Forces and magnets – Year 3

Key vocabulary	
force	A force is a push or a pull.
magnetic force	An invisible force that attracts magnetic metals.
magnet	Magnets attract magnetic materials. Iron, nickel, cobalt and materials that contain these (e.g. stainless steel) are magnetic.
attract	To pull towards.
repel	To push away.
poles	Magnets have two poles, a north pole and a south pole.
contact force	Many forces need contact to act:  
non-contact force	Magnetic force does not need contact and can act at a distance.

Objects moving on surfaces:



Ice skates have a sharp blade. This helps them move better on ice.



It is much harder to walk on ice in trainers.

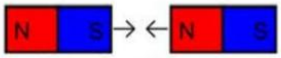
A bowling green is closely mown so the grass is short and the balls roll easily.



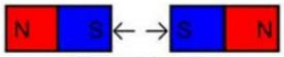
Significant scientist	
Michael Faraday *(1791-1867)* 	Michael Faraday was an English scientist. In 1831, he discovered electromagnetic induction. This was a very important discovery for the future of science and technology.

Types of magnets:	
Bar 	**Ring** 
Button 	**Horseshoe** 

Magnets have two poles



Opposite poles **attract**



Same poles **repel**

A magnet attracts magnetic materials.

These metals are magnetic:	
iron nails 	**nickel**  50p coins contain nickel
stainless steel 	**steel** 

We can sort and classify materials as:





A magnet does not need to touch an object to attract it.

Knowledge Organiser Science Year 3
Light and shadows

What is light?

Light is a type of energy that lets us see things



If there is no light then it is dark and we cannot see anything



Reflections

Shiny surfaces reflect light





Matt surfaces don't reflect light very well





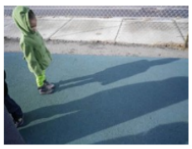
Key Vocabulary	
absorb	Take in or soak up
dark	The absence of light
energy	A supply of power. The ability to do work
light	A type of energy. We can see objects because our eyes can sense light
light source	Where light comes from, eg a candle, the Sun
mirror	A shiny surface that reflects light in a regular way
opaque	Not clear. Blocks light so that none gets through
reflect	To throw back or bounce light from a surface
shadow	a dark shape or outline of something that is made when light is blocked
transparent	clear, see-through, lets light pass through
translucent	Almost see through, lets some light through

Sunlight



The light from the sun can be dangerous.
It can damage our eyes.
We must never look directly at the sun.
We can protect our eyes by wearing sunglasses or sunhats in bright sunlight.

Shadows



An opaque object blocks the light from getting through. A dark shape or outline is formed. This is a shadow



We can change the size of the shadow by changing the position of the:

- light source
- object
- surface where the shadow is being made