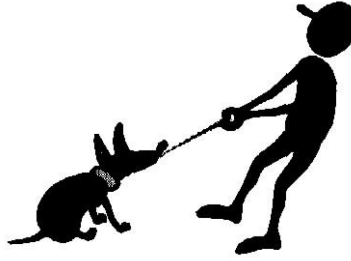


# WHAT A DRAG!



## **BENCHMARKS and TASKS**

**SC.C.1.1.1** The student understands that different things move at different speeds.

**SC.C.2.1.1** The student knows that one way to change how something is moving is to give it a push or a pull.

- The student changes the position and motion of objects by pushing or pulling on them.
- The student compares and contrasts many different ways of moving, such as straight, zigzag, round and round, back and forth, and fast and slow.

## **KEY QUESTION**

How does a block move differently when it is pulled across different surfaces?

What are some ways you can move a block?

Do all objects move at the same speed?

## **MATERIALS**

### **Teacher**

block

string or yarn

*The Enormous Turnip* by Kathy Parkinson or

*The Enormous Watermelon* – Wright Group

Sunshine big book or

*Cucumber Soup* by Vickie Leigh Krudwig

magic markers or round sticks

### **Per group**

1 large block (at least 20 cm x 15 cm x 15 cm)

string or yarn

various surfaces – floor, carpet, grass,  
sand, cement, wood, paper, etc.

items to travel on an inclined plane (e.g.,  
cotton ball, toy car, block, etc.)

## **TEACHER TIPS**

1. Ask a volunteer or an older student assistant to help with tying string around the blocks.
2. Try moving the block across the carpet/tile yourself before the lesson. If the difference in difficulty is not noticeable, substitute it with a box with blocks. (Be sure it's not too heavy.)
3. Books can be substituted if you do not have blocks.

## **ENGAGE**

1. Read and discuss *Cucumber Soup*, *The Enormous Turnip*, or *The Enormous Watermelon*.
2. Begin the lesson by dragging (pulling) a block with a string tied around it across both the carpet and the floor (or pull the box with blocks).

Ask:

*Did the block move the same way on the floor as it did on the carpet?*

Discuss responses.

3. Recite the poem:  
A block on a rug is hard to tug.  
A block on the floor moves out the door.

### **EXPLORE**

1. Encourage pairs of students to pull a block with a string tied around it along as many different surfaces as they can find.
2. Challenge the students to:
  - pull the blocks fast, then pull the blocks slowly.
  - pull the blocks in a straight line, a zigzag pattern, around in circles.
3. Use an inclined plane (box, board, cardboard, Hot Wheels track, etc.) to show that different things slide down a ramp at different speeds. Send different items (cotton ball, toy car, block, etc.) down an inclined plane.
4. Use a T-chart labeled “*Fast Lane/Slow Lane*” to record the names of the objects used in #3.

### **EXPLAIN**

Ask:

*On which surface was it the easiest to move the block?*

*On which surface was it the most difficult to move the block?*

*Do you think it would be easy to pull the block over a surface made of glass? Why?*

*What are some other surfaces where you think it would be easy to pull the block? Why?*

*What are some surfaces where you think it would be difficult to move the block? Why?*

*Was it easier to pull a block slowly or quickly? Why?*

*What did you discover when you pulled the block in a straight line, a zigzag pattern, around in circles?*

*When you sent items down an inclined plane, why do you think some items slid faster or slower than others?*

### **EXTEND/APPLY**

1. Bring a broom to class. Let children take turns trying to sweep a bare floor and a carpeted area. Discuss the ease or difficulty of sweeping the different surfaces. Relate the sweeping motion to a push and pull.
2. Have students bring in different kinds of shoes (or use the ones they are wearing). Compare the soles of the shoes (smooth/rough). *Which shoes allow you to “glide” across the floor? Why?*
3. *Which ones would be hard to “glide” across the floor? Why?*
4. Ask students to try to push a very heavy box (test first) with one finger across the table. Then give them something round such as magic markers. Place them under the box and push with one finger again. *Why was the box easier to push?*

### **ASSESSMENT**

Have the students draw a picture showing on which surface they would choose to ride a scooter. Dictate to an adult why they chose that surface.