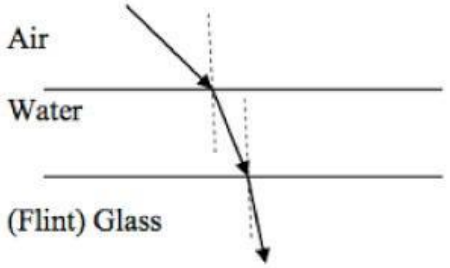
Learning Target S8P4. I can develop and use models to demonstrate the effects that lenses have on light and their possible technological applications.

## Exploring Light & Lenses Interactive Activity

**Objective:**
Students will explore the effects that lenses have on light and their possible technological applications.

**Part 1: Understanding Light**

1. **Diagram Analysis:** Below is a diagram showing the path of light as it travels through different media (air, water, and glass). Study the diagram and answer the following questions:

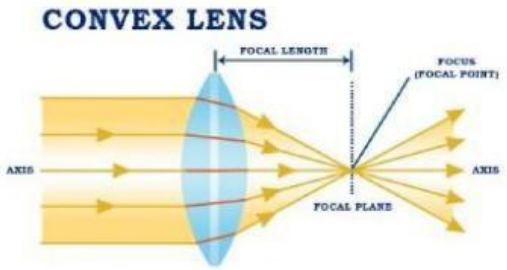


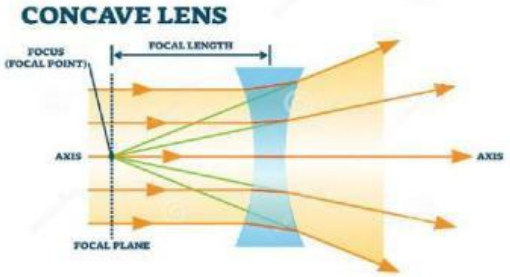

**Questions:**

- What happens to the speed of light as it moves from air into water? _____
  _____
- Explain why the light ray bends when it enters the glass from the water. _____
  _____
- In which medium (air, water, or glass) does light travel the fastest? _____

**Part 2: Types of Lenses**

2. **Lens Identification:** Below are images of two types of lenses: convex and concave.




**Activity:**

- Identify which lens focuses light rays to a point. _____
- Identify which lens spreads light rays apart. _____
- Describe one real-world application of each type of lens. _____
  _____

Created By: Chivas & Jordan Spivey

**Duplication of any part of this activity is prohibited by law.**

LIVEWORKSHEETS

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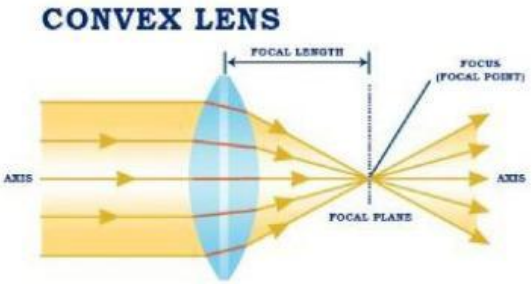
3. **Predicting Light Paths:** Below is a chart showing the direction of light rays passing through a convex lens. Use the chart to predict the direction of light rays for a concave lens.



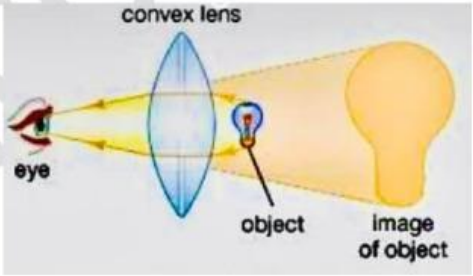

**Questions:**

- How would the light rays behave differently with a concave lens? _____
  _____
- Draw your prediction for the path of light through a concave lens.

| **Concave Lens Drawing** |
|---|
| |

**Part 3: Experiment Simulation**

4. **Experiment Setup:** Below is a diagram of an experiment setup with a light source, a convex lens, and a screen.




**Questions:**

- If the lens is moved closer to the light source, how will the size of the image on the screen change? _____
  _____
- What happens to the image if the lens is replaced with a concave lens? _____
  _____


**Duplication of any part of this activity is prohibited by law.**

LIVEWORKSHEETS