



Identifying Machines

Lab #12

Discussion: Machines are devices that make work easier. In science, work has a specific definition. The correct definition of work will help you determine which devices are just plain cool and which are cool machines.

Purpose: To examine some objects and determine which ones are machines and which are not. To use the information we gather by examining the objects to help finish the definition of the word machine.

Hypothesis: In order to develop a theory of what a machine really is, we will use the definition of the term work to help us. Then we will examine several objects to identify which ones are machines. Once we have identified the machines, we will identify what we do, what the device does, and how that makes our work easier.

On the lines below, define the term work:

Materials:



ball



book



broom



can opener



chalk



corkscrew



eraser



knife



paper



pencil



pliers



pulley



rope



ruler



screwdriver



wedge

Method and Data Collection: for each object, try to determine if it is a machine or not. To help you determine if an object is a machine, first write what you do when you use that object. Then, if the object makes some work easier, record what it does and/or how it makes the work easier. If it does not make work easier, write that it does not make work easier. Finally, state whether the object is a machine or not.

1. Ball: _____

2. Book: _____

3. Broom: _____

- 4. Can opener: _____

- 5. Chalk: _____

- 6. Corkscrew: _____

- 7. Eraser: _____

- 8. Knife: _____

- 9. Paper: _____

- 10. Pencil: _____

- 11. Pliers: _____

- 12. Pulley: _____

- 13. Rope: _____

- 14. Ruler: _____

- 15. Screwdriver: _____

- 16. Wedge: _____

Analysis:

- 1. What two things must be present for work to be done?

- 2. Since machines make work easier, machines must apply a _____ over a _____.

Conclusions:

Write your theory of what a machine is by defining the term machine on the lines below. (Hint: your definition should include three possible things a machine does to force.)

