Directing force

Background knowledge

A *force* is a push or pull. Forces can start or stop an object from moving. They can increase or decrease the speed of a moving object. The force that opposes motion is called *friction*. Forces can also make things change their direction of motion. For example, the force of the wind can blow a boat off course. A force acts in one direction. This direction is shown in the diagrams by using arrows. A longer arrow is used to show a bigger force.

A gentle kick

A hard kick

Science activity

Examine the diagrams below. On each diagram, draw an arrow to show the direction of each force mentioned.

The pull of gravity on the spring

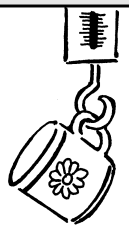
The force of friction slowing the rolling can

The force of the hammer

The force exerted by each team (two arrows)

Science investigation

Using the spring balance that you made in the last investigation or a store-purchased spring balance, investigate the amount of force needed to: lift a cookie, lift a cup, brush your teeth, write with a pen or pencil, or another activity of your choice.



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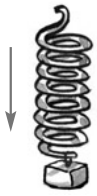
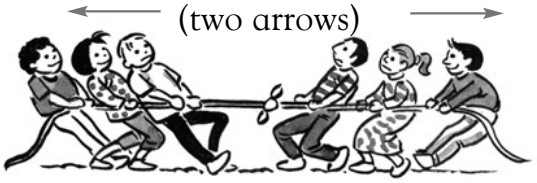


The force of friction slowing the rolling can

The force of the hammer

The force exerted by each team (two arrows)



Science investigation

Connect the object to be measured to the spring. A cabinet door may work better than a room door. Balances used to weigh fish can be used, but if they are not metric, the child will need to convert the measurement to metric units.