Science Knowledge Organiser

Topic: Forces	Year 5: Autumn Term	Strand: Physics

What should I already know?

- What a force is
- A push and a pull are forces
- That gravity is a force
- How to show and measure contact forces

What will I know by the end of the unit?

- That unsupported objects fall towards the earth because of the force of gravity acting between earth and the falling object
- The effects of air resistance, water resistance and friction, that act between moving surfaces
- That some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

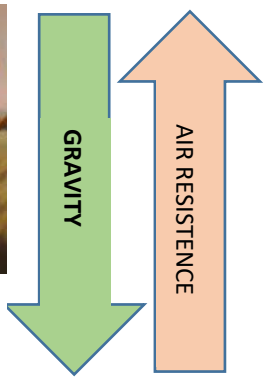
Real-life examples of forces in action

A non-slip mat uses fraction.

A skydiver falls fast until they open their parachute.

The dolphin has a steam-lined shape to help it move through water.

Seeds fall to the ground because of **gravity.**

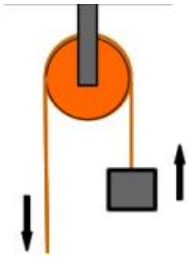


Key vocabulary	
force	A force is a push or a pull. Forces make objects start moving, stop moving, speed up, slow down or change direction.
gravity	A force which pulls things down towards the centre of the Earth.
forcemeter	Piece of equipment used to measure the size of a force.
Newton (N)	The unit for measuring force.
air resistance	The force that slows down objects that move through air.
water resistance	A force that slows down objects moving through water.
friction	When one surface moves against another, the rubbing force that tries to stop them is called friction. It gives us grip.
mechanisms	A device that allows a small force to be increased to a larger force.
simple machines	Levers, pulleys and gears are all types of simple machines.

Simple Machines

These are used to make tasks easier. This means you need to use less force.

A **lever** tilts on a **pivot.** The pivot is near to the end of the lever which is loaded with a heavy object.



A **pulley** has a rope or cable which goes over a wheel. The rope is then pulled to lift, lower or move heavy objects (the load).

Gears are toothed wheels which lock together and turn each other to form simple machines.