Tree of cubes

Introduction

Learn how to resize objects in Blender by creating a simple tree of cubes.

What you will make

Here is how your finished piece will look:

What you will need

Hardware

- A desktop or laptop computer capable of running the Blender software

Software

- Blender (v2.73 or higher)

License

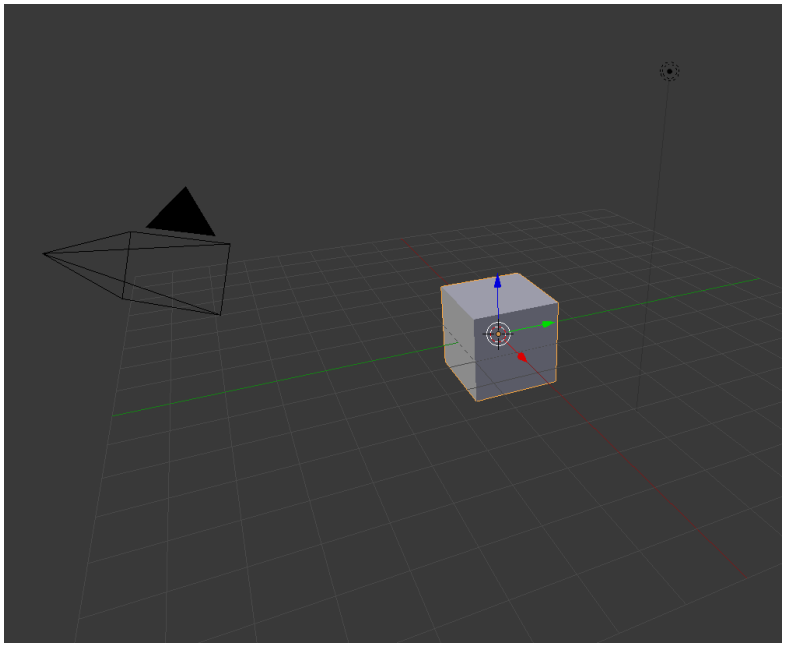
Step 1: Selecting objects

When you open Blender, you will see a splash screen. The splash screen of Blender 2.76 looks like this:

For this tutorial we won't be needing the splash screen.

Activity Checklist

- [ ] Click to the right, and the Splash screen will disappear.
  Now you'll see the 3D view. In the 3D view you have three objects: the lamp, the cube, and the camera.

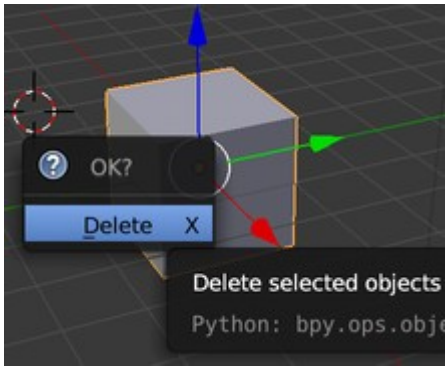


You can select the objects by right-clicking on them. An orange border appears surrounding the selected object. In the image above, the cube is selected.

- [ ] Right-click on the camera, the cube, or the lamp. If an object is correctly selected, there will be an orange border around it.

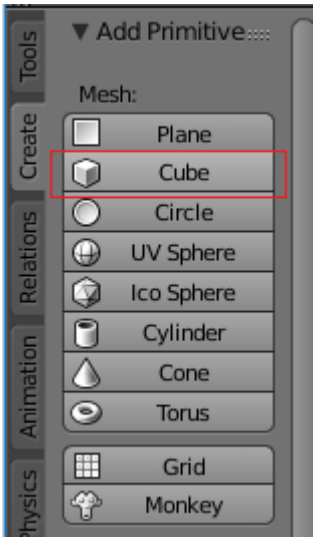
- [ ] Let's see how we can add objects. We'll remove the cube and add it again. Select the cube with the right mouse button. Check for the orange border.

- [ ] Press `x`. You'll be asked whether you want to delete the object.



- [ ] Select **Delete** or press `Enter` to delete it.

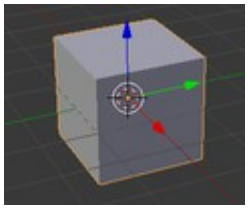
- [ ] To add a cube, go to the left-hand panel, called the **Toolbox**, click on the **Create** tab, and then select **Cube**.



A cube will appear in the 3D view. Now we will try to create a tree out of cubes.

Step 2: Create a tree trunk

To create a tree trunk, we need to resize the cube. For this we'll be using the blue, green, and red handles.



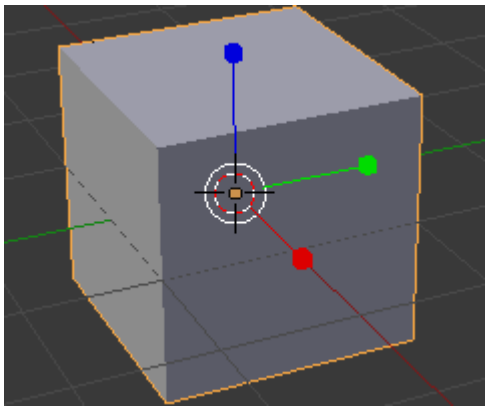
Using these handles you can move the cube along the x-axis, the y-axis, or the z-axis. Each handle has an arrow pointing into the direction of its axis.

You can also change what these handles do. For this you can use the panel at the bottom of the 3D view.

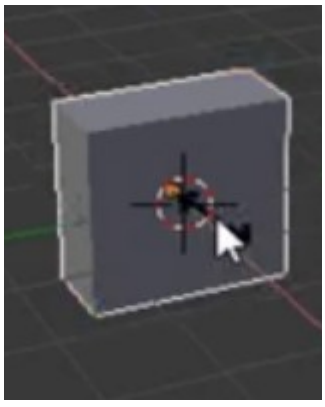
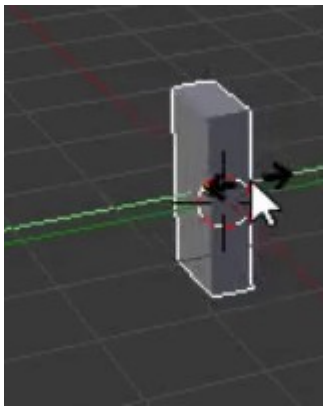
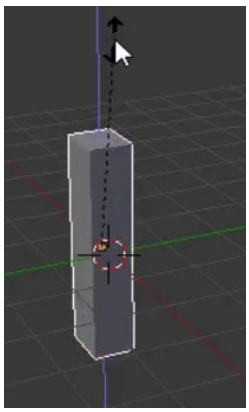
Instead of arrows, we can have cubes at the end by selecting the cube end from the menu. The cube ends allow you to squeeze and stretch the cube into whatever shape you want it to be!

Activity Checklist

- [ ] Select the cube end from the menu. The handles should then have cube ends.



- [ ] Squeeze and stretch the cube so that it starts to look like a tree trunk. For example:

- [ ] Rotate the view around to see whether the tree trunk looks okay, and if not, squeeze and stretch it a bit more.

Step 3: Add branches and leaves

Let's add some branches and leaves. For this, we will need to add some more cubes as our leafy branches.

Activity Checklist

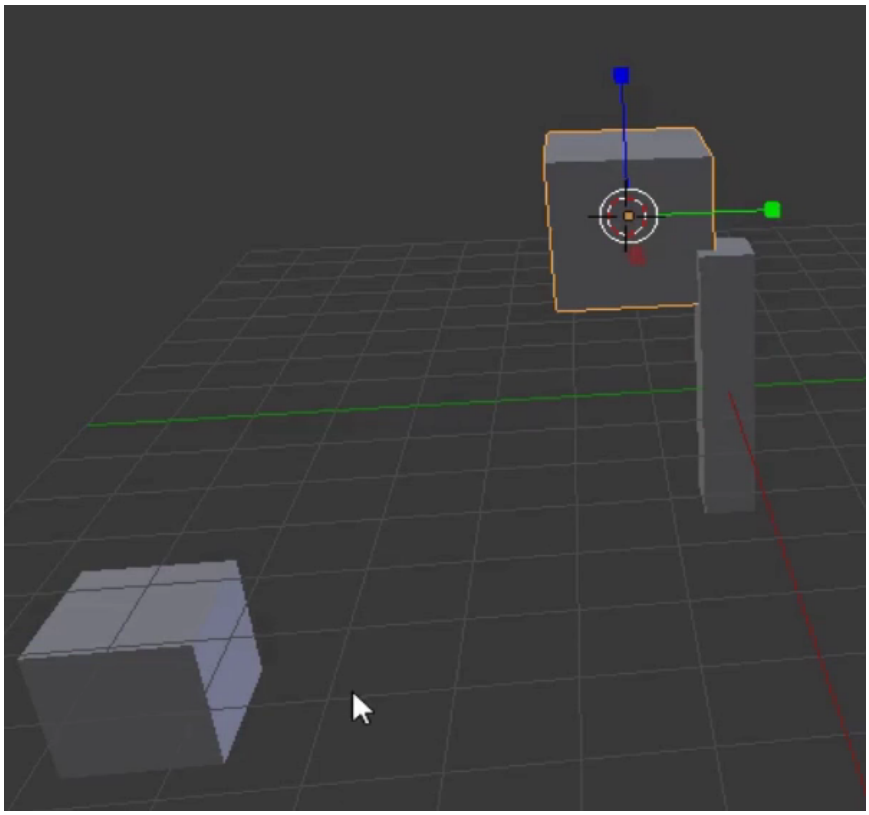
- [ ] First, notice there is a small circle in the cube.

If you left-click somewhere in the 3D view, the circle will be placed at that location. This is the 3D cursor. When you add an object, the object will be placed at the location of the 3D cursor.

- [ ] Make sure your mouse is somewhere inside the 3D view and left-click — close to the tree trunk might be handy. Notice that the 3D cursor is at the position where you clicked.

- [ ] Add a cube by selecting **Create** > **Cube** from the **Toolbox** on the left-hand panel.

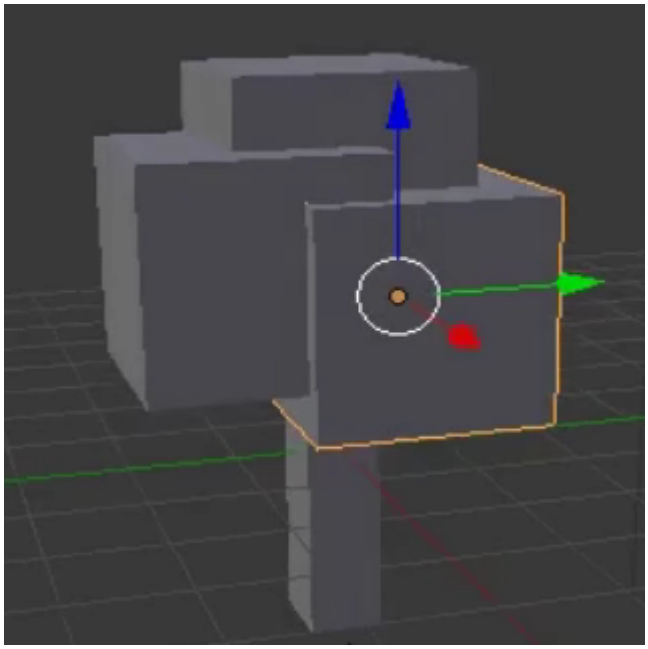
- [ ] Click somewhere else in the 3D view (but still close to the tree trunk) and add another cube. For example:



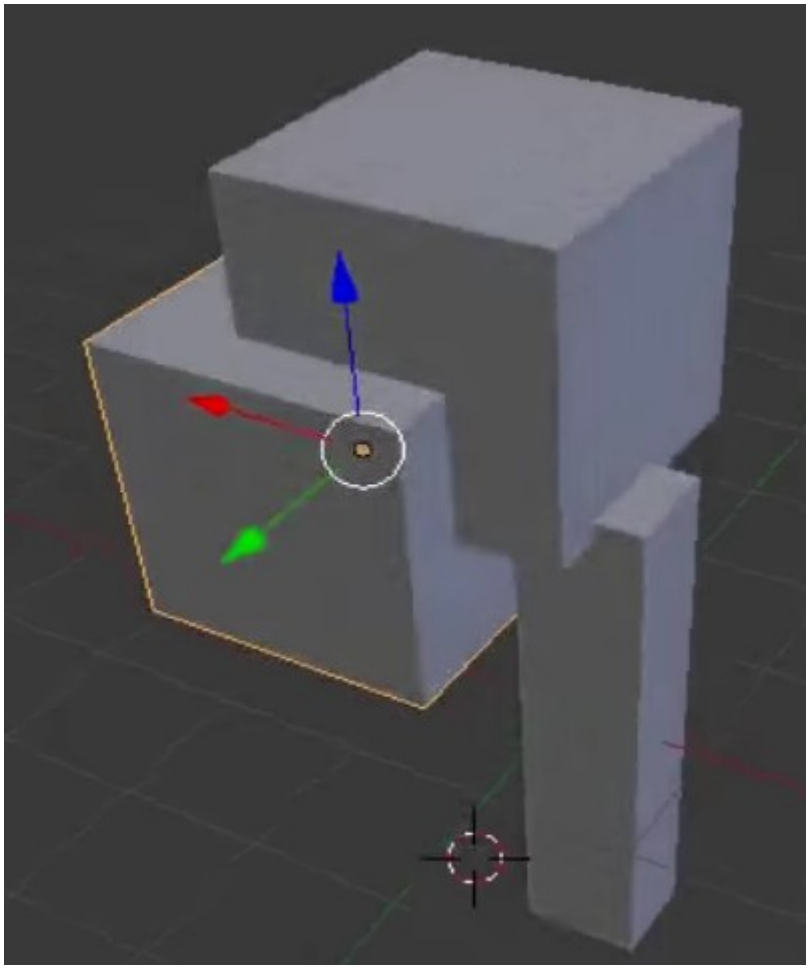
- [ ] Once again, click somewhere else in the 3D view and add another cube. Now there are three cubes in the 3D view. You can use the blue, green, and red handles again to move the cubes to the top of the tree trunk to make it look like a tree.

- [ ] From the menu below the 3D view, select the arrow ends so that you can move the cubes.

- [ ] Move the cubes on top of the tree trunk in a tree-like arrangement. For example:



- [ ] Rotate the 3D view using the middle mouse button and check that the tree looks okay from all angles, adjusting where necessary. For example:



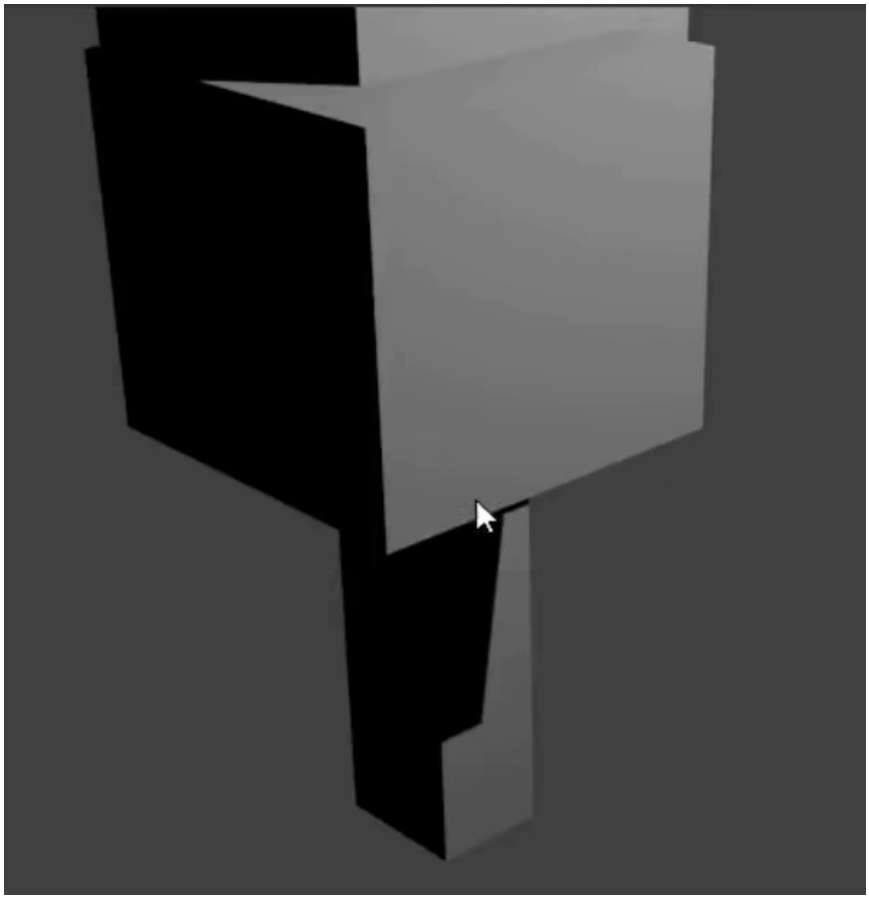
The image above shows that the cubes are not positioned properly on the tree trunk.

Step 4: Render

To see how your tree looks, you need to see it from the perspective of the camera by rendering the image:

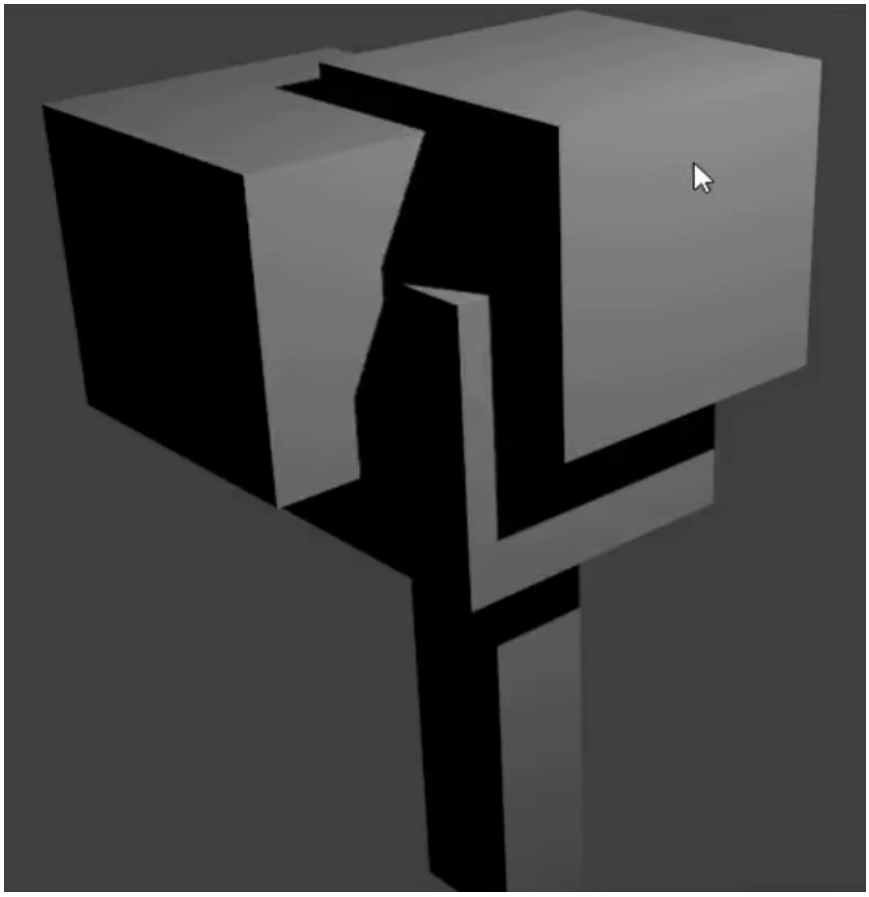
Activity Checklist

- [ ] Press `F12` or, if you're working on a Mac, `FN + F12`.
It could be that you don't see the tree properly, or perhaps it doesn't look very tree-like from the camera view. For example:



- [ ] Press `ESC` to exit the view.
- [ ] If the tree didn't look very tree-like, you might want to rearrange the cubes a bit.
- [ ] If your tree didn't fit into the camera's view, move the camera so that the tree shows up properly through the camera.

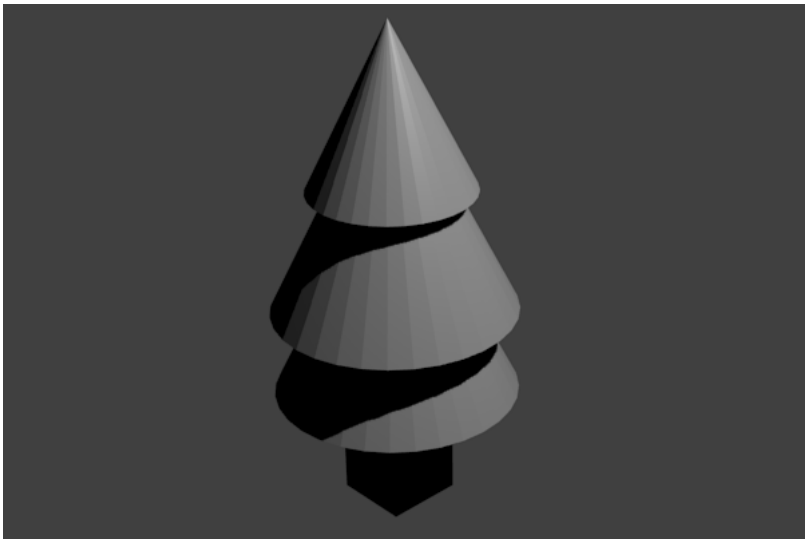
- [ ] Hit `F12` again or, if you're working on a Mac, `FN + F12` to see the rendered image.



You can also play around with the lamp to improve the lighting of your tree.

Challenge: pine tree

- Create a pine tree like this one:



- Add some apples to your tree.