Unit 3 - Intro to Lighting,Texturing & Rendering

Lesson #3 - Lighting

CG Cookie Videos used in this lesson

Videos for this unit are available within the [Fundamentals of Lighting](#) download, and or are Included within the [Educator Blender Bundle](#).

- Fundamentals of Lighting - Point Lamps
- Fundamentals of Lighting - Sun Lamps
- Fundamentals of LIghting - Spot Lamps
- Fundamentals of Lighting - Area Lamps
- Fundamentals of Lighting - 3 Point Lighting: Key
- Fundamentals of Lighting - 3 Point Lighting: Fill
- Fundamentals of Lighting - 3 Point Lighting: Back/Rim

Key Training
- Working with point lamp, sun lamp, spot lamp and area lamp.
- Create a 3 point light setup.

Instructor Focus and Tips
- Start the lesson with a class lecture on lighting. Start the lecture by throwing out the question, "What is lighting the room?". Students will answer with the lights. Keep asking what else is lighting the room? They will start saying thing like the computer monitors, or outside light from the windows. Keep asking, throw out probing questions like what about the desk tops or walls. Get the student to realize that light is being reflected, and then get them to started thinking about how they would light a scene in Blender. At the end of the lecture, try matching the different Blender lamps with the lighting in the room.
- Emphasize that if a student has a good handle on 3-Point Lighting, it will help his/her career down the line. The number one thing that will show that you are an amateur 3D artist is poor lighting of a model. Get students in the habit of setting up all of their projects with a 3-Point Lighting setup.
- To help students adjust working with lamps, suggest that they work in quad view.

- Get the student in the habit of setting up a 3-point light setup before the start working on modeling a project. This will help them get a better Idea what their objects will look like from the start.

Student Activities and Assignments
- Have the students use the Fundamentals of Lighting Resource Files. Practice with the different lights on this file.
- Have the students open the 3 monkeys with materials project from the previous lesson and set up a 3-point light to make the materials on the monkeys look better.
- Have the students open one of monkey files from the previous lesson or start a new one. Have the students create a simple 3-point lighting setup. Have the students create a 3-point lighting setup. Have the student name the lights Key, Fill, Back and then set them with the following strengths.

Slot 1	Key Light = 1.0	Fill Light = 1.0	Back Light = 1.0

Have the students render and save the results in slot 1. Have the students change the render slot and then change the lamp settings and render each of the following. You might have to show students how to change render slots.

Slot 2	Key Light = 1.0	Fill Light = .3	Back Light = .3
Slot 3	Key Light = Hidden	Fill Light = .3	Back Light = .3
Slot 4	Key Light = 1.0	Fill Light = Hidden	Back Light = .3
Slot 5	Key Light = 1.0	Fill Light =.3	Back Light = Hidden
Slot 6	Key Light = 1.0	Fill Light = Hidden	Back Light = Hidden
Slot 7	Key Light = Hidden	Fill Light = .3	Back Light = Hidden
Slot 8	Key Light = Hidden	Fill Light = Hidden	Back Light = .3

Have the students quickly cycle through the slots and notice how the changes in the lighting settings change the render image.

Blender Terminology, Commands and Hotkeys Introduced
- Toggle Quad view - Ctrl Alt Q
- Shift A - Lamps to get to the different lamps

BellRInger Prompts and Ideas
- What types of light is lighting up the room?

Exit Ticket Prompts and Ideas
- What blender lamp would you use to represent the following.
  - A lamp on a table.
  - A set of fluorescent lights in a classroom.
  - A light coming from a lighthouse

Learning Targets
- Students know the difference between a point lamp, sun lamp, spot lamp and area lamp.
- Students can create a 3 point light setup.

Extended Learning Activity
- Review mesh lighting

Rubric

	Beginning	**Developing**	**Accomplished**	**Exemplary**
Point Lamp	Student has received a demonstration on the use of the Point Lamp.	Student demonstrates use of the Point Lamp and its settings with assistance.	Student demonstrates good use of the Point Lamp and its settings.	Student demonstrates good use of the Point Lamp and its settings and can assist other with its use.
Sun Lamp	Student has received a demonstration on the use of the Sun Lamp.	Student demonstrates use of the Sun Lamp and its settings with assistance.	Student demonstrates good use of the Sun Lamp and its settings.	Student demonstrates good use of the Sun Lamp and its settings and can assist other with its use.

Spot Lamp	Student has received a demonstration on the use of the Spot Lamp.	Student demonstrates use of the Spot Lamp and its settings with assistance.	Student demonstrates good use of the Spot Lamp and its settings.	Student demonstrates good use of the Spot Lamp and its settings and can assist other with its use.
Area Lamp	Student has received a demonstration on the use of the Area Lamp.	Student demonstrates use of the Area Lamp and its settings with assistance.	Student demonstrates good use of the Area Lamp and its settings.	Student demonstrates good use of the Area Lamp and its settings and can assist other with its use.
3 Point Lighting	Student has received a demonstration on the different parts of a 3-Point Lighting system.	Student can set up a 3-Point Lighting system with assistance.	Student can set up a 3-Point Lighting system.	Student can set up a 3-Point Lighting system and explain the difference between key, fill, and backlights.

Standards

Standard 3: Lighting

- **Objective 1: Lighting Object Types and Terminology**
    - o Indicator 1: Know lighting terminology
    - o Indicator 2: Identify parts of the 3d application interface used with lighting
- **Objective 2: Apply lighting effects**
    - o Indicator 1: Use basic three point lighting for artistic effect: key, fill, rim