Homemade Magnifying Glass

Sections

Joey Scouts | **Cub Scouts** | **Scouts** | Venturer Scouts | Rover Scouts

Scouts VICTORIA

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Challenge Areas

COMMUNITY | **CREATIVE** | OUTDOOR | PERSONAL GROWTH

Scout Method Elements

COMMUNITY INVOLVEMENT | **LEARNING BY DOING** | NATURE AND THE OUTDOORS | PROMISE AND LAW | **PERSONAL PROGRESSION** | PATROL SYSTEM

SYMBOLIC FRAMEWORK | **YOUTH LEADING, ADULTS SUPPORTING**

SPICES Growth Areas

CHARACTER | EMOTIONAL | **INTELLECTUAL** | PHYSICAL | SOCIAL | SPIRITUAL

The Adventure

Take a closer look at the world around you by making a magnifying glass with resources from around the home.

Plan

1. Investigate magnifying glasses and how they work. What type of lenses do they use?
2. Investigate refraction, reflection, and diffraction of light. What are they, how do they differ, and what is being used by a magnifying glass?
3. Investigate the properties of water and how light interacts with it.
4. Read the safety information and discuss with your leaders or another appropriate adult what safety equipment, precautions, and supervision may be required. Ensure that you have these safety measures in place before starting the 'Do' section.
5. Gather all the equipment that you need to make your magnifying glass. You will need the following equipment: a clean and empty clear plastic (ideally 2 litre) bottle such as an old fizzy drink bottle, a permanent marker, a cup or other guide for drawing a circle, a pair of scissors, some water, paper with text or something else to look at under a magnifying glass.

Do

1. Make sure that the bottle is clean, empty, and dry.
2. Using the cup (or suitable alternative), draw a circle on the curved part of the bottle (near the top) with the permanent marker.
3. Carefully cut out the circle. You may need an adult to assist you with this.
4. With the curve of the bottle facing upwards to make a little bowl, pour some water into the curve. You should aim to approximately half fill the little bowl.
5. Taking care not to spill the water, hover your homemade magnifying glass over a piece of paper with text on it to see how it changes the size of the text. Have a look at other things under your magnifying glass.

Review

1. Did your magnifying glass work as you expected? Why or why not? How does it compare to a store bought magnifying glass?
2. What could you do differently to improve your magnifying glass? Do you think using a different sized bottle or cutting a different sized circle would change how the magnifying glass works?
3. What did you enjoy most about making your magnifying glass? What did you learn?

Safety

- Sharps warning: This activity requires the use of scissors to cut plastic which may lead to cuts. Adult supervision and assistance should be provided suitable to the age group. Leaders could consider pre-cutting the circles in young sections.
- The cut plastic may create sharp edges which may cause cuts. These edges can be sanded or have tape placed around them to minimise cut risk.

Variations

- This challenge card could pair well with Figuring out Fingerprints (Rolling Fingerprints) to allow youth members to take a closer look at their fingerprints.