dazzle WATER MICROSCOPE

Curriculum Framework Link
Energy & Change
Students understand and apply their knowledge about the nature of light.

What You Need

- plastic straws (different sizes)
- water
- scissors
- transparent plastic or glad wrap
- newspaper
- a glass
- a jar with a screw on lid
- a jug
- coins

What To Do

- Place the piece of plastic or glad wrap over the top of a sheet of newsprint.
- Use the straws to put water droplets of varying sizes and shapes on top of the plastic.
- Look at the print and record your observations. Which shaped drop magnifies the most?
- Place the coins in the bottom of the glass.
- Take careful note of what the coins look like.
- Fill the glass with water.
- Observe what the coins look like after the glass is full.
- Fill the glass jar with water and screw the lid on tightly.
- Roll the jar over a sheet of newspaper.
- Observe what happens to the newsprint.
- Record as much information as possible about your findings.

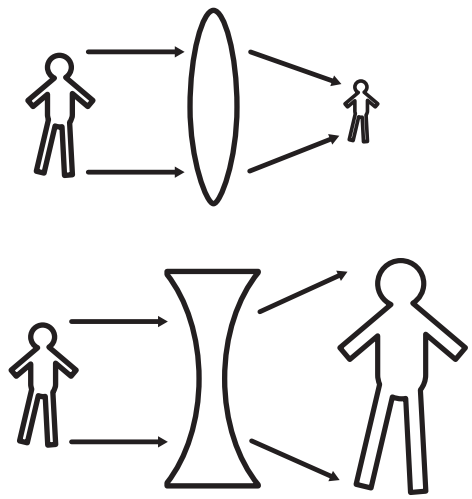
Focus Questions

* **Observe the size and shape of the lenses in a pair of glasses. Of course make sure you get the owners permission to feel them! What shape are they?**
* **Describe the difference between concave and convex lenses.**
* **How are images produced by an overhead projector, slide projector and a movie projector?**
* **Do you think convex and concave mirrors would work the same way as convex and concave lenses?**

BACKGROUND KNOWLEDGE

A convex lens has a surface which curves outwards, so the lens is thicker in the middle than at the edges. Convex lenses are the types of lens in magnifying glasses and curve inwards. They make things look bigger than they really are, because they bend light rays from objects inwards, making them seem to come from a bigger object. The surface of the water in the activity above works in a similar way to a convex lens. The surface tension curves the top surface of the water causing this part of the water to act as a convex lens.

A concave lens is where the surfaces of the lens curve inwards. A concave lens makes objects look smaller because it bends the light rays from it out, so that they seem to come from a smaller object.



Galileo Galilei was a famous Italian scientist and inventor who was born in 1564. During his life, the heavens and the movement of objects in the night sky fascinated him. Galileo invented a telescope using eye-pieces (lenses) and he also developed the first microscope using water.

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