

NAME: _____

Science Experiment: Water Drop Lens (#70)

Cycle 3, Week 2

Purpose: A water drop is used to simulate an eye lens.

Can a water drop simulate an eye lens?

Make a hypothesis: (Color in the circle next to your guess).

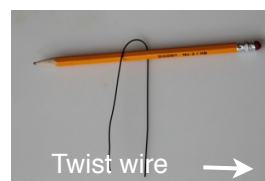
- ☐ **Yes**, a drop of water **can** simulate an eye lens.
- ☐ **No**, a drop of water **cannot** simulate an eye lens.

Needed materials: (Check off each material you have.)

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> one 6-inch piece of 20-gauge wire | <input type="checkbox"/> pencil |
| <input type="checkbox"/> bowl of water | <input type="checkbox"/> reading card |

Procedure:

1. Twist the end of the wire around the pencil to make a round loop.
2. Dip the wire into the bowl of water with the open loop pointing up.



3. Lift the loop carefully out of the water and hold it over the newspaper, magazine, etc.

(You want a large rounded drop of water to stay in the hole of the wire loop.)

4. Look through the water drop at the letters and words on the card. You may need to move the loop up and down to find a position that makes the print clear.

Conclusion: (Color in the circle next to what you observed.)

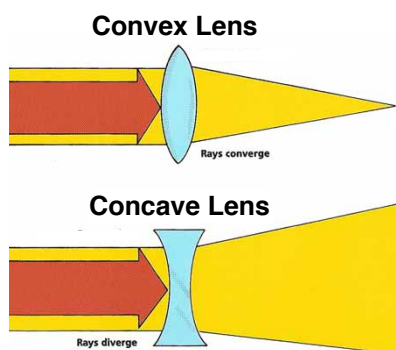
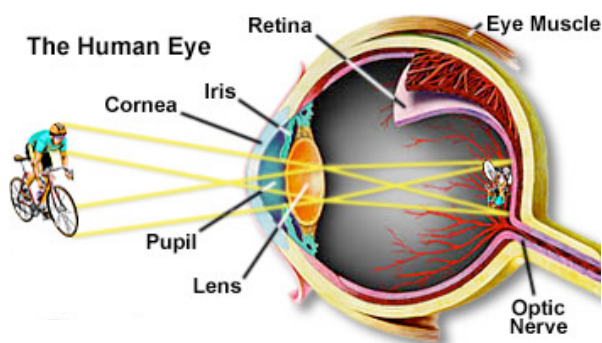
- ☐ The letters looked **larger** through the water drop.
- ☐ The letters looked **smaller** through the water drop.
- ☐ There was no difference in the size of the letters.



WHY WITH MISS WIZZLE

The eye is very complex and is made up of many parts. One of those parts is the **lens**. The job of the *lens* is to focus images on the *retina* of the eye.

There are two types of lenses, a **convex** and **concave**. The convex lens is thicker in the middle than on the ends which causes light to focus. The concave lens is thinner in the middle than on the ends, causing light to scatter.



The *lens* of your eye is a **double convex lens**, curving outward on both sides. This type of lens is also used in magnifying glasses and is what you created in the experiment today. Sometimes the water forms a **concave lens** by stretching between the wire and forming a thinner middle. This type of lens will cause the letters to look smaller.

*"If we can't explain how the eye evolved, then the whole theory of evolution is dead."
- Charles Darwin*

The human eye mystifies even the best evolutionary scientists today just as it did in Darwin's day. The irreducibly complex structure of the eye not only disproves the Darwinist theory, but also confirms that life was created by an intelligent designer.

I praise you, for I am fearfully and wonderfully made. Wonderful are your works; my soul knows it very well. – Psalms 139:14

1. Print one copy of this page.
2. Cut cards apart. *(You may wish to laminate so water does not damage print during the experiment).*
3. Give each student a card for the experiment. *Each card features three different letters, one one-syllable word, and a short quote by Benjamin Franklin.*

<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>A H L</p> <p>cat</p> <p>A penny saved is a penny earned. - Benjamin Franklin -</p>	<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>B X M</p> <p>dog</p> <p>A place for everything, everything in its place. - Benjamin Franklin -</p>
<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>C J V</p> <p>hat</p> <p>By failing to prepare, you are preparing to fail. - Benjamin Franklin -</p>	<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>D K Z</p> <p>pan</p> <p>Guests, like fish, begin to smell after three days. - Benjamin Franklin -</p>
<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>F P O</p> <p>sit</p> <p>Half a truth is often a great lie. - Benjamin Franklin -</p>	<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>U E N</p> <p>pig</p> <p>Either write something worth reading or do something worth writing. - Benjamin Franklin -</p>
<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>G M R</p> <p>bug</p> <p>I didn't fail the test, I just found 100 ways to do it wrong. - Benjamin Franklin -</p>	<p>Science Experiment #70</p> <p>Cycle 3, Week 2</p> <p>Q T X</p> <p>fan</p> <p>Wise men don't need advice. Fools won't take it. - Benjamin Franklin -</p>