



Teacher's Guide



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Introduction

Ask Mark Question is designed to spark the imaginations of children in kindergarten through grade 2 and encourage them to use their natural curiosity to observe, question, and investigate science. Loveable animated character Mark Question has his own show during which he receives questions from viewers about science phenomena. Mark rarely knows the answer, of course, but with guidance from his good friend, Peri Od, he investigates and learns. This guide provides suggestions for introducing, presenting, and reinforcing each of the video programs.

Learning Objectives

After viewing the programs and completing the lessons, students will be able to:

- Describe basic concepts of science.
- Demonstrate hands-on thinking skills while carrying out scientific exploration.
- Apply scientific concepts to aspects of their own lives and the larger world.

Using TV to Teach

In order to ensure that the use of television or video in the classroom is a true educational tool, it is necessary to create an atmosphere of learning around the procedure. Students must learn habits that are different than those they are used to at home—including active rather than passive viewing; centering full attention on the program; and participating in comprehension strategies that encourage thoughtful analysis of the content: predicting outcomes, drawing conclusions, and making inferences. To that end, we suggest that the following procedures be followed when using *Ask Mark Question* as an educational tool in your classroom.

Pre-Viewing Activities

Before showing the program, create interest and generate curiosity in the topic of study by introducing the key concepts and conducting the exploration activity. Prior to showing the video, you may also want to find out what children already know about the topic and identify misconceptions in students' understanding.

After the Video

For each video you will find a hands-on activity intended to reinforce the topic introduced in the video and to help students develop thinking processes. This guide also suggests a variety of cross-curricular follow-up activities designed to help children understand the practical applications of science within language arts, math, social studies, art, or music.

Standards

The American Association for the Advancement of Science (AAAS) founded Project 2061 in 1985 to help all Americans become literate in science, mathematics, and technology.

With its 1989 landmark publication *Science for All Americans*, Project 2061 set out recommendations for what all students should know and be able to do in science, mathematics, and technology by the time they graduate from high school. *Science for All Americans* laid the groundwork for the nationwide science standards movement of the 1990s. *Benchmarks for Science Literacy*, published in 1993, translated the science literacy goals in *Science for All Americans* into learning goals or benchmarks for grades K–12. *Ask Mark Question* correlates to the following benchmarks, as outlined by Project 2061, found at www.project2061.org/publications/bsl/online/bolintro.htm.

The Physical Setting

Kindergarten through Grade 2

B. The Earth

- Water can be a liquid or a solid and can go back and forth from one form to the other. If water is turned into ice and then the ice is allowed to melt, the amount of water is the same as it was before freezing.
- Water left in an open container disappears, but water in a closed container does not disappear.

F. Motion

- The way to change how something is moving is to give it a push or a pull.

1. *Evaporation/Water Cycle*

Episode Summary

A question about a mysterious shrinking puddle that eventually disappears puzzles Mark. Peri jumps in to explain about evaporation, how clouds form, and precipitation.

Pre-Viewing Activities

Keywords

evaporate
puddle
rain
sun

Exploration Activity

Wipe the chalkboard with a wet paper towel and have students observe what happens. Ask students to explain where the water goes. Then have students describe why they think puddles of water always disappear.

Post-Viewing Activities

Hands-On Science

Make puddles of water on the concrete outside and trace them with sidewalk chalk. Record the size of the puddle on a piece of notebook paper. At regular intervals retrace the puddles and record the sizes of the puddles. Continue to do this until the puddles disappear. Ask students, “Do puddles evaporate more quickly in the shade or in the sun? Why? Do large puddles take longer to evaporate than small ones? Do puddles evaporate even on a cloudy day?”

Curriculum Connections

Math

Pour 50 mL of water into an open container and 50 mL of water into a container with a lid. Place the containers on a table or a surface (preferably near a window or in a sunny spot) where they can remain undisturbed for a length of time. Each day, have students observe the level of

water in each container and mark a new line if necessary. Create graphs to show how much water evaporated each day.

Social Studies

Invite someone from the local water department to visit your classroom and discuss the watershed and where local tap water comes from. Ask the representative from the local water department to show students a map of the water collection and distribution system.

Language Arts

Have students read *The Magic School Bus Wet All Over: A Book About The Water Cycle (Magic School Bus)*, by Pat Relf. Then ask students to write their own stories about the water cycle.

2. *Work/Simple Machines*

Episode Summary

How can a human lift a car? As Peri demonstrates, there's more than human strength involved when the jack uses leverage to break up a big job into a series of little ones.

Pre-Viewing Activities

Keywords

lever
simple machine
work

Exploration Activity

Ask students whether or not they think it is possible for one student to lift you off the ground. Then show students a stack of four large books and a piece of lumber that is six inches wide and five feet long. Ask students how they can use those materials to lift you off the ground.

Post-Viewing Activities

Hands-On Science

Divide the class into small groups. Give each group a pencil, masking tape, and ten pennies. Have each group tape the pencil to a level table top and balance a ruler across the pencil. Have students place five pennies on each side of the ruler and observe what happens. Then have students place two pennies on one side of the ruler and eight pennies on the other side of the ruler and observe what happens. Students can also position the pencil closer to one end of the ruler and observe what happens.

Curriculum Connections

Art

Ask students to look through catalogs, magazines, and newspapers and find pictures of simple machines. Students can then create a collage of simple machines.

Language Arts

Have students read *How Do You Lift a Lion?* by Robert E. Wells.