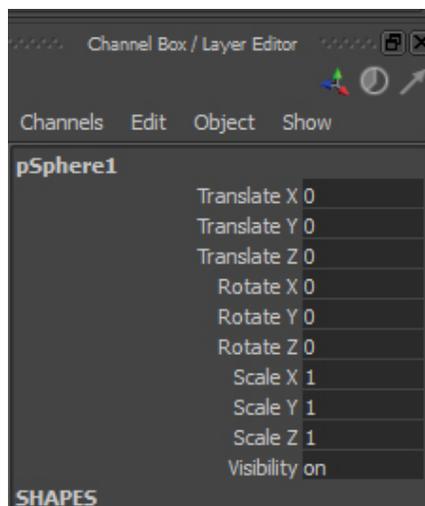


Primitive Geometry & Simple Editing

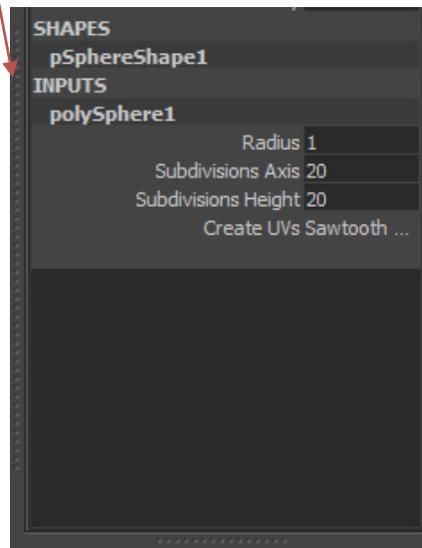
- Menu Set (on the Status Line) → Make sure this is set to 'Polygons' or 'Modeling'
 - Create → Polygon Primitives →
 - Interactive Creation:
 - Checked ON: If this is checked on, Maya will allow you to draw your geometry into your scene. If
 - Checked OFF: Maya will create a default primitive for you at the origin of the grid/scene.
 - **Note** – Personally I like to have this checked OFF, so that it gives me clean, uniform geometry right at the origin to start with. I find it easier to begin with.
 - Sphere, Cube, Cylinder etc....:
 - We have a variety of simply geometry to start from.
 - **Note** – think of these as base lumps of clay that you will have the ability to mush and mold into other things... the only difference is that you're doing it digitally!

Let's try it!

- Create → Polygon Primitives → Sphere
 - Object level manipulations.
 - Select Tool – 'q'
 - Move Tool – 'w'
 - Rotate Tool – 'e'
 - Scale Tool – 'r'
 - Channel Box
 - select channel and MM+Drag or manually enter data



- Channel Box → INPUTS
 - **Note** – this gives us some base features to manipulate our geometry with before we begin the sculpting process.
 - **Note** – the INPUTS also houses the history of commands/edits we create for a given object. When we ‘Delete History’, this is the area that gets cleared out (this helping us save on memory etc).
 - Select the channel and MM+Drag in the viewport or manually enter values into the data box
 - The options will be different for each primitive we create
 - These options will largely only be good right at the beginning of our modeling process. Once we start altering the object’s components (faces, vertices, edges), we won’t be able to manipulate these channels and get the same expected result because Maya won’t know how to handle the altered geometry.

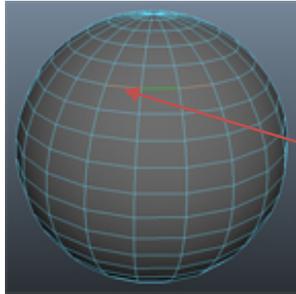


- Object Components/ Polygon Anatomy:

- **Mesh** – A collection of attached faces/edges/vertices
- Rt mouse click over obj → Object Mode
- Hotkey: F8

- **Edges** – the lines that make up the wire structure of our geometry and give our objects shape (kind of like the base wire mesh to a Papier-mâché structure)
- Rt mouse click over obj → Edge

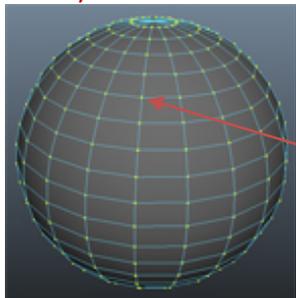
- Hotkey: F10



- **Vertices/Vertex** – the points that connect the wire structure of our geometry.

- Rt mouse click over obj → Vertex

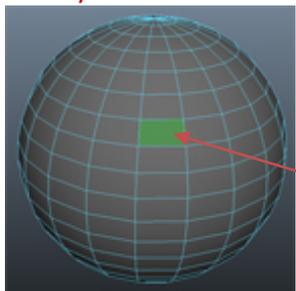
- Hotkey: F9



- **Faces** – The resulting face the connected edges make.

- Rt mouse click over obj → Face

- Hotkey: F11



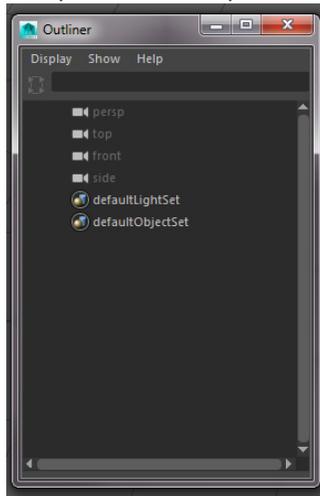
Let's try it! Create different primitives and adjust their INPUT options. Then select individual components and try translating, scaling and rotating! After you've played with the components, try adjusting the INPUT options again. What happens?

The Outliner

a. Main Menu:

Windows → **Outliner**

- Note – this holds all of the assets in your scene. It is the organizational tool of Maya (similar to the layers palette in Photoshop). This is where we will name objects, group, make selections etc. This is kind of like your 'home base'. You will likely always have this open. It is important to keep this clean and organized as you work!



Grouping

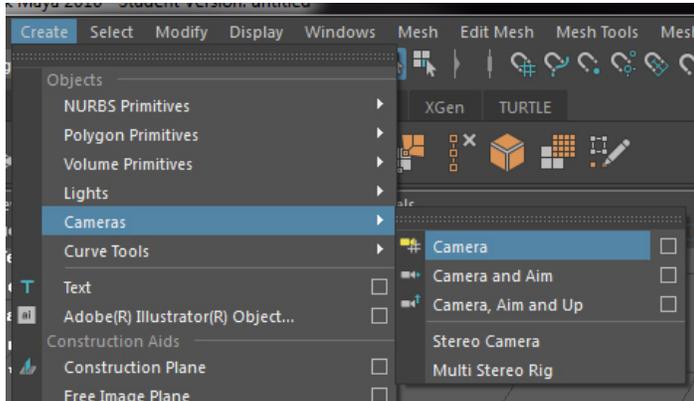
b. Main Menu:

Edit →

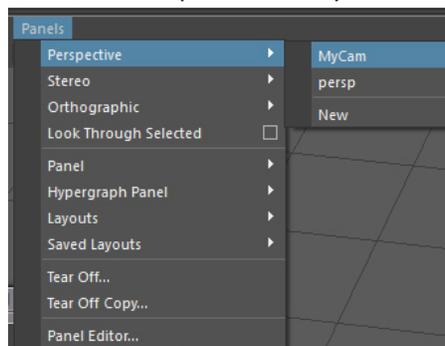
- **Group (Ctrl g):** This will allow us to group our objects together so that we can move them as a unit. **Note** – even if we group, we still have access to the individual pieces. This is very important to remember!!
 - **Hotkey:** Up Arrow - if we have an individual object selected that is in a group, we can hit the up arrow on our keyboard and it will select the whole group that the object resides within.
 - **Note** - we can embed/nest groups within groups! We can also move individual objects in and out of groups without ungrouping/grouping the whole thing!
 - Moving objects in and out of groups: Open your Outliner (see Window → Outliner) and middle mouse drag the object to the group our out of the group.
 - To embed groups: Open your Outliner and middle mouse drag the group you want to embed to the group you want to embed it to.
- **Ungroup:** This will ungroup previously grouped objects.

Creating a Scene Camera (For PreVis Purposes)

- Main Menu: Create → Cameras → Camera



- Name this camera in your Outliner by double clicking on it and typing: 'MyCam'
- Look through the camera
 - Panels → Perspective → MyCam



- Show the **resolution gate**: To frame the shot using the sizing setup in our render settings. This will show us what will get rendered and what won't.



- Position the camera where you want, using the same hotkeys as you do to move around in any camera.
- Move out of your camera and back to persp

Rendering

- 1) Render Settings 
 - a) Render Using: Maya Software
 - b) Common Tab:
 - i) File Output:
 - File name prefix: naming convention for your renders
 - ◆ Example: stageScene
 - Image format:
 - ◆ .jpg
 - Frame/Animation ext: name_#.ext
 - Frame padding: 3
 - ◆ Creates the spaces for the frame number to be added to the name
 - ii) Renderable Camera:
 - Renderable Camera: choose the camera you created for final rendering 'MyCam', until then use the perp
 - iii) Image Size:
 - Presets: 640x480
 - Maintain width/height ratio: Check on
 - c) Maya Software Tab:
 - i) Anti-Aliasing Quality
 - Quality: Production quality
- 2) To Render a still frame: 
 - a) Save the image:
 - i) File → Save Image
 - Save your images in the Images folder of your project structure
 - File Name: lastnameFirstname_imagename
 - Files of Type: change to JPEG (**DO NOT GIVE ME .als files**)

Using your first modeling tools:

i. Edit Mesh → **Extrude**



- Extrudes selected faces
- Use this tool to:
 - Pull faces out
 - Push faces in
 - Subdivide a face to create edge loops

ii. Mesh Tools → **Insert Edge Loop**



- Click and drag along any edge to make a cut or subdivide in the direction you want
- This tool does a pretty good job of maintaining poly flow and a quad work flow

iii. Mesh Tools → **Multi-Cut**



- This is a combo tool of many cut options
- It snaps to verts or you can click anywhere along an edge to start your cut
- Hold down: Cntrl Shift to have it act like the Insert Edge Loop
- Click and drag outside of the mesh to make cuts on a line. Holding down shift will snap it in 15 degree increments.

iv. Mesh → **Mirror Geometry Options**



- This tool will allow you to mirror geometry in the direction you dictate in the options
- Merge with the Original: Checked On
- Merge vertices
 - By having these options set, it'll save you the extra step of having to combine the geometry and merge verts.
- Note – be mindful of where your pivot is