

What do we know already:

*I know that different objects, materials and living things have similarities and differences.

*I know that some solid objects can be changed by bending, twisting and stretching.

*I can compare the suitability of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses.

What's next:

*I will learn that forces can make objects start to move, speed up, slow down or change direction.

*I will learn the type of surface affects the amount of friction and how easy it is to move. Smooth surfaces have less friction and rough surfaces create more friction.

*I will learn that force is measured using a force metre.

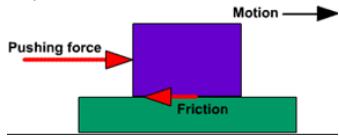
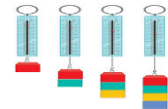
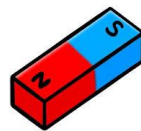
*I will learn that magnetism is a property of a material and that not all metals are magnetic.

*I will learn that some forces need contact between two objects, but magnetic forces can act at a distance.

*I will learn that magnets have 'poles' which attract or repel each other.

*In Year 5 I will learn that unsupported objects fall towards the Earth because of the force of gravity.

Vocabulary:		
Tier 1	Tier 2	Tier 3
Push/pushing Pull/pulling Twist Materials	Force Friction Magnet Magnetic force Magnetism Pole Resistance Attract Repel	Contact force - many forces need contact to act.  Non-contact force - Magnetic force does not need contact and can act as a distance.

What is a force?	What is friction?	How do we measure force?	How does a magnet work?	How does a magnet attract and repel?
A force is a push or a pull that causes an object to move faster or slower, stop, change direction or change size or shape. Without a force, nothing would ever move pushes and pulls – forces and motion  	When two surfaces meet and slide (or try to slide) against each other this is called friction. The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more friction is produced. The smoother the surface, the less friction is produced.	When two surfaces move or try to move there are opposing forces Pushing force or pulling force Friction (is the opposite direction to the push or pull).  A force meter, also known as a Newton meter, can be used to measure the size of a force. Force meters have a spring inside them. The weight of the mass causes the spring to stretch. 	A magnet is a special object which produces an area of magnetic force around itself called a magnetic field. Magnetism is the force of attraction or repulsion between a magnet and a magnetic object. A magnetic force is an attraction of a magnetic object. This results in an object being pulled towards the magnet. A magnet doesn't need to touch / rub to create the force to pull an object The force of a magnet can travel through some materials.  	Magnets have an invisible field that forces other objects to react to its properties. Magnets have a North and a South pole. North + North = repel South + South = repel North + South = attract South + North = attract 