

CREEPY MOVER (MODIFIED FOR ADEED)



Science Concept:

Objects can be moved by pushing or pulling.

Objectives:

The student will:

- describe how pushing or pulling an object causes it to move;
- classify objects according to whether they are moved using a push or pull; and
- illustrate and label objects showing how they move.

GLEs Addressed:

Science

[4] SB4.1 The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by simulating that changes in speed or direction of motion are caused by forces.

[4] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.

Writing

[1] W1.2.1 The student writes for a variety of purposes and audiences by writing thoughts or ideas to communicate with specific audiences (e.g., cards, letters, notes, lists).

Vocabulary:

force – strength or power exerted upon an object; in physics, an influence on a body or system, producing or tending to produce a change in movement or in shape or other effects; the intensity of such an influence

pull – to draw or haul toward oneself or itself, in a particular direction, or into a particular position; to draw or tug at with force

push – to press upon or against (a thing) with force in order to move it away

Materials:

- Toys that can be pushed
- Toys that can be pulled
- Paper or foam bowls (one per student)
- Craft fur, thin material, or paint to decorate “bug body”
- 1- 3/16 inch diameter wooden dowel rod (6-inch section per student)
- Thread spools (two per student)
- Pipe cleaners (six per student)
- White glue or tape
- Paper hole punch
- Small handsaw
- Scissors
- Rulers
- Wiggle eyes (two per student)
- String for “pull” toys
- Chart paper
- Science Journal
- STUDENT WORKSHEET: “Motion Walk Form”

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Activity Procedure:

Please refer to the assessment task and scoring rubric located at the end of these instructions. Discuss the assessment descriptors with the class before teaching this lesson.

Gear Up

Process Skills: observing, communicating, and describing

1. Ask the class to sit in a circle. Ask what students know about toys that can be moved by a push and toys that can be moved by a pull. On chart paper record students' responses on a two-column chart, labeled "toys that are pushed" and "toys that are pulled." Write student's initials beside their response(s).
2. Shows students an example of a toy that can be moved with a push and another toy that can be moved with a pull. Pass the toy around so students can get a better look and briefly explore the toy. Ask students if they can think of other examples of toys that can be pulled or pushed.
3. Review the vocabulary: force, pull, and push.

Explore

Process Skills: observing, describing, communicating, and developing models

4. Divide students into small groups and distribute several toys that move by push and several that move by pull to each group. Explain students will touch and explore several sample toys provided by the teacher. Allow students ample time to explore the toys.
5. Explain students will each create a "bug" toy that can be moved by a push or a pull. Ask students to decide how their bug will move. Remind students their toy may be moved by a push, pull, or both, but must be able to move at least one way. Distribute materials (paper or foam bowls, craft fur, dowel, spools, pipe cleaners, glue or tape, hole punch). Have scissors available as needed.
6. Explain students will share their toys with the class when they are finished. Other students/teacher may ask questions of each presenter.

Generalize

Process Skills: communicating, inferring, questioning, and describing

7. Ask students the following questions and record ideas on chart paper:
 - a. Which toys did you have to pull? Push?
 - b. How did pushing or pulling change how the toys moved?
 - c. How did the toys move? (straight line, in a circle, zigzag, fast, slow, etc.)
 - d. How is the way your toy moves similar to those toys that you explored?
 - e. Why were some toys easier to move than others?
 - f. What are some things you have at home that can be moved using a push? Pull?

Apply

Process Skills: communicating and observing

8. Explain the class will go on a "motion walk" throughout the school. As the class walks quietly through the school, they should record examples of various objects that need to be pushed or pulled to move. Distribute STUDENT WORKSHEET: "Motion Walk" and ask students to complete the worksheet as they travel through the school.
9. After returning to the classroom, ask students to share what they recorded on their worksheets. Similar questions to the Generalize may be asked to elicit student learning.

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RUBRIC

Assessment Task:

Review “push” and “pull” with the students. Explain students will classify a variety of toys that can be moved using a pull, push, or both. Ask students to choose several toys to use (provided by teacher). Ask students to divide a page in their journal into two columns labeled “toys that are pushed” and “toys that are pulled.” Ask students to write the names of at least three toys under each column. Students should then draw an illustration of each toy listed, use arrows to show what direction the toy moved as it was pushed or pulled, and write at least one sentence about each toy and how it moved by a push and/or pull.

Rubric:

Objectives	GLEs	Below Proficient	Proficient	Above Proficient
The student describes how pushing or pulling an object causes it to move.	[4] SB4.1	The student describes how fewer than three toys move using a push or pull in each column in their journal, using fewer than three sentences.	The student describes how three toys move using a push or pull in each column in their journal, using three sentences.	The student describes how more than three toys move using a push or pull in each column in their journal, using more than three sentences.
The student classifies objects according to whether they are moved using a push or pull.	[4] SA1.1	The student classifies fewer than three names of toys that can be pushed or pulled in the appropriate column in his or her science journal.	The student classifies the names of three toys that can be pushed or pulled in the appropriate column in his or her science journal.	The student classifies the names of more than three toys that can be pushed or pulled in the appropriate column in his or her science journal.
The student illustrates and labels each object named.	[1] W1.2.1	The student draws an illustration of fewer than three toys and may or may not include movement directional arrows for each toy.	The student draws an illustration of three toys and includes movement directional arrows for each toy.	The student draws an illustration of more than three toys and includes movement directional arrows for each toy. He or she also writes a sentence or phrases describing what happened for each toy.

NAME: _____

STUDENT WORKSHEET

MOTION WALK FORM

Items That Are Pushed	Items That Are Pulled