



Year 3 Term 1: Feel the force, see the light!



During this unit, the children will gain a deep understanding of both kinetics and optics. They will begin by studying forces by looking at the impact different surfaces have on how things move, before moving on to exploring magnets through a variety of hands-on exploration and investigation. When learning about optics, children will explore light, dark, reflection and shadows. This unit will also provide vast opportunity for children to refine their investigative skills. In Design Technology, children will learn about linkages and levers.

Vocabulary

Force: A force is either a push or a pull. It changes or maintains the motion.

Contact force: Forces that act when contact is made between objects.

Non-contact force: Forces that act between objects that are not touching.

Magnet: A metal that attracts or repels other materials.

Attract: When a metal is pulled in towards the magnet.

Repel: When a metal is pushed away from the magnet.

Magnetic poles: A magnet has two ends. They are called the North Pole and the South Pole.

Science

Contact Forces

Push = force

Pull = force

Friction Force

Non-Contact Forces

Force of Gravity

Force of Gravity = Weight

Magnetic vs Non-Magnetic Metals

Magnetic	Not Magnetic
Iron	Aluminum
Nickel	Copper
Cobalt	Lead
Steel	Brass

MAGNETS

When two magnets are close, they create pushing or pulling forces on one another. These forces are strongest at the ends of the magnets.

A magnet has two ends: the north pole and the south pole.

Some magnets are stronger than others. Strong magnets will create bigger pushing or pulling forces than weak magnets.

Vocabulary

Light: Electromagnetic radiation that can be seen by the human eye.

Light Source: A source of light makes light.

Dark: The absence of light.

Transparent: All light passes through it and you can see through it.

Translucent: Some light passes through it but you can't see clearly through it.

Opaque: No light passes through it, and you cannot see through it.

Reflects: When light from an object is reflected off a surface it changes direction.

Shadow: Shadows are formed when a light source is blocked by an opaque object.

Sources of Light

fireworks, candle, fire, Christmas lights, lantern, Diwali diva, light bulb, stars, neon signs, sun, sparklers, jellyfish, firefly, lighthouse, traffic lights, car headlights.

Knights Owl Teaching Resources

Light and Shadow Diagrams:

If the object is moved closer to the screen the shadow gets **SMALLER**.

Transparent, Translucent, Opaque:

Rays of light and Shadow:

Technology

oscillating

A backwards and forwards motion in an arc.

linkage

A system of links.

linear

Linear motion moves in a straight line, e.g. a train moving down a track.

rotary

Rotary motion moves in a complete circle, eg a wheel turning.

reciprocal

A backwards and forwards motion in a straight line

mechanism

A device used in a product to create movement.

lever

A bar featuring a pivot that can be pushed or pulled to make the moving of a load easier