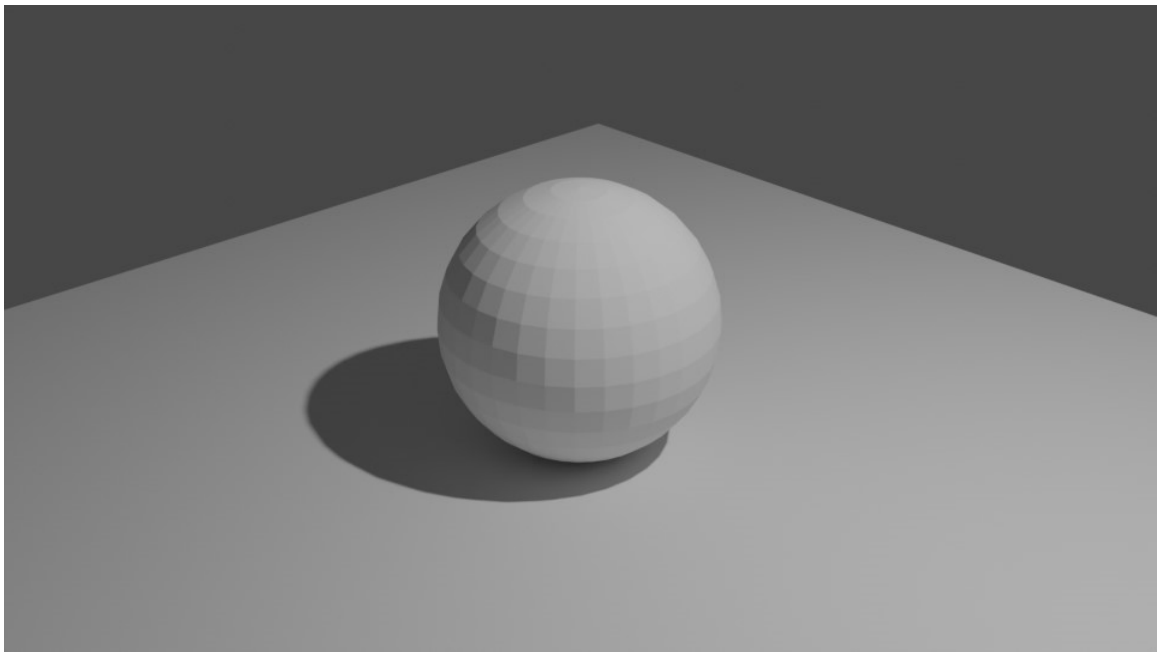
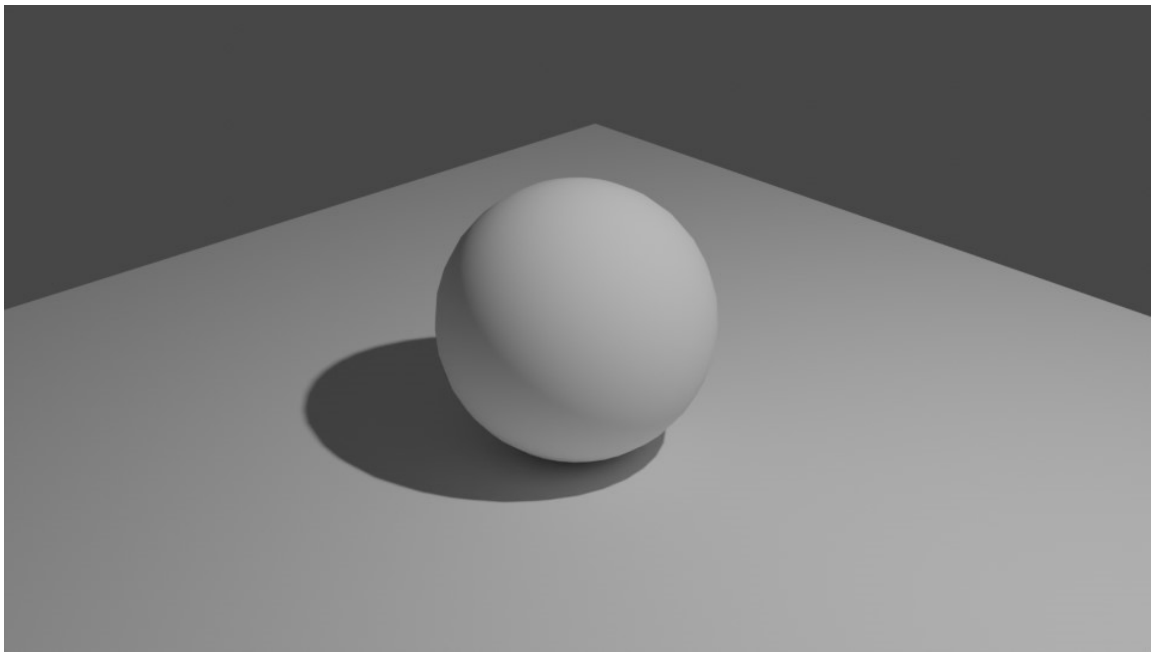
Checkpoint 1.1: Shade Flat

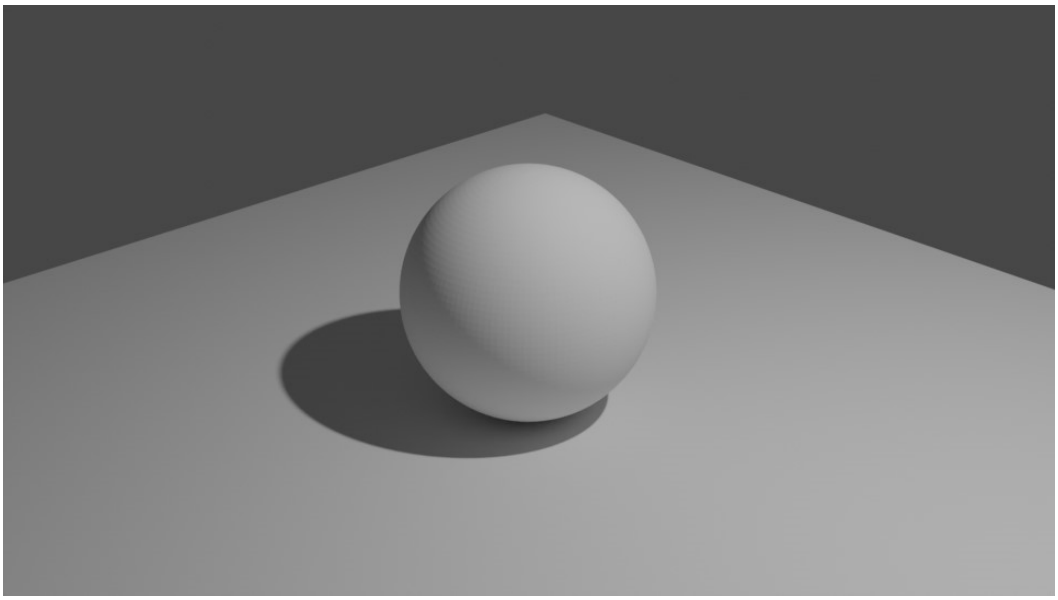


Checkpoint 1.2: Shade Smooth

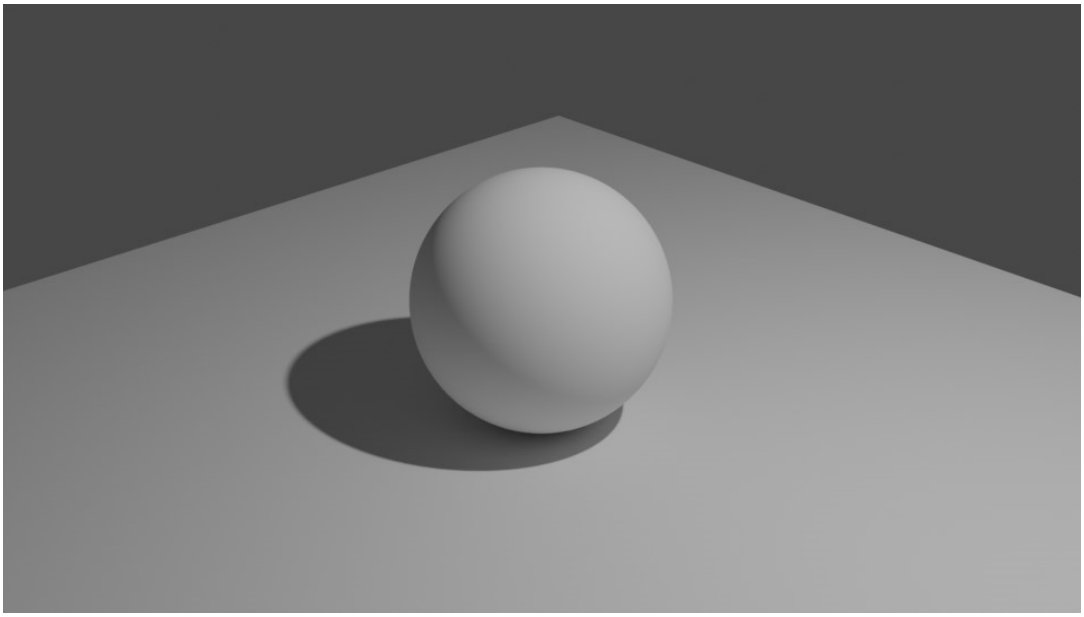


Smooth shading removes the squares that surround the UV sphere, but does not affect the shadow or lighting. It makes the edges of the sphere look invisible.

Checkpoint 1.4: Subdivision + Shade Flat

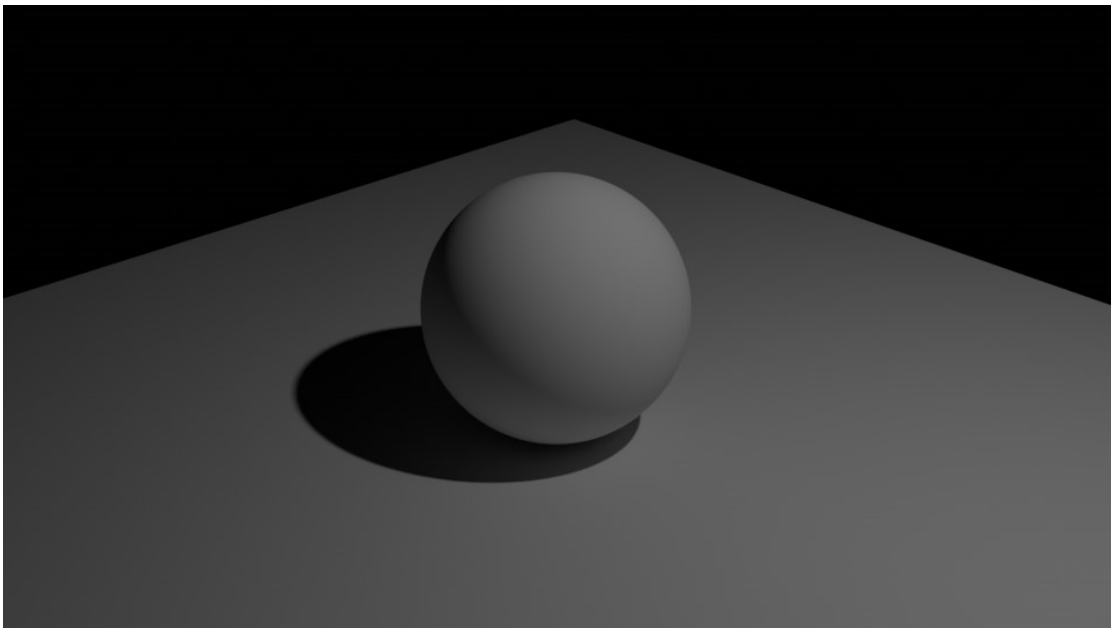


Checkpoint 1.5: Subdivision + Shade Smooth



Subdivision makes objects look smoother, which is seen in Checkpoint 1.4 since you have to zoom in to be able to see the edges of the sphere. If you want low detail to have less scene complexity, you can use smoothing, which has a lower render quality. If you want high detail to have more scene complexity, you can use subdivision, which has a higher render quality.

Checkpoint 2.1: Lower Light Power



x-value: 484, y-value: 279

Checkpoint 1.5

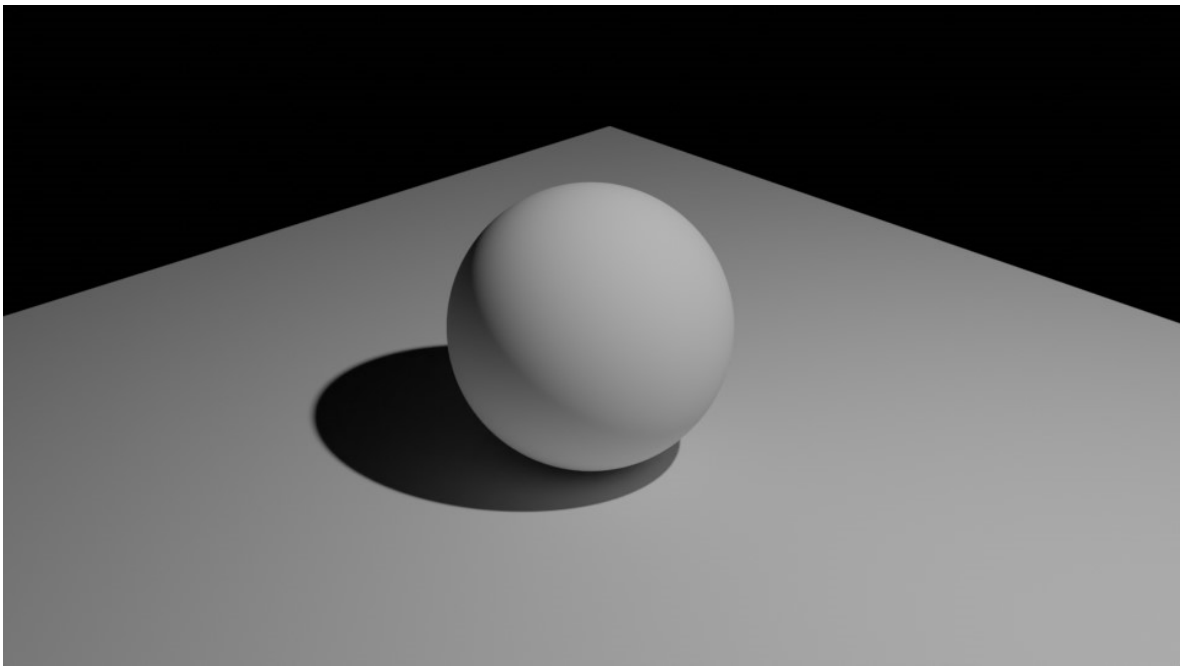
- R: 0.33955, G: 0.34030, B: 0.33977

Checkpoint 2.1

- R: 0.07508, G: 0.07518, B: 0.07508

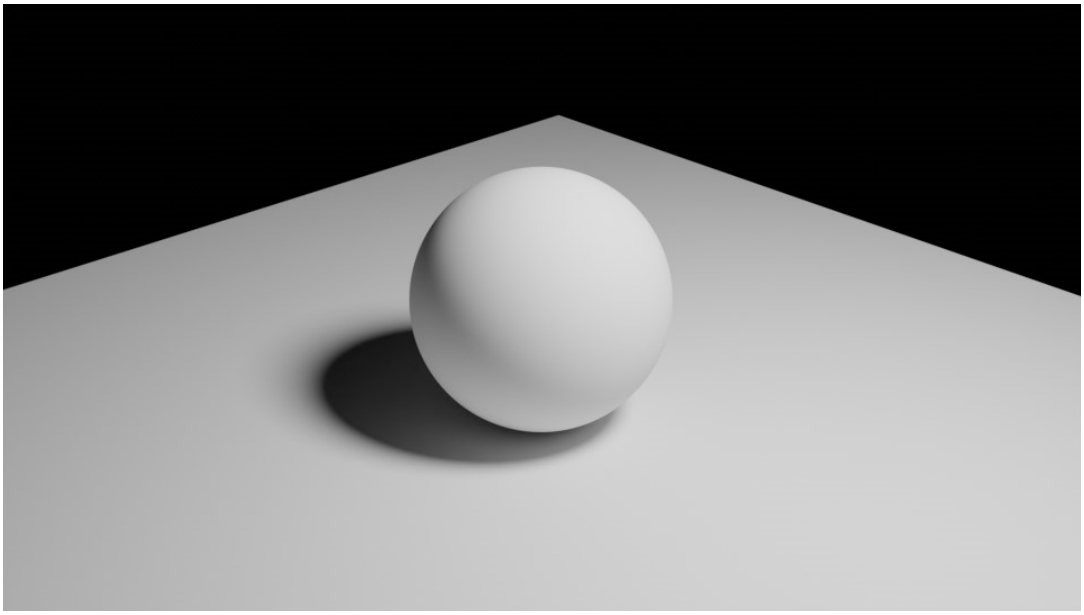
Since the image in checkpoint 2.1 is much darker than the image in checkpoint 1.5, it can be assumed that the lower the light power is, the lower the irradiance is as well (the image in checkpoint 2.1 shines much less brightly).

Checkpoint 2.3: Closer Light



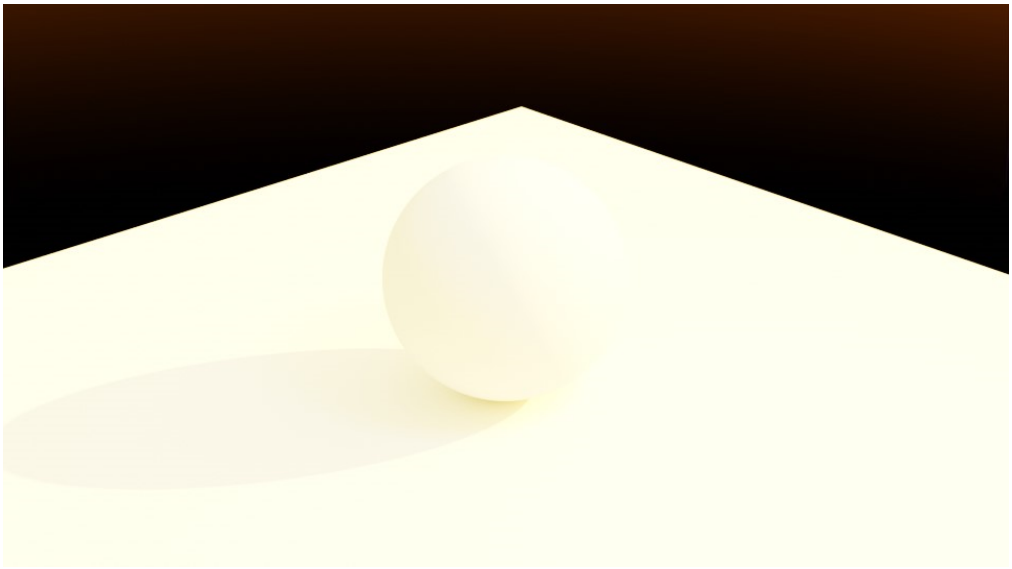
The image in checkpoint 2.3 is shining more brightly than the image in checkpoint 1.5 (also the shadow is much darker). This shows that as the distance from the light source decreases, the irradiance increases.

Checkpoint 2.5: Area Light

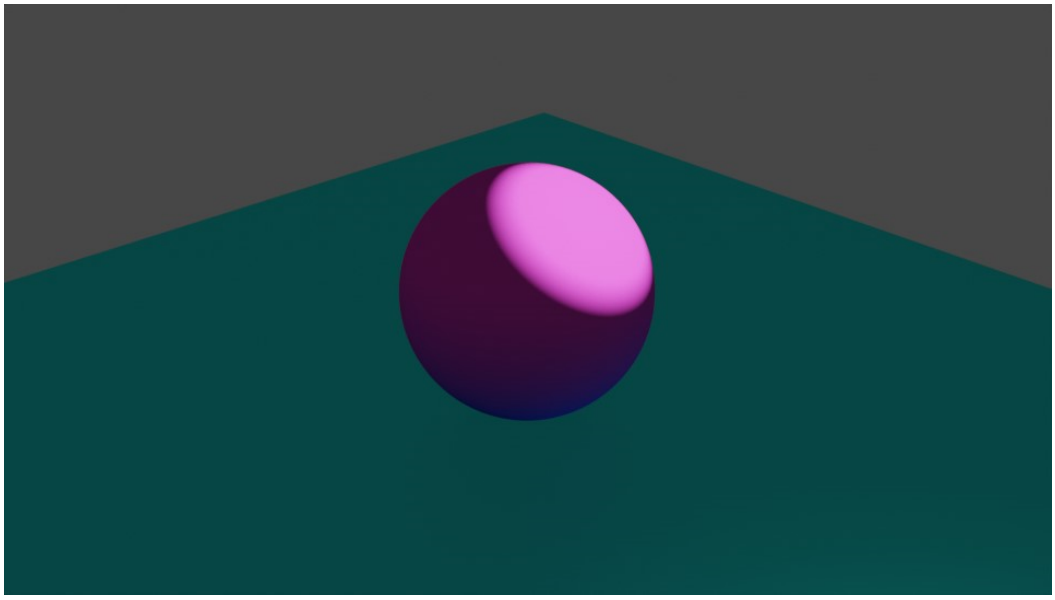


The image in checkpoint 2.5 is shining much brighter than the image in checkpoint 1.5, and the shadow in checkpoint 1.5 has a much more clearly defined edge than the shadow in checkpoint 2.5. This is because the area light covers a greater surface of the plane, so the shape of shadow is affected by light that is more spread.

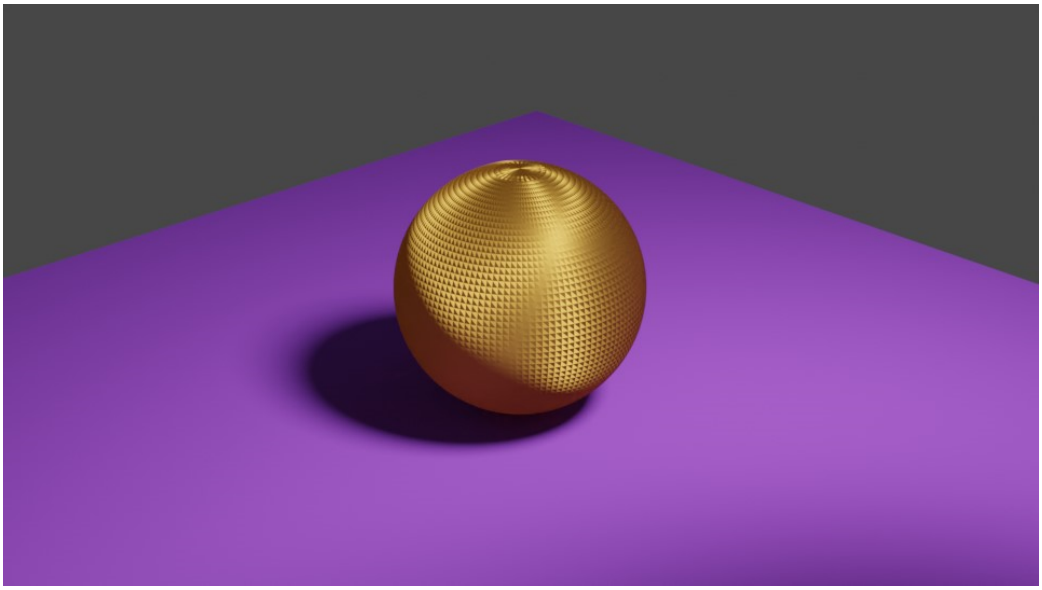
Checkpoint 3: Nishita Sky



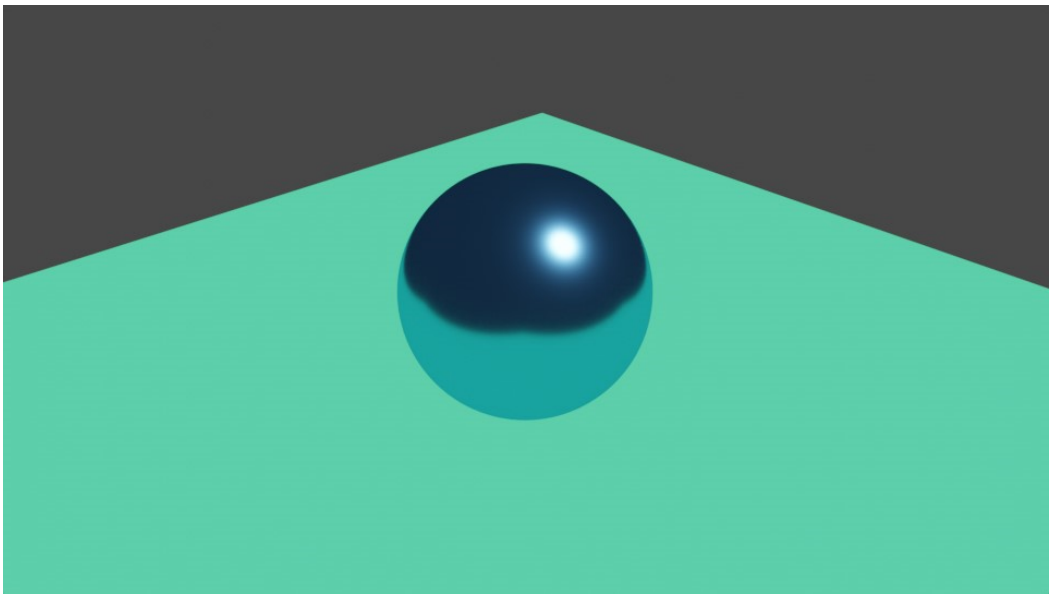
Checkpoint 4.1



Sphere: Toon BSDF, Plane: Glass BSDF.
With these parameters and shaders, the light is not scattered very much, since you can see that only one part of the sphere is being lit up. There is no shadow.



Sphere: Hair BSDF, Plane: Velvet BSDF
With these parameters and shaders, the light appears to be scattered across the sphere, since the whole sphere is shining brightly, and you can see a shadow.



Sphere: Glossy BSDF, Plane: Emission
With these parameters and shaders, the light seems to be hitting the top of the sphere but not the bottom, and there is no shadow.