Force and Work

Objectives:
Students will determine that work is the result of a force moving an object.
Students will determine that work is done only when a force moves an object.

Concepts to be learned:
Students will learn what is needed before work can occur and if what they do at home can be classified as work.

Materials:
A copy of the book *Back and Fourth* by Patricia J. Murphy for each student.
Drawing paper
Crayons, markers, colored pencils
Chalk and Chalkboard

Procedures:

Introduction:
Invite students to share examples of work their parents do, write responses on board. Ask children:
How do you know that what you suggested is work?
After each student has had a chance to share and explain their answers, explain to students that as a class we are going to read a book that will explain how a person can figure out if work is being done.

Development:
Place students in groups of two using Popsicle sticks. Make sure every student has a copy of the book *Back and Fourth* by Patricia J. Murphy. Instruct students that while they are reading the book they need to pay close attention to see if they can find out if the book really does tell them how they can figure out if work is being done. Have student’s sit with their partners anywhere in the room they want and partner read the book (each child takes a turn reading a page). After students are finished reading have students return to their seats and ask them:

Did the book explain to you how to figure out if work is being done?
What can a person do to determine if work is being done?
What is the definition of work?
What is the definition of force?
What are some ways that a person can do work that the book describes?

After students have answered the questions have students suggest examples of work that they do at home, write their responses on the board. Have students explain why their example should be defined as work. Write students answers on the board.
**Conclusion:**

Have students illustrate a picture of themselves doing work. Have students identify and label the force and the movement in their illustration. Have students share their illustrations when finished.

**Evaluation:**

Students will be evaluated on the whole-class discussions, whether or not their illustrations are an example of work, and if they correctly labeled their illustrations.