

Dear Parent,

Your child is beginning a unit developed by the Battle Creek Area Mathematics and Science Center. This unit was designed to promote science and engineering literacy and integrate reading and writing skills into high-interest science content. During the next twelve weeks, your child will be actively involved with the *Structure and Properties of Matter* unit. This unit is geared for second-grade students and focuses on the "big ideas" of obtaining information to determine how structures and properties of matter make things useful. Students will:

1. Sort objects according to observable properties, such as color, shape, size, and sinking or floating.
2. Identify materials that are attracted to a magnet.
3. Demonstrate properties of water as a solid and a liquid.
4. Communicate scientific findings to others.
5. Demonstrate good observation skills, generate questions, and plan and conduct simple investigations.
6. Construct simple charts and graphs.

Second-grade students are also encouraged to think and act like scientists and engineers and begin to develop observation and communication skills in science.

1. Ask questions that can be investigated and use evidence to predict outcomes based on patterns.
2. Make observations to produce data.
3. Plan and conduct simple investigations.
4. Use evidence to construct explanations.
5. Obtain and combine information from resources to explain phenomena.
6. Develop a model using an analogy, example, or abstract representation to describe a scientific principle.
7. Use patterns in data and cause-and-effect relationships to explain change.
8. Use relevant scientific concepts and research findings to solve an engineering problem.

In this unit the activities are geared to build on students' inherent knowledge and provide experiences in which they use and apply their knowledge in a wider range of tasks. Students will be given the opportunity to examine, measure, reflect upon, describe, and discuss how properties of different materials make them useful. Students will read and explore how scientists and engineers use properties of organisms to design and build useful tools. Suggestions for activities to do at home are included with this letter. These activities will reinforce the concepts taught during this unit instruction.

May you enjoy quality time with your child while discussing the concepts involved with the *Structure and Properties of Matter* unit. Let us know if we may be of assistance.

The Outreach Staff

Battle Creek Area Mathematics and Science Center

(269) 213-3904 or (269) 213-3905

ACTIVITIES TO DO AT HOME

Activities To Do At Home

1. Your child will be learning about the physical states of water as it changes from one phase to another: solid (ice), liquid (water), gas (water vapor). Be sure your child explains what he/she learned about water.
2. Experiment with your child by using water in small containers. Doing these experiments in the sink, in the tub, or outside will help to prevent spills. Have your child select items found around the home. First, ask your child to predict what will happen to each item when placed in the water. Will it sink or float? Will it dissolve or not? Is it waterproof or not? Then place each item in the water to see what happens. Have your child keep track of his/her predictions and what actually happens by drawing it or writing it down on paper.
3. *Help your child* choose several containers of different shapes and with different-sized openings. Allow your child to put water into the containers, mark the beginning water levels, predict what will happen to the water left in the containers, and then observe what actually does happen each day over several days. Keeping a daily record of what happens is good practice in data collection and in making comparisons.
4. Ask your child to help sort the laundry by color and size of clothing. Explain why it is better to sort by color before washing.
5. Ask your child to sort a variety of canned goods. Have him/her sort and place them in an area on the shelf for easy location and use.
6. Keep track of how often you and your child use water in your home during one day. Look for ways you can help to conserve water.
7. Take a trip to the library with your child. Look for books about properties, water, and about heating and cooling.

The Secret of Water, Masaru Emoto

What is a Liquid? Jennifer Boothroyd

Change It! Solids, Liquids, Gases, and You, Adrienne Mason

Matter Comes in All Shapes, Amy Hansen

8. Remove the magnets from the refrigerator and have your child find which side of the magnets attracts other magnets and which repels. Allow your child to mess about with paper clips, a variety of nails or screws, and other metal items to see which objects magnets attract.
9. Use tools and kitchen utensils with your child and discuss the properties of each item and how that property makes the item useful (flexible, rigid, absorbent, repellent, sink, float, texture, etc.).