Curiosity Guide #203
Refraction of Light

Accompanies Curious Crew, Season 2, Episode 3 (#203)

Test Tube Magnifier

Investigation #7

Description

Can you figure out how a test tube magnifier works?

Materials

- Capped test tube, test tube with rubber stopper, or cylindrical jar with lid
- Hot, soapy water for removing labels if needed
- Water
- Magazine pages

Procedure

1) Remove any label on the test tube or jar with hot, soapy water.
2) Completely fill the test tube or jar with water.
3) Secure the top so that it does not leak.
4) Lay your Test Tube Magnifier on its side, over the text from a magazine page.
5) Look through the tube. Slowly lift the tube up.
6) Continue to lift the tube higher while looking through it.
7) What did you notice?

My Results

Explanation

A convex lens is a lens that is curved on both sides. As light enters the tube, the rays on the outer sides are bent toward the center. The light rays bend again as they pass through the second curved side of the lens. The rays converge at a single point, called the focal point, where the image can clearly be seen and magnified. However, by continuing to move the tube, the converging rays of light cross one another and make the image flip upside down.

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