Amblecote Primary School—Knowledge Organisers

Phase: 3/4	Subject: Science	Focus: Forces and Magnets	Term: Autumn

What I should already know?

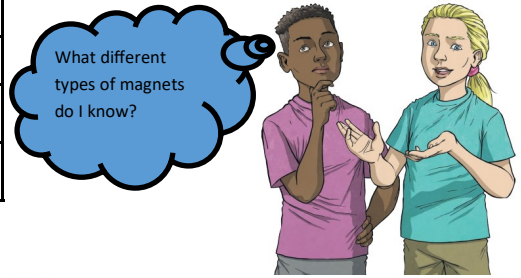
- Know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- There is a North and South pole.

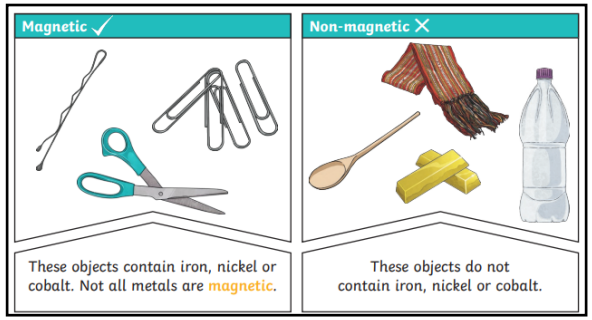
Vocabulary

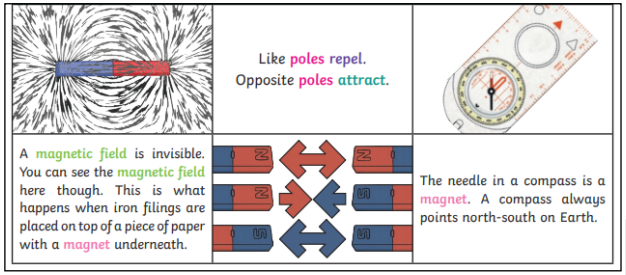
Force	Pushes or pulls
Friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other,
Surface	The top layer of something
Magnet	An object that produces a magnetic force that pulls certain objects towards it,
Magnetic	Objects that are attracted to a magnet are magnetic. Objects containing iron, nickel or cobalt metals.
Magnetic field	The area around a magnet where there is a magnetic force which will pull magnetic objects towards the magnet.
Poles	North and south poles are found at different ends of the magnet.
Repel	Repulsion is a force that pushes objects away, e.g. when the north pole is placed near the north pole of another magnet the two poles repel (push away from each other).
Attract	Attraction is a force that pulls objects together for example when a north pole is placed near the south pole of another magnet the two poles attract (pull together) .

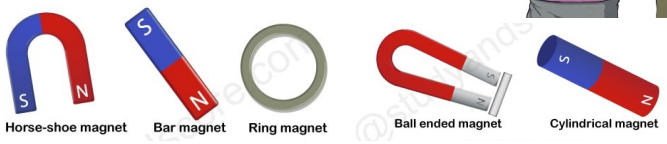
Knowledge

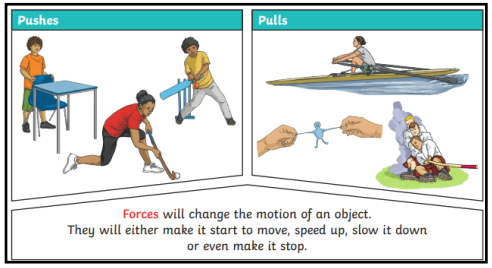
- A force is a push or a pull.
- When an object moves on a surface, the texture of the surface and the object affect how it moves.
- It may help the object to move better or it may hinder its movement e.g. ice skater compared to walking on ice in normal shoes.
- A magnet attracts magnetic material.
- Iron and nickel and other materials containing these, e.g. stainless steel, are magnetic.
- The strongest parts of a magnet are the poles. Magnets have two poles – a north pole and a south pole.
- If two like poles, e.g. two north poles, are brought together they will push away from each other – repel.
- If two unlike poles, e.g. a north and south, are brought together they will pull together – attract.
- For some forces to act, there must be contact e.g. a hand opening a door, the wind pushing the trees.
- Some forces can act at a distance e.g. magnetism.
- The magnet does not need to touch the object that it attracts.

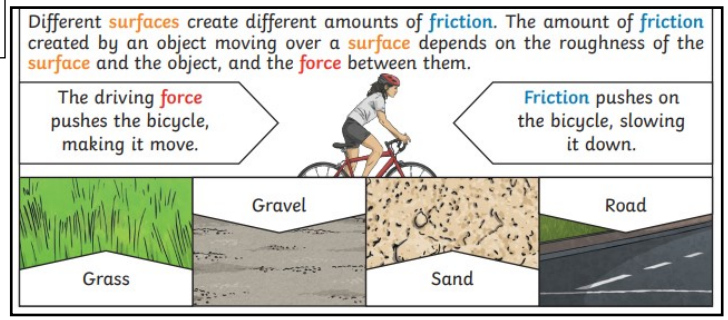












By the end of the unit I should know...

- Compare how things move on different surfaces.
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- Observe how magnets attract or repel each other and attract some materials and not others.
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- Describe magnets as having two poles.
- Predict whether two magnets will attract or repel each other, depending on which poles are facing.

Question 1 - Repel is when…	Start of Unit	End of Unit
Two magnets pull together		
Two magnets push apart		
Two magnets stick together		
Don't know		

Question 2 - Attract is when…	Start of Unit	End of Unit
Two magnets pull together		
Two magnets push apart		
Two magnets join together		
Don't know		

Question 3 - For a force to happen…	Start of Unit	End of Unit
There must be magnets		
There must be contact		
There can sometimes be contact		
Don't know		

Question 4— Which materials are magnetic? (Tick all that apply)	Start of Unit	End of Unit
Aluminium		
Plastic		
Nickel		
Cobalt		
Wood		
Iron		
Don't know		

Question 5—All metals are magnetic	Start of Unit	End of Unit
True		
False		
Don't know		

Question 6—The bigger the magnet the stronger it is	Start of Unit	End of Unit
True		
False		
Don't know		

What I would like to find out?

Answers to my questions…