



HOMESCHOOL SCIENCE EXPERIMENT

OBSERVING THE PROPERTIES OF LIGHT REFRACTION WITH WATER AND GLASS

Name: _____

Date: _____

OBJECTIVE

To observe how light changes direction (refracts) when it moves from air into water and through glass.

BACKGROUND

Light travels in straight lines, but when it passes from one transparent medium to another—such as from air into water or through glass—it changes speed and bends. This bending of light is called refraction.

HYPOTHESIS

If light passes from air into water or through glass,
then I think the light will _____
because _____.

PROCEDURE

1. Place the clear glass or jar on a table and fill it about 3/4 full with water.
2. Place the pencil (or straw) in the glass so that part of it is in the water and part is in the air.
3. Step back and observe the pencil. What do you notice about how it looks in the water?
4. Shine a flashlight from the side so the beam hits the water surface.
5. Observe the light as it enters the water. What happens to the direction of the light?
6. Now, place the empty glass cup or glass block on a sheet of white paper.
7. Shine the flashlight through the glass and observe the light as it enters and exits the glass.
8. Draw your observations in the table and answer the questions below.

OBSERVATIONS

Test	What I Observed	How the Light Changed Direction
Light entering water		
Light passing through glass		

CONCLUSION

Write a sentence summarizing what you learned.

MATERIALS

- Clear glass or jar
- Water
- Pencil or straw
- Clear glass block or empty glass cup (for glass refraction)
- White paper
- Ruler (optional)
- Flashlight or lamp



SAFETY

Do not shine the light into anyone's eyes.
Keep water away from electrical devices.

DIAGRAMS – DRAW YOUR OBSERVATIONS

Light entering water

Light passing through glass

ANALYSIS QUESTIONS

1. How did the light change when it entered the water?

2. How did the light change when it passed through the glass?

3. Why do you think light bends when it moves from one medium to another?

4. Give two real-life examples where refraction of light is used or can be observed.

