

# Simple Machines -- Review

Diagram 1 Lever

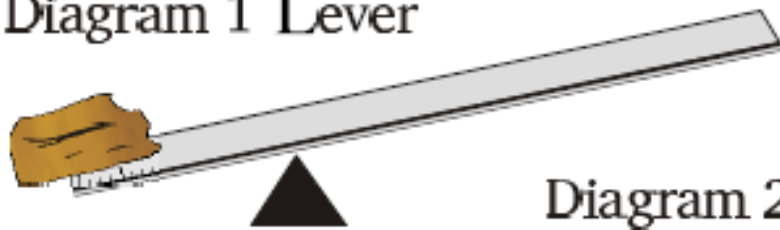


Diagram 2 Wheel & Axle

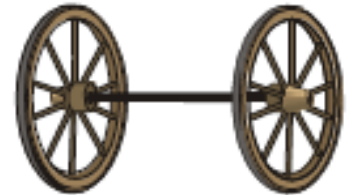


Diagram 3 Pulley

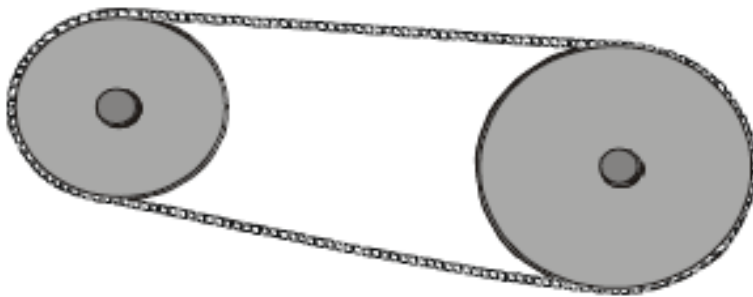


Diagram 4 Inclined Plane

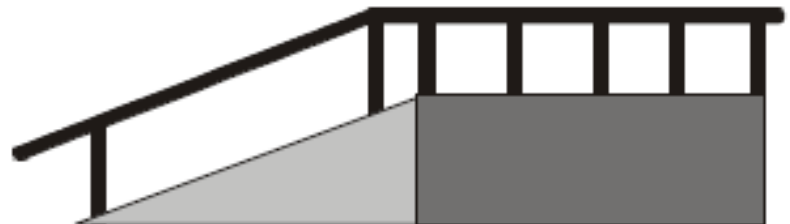


Diagram 5 Wedge

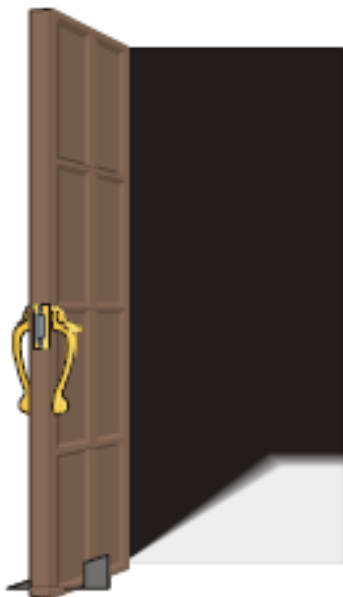


Diagram 6 Screw



## Descriptions and Definitions for the six simple machines

### **Lever**

- a simple machine involving a rod that moves on a pivot point (fulcrum) to produce useful movement
- changes the amount of force (effort) needed to move an object (load)
  - *First-class lever* - a lever where the fulcrum (pivot point) is between the effort and the load. Examples include a screwdriver used to pry, a teeter-totter, and scissors.
  - *Second-class lever* - a lever where the load is located between the fulcrum and the effort. Examples include a nutcracker, a can opener, and a wheelbarrow.
  - *Third-class lever* - a lever where the effort is located between the fulcrum and the load. Examples include tweezers, a shovel, and a fishing rod.

### **Wheel and Axle**

- an axle is a rod that connects to a wheel or lever
- a wheel and axle involves two objects attached in the centre, one of which turns the other (e.g., car steering wheel)

### **Pulley**

- a grooved wheel with a belt, chain or rope running in the groove (e.g., a flagpole)

### **Inclined Plane**

- a ramp - fixed in one place
- reduces the amount of effort needed to lift an object
- e.g., a wheelchair ramp

### **Wedge**

- an inclined plane that is not fixed in one place
- e.g., a doorstop

### **Screw**

- an inclined plane wrapped around a central cylinder
- e.g., a screw top jar lid