Lighting communicates form, emotion, atmosphere, and also directs the viewer’s attention to part of a scene. Blender has two very different rendering engines – the Internal renderer and Cycles – and the techniques for successful lighting differ widely in each.

In the Internal renderer there are five types of lights – point, sun, spot, hemi, and area. Each can have differing intensities and colors. Some can cast shadows; it’s generally worth making your shadows dark gray rather than the default black. If you go to the World tab in the Properties window you can also see an option (disabled by default) called Ambient Occlusion. If you enable this by checking the box, and reduce the AO effect to around 0.25 or 0.30, this will add a pleasant diffuse light to the scene. In the Cycles renderer ambient light occurs automatically by light bouncing off surfaces, as it does in real life. In the Internal renderer the calculations are done in an unrealistic way (by rays being sent out from the camera) and AO does not occur without a specific additional calculation.

**Transparent shadows**
All aspects of Blender are designed to minimize use of system resources. For this reason shadows are always rendered as opaque in the Internal renderer (again, Cycles is different) and must be enabled for particular objects.

There is a video about creating transparent shadows at [https://youtu.be/MwSrreKlzlg](https://youtu.be/MwSrreKlzlg).

**Soft shadows**
Sometimes you don’t want a sharp raytraced shadow from an object. Any light source that is larger than a point and is relatively close to the object (ie: not the sun) will produce soft (blurred) shadows. In Blender Internal these are produced by a method called sampling, where shadows from several positions of the light are calculated and then combined. Too few samples (less than eight, generally) and the blur will be seen as grainy. Too many, and the rendering will take an unnecessary time. The width of the blurred edge is controlled with the Soft Size value – experiment with this to find the best for your scene.

**No shadows**
There are three types of surfaces that don’t show shadows. These are glowing objects, reflective (mirror finish) objects, and objects that are entirely black (so that the shadow isn’t distinguishable from the unshadowed part).
**Override materials**

A useful technique to gain an idea of how the lighting in a scene affects its look is to use an **override material**. Create an object in the scene (it can be hidden in the 3D view and from rendering by graying out the eye and camera icons next to it in the Outliner) and give it a matte light gray material. Call it something like Override. Then go to the Render Layers tab in Properties and select that material from the Material drop down list. The objects' material previews will not change, but they will all be rendered in that one material and you can judge the color, intensity, and direction of the lighting more accurately. To remove the Material Override option simply click on the X to the right of the material name.

If you know something about photography the techniques of real world lighting can be used in Cycles, and to a lesser extent in the Internal renderer.

There is a guide to some of the features of Blender Internal lighting at [https://users.soe.ucsc.edu/~yonge/02_PDF_guides/009_Lighting_1.pdf](https://users.soe.ucsc.edu/~yonge/02_PDF_guides/009_Lighting_1.pdf)


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