

## Key Vocabulary

air resistance, Aristotle, balanced, balanced forces, bevel gears, clockwork, cogs, compress, extend, effort, force arm, forces, force, friction, force arrow, fulcrum, gravity, Galileo, gear ratio, gears, gear trains, lever, lift, machine, mechanisms, movement, Newton, Newton meter, pinion, pivot, pulley, pull, push, rack, resistance, rotary

## Working Scientifically

Carrying out fair test and pattern-seeking investigations.

Observing carefully, recording accurate measurements, and construct different mechanisms.

Looking at scientific ideas from the past and carry out an activity to find evidence to support or refute famous scientists' ideas.

Making predictions as a result of carrying out simple activities and go on planning new investigations.

## Must – know knowledge

Friction is a force that makes it harder to move an object across a surface or slows down an object moving over a surface. The force of friction can be measured using a Newton meter. The unit of measurement of a force is Newtons (abbreviated to N).

Gravity is a force that pulls all objects towards the centre of the Earth. Air resistance is a force that slows down an object moving through air. The amount of air resistance depends on the surface area of the object. It is air resistance, not the object's weight, which affects how quickly an object falls.

Water resistance is a force that slows down an object moving through water. The amount of water resistance depends on the shape of the object.

A pulley is a mechanism used for lifting heavy objects (the load) by applying a pulling force at one end of rope attached to the load which passes over a wheel. The more pulleys in the mechanism, the less pulling force is required to lift the load.

A lever is a long, rigid arm that rests on a pivot. A force is applied to one part of the lever to lift the load at another point on the lever. The longer the lever, the less force is required to lift the load.

Diagram: pulley

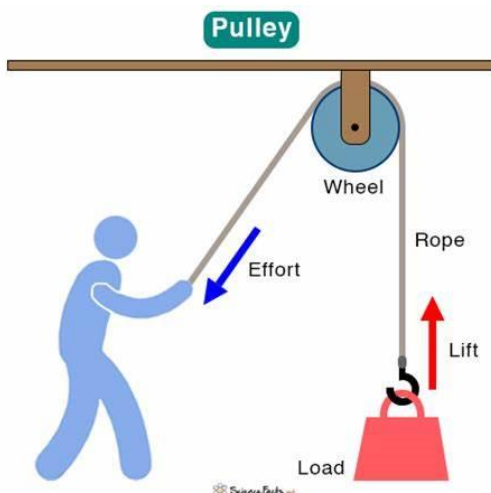


Diagram: Newton meter



Experiments: How does the shape of an object affect its movement in water?