Year 5 Science : Forces

Spring

Core Knowledge—Forces

A force is a **push** or a **pull.** It causes an object to start moving, stop moving, speed up, slow down or change direction.

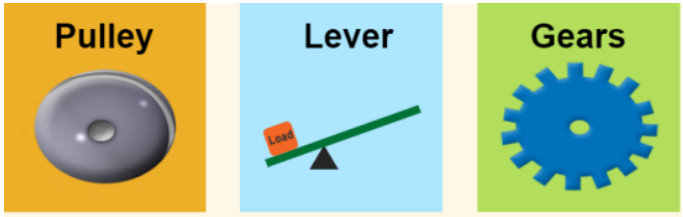
Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity. This causes unsupported objects to fall.

Friction is a contact force that acts between two moving forces and makes movement more difficult.

If the object is moving through air or water, or the air or water are moving over a stationary (not moving) object, the force is called **air or water resistance** which are both forms of friction.

Core Knowledge—Pulleys, levers and gears

A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement.



The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover.

Pulleys, levers and gears are all mechanisms (moving parts all working together) also known as simple machines.

Scientific Enquiry

Making observations and taking measurements.

Recording and presenting evidence.

Game

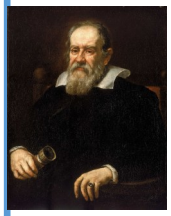
Year 5 Forces - Key Knowledge - Teaching resource

Key Vocabulary

Vocabulary	Definition
pulleys	A wheel with a groove for a rope to pull on to lift the objects. E.g. a crane
levers	A long arm and a point where the arm pivots (a turning point) to lift the load. E.g. a seesaw
gears	A special wheel with teeth around its edge that fits with another gear to transfer movement or power .E.g. A see saw
contact forces	A force that occurs as a result of two or more objects making contact with each other. E.g. water resistance
non-contact forces	A force that acts at a distance and with out contact between the objects. E.g. gravity
mass	The amount of matter in a given object.

Core Knowledge—Famous Scientists

Isaac Newton (1643-1727) was an English scientist who discovered the idea of forces acting upon objects on Earth. He discovered gravity acts upon objects on Earth and for every action there is an equal and opposite reaction.



Galileo (1564-1642) was an Italian professor of mathematics who discovered the idea of air resistance and how it affects the rate objects fall. He discovered that all objects, no matter their mass, would fall at the same rate in a vacuum.