PARENT LETTER

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 *Forces and Interactions* unit. This unit is geared for third-grade students and focuses on the big ideas of obtaining information to determine the effect of equal and unequal forces on an object and how magnetic forces can be used to solve problems. Students will:

- Plan and carry out an investigation to collect data to determine different strengths and directions of balanced and unbalanced forces.
- Plan and carry out investigations to collect data to determine the effect of collisions and objects in contact with one another.
- Collect and record data through observations and measurement to identify the forces acting on an object at rest and an object in motion.
- Use patterns in data to predict future motion.
- Make observations and collect data to determine the cause-and-effect relationship between magnetic and electric interactions and motion.
- Design a device to solve a problem using electric or magnetic interactions.

Third-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 that 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 the effects of forces on objects. Students will read and explore how scientists and engineers use information about forces and interactions to predict future motion. 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 *Forces and Interactions* 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

- As you are spending time with your child, discuss the importance of knowing directions. Give your child the opportunity to tell you which way to turn when heading toward a specific destination. Provide additional practice with directions by having your child tell you which way you turned. Be sure to use the words north, south, east, west, right, and left. Also give your child practice with the words slow, slower, fast, and faster while you are working on this concept of direction.
- Take your child to a library or bookstore to find magazines and books about friction, gravity, and simple machines.
- Ask your child to identify the forces that start objects moving and forces that stop objects' motion in common situations.
- Look for examples of data tables and graphs in the newspaper or magazines you read at home. Discuss the information presented. Interpret what they mean. (USA Today is a good source for a variety of interesting graphs.)
- Design and make paper airplanes at home. Use motion, direction, and speed words to describe the action of the plane. Have your child explain the force that makes the plane come to rest on the floor or ground.
- Make observations of how magnets are used in the home, stores, and businesses.
- Visit the local library and check out books related to motion. Examples:

  Roll, Slope, and Slide, by Michael Dahl

  What Makes It Swing? by Jim Pipe

  Move It! by Jennifer Waters

  Rolling, by Patricia Whitehouse