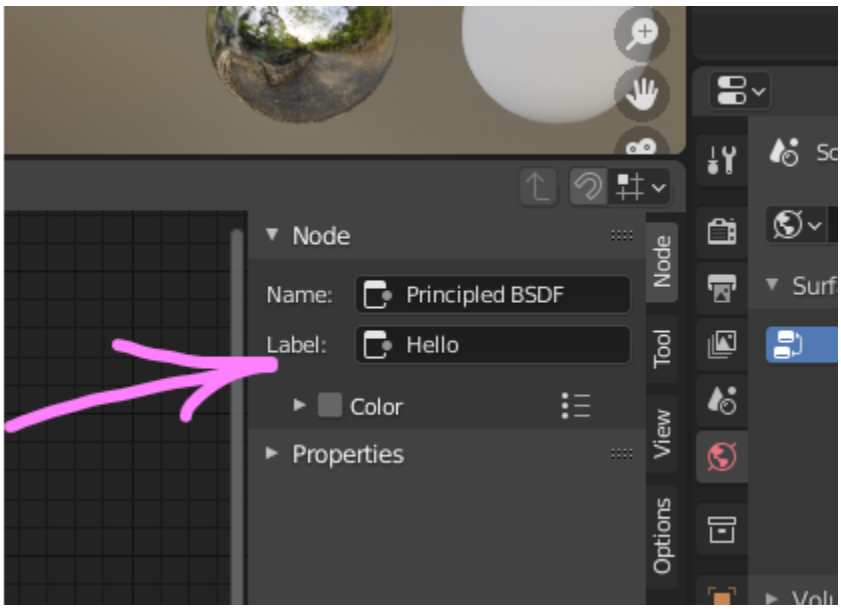
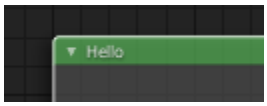
Shader Nodes

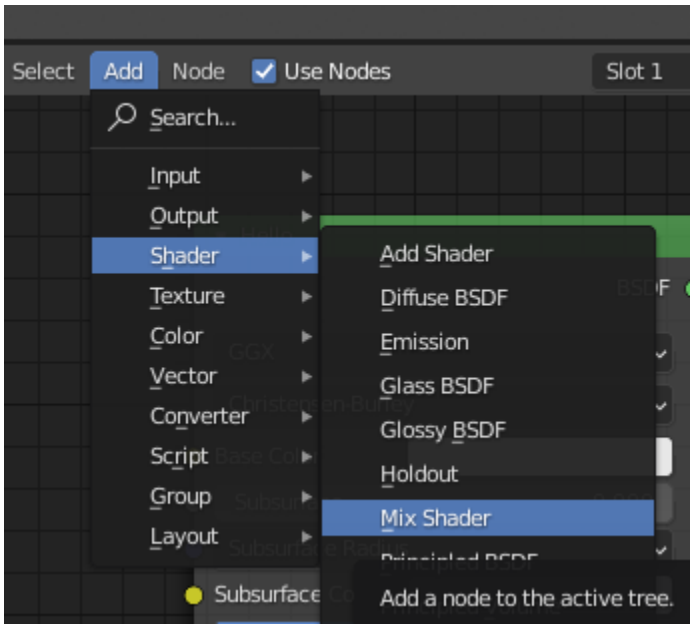
Click the Shading tab at the top of the window to enter the Shading workspace
Click and drag one of the nodes. Notice that they can be moved around and the connected
Click the Principled BSDF node and open the sidebar by pressing “n” on the keyboard
Type the word “Hello” in the label field



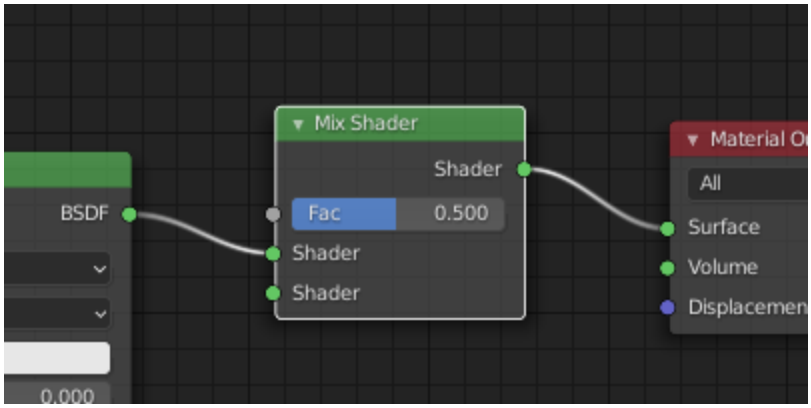
Notice that the title of the node reflects the new label



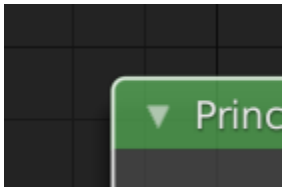
Erase the word Hello from the labe field to return the title of the node to the default title
How many Sockets does the Principled BSDF node have? Count them
Point to the input sockets on the left
Point to the output sockets on the right
Point to the properties of the node (the ones without sockets)
Add a Mix Shader node by selecting Add → Shader → Mix Shader



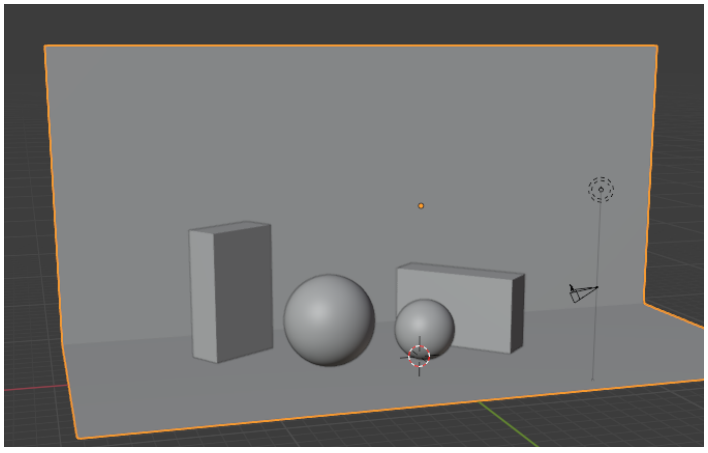
Drop the node directly on the line connecting the two other nodes. Notice how the node links occur automatically (because it has no prior links)



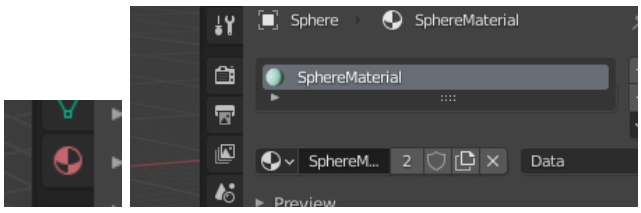
Select all three nodes by dragging a box around them
Press “g” to grab and move them around
Press “s” to scale their positions horizontally
Press “r” to adjust their rotation
Select the Mix Shader and delete it by pressing Delete on the keyboard
Click on the BSDF output socket of the node on the left and drag a link to the Surface input socket of the Material Output node on the right. Notice the link is made
Click the right end of the link and drag it away. The link between the nodes is now broken.
Duplicate the left node by clicking Ctrl+D
Delete the newly duplicated node
Try hiding the node with the arrow in the node header



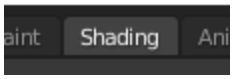
Lets explore Material Shader properties
Create a stage with a few shapes



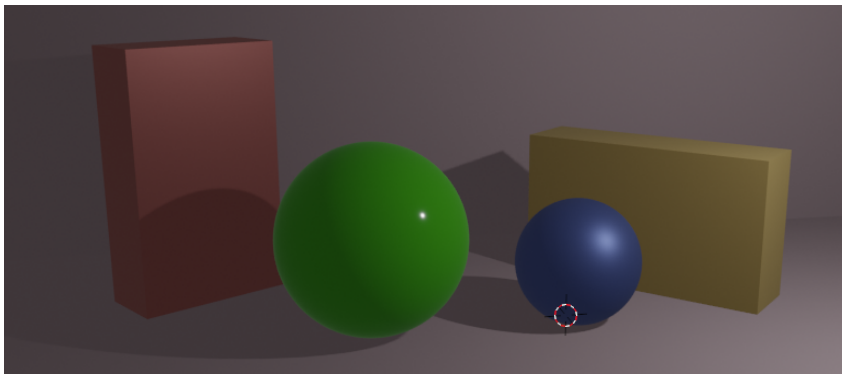
Click each shape and create a new material for it. Rename the material to something descriptive (LargeSphere, etc.) to stay organized. Be sure to create a material for the stage as well.



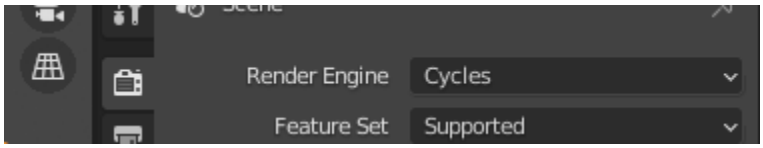
Enter the Shading Workspace

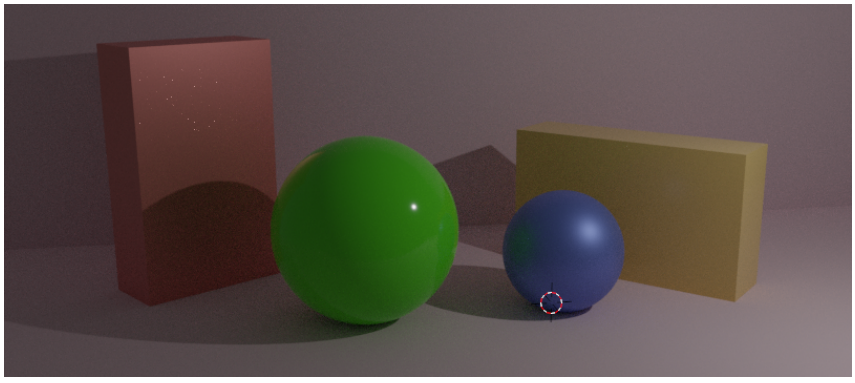


Lets explore the material properties on the node editor.
Change the Base Color of the material
Alter the roughness, specularity, and metallic properties for each material



Lets preview this with the cycles renderer. Switch from EEVEE to Cycles

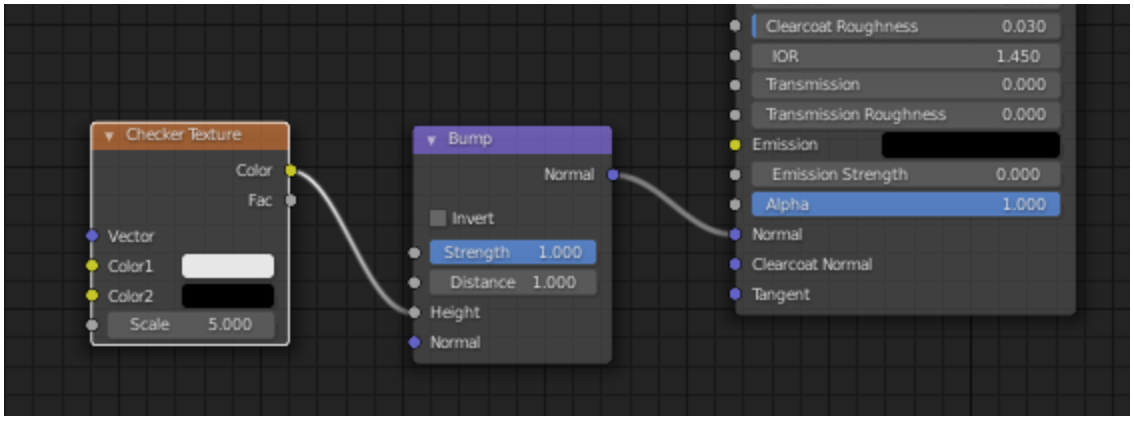




In class - Explain differences between EEVEE and cycles rendering engines

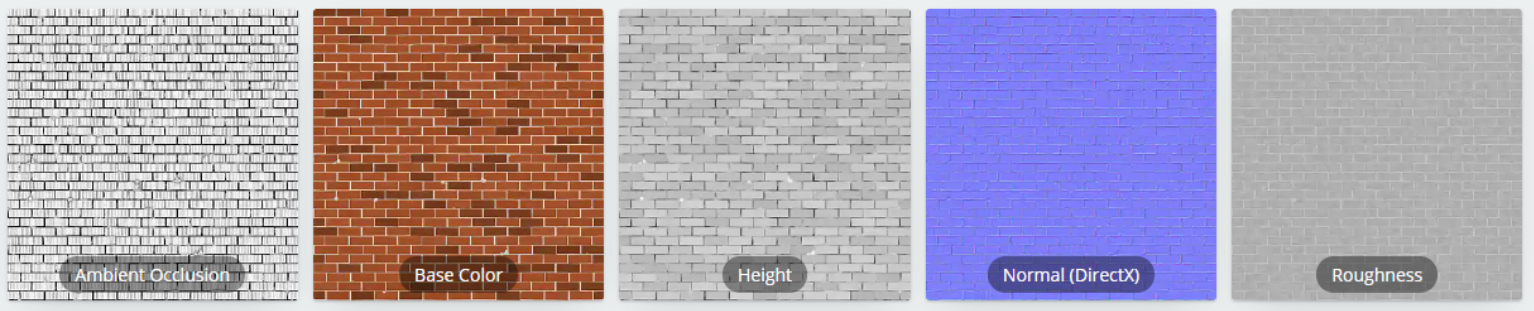
> Keeping it simple, EEVEE is a real time viewport rendering engine and it is still a work in progress. Your viewport is what you work in as you work on your projects. Cycles on the other hand is a high performance rendering engine and is anything but realtime. As EEVEE evolves many of the things that would have required Cycles can be done in EEVEE instead. In real time. Cycles will still be used for jobs needing extremely high quality graphics. Ultimately it comes down to the **time/look** ratio. Do you want to spend the **time** to get the **look**? Another way to say this is **can EEVEE give you the look that is good enough or better without having to sacrifice the time Cycles will cost**. More and more Blenderheads are using EEVEE for their final output because as EEVEE evolves it does in fact give many people the look they want which is, for them, good enough or better and they don't need to spend the time required to render in Cycles.

Lets add a new texture node to the shader editor for one of the spheres.
Add → Texture → Checker Texture
Place the node somewhere to the left.
Create a link between the color socket of the Checker node to the Base Color input socket of the BSDF shader node
Now let's explore how the checker affects roughness, metallic, and other properties. Notice how the black and white values of the checker texture have different luster effects on the surface of the sphere
Now add a new node Add → Vector → Bump and place it on the left somewhere. Create links like this



Notice how the sphere's appearance changes. Alter the strength to soften the effect

*in-class Explain the different Texture Map types



cgBookcase.com

Select the back wall of your scene. If the back wall and floor are one object, separate them by selecting the vertices and in edit mode and pressing "p" on the keyboard to separate by selection. Tab back into object mode.

Add a new empty material to the back wall and rename it BackWall

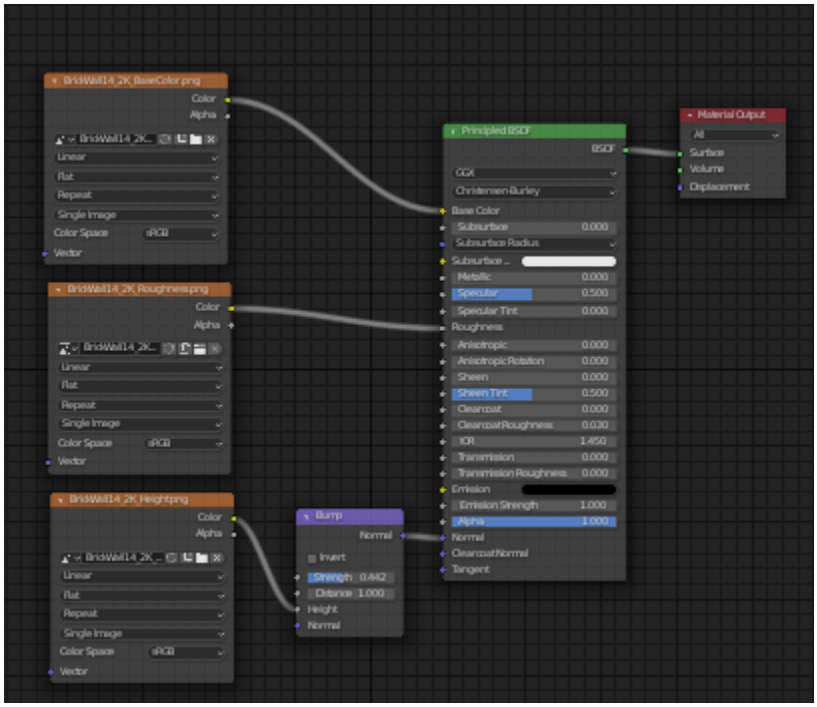
Enter the Shader workspace and add the the texture materials like we discussed in class to the back wall

Should be:

Base Color image texture linked to Base Color socket of the shader node

Roughness image texture linked to Roughness socket of the shader node

Height image texture linked to a bump map which is linked to the Normal socket of the shader node



Repeat the same for each object in the scene to create a richly textured scene like below