

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# ***REFRACTION***

Earlier in this unit you were asked a question about a spear fisher throwing his spear in front of where he sees the fish. We came to the conclusion that this is because light bends when it enters or leaves the water. In fact, light behaves like this when it passes through any different material. We say that **light refracts when passing from one medium to another** (light bends when it goes into a different material.)

As humans we take advantage of refracted light in many different ways. Do you know anyone who wears glasses? Glasses use the refraction of the light, going from the air into the glass, to help our vision. Similarly, glass can be used to make magnifying lenses. Today you will be making your own magnifying lens, using a cup and some water, so that you may see refraction in action.

## *Equipment:*

- Rubber Band
- Plastic Containers
- Small Objects
- Water
- Newspaper
- Pipette

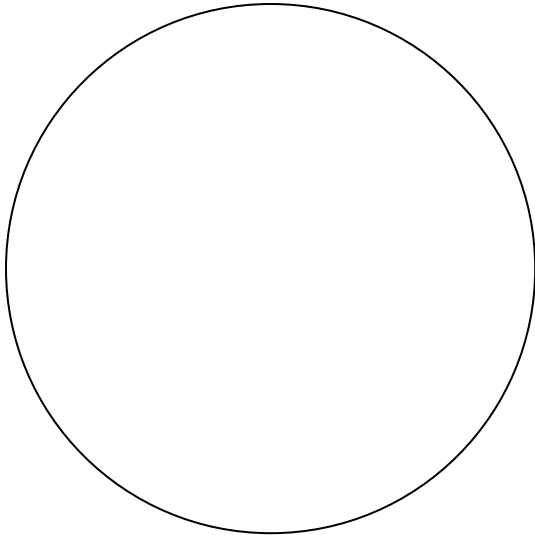
## *Procedure:*

1. Place the small objects in the bottom of the plastic container.
2. Draw what you see.
3. Cover the plastic container loosely with plastic wrap and use the rubber band to hold it in place.
4. Gently pour water on the plastic wrap, notice that the top of the water is flat, yet the bottom is curved.
5. Look at the small objects in the bottom of the container.
6. Draw what you see.
7. Experiment to see if you can make your lens more or less powerful.
8. Answer the discussion questions.

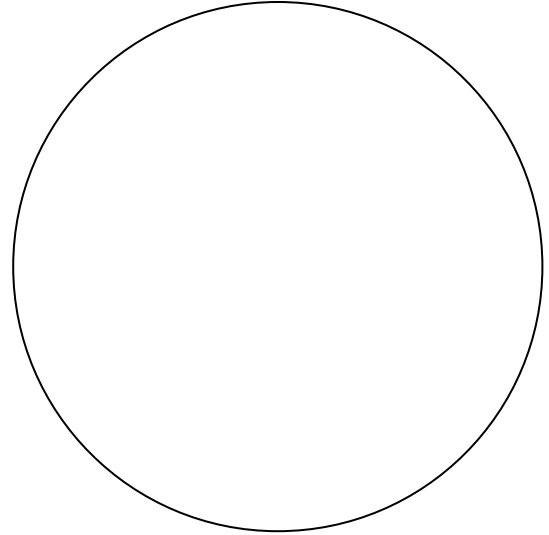


*Observations:*

Without Lens



With Lens



*Discussion:*

1. Why does your view of the objects change after adding the plastic wrap and water?

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2. Using the same principles you have used to make this magnifying lens, can you make a magnifier to make it easier to read a newspaper? Test your idea, then draw the results.