



**Prior learning to reactivate**

- Friction is created when an object or surface are rubbed against another (Year 3)
- A force can cause something to speed up, slow down, change shape or change direction. (Year 3)
- Magnetism is a type of force that can attract or repel certain metals. (Year 3)

**Key learning**

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.

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

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.

Some mechanisms such as pulleys, gears and levers allow a smaller force to have a greater effect.

**Key vocabulary**

Air resistance	The friction that acts against an object as it falls
Water resistance	The friction that acts against an object as it moves through water.
Gravity	The force that pulls objects towards the centre of the earth.
Pulley	A pulley is a wheel on an axle or shaft that is designed to support movement and change of direction
Gear	Gears are wheels with teeth that slot together. When one gear is turned the other one turns as well. If the gears are of different sizes, they can be used to increase the power of a turning force.
Fulcrum	The point at which a lever is supported to allow it to lift an object.
Up thrust	The upward force

**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:**

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

