

# Levers and Pivots

Levers are made up of 3 parts;

- A fulcrum – the point at which the lever pivots or turns
- The load – the stuff you are trying to move
- The force – the effort it takes to move the load

A Lever allows you to move a large load using a small amount of effort. **The further the effort (or force) is from the fulcrum, the easier a lever is to move.** Therefore generally long levers work best and usually can turn a small effort into a much larger one.

There are 3 classes or types of lever:

## class 1 lever

This is where the fulcrum is between the effort and the load, e.g. a see saw. If you push down on one end (effort) it will raise the load on the other end.

## class 2 lever

In this case the load is between the fulcrum and the effort, e.g. a wheelbarrow. You pull up on the handles (effort) to raise the load in the middle and the wheel (fulcrum) is at the end.

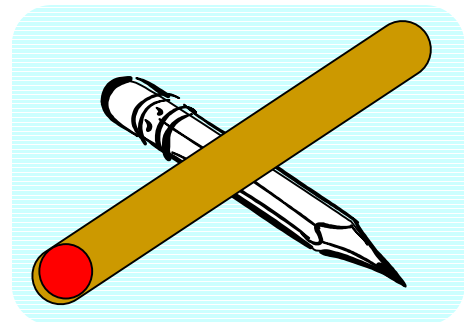
## class 3 lever

The effort is between the fulcrum and the load, e.g. a fishing rod. One hand acts as the pivot (fulcrum), the other hand is placed in the middle of the rod and pulls (effort) and the fish (load) is hanging off the end.

# Fulcrum Challenge

## You will need:

icelolly stick  
metre stick or measuring tape  
tiddly winks/ counters  
pencil  
pen



## Method

1. Place the icelolly stick across the pencil
2. Put a counter on the end of the stick that is touching the table.
3. Mark the point on the lollystick where it is balancing on the pencil (the fulcrum) with a number 1
4. Flip the counter by hitting the stick end that is in the air.
5. Record the distance that the counter travelled.
6. Now move the fulcrum, mark with the number 2 and do the experiment again.
7. Keep repeating the experiment, can you see a pattern emerging?

## Extension

Place a plastic cup some distance from the catapult, experiment adjusting the position of the fulcrum until you can accurately get your counter into the cup.