Blender Introductory Activities

Part 1: Tour of Blender’s Interface

**You will learn:**

* Where the basic menus and tools are located within Blender, and how (not) to manipulate the various windows.
* What some basic hotkeys used in Blender are

**To learn this knowledge you will:**

* Follow along with Ms. Hammond as she takes you through a brief tour
* Use the “Blender Hotkeys Cheatsheet” PDF as a reference throughout your modelling over the next 6 weeks. As you progress throughout the course, highlight the shortcuts that are most utilized

Part 1: Create a Robot & Object of Choice Using Mesh Primitives

**You will learn how to:**

* Navigate 3D Space in Blender
  + Mouse/scroll wheel = zoom view
  + Mouse/click wheel = rotate view
  + Mouse/click wheel + shift = pan view
* Manipulate Objects Using 3D Axes
  + Grab/Move = G
  + Rotate = R
  + Scale = S
  + After selecting a Letter, holding X/Y/X will result in manipulation along this axis
  + Duplicate = Shift + D
  + Select Multiple = Shift + click
  + Escape Key = cancel a move
* Access and Select Mesh Primitives
  + Add Primitive: Add Menu > Mesh > Cube or = Shift + A
  + Right-click to select an object
* Use the 3D Cursor
  + Left-click to place 3D Cursor, which places new object
  + Center Pivot Point: Object Menu > Transform > Origin to 3D Cursor
* Save, and Save Often
  + Save your model upon first opening a new Blender document
  + Save every time you make a significant change
  + Save before you exit (Blender will not prompt you to save)

**To learn these skills you will:**

* Watch [“Getting Started with Blender – for kids! (1 of 3)”](https://www.youtube.com/watch?v=iWWgMWpXfnE) – 1:00-2:48/6:05-14:54
  + Watch as a class so that Ms. Hammond can point out key differences between the video and reality, and other tools
  + You may choose to model along with the video, or wait until it is over
  + Click the video link above so that you may go back and follow along
* Watch [“3D Modelling For Kids 101 (2 of 3)”](https://www.youtube.com/watch?v=t96wAzuD91I) – 00:00-18:36
  + Watch as a class so that Ms. Hammond can point out key differences between the video and reality, and other tools
  + You may choose to model along with the video, or wait until it is over
  + Click the video link above so that you may go back and follow along
* Model Your Own:
  + 3D Robot (by following along with the tutorial)

Part 2: Applying Materials to Your Model

**You Will Learn How To:**

* Navigate Blender’s Panels
* Apply simple colour materials to an object
* Adjust various material settings that will impact the object’s final render (ex. diffuse, render filters, specular, intensity, shading, transparency, shadows, etc.)
* Select Object Mode vs Edit Mode (from menu) and how each can be used to apply materials to different faces within an object

**To Learn These Skills You Will:**

* Watch the [“Adding Colour and Material”](https://www.youtube.com/watch?v=rRdKj33Keec) tutorial
  + Watch as a class so that Ms. Hammond can point out key differences between the video and reality, and other tools
  + You may choose to model along with the video, or wait until it is over
  + Click the video link above so that you may go back and follow along
* Apply materials and adjust material settings for their own model

Part 3: Setting Your Scene

**You Will Learn How To:**

* Add, remove, and position lights for optimal rendering
* Adjust each light’s settings for optimal rendering
* Add, remove, and position camera for optimal rendering
* Adjust each camera’s settings for optimal rendering
* Preview the image your camera will capture by hitting Numpad 0 on the keyboard (which allows you to “look through” your camera)

**To Learn These Skills You Will:**

* Follow along with Ms. Hammond as she demonstrates to the class
* Apply these techniques to your own model prior to rendering

Part 4: Blender Rendering Your Scene

**You Will Learn How To:**

* Understand the difference between Blender Rendering and Cycles Rendering
* Apply a “subsurface” object modifier
* Render and re-render your own model until it satisfies your standards

**To Learn These Skills You Will:**

* Watch Ms. Hammond demonstrate how to add/remove/reposition lights and cameras (create tab – treat these objects just like the meshes you’ve been using)
* Watch Ms. Hammond test the camera’s view by hitting Num0 (Num0 to escape)
* Watch Ms. Hammond render her robot model by selecting the “Render” option in the Properties Panel OR by hitting F12 on the keyboard.
  + This allows you to enter into Blender’s Image Editor, where renders are displayed, saved, and exported as 2D images
  + To go back to the 3D Modelling Space, simply hit the ESC button
  + To toggle between 3D Space and Image Editor without taking the time to re-render, simply hit F11
  + To save a render, select the “Image” option at the bottom of the Image Editor, then click “Save as Image” and save to your files