Explain Events, Procedures, and Ideas

Grade 4 Reading Worksheet - Building Confidence

Name _____ Date _____

Read the text. Circle the answer to each How 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. How can you check that your compass works?
   Stroke the needle with the magnet thirty more times.
   Compare it with a real compass or a phone compass.
   Push the needle deeper into the slice of cork.

2. How do you stroke the magnet along the needle?
   back and forth over the whole needle
   in one direction, from the eye to the point
   in small circles around the middle of the needle

3. How does the needle stay up on the water?
   It is pushed through a slice of cork.
   It is taped to the rim of the bowl.
   It is held up by the pull of the magnet.

4. How does the cork behave after you set it on the water?
   It spins around and never stops.
   It slowly turns and then stops.
   It sinks to the bottom of the bowl.

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Answer Key - Grade 4 Reading Worksheet - Building Confidence

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