Welcome to Blender – Quick Start Exercise

The purpose of this exercise is to quickly introduce some of the basics of Blender. You are also encouraged to consult the Blender text and online resources. [M. Wainer 2013 – Blender 2.65a]

When Blender opens it usually starts with the following configuration (which you can customize). The main Blender window is divided into different subwindows to view and edit various objects and properties. The 3D View is what we'll focus on first since the majority of 3D modeling activity takes place within that window.

The Blender start-up window configuration is shown to the right. (Following the colors of the diagram in the Blender 2.6 online manual)

[Diagram of Blender window configuration]

These properties reflect those of the object currently selected.

The Blender interface is best used with a 3 button mouse and numeric keypad. **Object selection** in the 3D View is done with the RMB (right mouse button). **View manipulations** can be done with the MMB (middle mouse button or mouse wheel) and **other direct operations** – like moving the 3D cursor, using the 3D manipulator, or carrying out a command are done with the LMB (left mouse button). While there are many menus containing commands, there are often keyboard shortcuts as well. The interface is designed to work efficiently with one hand on the mouse and the other on the keyboard.

The manipulator allows objects to be translated/grabbed (g), scaled (s), or rotated (r). The letters given after the operations are the keyboard shortcuts. These operations can be constrained to an axis. The objects we will start with are represented by a polygon mesh. To edit the mesh itself a selected object should be switched into “edit” mode which can be done by the TAB key (TAB again to get back into “object” mode) Once in edit mode, there are 3 different modes to work in vertices, edges or faces as indicated by small icons. The number pad has a TAB key but it is primarily used to shift views and move the camera. A summary diagram is given below:

Some commands/tools you may find useful

- a – select all, deselect all
- b – box select
- e – extrude
- x – delete
- cntl-z undo
- duplicate
- spin
- display method: shaded, wireframe etc.
- vertex, edge, face
- manipulators: G, R, S
- Grab(translate), Rotate, Scale
- Toggle that confines selection to visible items only (or enables selection to include hidden items). Useful esp. with box (b) selection.

Mesh menu has various functions (check submenus for Faces, Edges and Vertices). Adding edges, faces etc. Also a tool panel to the left of 3D View.


M. Wainer 2013
Example: Making a House

01. **Start Blender** – a cube will be in the 3D window and selected. **Delete the cube.** [Object Tools (to the left) delete button or x]

02. **Add a Plane** object. Add Menu [Top near the left], Mesh submenu, Plane

03. **Switch to Top view, orthographic.** [Numpad 7, Numpad 5]

04. **Tab to Edit Mode** [Hit TAB key]

05. **Enter Edge Mode**: [Click on the small picture with highlighted edge]

06. **Deselect all** a and select the rightmost edge [RMB].

07. **Extrude along x** 2 units to the right [e x – drag with LMB, click to finalize]

08. **Select bottom's right half edge** [RMB]. **Extrude y 1 unit** [e y LMB, click]

09. **Deselect all** a, Select all a. **Switch to front view** [Numpad 1]

10. **Extrude z 2 units** [e z LMB, click]. **Adjust view** [drag MMB]

11. **Deselect 3 frontmost edges** (garage). [Shift RMB click to deselect] **Extrude z 2 units**. **Switch to Face mode.**

12. **Top view**, [Numpad 7], **Face Mode**

13. **Scale y** [s y LMB] shrink the faces towards the center. 14. **Adjust view** [drag MMB]

15. **Switch to Vertex mode**, select pairs of vertices to merge [merge tool on left], **remove doubles** (in middle)

**Exercises (M. Wainer 2013):**

1. Make a roof section for the garage portion. [use grab (g) to drag garage roof vertex over]

2. Cut out the garage door. [delete a face and replace with new ones]

3. Lower the roof. [In vertex mode, try box(b) select, and grab(g) to drag the roof top]
Adding some color (see video tutorial 05-01)  
vimeo.com/44842112

With your house in edit mode.
01. Open the Material context button. Add [+] 2 new materials.  
02. Change the diffuse color to for each and name appropriately.  
03. Assign one new material to your house and the other to the roof faces. [Assign button for selected faces ]

Make a rendering of your model.

01. Toggle into Quad-View [View menu or cntl-alt-Q]  
This will show 4 views including the view from the camera that will render this image in the top right. The box shows the portion of the world that will be rendered.  
02. In the outline view (top right) select the camera object. It should show up highlighted in the 3D View windows. Using grab (g) and rotate ® you should be able to move the camera around and see the result in the top right.  
03. Try a render [ Render Menu at top, Render Image ] - once you've finished rendering, esc to return to 3D view. Or use the menu for that window and bring up the 3D view again.

You may find that your lighting isn't right. You can also select and move the light around with grab.  
See video tutorial 06-01 for more about blender lighting. vimeo.com/44842546

Once rendered, check the Image menu at the bottom of the render window for an option to save to an image file.

See the Render context to set things like image format  
(png & RGBA is good for transparent background etc.)  
[ Render context button is shown as a camera – see the the figure at top right of this page marked with an R]

Exercise:  
Try duplicate and spin (with dupli checked) to make a neighborhood of houses.

M. Wainer 2013