

Prior Learning

- Friction is created when objects or surfaces are rubbed together (Year 3)
- A force can make something speed up, slow down, change shape or change direction (Year 3)
- Magnetism is a force that repels or attracts certain metals (Year 3)

Key Learning

Forces can make an object move, stop, change direction, move faster, change its shape or move more slowly.

Friction is the resistance of motion when one object rubs against another. Anytime two objects rub against each other, they cause friction. Friction works against the motion and acts in the opposite direction. When one object is sliding on another, it starts to slow down due to friction.

Unsupported objects fall towards the Earth because of the force of gravity.

Water resistance is a force that tries to slow things down that are moving through water. It is a type of friction and sometimes called drag.

Air resistance is the frictional force that acts against gravity when an object is falling. It can affect how fast an object falls.

Weight is how strongly gravity is pulling an object down. It is measured in Newtons (N)






Key vocabulary

Force	Pushes or pulls
Gravity	A force that pulls objects to the centre of the Earth.
Water resistance	A force that slows things down that are moving through water.
Air resistance	A type of friction caused by air that pushes against a falling object.
Streamlined	When an object is shaped to lessen the effects of air and water resistance.
Buoyancy	An upward force that a liquid applies to an object.
Mechanism	Parts which work together in machine (pulleys, gears, cogs, levers)
Pulley	Wheels on an axle or shaft, that help support the lifting of a weight.
Gear/ Cogs	Wheels with teeth that can change the speed, force or direction of a motion.
Lever	A lever rests on a pivot and can use a small force to lift a heavy load.
Weight	The measure of the force of gravity on an object.



Scientific skills

By the end of the year, children should be able to ...

-  Plan scientific enquiries to answer different questions, recognising and controlling variables where necessary
-  Take measurements, using a range of scientific equipment
-  Record data and results, using charts, tables, diagrams, keys and graphs
-  Use test results to make predictions to set up further tests
-  Report and present findings, drawing conclusions about results
- Identify scientific evidence which has been used to support or refute ideas

Opportunities for scientific enquiry within the unit:

- Explore falling paper cones or cupcake cases
- Design and make a variety of parachutes in different shapes
- Design and make products that use levers, pulleys, gears and/or springs and explore their effects