LASER CLASSROOM
Bringing STEM to light®

BIG IDEAS

- Light allows us to see.
- Light originates from a source.

WHAT YOU'LL NEED

- White LED or Flash Light
- Blankets / Boxes
- Paper Doll Template
- Aluminum Foil
- Construction Paper (white and black)

LIGHT IS FOR SEEING!

You can begin a unit on light by having a classroom discussion that introduces the idea that light is what allows us to see.

1. Close the shades, cover the windows and turn on off the lights; then invite students to complete a task such as coloring or reading. When they respond "we can't!!", ask them why?
2. Ask students to brainstorm a list of dark places - cave, deep sea, movie theater.
3. Ask students WHY are those places dark? Facilitate a conversation that leads students to realize that without a source of light, there is no light; and with no light, there is no seeing!
4. Once students are clear that light is what allows them to see, introduce the idea that light comes from a source.
5. Brainstorm sources of light: candle, light bulbs, stars/sun, holiday lights. Light comes from a source.

The following Activity: Classroom Cave, gives students a chance to use science to refine their understanding of light and sight. By predicting, testing, changing a variable and testing again, students learn the process of science along with the content: light allows us to see.

ACTIVITY: CLASSROOM CAVE

This activity allows students to simply have the experience that a light source illuminates objects and allows us to see; it creates the foundation for the rest of the activities which lead students through the various properties of light and back around to how we see in our every day life.

1. Prepare a very dark “cave” in your classroom with blankets and/or boxes that students can easily climb in and block out light from the room. You can do this in advance, or have students brainstorm and create it with you, working together to make it as dark as possible.
2. Use the template on the next page and some construction paper to cut out 6 paper dolls: 2 white, 2 black and 2 aluminum foil.
3. “Hide” one of each doll inside the cave.
4. Show students the dolls and invite them to predict which doll(s) they will be able to see inside the cave (without taking a light in with them). Write down their predictions.
5. Invite one or two students at a time to go into the dark cave without a light to look for the hidden dolls..
6. Soon, students realize, they can not find any dolls. Discuss what they predicted vs. what actually happened.
7. Ask, why they found no dolls. What do they need? LIGHT!
8. Invite students to predict which dolls they will find if they take a flash light with them into the cave?
9. Give each student or small group of students a flash light or LED and allow them to use the light to look for the hidden dolls.
10. Discuss both their findings and the process of predicting, testing, changing a variable (light) and predicting and testing again. THIS IS SCIENCE!!

TEMPLATE: PAPER DOLLS