocation first prevents students from getting lost in 3D space as they build and playtest in the next few lessons. The spawnLocation acts as a landmark for students as they learn to control the camera and place blocks.

Focus on the SpawnLocation

If your parts are too far away from the camera, they can be really inconvenient to work with. Use the camera controls and hotkeys to get a better view of parts you are working with.

To focus the camera on the SpawnLocation:

- Select **SpawnLocation** in the Explorer.
- Press **F** to focus the camera on the selected part.



Moving the Camera

Now that you have an object in your game, click in the 3D view and move the camera around to get a better view.

Camera Controls

- Forward - W
- Away - S
- Left - A
- Right -D
- Down - Q
- Up - E
- Turn Camera - Right Mouse Button
- Zoom in and out - Scroll Wheel

Camera Not Moving?
If the camera doesn't move, first click inside the game editor.

Playtesting

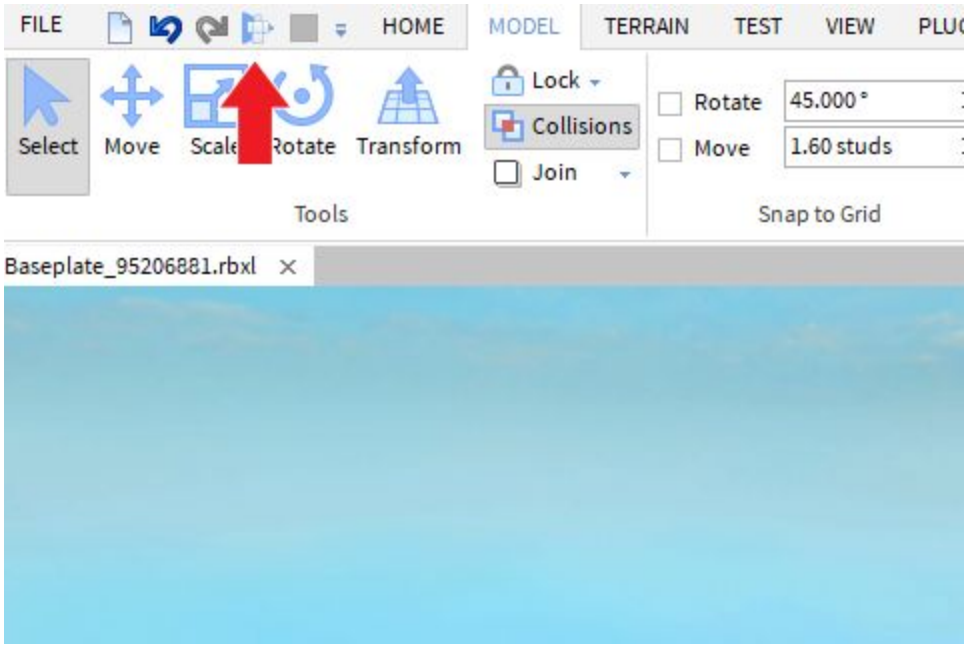
Playtesting is the process of you or a peer playing a game to make sure everything works and figuring out how to make it even better. The bigger the game, the more likely it has gone through many, many hours of playtesting. Playtest your game whenever you make changes.

When you playtest:

- Make sure your game works, particularly changes you just made.
- Look for areas that can be improved.

Playtest Your Game

1. Save your game. Remember to change the file name.
2. Click the **Play** button.



Control the Camera In-game

Camera controls in the game are similar to when you are in the editor.

- Use WASD to control the player.
- Spacebar to jump.
- Right-click and drag to move the camera.

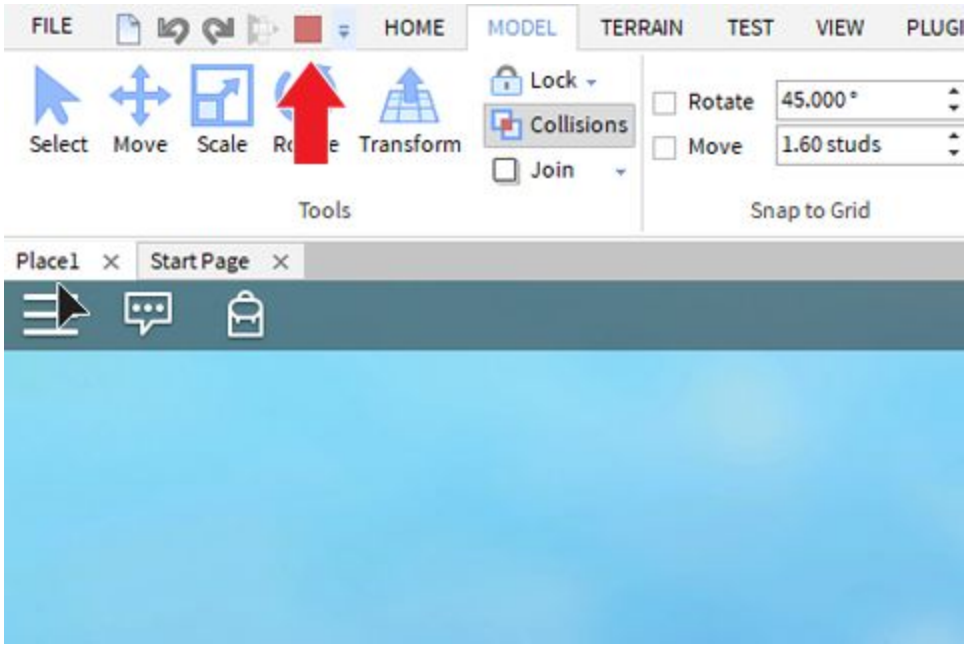
Not much there yet huh?

Teaching Tip
This should only take a minute. You can encourage the kids to run off the edge of the SpawnLocation to their death.

Stop Playtesting

To stop playtesting:

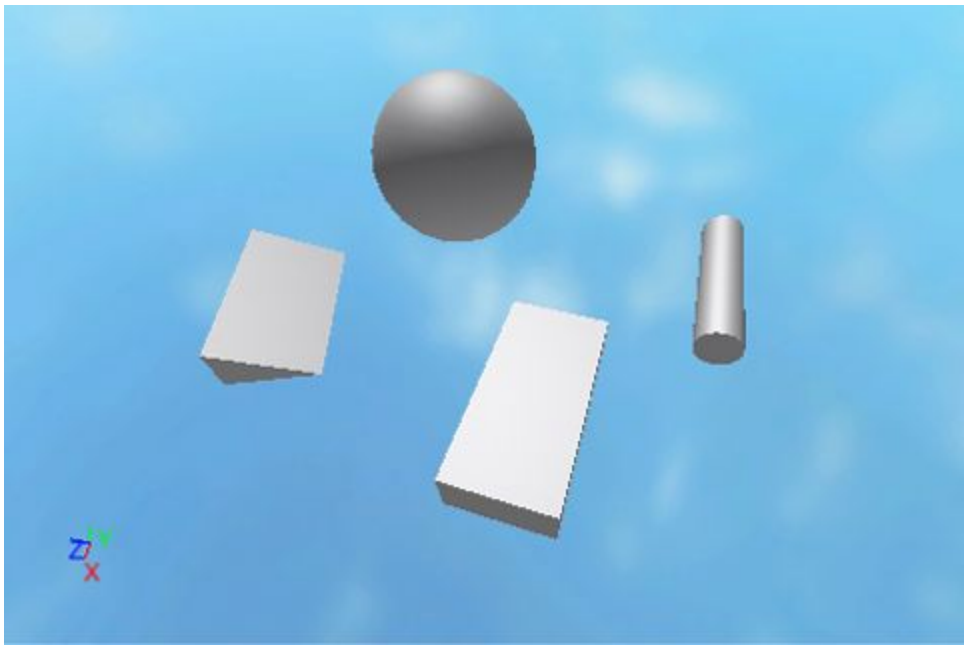
- Click the red-square.



Don't Make Changes in Test Mode
Any changes you make while in Play mode won't be saved. You'll have to do them all over again when you go back to editing.

Adding and Moving Parts

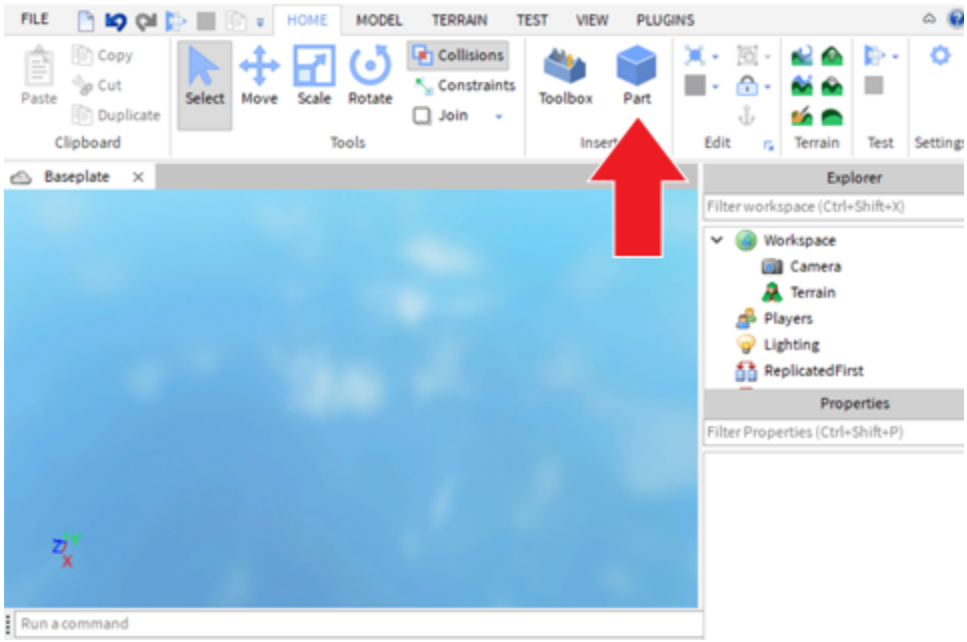
Parts are the building blocks of your game. You can use them to build environments and models for your game.



Add A Part

- In the **Home** or **Model** tab, click **Part**.

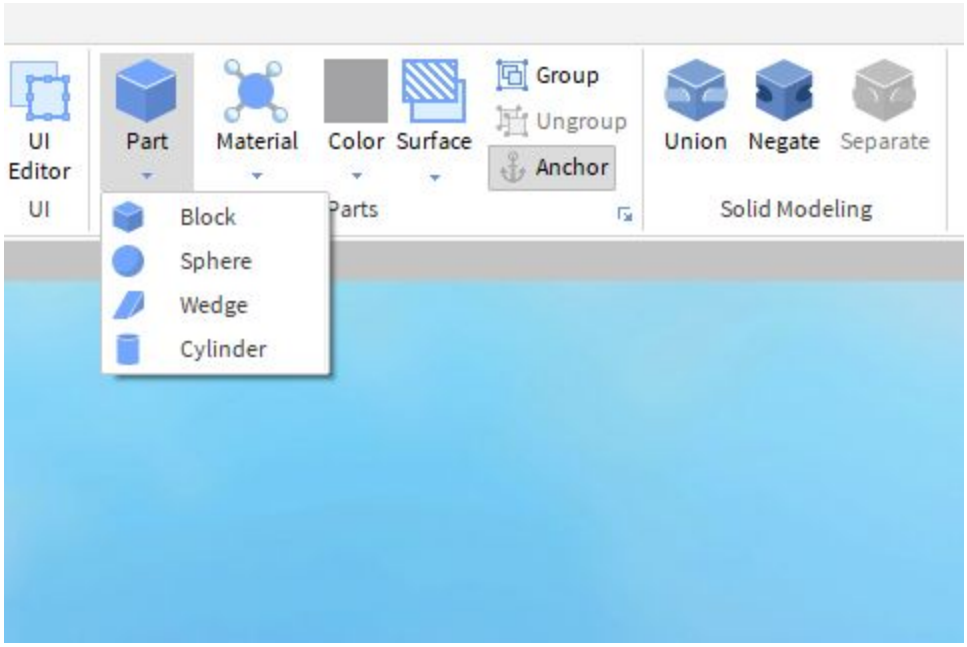
A part will appear at the exact center of your camera view. If you want more control over where the part appears, zoom in your camera and center it on where you want the part to appear.



Change the Part Type

There are four different kinds of parts; Block, Sphere, Wedge, and Cylinder. You can change which part type the part button creates.

- Use the drop-down menu beneath Part and select a new part type to create.

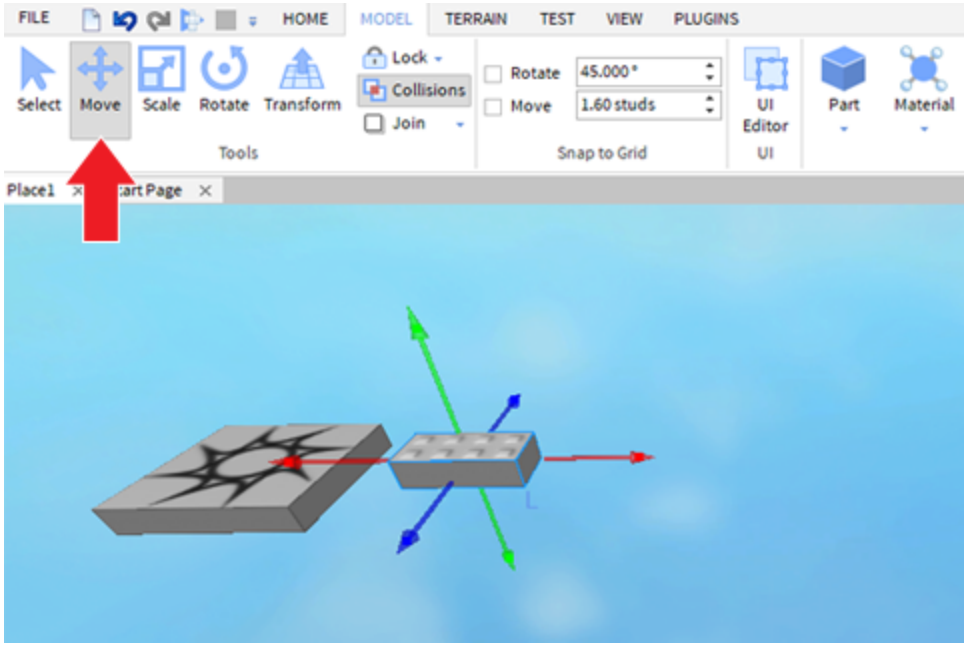


Move the Part

To move the part where you would like it to go:

1. Select the part.
2. Use the camera controls you learned earlier to get a good view.
3. Click the **Move** tool.
4. Drag the arrows to move the part around.

Tool Tip
Where the selected part comes into contact with another part, you will see a white outline.



Changing Part Snapping

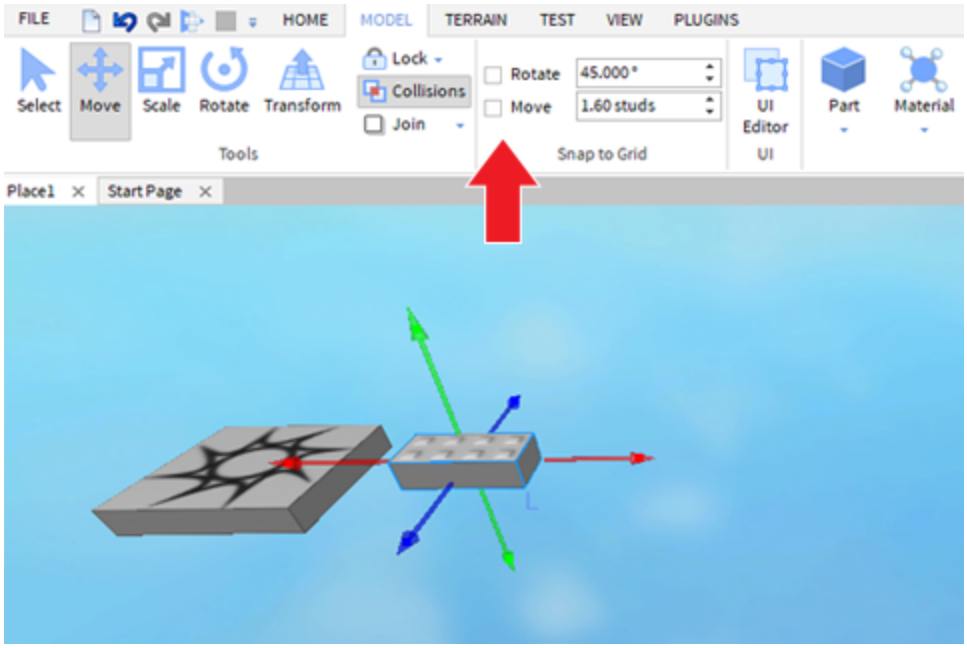
Snapping is the amount a part will move, scale, or rotate at a time. If you notice a part moving ninety degrees at a time, this is because of snapping. Snapping is useful when creating items that need to be placed exactly, like the walls of buildings.

Change Snap Amount

- Select the **Model** tab.
- Use the arrows next to **Rotate** or type in a new number.

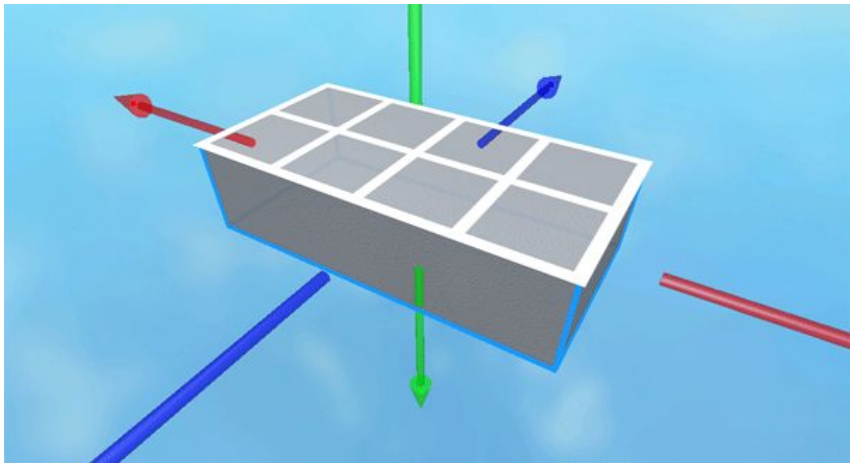
Turn Off Snap

- Turn off snap by unchecking the box next to Rotate or Move.



Measuring in Studs

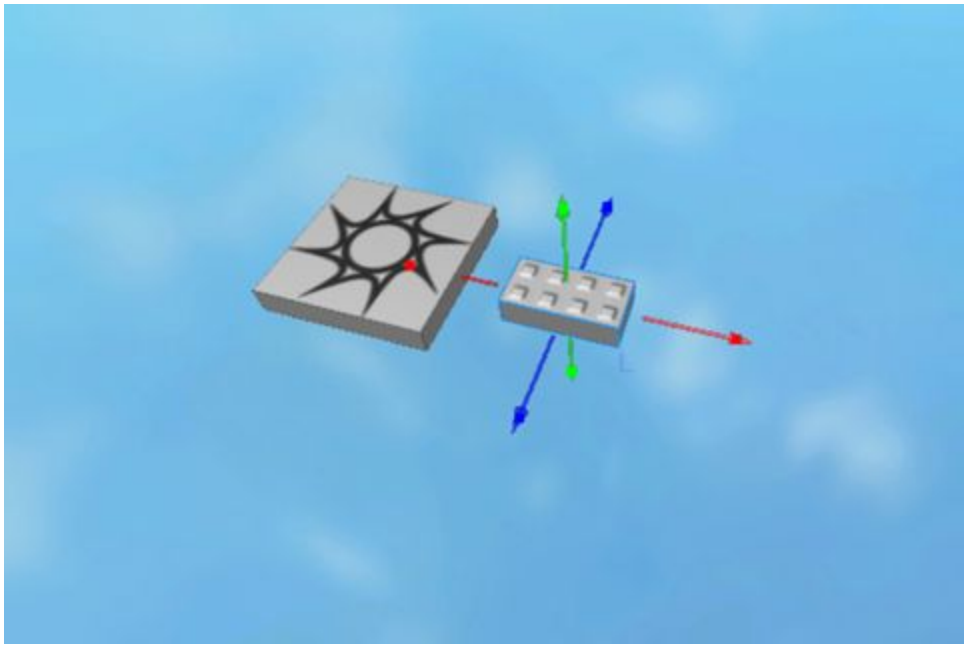
In Roblox, **studs** are the basic unit of measurement. Below, the white grid shows the size of each stud. If you set **Move** to **1.00 studs**, parts will move by a one full stud each step.



Creating the First Player Jump

An obby usually starts out with a simple jumping puzzle. As a good game designer, you want to make it easy for new players to get started. If you make it too hard right away, players might just quit instead of continuing to play.

- Move the part slightly away from the SpawnLocation to create an easy jump.
- Don't test your game yet.



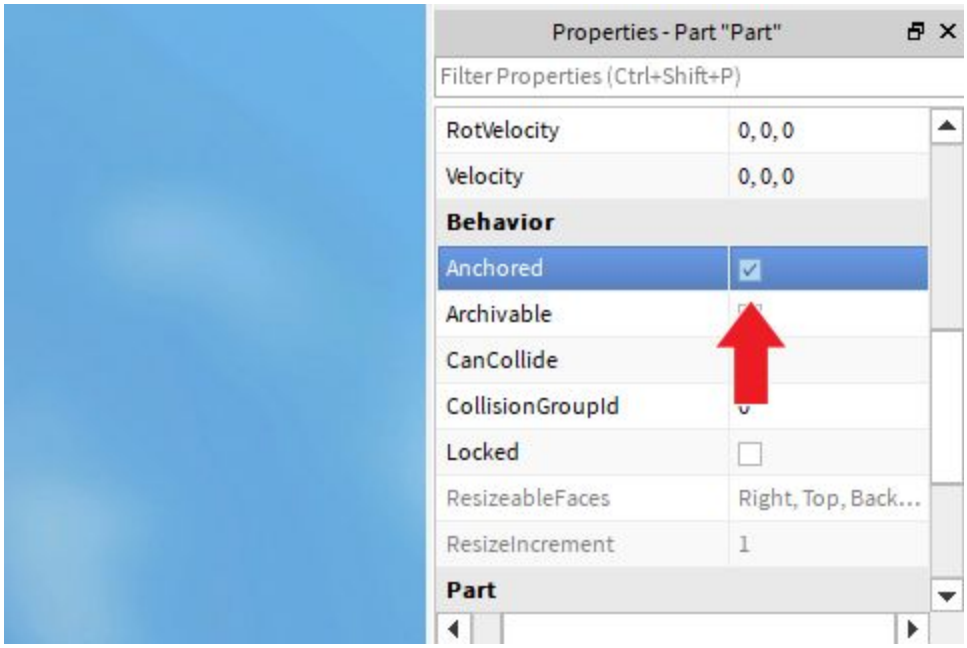
Press F if Your Parts Are Far Away
If your parts get far away from you, don't forget you can bring it back in focus by selecting the part and pressing F.

Anchoring Parts In Place

If you playtest your game at this point, you'll notice any parts you've added (other than the SpawnLocation) will fall. **Anchoring** will stop parts from falling. They'll even stay in place when players and other objects bump into them.

To anchor parts:

1. Select the part you would like to anchor.
2. Go to the **Properties** window.
3. Scroll down to **Behavior**.
4. Check **Anchored**.
5. Save & playtest your game.



Scaling and Rotating Parts

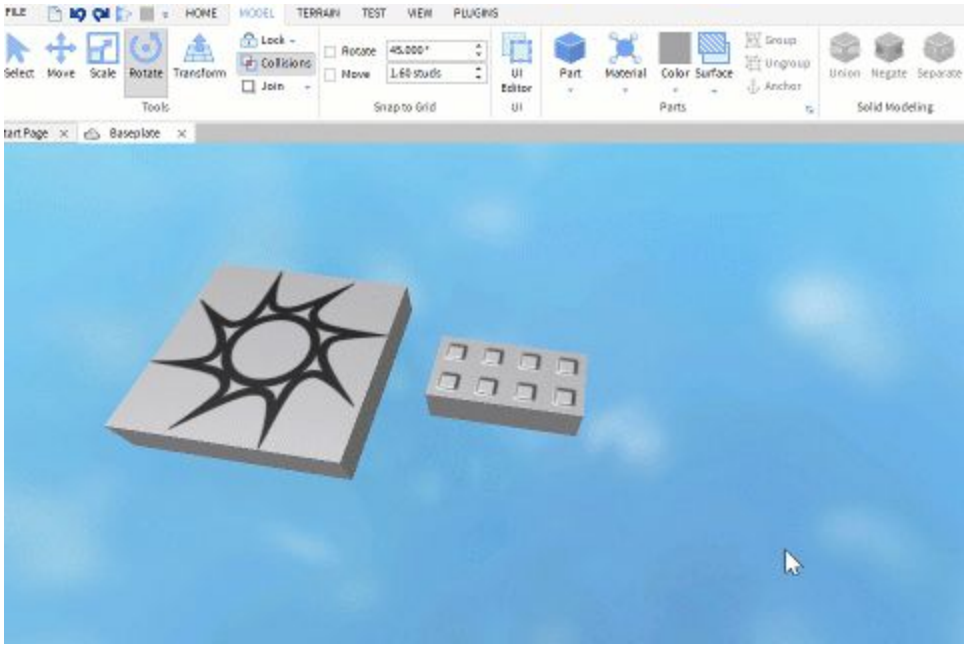
To change the size of your part:

1. In the Home tab, click on the **Scale** button.
2. Drag the spheres to change the size of the block.

To rotate a part:

1. Click the **Rotate** button.
2. Drag the sphere to rotate the part.

If you are having trouble rotating or moving a part, make sure it's not about to intersect with another part.



Making Things Easier
• If the part is scaling or rotating in steps, you may need to adjust or turn off **snapping**. • If the part is being blocked from moving or rotating into another part, turning off **collisions** might make things easier.

Add Another Jump

This is the very beginning of your game, so you don't want the jumps to be very difficult yet. You want the player to think your game is fun and keep playing. As you build, experiment with rotation, scaling, snapping amounts and turning snap off.

- Add two more parts to your game
- Save and test

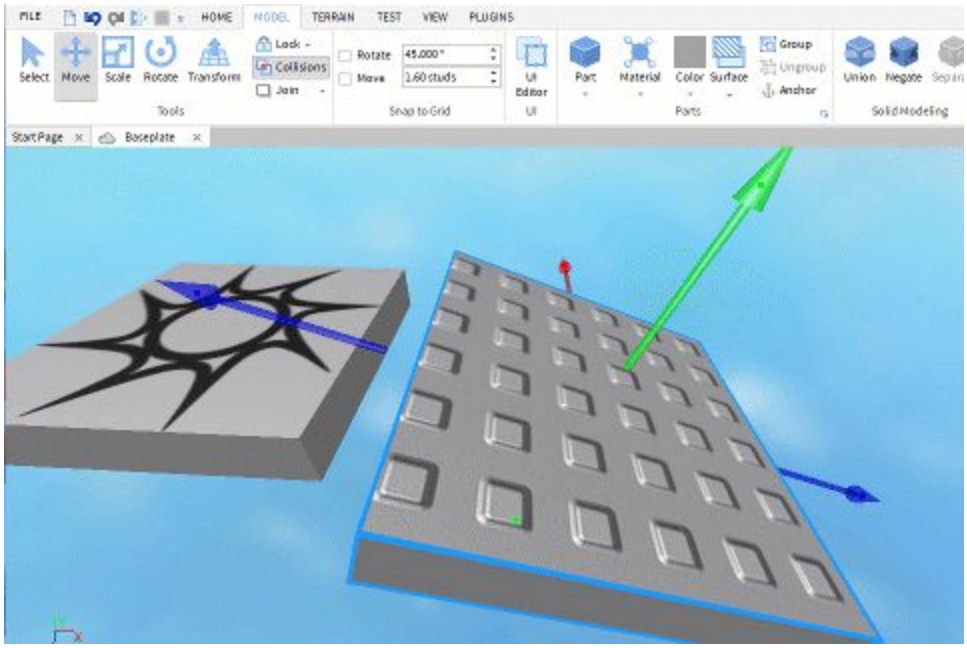
Don't Forget to Anchor
Did your parts fall down? Don't forget to anchor them!

Locking Parts

Sometimes you might find that a part is getting in the way of you selecting another part. To make it so that a part can't be moved, you can **lock** it in place.

1. Click the **lock tool**
2. Select lock or unlock from the drop-down menu
3. Click on the part you would like to lock (or unlock)

Once you lock the part, you will no longer be able to select it.



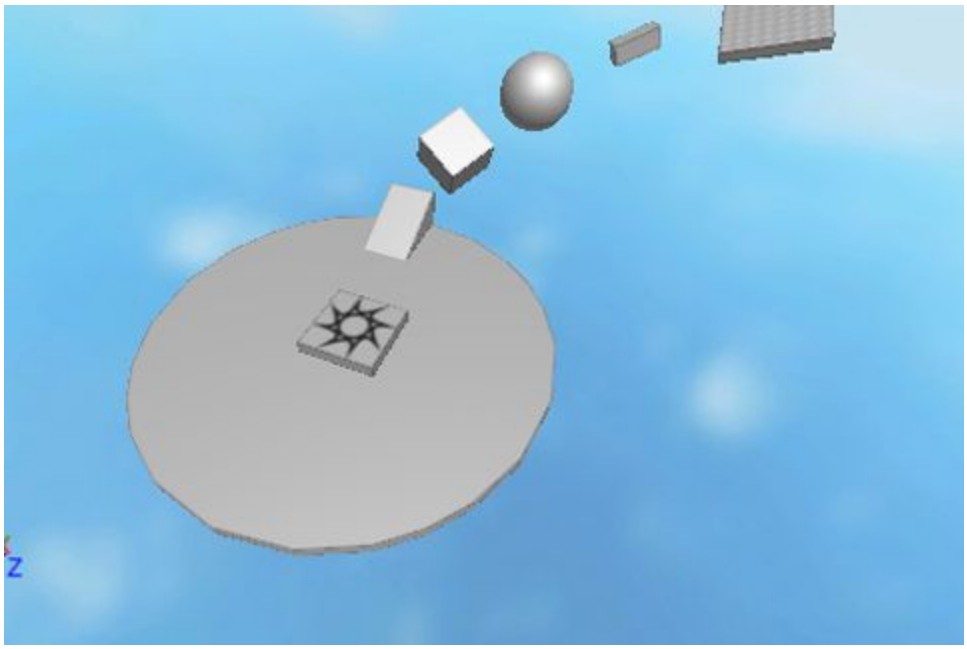
Finishing Your First Level

Create a Starting Area

The starting area is the first thing a player sees when they land in your game. They're a place to introduce new players to your world, and begin setting theme for your game. Think of the last few games you played. What did the starting area look like? What did they make you think about the game?

Starting areas can be as simple as one big part to create a floor, or as fancy as you'd like.

- Create a starting area by placing a larger part beneath your spawnLocation.



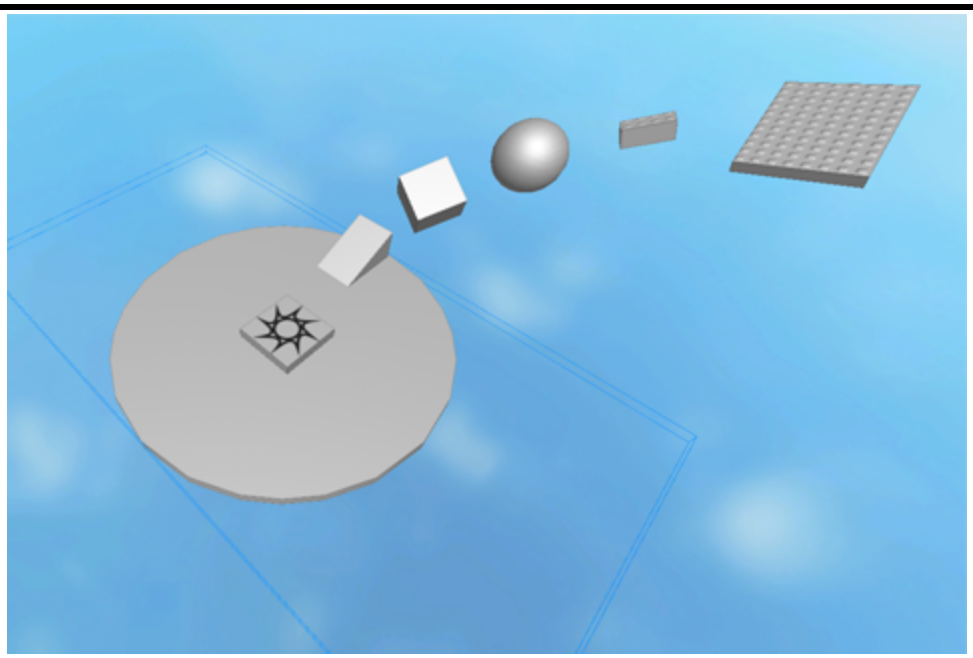
Teaching Tip
Depending on your time constraints, you can give them just a minute and have them create a simple floor beneath the SpawnLocation

Design the Rest of the Level

- Add 4-5 parts of different sizes and shapes to create a jumping puzzle
- Remember to save your project often so you don't risk losing a lot of work.

Keep Testing
Remember to constantly playtest your game. Parts might not be lining up the way you think you will if you are only looking from one direction.

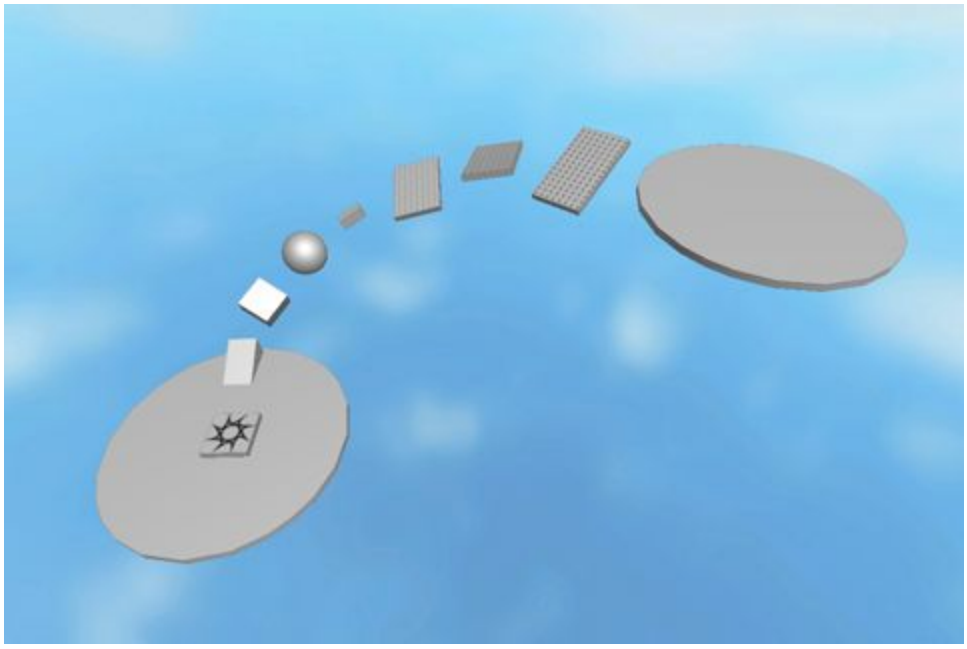
Teaching Tip
Give five to ten minutes for students to complete their first section of their first jumping puzzle. First level should be completed in a few minutes.



Create an End Zone

At the end of your first jumping puzzle, have a larger landing area for your players to take a break on.

- Create a floor at the end of your first set of jumps to act as an endpoint for that level and give players a place to rest.



Example file: DesigningAnObby_FinishingYourLevel_End.rbxl