LEARNING HOW LIGHT WORKS

INTERNATIONAL YEAR OF LIGHT 2015

Refraction

NAME_____

TEACHER'S NAME_____

SCHOOL_____

Learning How Light Works: Refraction Discovery

Each activity will be followed by a group discussion.

Warm up

Why can you see the rays?	
Describe the light rays.	

Activity 1: Can You Bend Light?

Describe what happens when the light goes from air into gelatin.

Activity 2: Disappearing Penny

What happens when the cup is filled with water? Can you see the penny? What does the water do to the light so you can see the penny again?

Activity 3: Disappearing Beaker

At each step, tell whether you can see the outside beaker and the inside beaker.

	Outside beaker	Inside beaker
No oil in either beaker		
Oil in the inside beaker only		
Oil in both beakers		

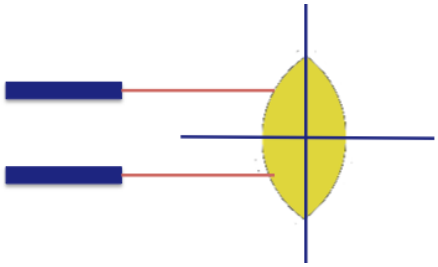
When you *can* see a beaker, why can you see it?

Why can't you see the inside beaker when both beakers have oil in them?

Activity 4: Lenses

1. Converging.

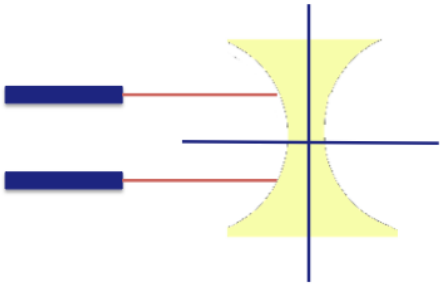
PREDICT what you think will happen when light goes through this lens.



Do the activity, then draw the path of the light rays. Was your prediction correct?

2. Diverging

PREDICT what you think will happen when light goes through this lens.



Do the activity, then draw the path of the light rays. Was your prediction correct?

Activity 5: Optical Fiber

Describe what happened to the laser light in the long thin piece of gelatin (optical fiber).

Activity 6: Light Without Electricity

In the space below, sketch your idea for lighting a small building using soda bottle light and refraction.

If you built a model of a soda bottle light, how did it work? Did you need to make any changes?

Debrief Activities

1. In learning about refraction today, what surprised you?

2. In learning about refraction today, what is one thing you learned that was new?