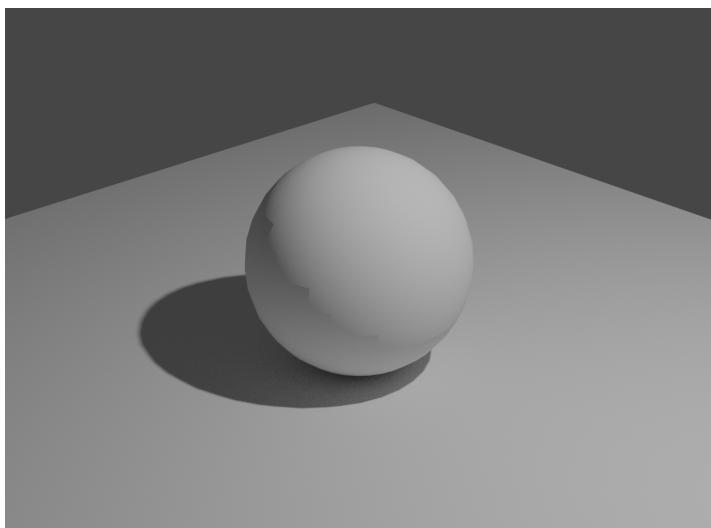
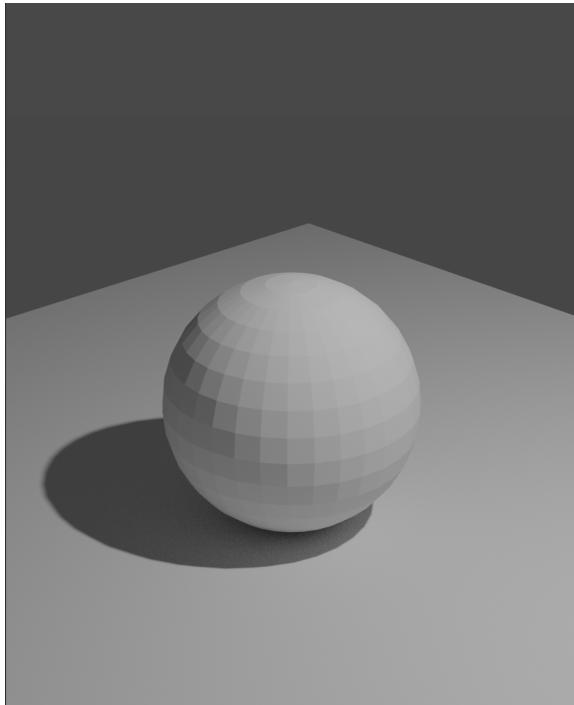


David Olumilua
CSC 322
Activity 3

1.

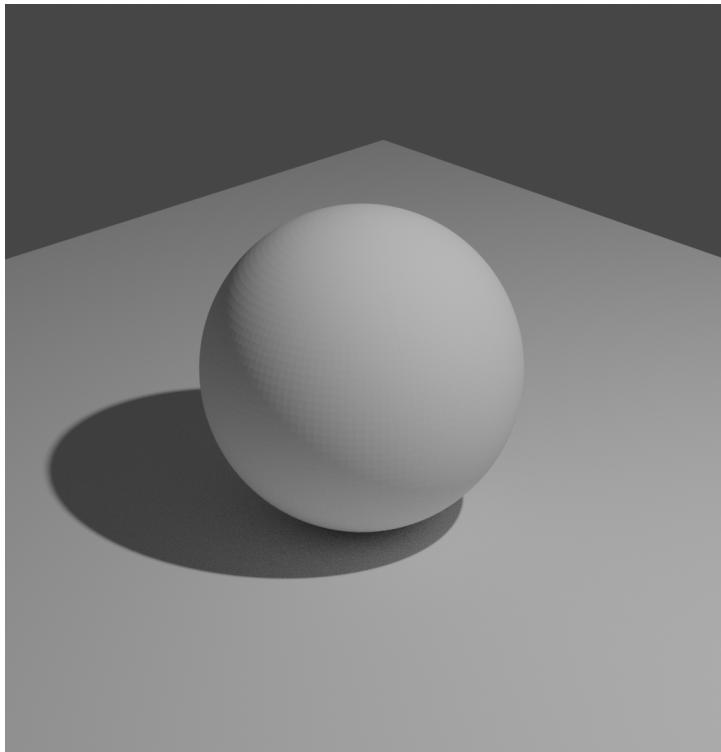


Shade smooth

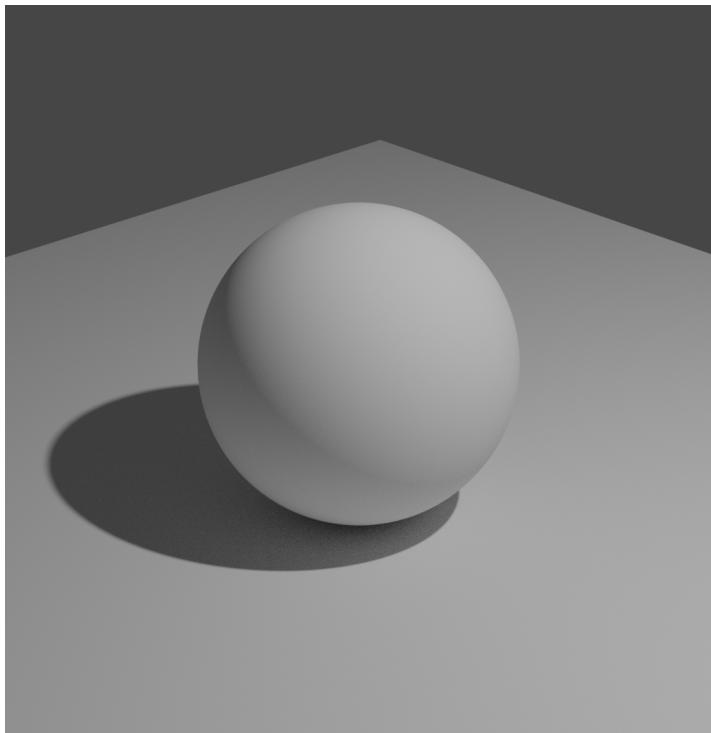


Shade flat

1.3: The difference between picture one vs picture 2 is the texture; you can see the different faces on shade flat while shade smooth leaves a smoother surface (shade flat looks more like a golf ball while shade smooth looks more like bouncing ball)



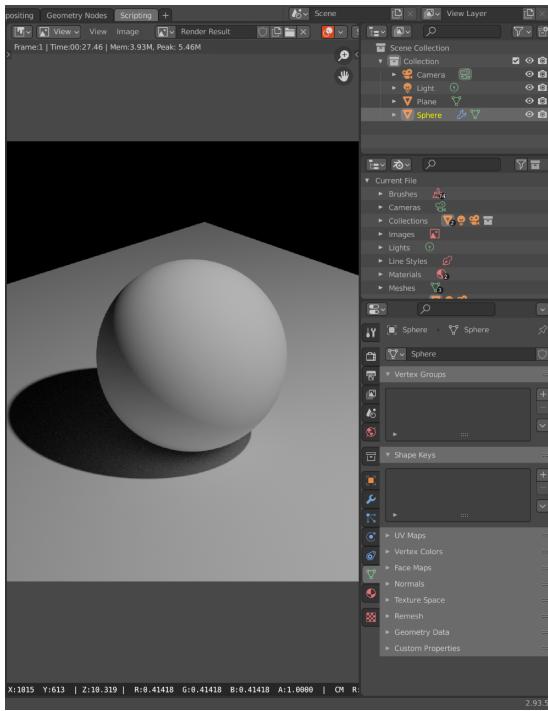
subdivision + shade flat



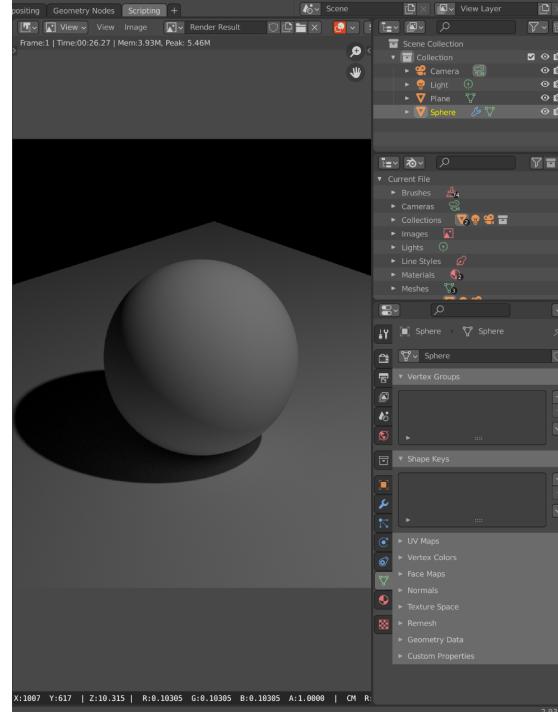
subdivision + shade smooth

The subdivision + smooth shading makes the image clearer and actually look more like a sphere; it smooths out any rough edges with the subdivision modifier

2.

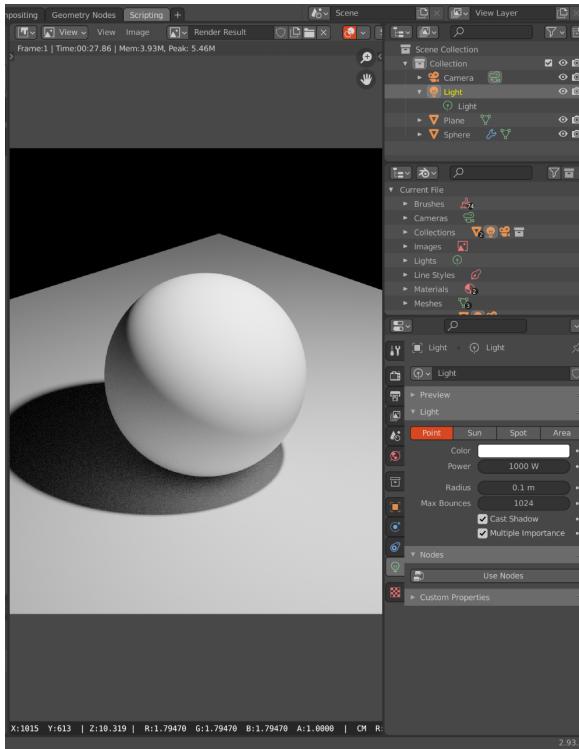


Checkpoint 1.5; R: .41 G: .41 B: .41



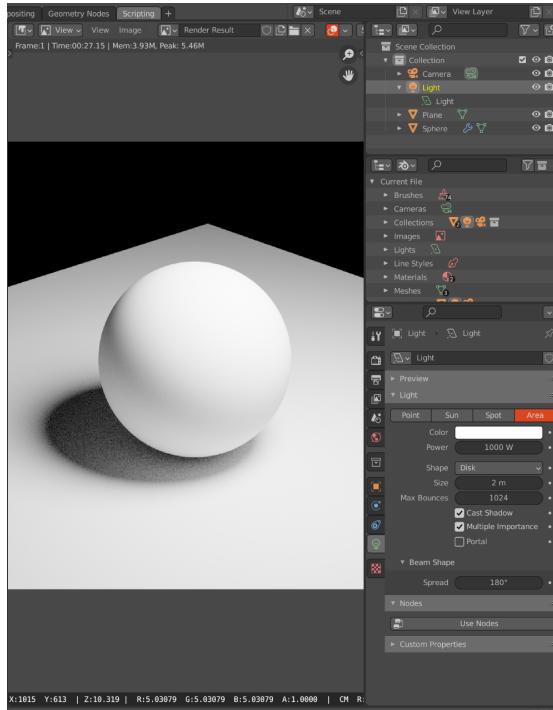
Checkpoint 2.1; R: .10 G: .10 B: .10

The RGB color spectrum is a lot darker in Checkpoint 2.1; setting a lower light and irradiance makes the color closer to black for the sphere as well as the plane



Checkpoint 2.2; R: 1.79 G: 1.79 B: 1.79

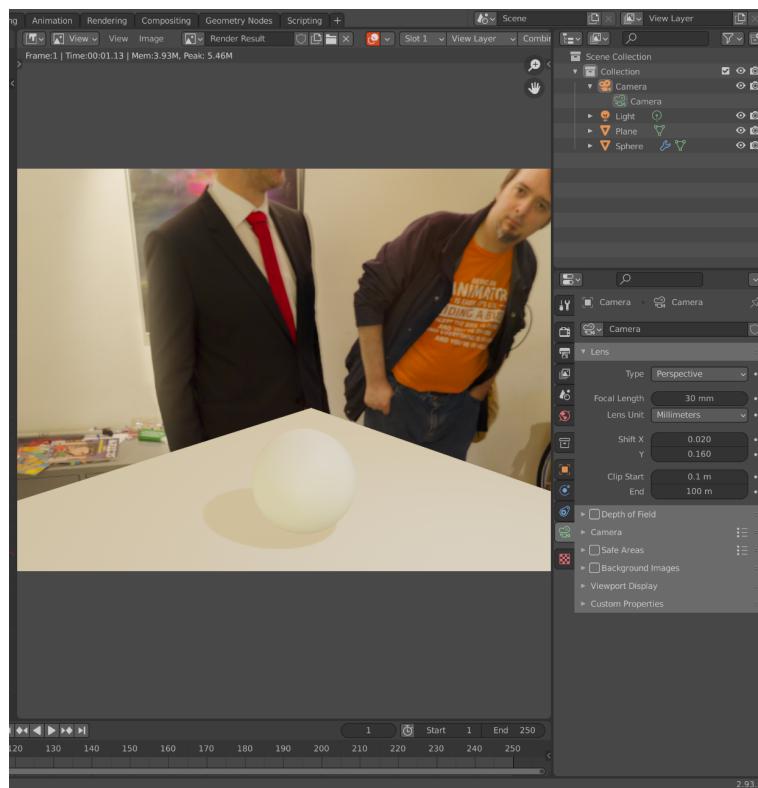
Placing the light closer makes the RGB colors brighter (closer to the color white); the plane is also a bit brighter and the shadow is more visible



Checkpoint 2.3; R: 5.03 G: 5.03 B: 5.03

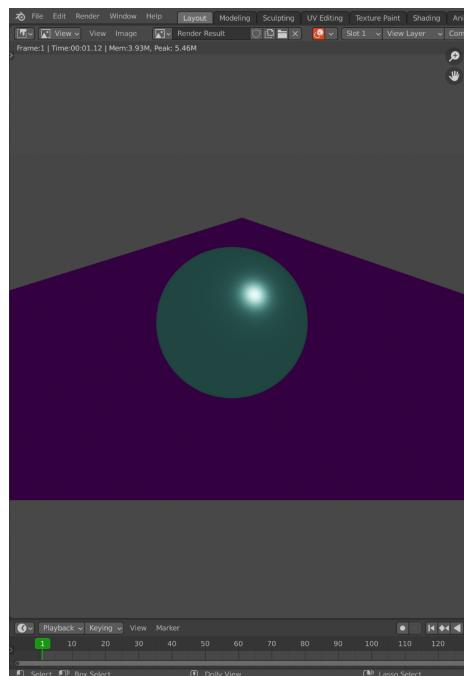
The shadow is more minuscule in checkpoint 2.3 than checkpoint 1.5; the more ambient lighting causes light to cover more area making the shadow appear in a smaller region

3.



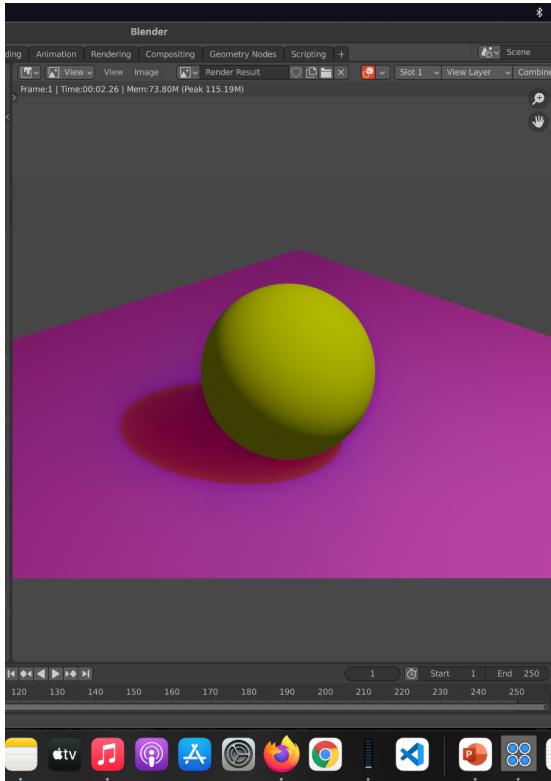
(This is rendered with HDRI)

4.



Sphere: Glass BSDF, Beckman setting; Aqua color; .3 Roughness; 3.650 IOR
Plane: Refraction BSDF, GGX setting; Magenta color; 0 Roughness; 1.050 IOR

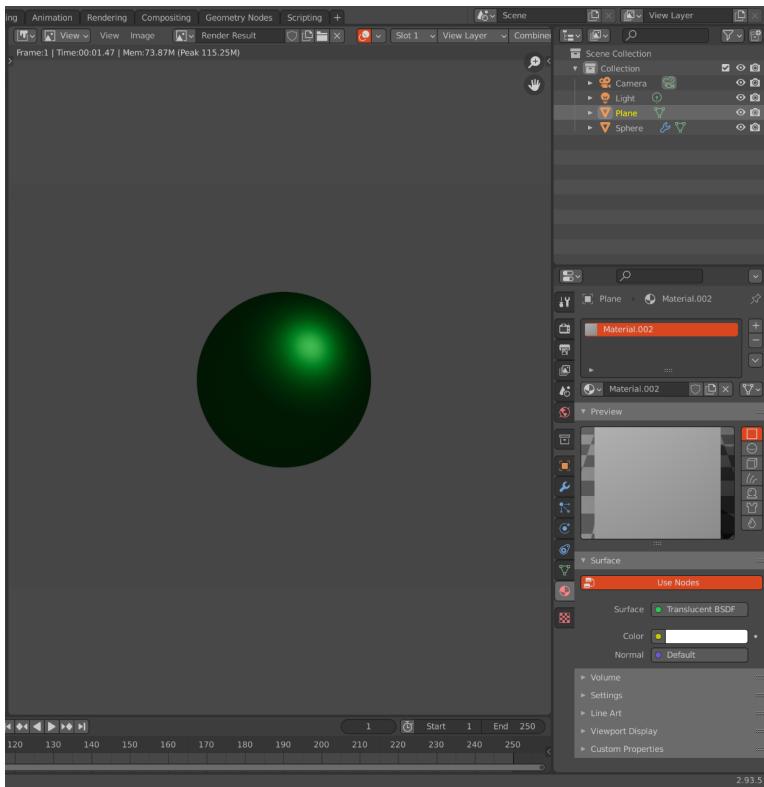
For this one the light reflects off the sphere (you see the point light reflection with the white spot on the sphere); for the plane it seems it absorbs the light since the sphere leaves no shadow (its not that the shadow is hard to see, its literally not visible)



Sphere: Velvet BSDF; Yellow color; 10 Sigma

Plane: Subsurface Scattering, Random Walk setting; Pink color; 4.5 Scale; 1° Texture blur

This one the sphere looks rather normal with Yellow color; however the shadow is what looks different. There is a solid ring around the shadow and the shadow is actually a different color rather than a different shade of pink (the shadow is like an orangish red; the outer ring is more orange while the inner shadow is more red)



Sphere: Glossy BSDF; GGX setting; Green color; .5 roughness

Plane: Translucent BSDF; White color

This one is actually very interesting; the plane is actually invisible with the white color (well not really its there but blends in with the background). The translucent plane also makes it so that no shadow is cast from the sphere as well, making the point light shine on the sphere very minimal.