



## GOD'S COMPASS

### SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything while doing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a **CHOKING HAZARD**. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

### REVERSING ARROW

#### INGREDIENTS

- Transparent Drinking Glass
- Black Permanent Marker
- Piece of Paper
- Water

#### INSTRUCTIONS

**STEP 1:** Fill the transparent drinking glass with water.

**STEP 2:** Using the black permanent marker draw a horizontal arrow on the piece of paper.

**STEP 3:** Place the piece of paper, with the horizontal arrow, behind the transparent drinking glass, filled with water. Make sure the paper is touching the transparent drinking glass of water and observe the horizontal arrow.

**STEP 4:** Move the piece of paper, with the horizontal arrow, away from the transparent drinking glass of water and observe the horizontal arrow. What are the effects of placing the piece of paper, with the horizontal arrow, behind the transparent drinking glass of water?

#### EXPLANATION

As you move the piece of paper, with the horizontal arrow, away from the transparent drinking glass of water, the arrow appears to reverse. The light is refracted as it passes through the transparent drinking glass, the water, then through the back of the transparent drinking glass, and finally through the air to the paper with the horizontal arrow. This refraction causes the horizontal arrow to appear as if it is reversed.



### BIBLE TRUTH

God will always lead you in the right direction.

### WHAT THE BIBLE SAYS

*Psalm 32:8*

I will instruct you and teach you in the way you should go; I will counsel you with my loving eye on you.

### BIBLE CONNECTION

Just as the arrow reverses, as you move the piece of paper away from the transparent drinking glass, when you are headed in the wrong direction, if you listen, God will guide you in the right direction. If you allow God to lead you, you'll never head in the wrong direction, and discover He is better than any compass.

### SCIENCE WORDS

**LIGHT** – Energy in the form of waves that the human eye sees as visible light

**REFRACT** – To bend light rays as they pass from one substance into another, such as from air into water.