Explain Events, Procedures, and Ideas

Grade 4 Reading Worksheet - Building Confidence

Name _____ Date _____

Read the text. Circle the answer to each Why question.

READ THIS FIRST

Make a Floating Compass

A compass is a tool that shows which way is north. Sailors and hikers have used compasses for hundreds of years. You can make a simple one at home with a few supplies.

You will need a sewing needle, a small magnet, a slice of cork and a bowl of water. Ask an adult to help, because the needle is sharp.

First, hold the needle by its eye. Then stroke the magnet along the needle about thirty times. Always stroke in the same direction, from the eye to the point. Lift the magnet away at the end of each stroke. Rubbing back and forth would undo your work.

Next, push the needle carefully through the slice of cork so it lies flat. Gently set the cork on the water in the middle of the bowl. Keep the bowl away from metal objects and other magnets.

Now watch closely. The cork will slowly turn and then stop. The needle will point north and south.

Why does this work? Stroking the needle in one direction lines up tiny parts inside the metal. As a result, the needle becomes a weak magnet. Earth itself acts like a giant magnet, with one end near the North Pole. A magnet that can turn freely will line up with Earth's magnet. The water lets the cork spin easily, so the needle can turn until it lines up.

To check your compass, compare it with a real one or a phone compass. Your needle should match.

1. Why must you stroke the magnet in only one direction?
   - It keeps the needle point from getting dull.
   - It helps the cork float on the water.
   - Rubbing back and forth would undo the work.

2. Why is the needle set on cork floating in water?
   - so it can turn freely until it lines up
   - so the magnet can stay close to it
   - so it stays clean and does not rust

3. Why should you keep the bowl away from metal objects and other magnets?
   - They could make the water too cold.
   - They could make the cork sink.
   - They could pull the needle the wrong way.

4. According to the text, why does the needle point north and south?
   - The cork is always heavier on its north side.
   - It lines up with Earth, which acts like a giant magnet.
   - The water in the bowl slowly flows toward the north side.

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Answer Key - Grade 4 Reading Worksheet - Building Confidence

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