

All Saints Academy Primary School

Theme: We are scientists

Year: 3

Subject: Science

What should I already know?

- The shape of some materials can be changed when they are stretched, twisted, bent and squashed.
- Know how different toys move.
- Know what a force is and be able to explain that a push and pull are types of forces.
- That when forces are applied to an object they allow them to move or stop moving.
- The strength of the force determines how far and fast an object moves.

Investigate

- Investigate the amount of friction created by different surfaces. Use measures (such as length and time) to show how far or fast an object travels.
- Compare how different things move and group them.
- Observe how a magnetic field attracts iron filings by using a bar magnet.
- Investigate how magnets are used in everyday life.
- Investigate which materials are magnetic and sort between objects that are magnetic and those that are non-magnetic.
- Investigate if the size of a magnet affects how strong it is (using chains of paper clips of varying lengths)
- Investigate if all metals are magnetic.
- Observe what happens when magnets with similar poles are placed next to each. Repeat this for when the poles are different.

Vocabulary

Attract If one object attracts another object, it causes the second object to move towards it

Bendy an object that bends easily into a curved shape

Friction the resistance of motion when there is contact between two surfaces

Force the pulling or pushing effect that something has on something else

Gravity the force which causes things to drop to the ground

Magnet a piece of iron or other material which attracts magnetic materials towards it

magnetic field an area around a magnet, or something functioning as a magnet, in which the magnet's power to attract things is felt

metal a hard substance such as iron, steel, gold, or lead

motion the activity of changing position or moving from one place to another

non-magnetic an object that is not magnetic

Repel when a magnetic pole repels another magnetic pole, it gives out a force that pushes the other pole away

Resistance a force which slows down a moving object or vehicle

What will I know by the end of the unit?

How do magnetic poles work?

- The ends of a magnet are called poles.
- One end is called the north pole and the other end is called the south pole.
- Opposite poles attract, similar poles repel.
- If you place two magnets so the south pole of one faces the north pole of the other, the magnets will move towards each other. This is called attraction.
- If you place the magnets so that two of the same poles face each other, the magnets will move away from each other. They are repelling each other.



What will I know by the end of the unit?

How do different surfaces affect the motion of an object?

- Forces act in opposite directions to each other.
- When an object moves across a surface, friction acts as an opposite force.
- Friction is a force that holds back the motion of an object.
- Some surfaces create more friction than others which means that objects move across them slower.
- On a ramp, the force that causes the object to move downwards is gravity.
- Objects move differently depending on the surface of the object itself and the surface of the ramp.

What will I know by the end of the unit?

How do magnets work?

- Magnets produce an area of force around them called a magnetic field.
- When objects enter this magnetic field, they will be attracted to or repelled from the magnet if they are magnetic.
- When magnets repel, they push each other away
- When magnets attract, they pull together.

