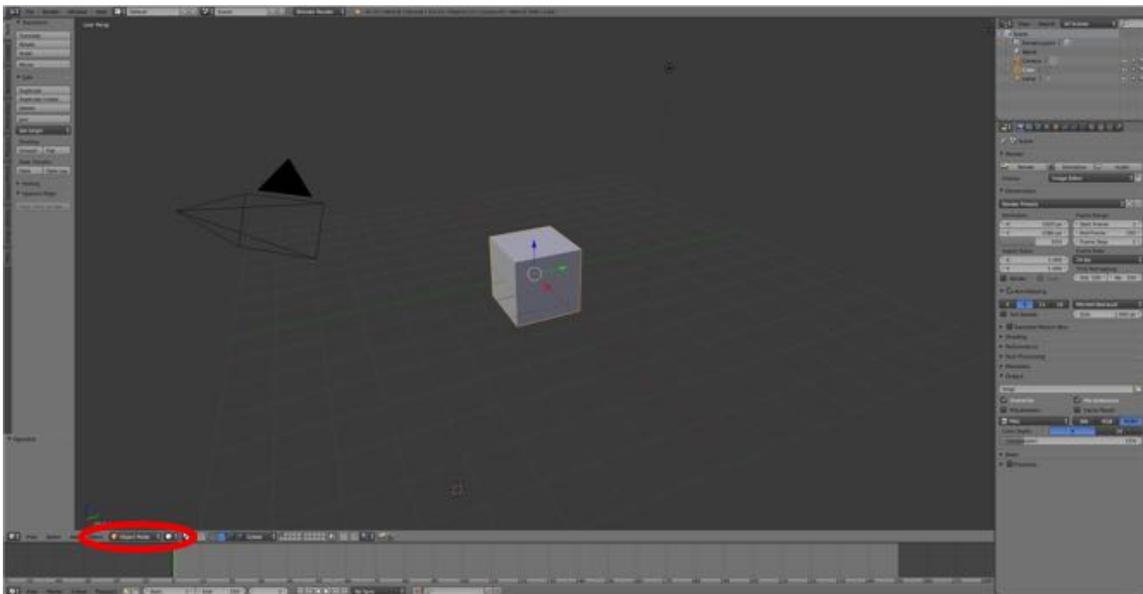# 3D Editor Selection and Navigation

Selection

Blender's 3D Editor has several modes for working with objects and their elements (vertices, edges and faces) but, initially, only two are needed to make Trainz assets, Object Mode and Edit Mode.

Object Mode

Blender opens with the default interface in Object Mode as indicated in the 3D Editor's header.

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Toggling between Object Mode and Edit Mode is as easy as pressing the **TAB-KEY**. Alternatively, one can press **CMD + 1-KEY** (not the number pad 1 key) for Object Mode and **CMD + 2-KEY** for Edit Mode.

Object Mode is for working with Objects (models or parts of a model).

In Object Mode, an object is selected when it is outlined in orange. In Blenders default interface the cube is selected as indicated by the orange outline. **RMB** clicking on an object selects it. RMB clicking on the camera or the lamp will select them in turn. Pressing the **A-KEY** deselected all selected objects. Pressing the **A-KEY** again will select all of the objects in the scene (i.e., the cube, camera and lamp). One object will be outlined in orange (the active object) while the other objects will be outlined in dark orange.

Video Demo (see website)

Edit Mode

In Edit Mode, pressing the **A-KEY** selects all objects but excludes the camera(s) and lamp(s).

A vertex (vertices), edge(s) or face(s) is selected by choosing **Vertex- Edge- or Face Selection Mode** in the 3D Editor's header.
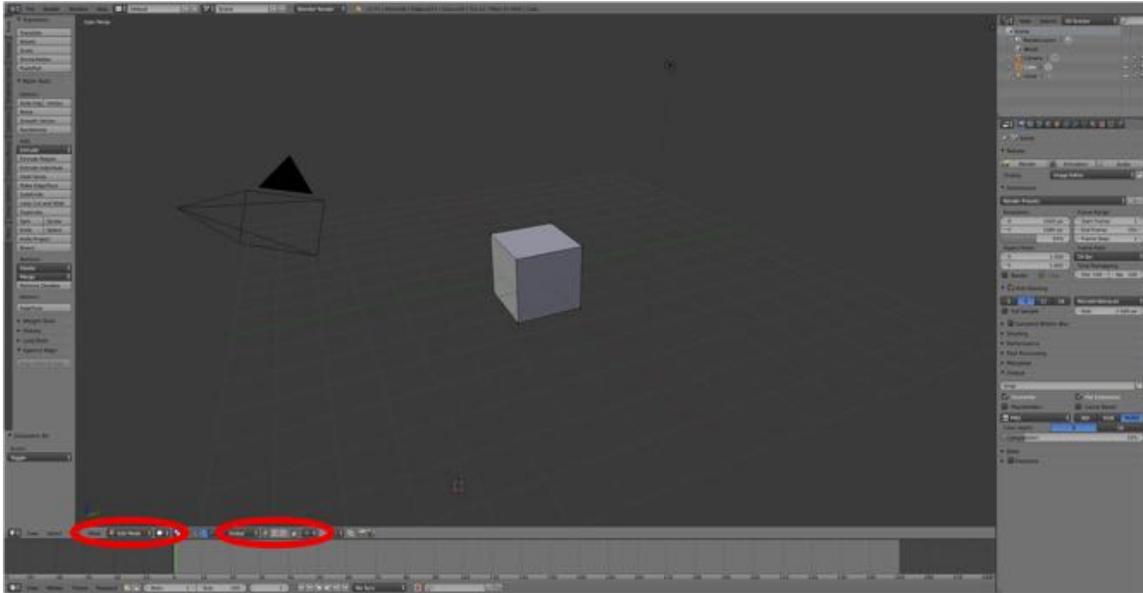
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The keyboard shortcut for changing selection mode is **CTRL + TAB-KEY**, which brings up a menu from which Vertex–, Edge-, or Face Selection Mode can be selected.

To select a vertex, edge or face hover the mouse over the element and press **RMB**. More than one vertex, edge or face may then be added to the selection by pressing **SHIFT + RMB**. Transformations such as moving, rotating or scaling may be then applied.

Video Demo (see website)

Navigation

3D Views

So far we have just been looking at the components of the scene you see when you first open Blender, i.e. the Default Scene. The cube that is present is not a good object to use to demonstrate navigation because it is the same on all sides. So lets remove it and replace it with one of the other **primitives** (preformed models) available in Blender. There are 10 primitives in all.

- Cube
- Cylinder
- Cone
- Torus
- UV Sphere
- ICO Sphere
- Monkey
- Circle
- Grid
- Plane
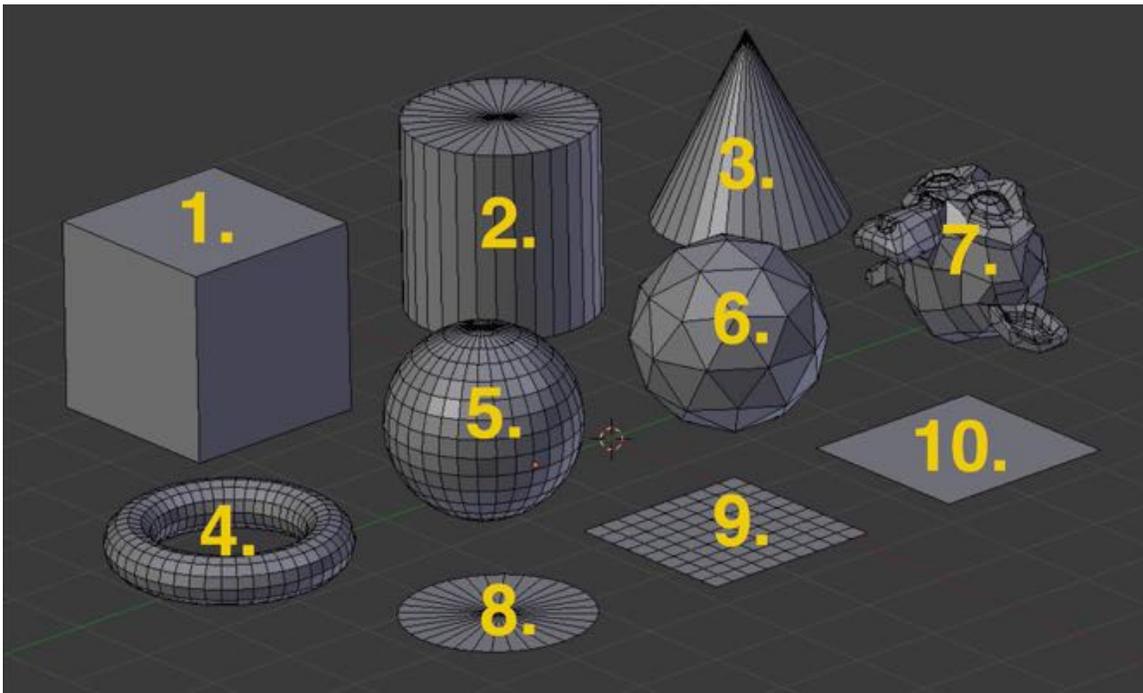
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We're going to use the monkey (affectionately known as Suzanne).

- **Open** Blender
- **Press** the **X-KEY** and from the Delete Popup Menu **select** "**Delete**" to remove the default cube.
- **Press SHIFT + C-KEY** to place the cursor (the little red and white circle with the crosshair) at the intersection of the X-, Y- and Z-axes.
- **Press SHIFT + A-KEY** and from the Popup Menu hover your mouse cursor over "**Mesh**" to get the Popup Submenu and select "**Monkey**".
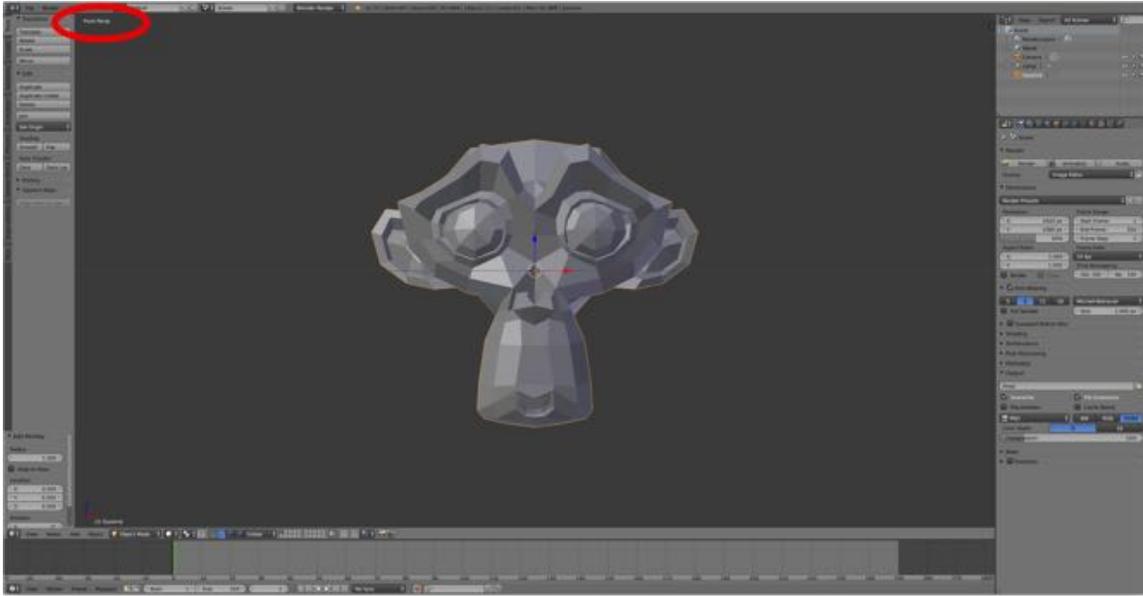
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Now your should be able to see Suzanne. You can press the
NUMPAD-PERIOD-KEY to zoom in.

At the moment we are kind of looking at Suzanne at a bit of an angle.
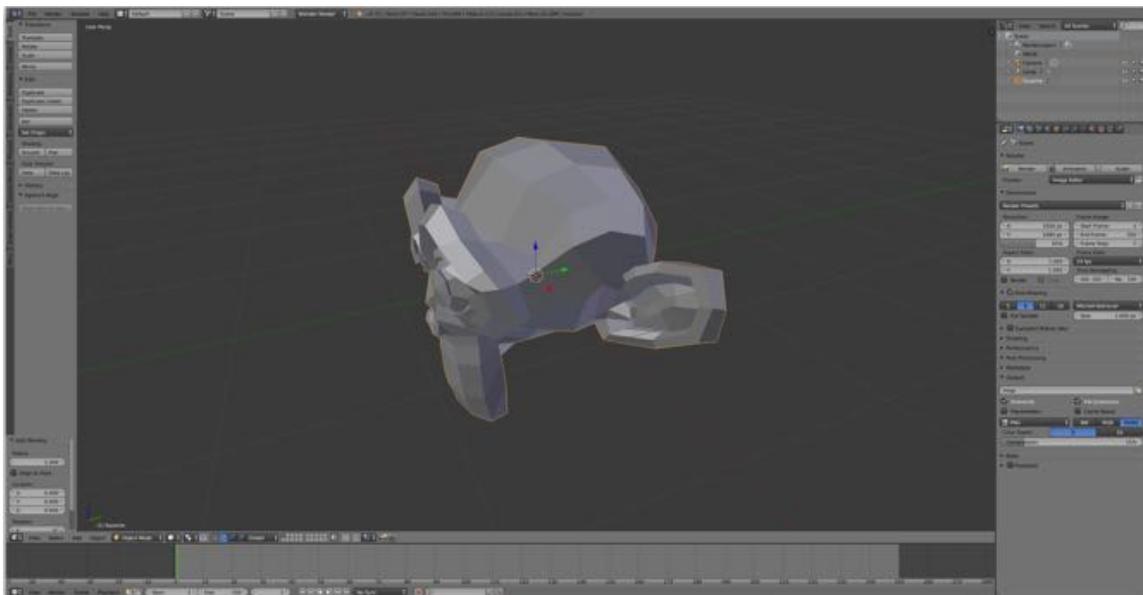
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• Press the **NUMPAD-1-KEY**. We are now looking at Suzanne from the Front View.

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• The following views are available in the 3D Editor:

NUMPAD-1 KEY	= Front View
NUMPAD-3 KEY	= Right Side View
NUMPAD-7 KEY	= Top View
CTRL + NUMPAD-1 KEY	= Back View
CTRL + NUMPAD-3 KEY	= Left Side View
CTRL + NUMPAD-7 KEY	= Bottom View

Which view you are looking at is indicated in the to left-hand corner of the workspace.

You can also toggle between **Perspective (Persp) View** and **Orthographic (Ortho) View** using the **NUMPAD-5 KEY**. Normally we view thing in perspective view. In perspective view objects are smaller in the distance (the rails of railway tracks appear closer together in with increasing distance). In orthographic view objects are the same size regardless of how far they are away from our viewpoint and this is very useful for modeling, particularly when you are trying to select only a portion of the model.

An additional view that can at times be useful is the **Quad View**. It is toggled on and by the **CTRL + ALT/OPT + Q-KEY**. The upper right hand corner of the quad view shows your currently selected single view you just toggled out of. This view can be changed using the number pad viewing keys (e.g., NUMPAD-1-KEY, NUMPAD-3-KEY, etc.). The other three views are the Front, Top and Right Side and cannot be selectively changed.
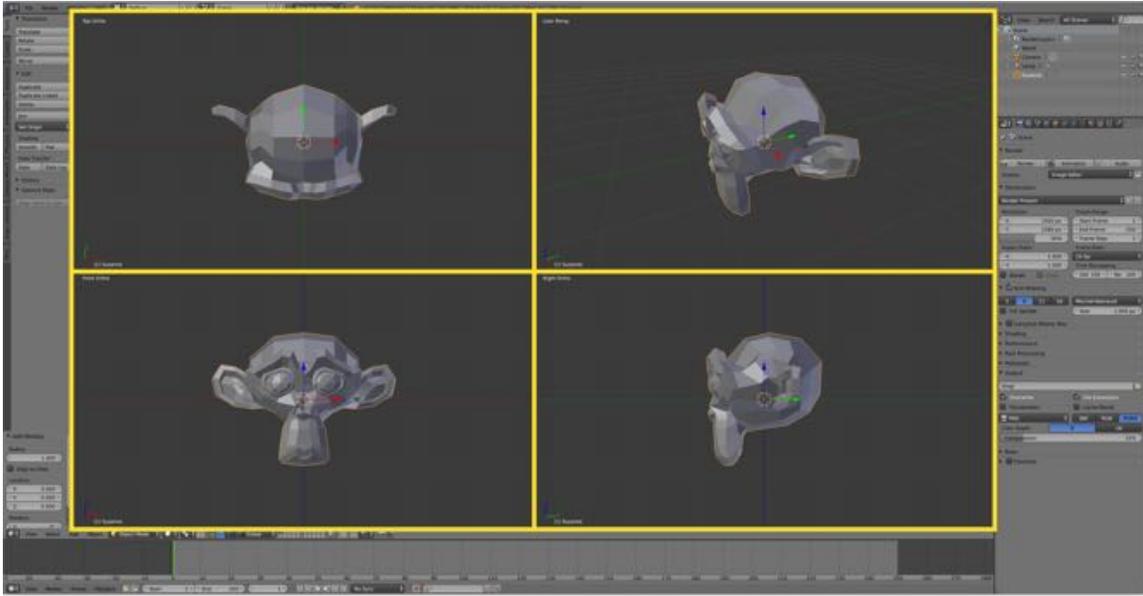
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Rotate, Pan and Zoom View

The number pad can also be used to rotate or pan and zoom the scene.

|	
NUMPAD-4-KEY	= To the right
NUMPAD-6-KEY	= To the left
NUMPAD-8-KEY	= Up
NUMPAD-2-KEY	= Down
CTRL + NUMPAD-4-KEY	= Pan right
CTRL + NUMPAD-6-KEY	= Pan left
CTRL + NUMPAD-8-KEY	= Pan up
CTRL + NUMPAD-2-KEY	= Pan down
NUMPAD-PLUS-KEY	= Zoom in
NUMPAD-MINUS-KEY	= Zoom out

But, except for zooming, using the mouse is more easier.

Rolling the mouse wheel zooms in and out. Pressing the middle mouse button (MMB) and dragging rotates. Holding down the CTRL-KEY while pressing the middle mouse button (MMB) and dragging pans.

However, I find the easiest way to rotate, pan and zoom is to set Blender to emulate a three-button mouse:

To set Blender to emulate a three-button mouse:

- **Open** Blender's **User Preferences** (**CMD + COMMA**).
- **LMB** click on the **Input Tab** in the editor window that opens.
- In the upper left-hand corner **check** "Emulate 3 Button Mouse".
- In the lower left-hand corner **LMB** on "**Save User Settings**" to have 3 button mouse emulation activated next time you open Blender.
- **Close** the User Preferences Editor.
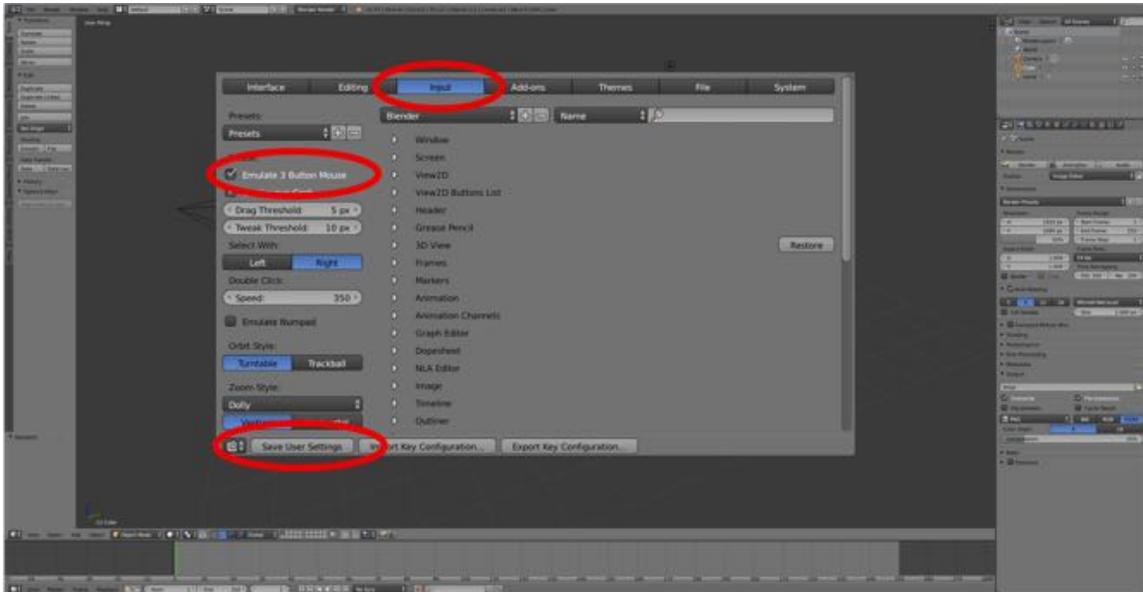
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Now to zoom, pan or rotate the view:

Scroll	= Zoom
SHIFT + ALT/OPT + Drag	= Pan up, down, left and right
ALT/OPT + Drag	= Rotate