

SIMPLE MACHINES

Grade:

4th

Georgia Standards:

S4P3. Students will demonstrate the relationship between the application of a force and the resulting change in position and motion on an object.

- a. *Identify simple machines and explain their uses (lever, pulley, wedge, inclined plane, screw, wheel and axle).*
- b. Using different size objects, observe how force affects speed and motion.
- c. Explain what happens to the speed or direction of an object when a greater force than the initial one is applied.
- d. Demonstrate the effect of gravitational force on the motion of an object

Materials:

Bag 1 A manual can-opener

Bag 2 bottle top

Bag 3 A pair of pliers

Bag 4 Screw

Bag 5 A photograph of a bicycle

Bag 6 Picture of a flagpole

Bag 7 clothes pin

Bag 8 Picture of a knife

Bag 9 picture of a slide

Safety concerns:

They will be handling pliers. They just need to be made aware that they are not toys and are simply to be examined for the type of simple machine they are.

How to facilitate the lesson:

First, read page 252 together as a class from their science textbook. Then show a powerpoint about all six simple machines. Next, facilitate the work session activity:

1. Make grid on board with the 6 simple machines – pulley, wheel and axle, lever, wedge, screw, and inclined plane.
2. Each paper bag has a simple machine in it. Place the 9 paper bags in a rotation order throughout the classroom.
3. Count off all the students from 1-9. Their number is the bag they start on. Make sure the students know the direction they rotate.
4. Tell the students they have 2 minutes per bag. Their job is to write down the name of the simple machine in that paper bag. Let them know when it is time to rotate.
5. Walk around and help them out if they need a bit of help.
6. Students rotate through each station until all objects are identified.
7. Students then go to their desks.

8. Go through each paper bag, starting with number one. As you read out the names of simple machines, ask kids to raise their hand for the simple machine they think it is. Once the simple machine is identified, go through an explanation of *why* it's that simple machine.

What I would modify:

There isn't too much I would modify with this lesson. I thought the students would be very unruly, but they were actually very engaged in the lesson and participated wholeheartedly. I really do feel as if the students learned the simple machines through this hands on lesson.