

PRIMARY ACTIVITY: A Slide Is A Simple Machine

Concepts: Simple machines make work easier.
An inclined plane makes it easier to lift things.
An inclined plane reduces the force needed to move an object, but increases the distance.

Time: One class period

Materials: 1 playground slide 4 heavy books
1 long rope (25 feet) 1 sturdy canvas bag with handles
1 measuring tape

Procedure:

- 1 Put the books in the bag and tie the rope to the handles.
- 2 Loop the rope across the top of the slide as shown in Diagram 1. Lift the bag to the height of the bottom of the slide.
- 3 Have a student lift the bag straight up through the air by the rope. Ask the student to observe the force it takes to lift the bag.
- 4 Measure the distance the bag was lifted.
- 5 Place the bag at the bottom of the slide and have the student pull the bag to the top of the slide, as in Diagram 2. Ask the student to observe the force it takes to pull the bag to the top.
- 6 Observe the distance the bag was moved.
- 7 Have each student conduct the experiment in turn.

Results: Have the students write or draw an explanation of the experiment. Have them compare the force needed in each situation, as well as the length of rope.

Conclusion: An inclined plane reduces the force needed but increases the distance.

Extensions: Discuss ways that inclined planes are commonly used.

Assessment: Have students draw a picture of someone using an inclined plane. Have the students find inclined planes in pictures.

Diagram 1

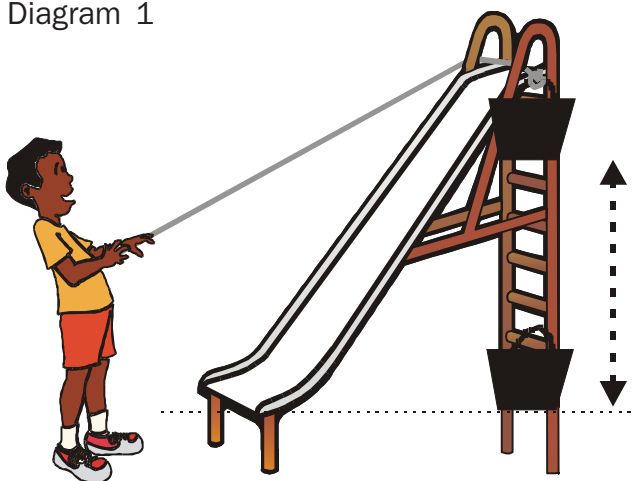


Diagram 2

