

# Lever

A door is a type of lever. So depending on where you push on it, makes it more or less effort for you.

## Materials

Door

Clay

## Steps

- 1.) Place one piece of clay near the hinge of the door half way between the length of the door.
- 2.) Place a second piece of clay near the door knob at the same length as the first piece of clay.
- 3.) Place a third piece of clay in between the first and second pieces of clay making the three piece of clay in a line.
- 4.) Using one finger, push on the piece of clay nearest to the hinge. Is it hard or easy?
- 5.) Using one finger, push on the piece of clay in the middle of the door. Is it hard or easy?
- 6.) Using one finger, push on the piece of clay 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).  $Work = Distance \times Force$ , and because of that equation we know if we lower the effort, we have to raise the distance. The distance is the length from the point we are pushing, from the fulcrum, and the 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.