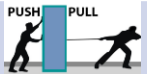
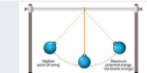
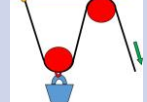


Key Vocabulary

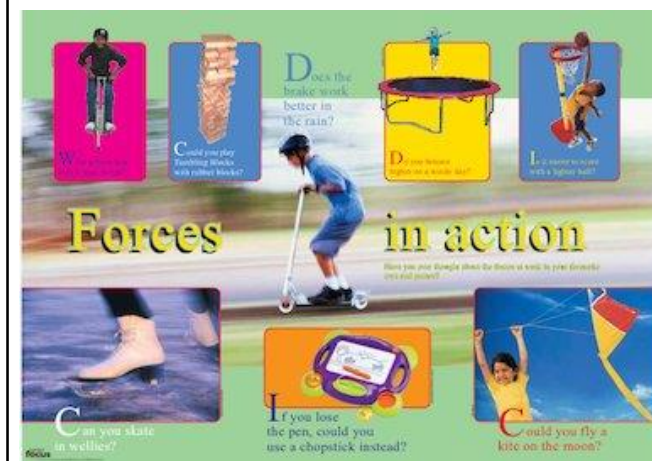
1		Force- a push, pull, twist or turn.
2		Gravity- a pushing force exerted by the Earth, it attracts objects towards the centre of the Earth.
3		Water Resistance- the force that water exerts on a moving object
4		Air Resistance- the force that air exerts on a moving object
5		Friction- the force between 2 moving surfaces.
6		Kinetic energy- the energy an object has due to its motion.
7		Streamlined- when an object is shaped to minimise the effects of air or water resistance.
8		Mechanism- machines or devices which help to achieve a result.
9		Gears/Cogs- are used to change speed, direction or force of a motion. When 2 gears are connected they always turn in the opposite direction to one another.
10		Levers- can be used to make a small force lift a lighter load. A lever always rests on a pivot or fulcrum.
11		Pulleys- they are used to reduce the amount of force needed to lift a load. The more wheels in a pulley the less force is needed to lift the weight.

Sticky Knowledge

1	A force is always acting upon an object.
2	Gravity was discovered by Isaac Newton.
3	A force metre is marked in Newtons and measures the weight of an object.
4	The gravity on the surface of the moon is different to the surface on the Earth.
5	Water resistance and air resistance are forms of friction.
6	Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops the skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is unhelpful.
7	The faster you are going the more air resistance or water resistance will act against you,.
8	Weight is the pull of the Earth's gravity on the mass of an object. All objects exert a force of gravity on each other; the size of the force depends on their masses.
9	Buoyancy is an objects ability to float in water.
10	If something is streamlined, it has a pointed nose to cut through the water, and a smooth, low, curved back to allow the water to flow over and around it.
11	Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight.
12	Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.
13	Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.

Key Questions for the Topic

1	Which force pulls objects towards the ground?
2	What is fiction and how can different materials affect it?
3	Do air resistance and water resistance always act in the same direction?
4	Which force act against your movement in water?
5	Do you need to use all 3 forms of mechanism in order for an invention to work?
6	What is the name of the one variable that will change during the experiment?





Key Vocabulary

1	Force	A push, pull, twist or turn.
2	Friction	The force between 2 moving surfaces.
3	Air resistance	A kind of friction that occurs between air and another object.
4	Magnet	A material or object that produces a magnetic field, it attracts or repels magnetic objects.
5	Magnetism	The force of attraction and repelling caused by a magnet.
6	Attract	To pull towards.
7	Repel	To push away.
8	Pole	Two sides of a magnet where the magnetism is strongest.
11	Newton	The standard unit measuring force.
12	Newton meter	A piece of equipment that is used to measure the forces acting on an object.
13	Streamlined	An object that is shaped to travel through air or water with as little resistance as possible.

Prior Sticky Knowledge

1	When an object is pushed or pulled it moves for example a car or pushchair
2	Some heavy objects sink whilst others float. Shadows can be different shapes and sizes.
3	Typically, objects that float are light or hollow
4	The strongest parts of a magnet are the poles
5	Magnets have two poles (north and south). Opposite poles attract each other while like poles repel each other
6	Objects move differently on different surfaces
7	Pulleys can help to lift objects
8	A force is a push or a pull. There must be an equal balance in push and pull forces for an object to move.
9	Some forces act at a distance e.g. magnetism.
10	Magnets are attracted to objects that have magnetic properties. E.g. nickel or iron.
11	The needle in a compass is a magnetic material.
12	Magnets can be different shapes: bar magnet, u-shaped magnet, ring magnet and horseshoe magnet

Previous Key Questions for the Topic

1	Can you compare how things move on different surfaces?
2	How do some magnets attract or repel each other?
3	Why do some forces need contact between two objects, but magnetic forces can act at a distance?
4	Which materials are attracted to a magnet? How can you group these materials?
5	Will magnets attract or repel each other depending on which poles are facing?
6	Are all magnets the same strength?
7	How could we test magnetic force?

