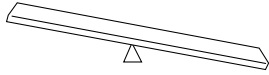


SIMPLE MACHINES PRE-VISIT ACTIVITIES

LEVER



A door is a type of lever. Depending on where you push on it, it takes more or less force (effort) to move it.

MATERIALS

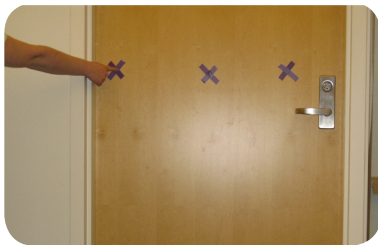
- Door
- Masking tape

STEPS



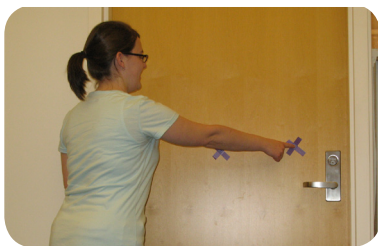
1) Place one piece of tape near the hinge of the door half way up the height of the door.

2) Place a second piece of tape near the door knob at the same height as the first piece of tape.



3) Place a third piece of tape in between the first and second pieces of tape making the three pieces of tape in a line.

4) Using one finger, push on the piece of tape nearest to the hinge. Is it hard or easy?



5) Using one finger, push on the piece of tape in the middle of the door. Is it hard or easy?

6) Using one finger, push on the piece of tape closest to the knob. Is it hard or easy?

WHAT'S GOING ON HERE?

Because the door is a lever, it pivots on a fulcrum (the hinge).

Work = Distance X Force, and because of that equation we know if we decrease the force, we have to increase the distance to get the same amount of work done. The distance is the length from the point we are pushing, from the fulcrum, and the force (effort) is pushing the door with your finger. It should have been easiest near the knob of the door, because it is the farthest from the hinge or fulcrum.