INDUCTEE CONNECTION:
KATHARINE BURR BLODGETT

Light refraction is used in many ways to alter how we view objects. Eyeglasses and magnifying glasses refract light to make objects less blurry or larger. Telescopes use refraction to reveal objects in the distance, while microscopes use refraction to make visible tiny objects that cannot be seen without them. Hall of Famer Katharine Burr Blodgett is the inventor of the world's first 100% transparent, or truly invisible, glass. When light reflects off a glass surface, it can cause distortions. Blodgett's antireflective coating on glass eliminates these distortions and is used in a wide variety of optical equipment.

Camp Invention®

LEADER-IN-TRAINING ACTIVITY GUIDE

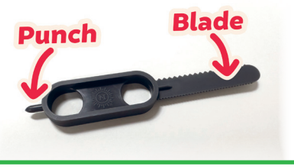
Discover the excitement of Camp Invention® and find inspiration from a Hall of Famer!

LEADER LAB

1

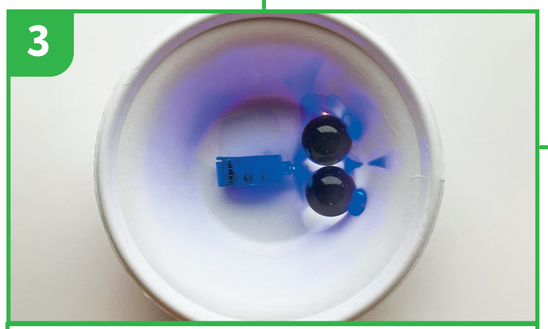
Get ready to explore a few materials you might see at Camp Invention®. This exploration will prepare you to help campers investigate. Start by putting on your safety glasses.

2



Check out the safety saw—a tool for cutting cardboard and creating holes in recyclable materials. Use it to practice your prototyping skills before the start of camp.

3



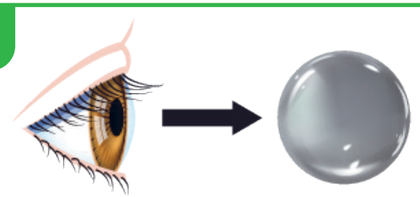
Explore light refraction by shining a finger light on the large, clear marbles.

Try placing two marbles in a bowl and setting the light directly between them. Where do you notice that the light splits? You may also have observed how the colored light from the finger lights bent as it hit the marbles from different angles! Add more marbles and keep experimenting.

LOCATE THESE MATERIALS:

- Camp Invention® bag
- Container or bowl, not clear (not provided)
- Container or cup filled with water, clear (not provided)
- Finger light
- Large, clear marbles
- Safety glasses
- Safety saw

4

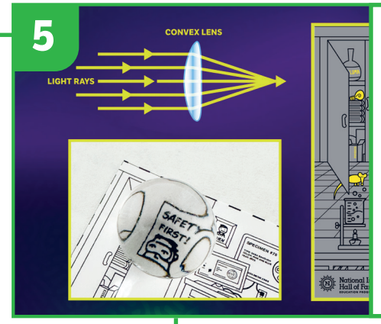


Continue investigating the large, clear marble. Look through the marble at various objects around the room.

Refraction is when light waves change direction as they pass through one medium, like air, to another, like water or a marble.

Different materials bend light in different ways because they change the speed of the wave. The more the light wave slows down, the more it bends.

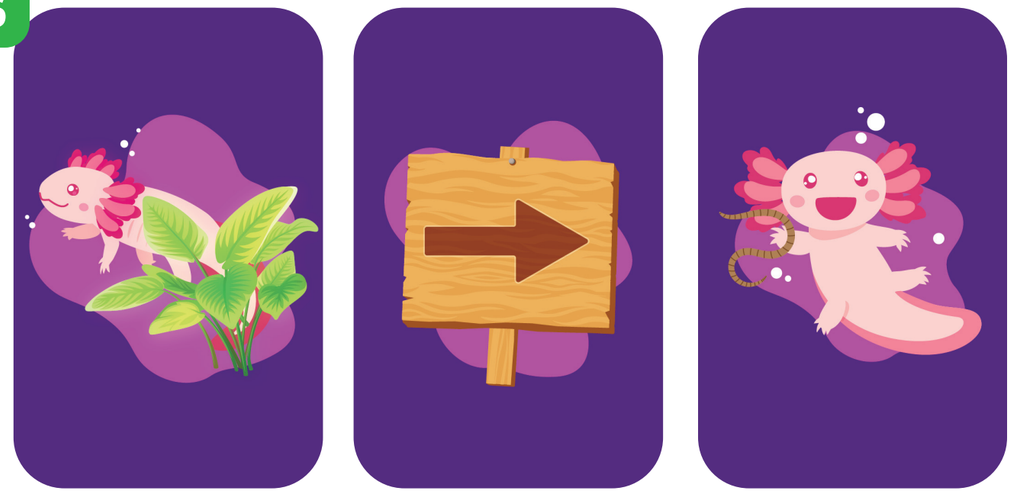
5



You may notice that looking through the large, clear marble will make objects appear curved or bent, and far away objects may look upside down!

Place the marble on top of images or text. You can magnify images with the large, clear marble's convex shape. The curved marble refracts or bends the light as it travels from the image to your eyes so that the image looks larger.

6



Hold the arrow and axolotl images behind a clear container with water. Look through the water and move the images closer and farther away to see what happens. You should notice that the images flip! An arrow that points to the right might reverse and point to the left.

7

All these feats of light are possible because light bends and refracts as it travels through the air and into water or a solid object like a clear marble!

Just like you've made light bend, be ready to flex and adapt with both yourself and the campers. It's important to embrace flexibility and bend with the new opportunities that might arise as a Leader. Place all of the materials in your Camp Invention® bag and use the bag to carry Inventor Logs and supplies for participants!