



Subject: Science  
 Year group: 3  
 Term: Spring  
 Unit name: Forces and Magnets

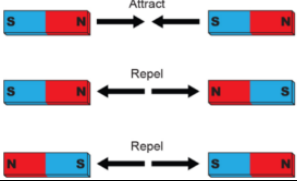
<b>Prior Knowledge -</b> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)	
<b>Scientific enquiry</b>	
Classifying	Identifying magnetic and non-magnetic materials.
Observing over time	Not relevant
Pattern seeking	Magnetic forces at a distance
Comparative/fair testing	Venn diagrams – fair testing Which materials are magnetic around the classroom How magnets make objects move on different surfaces Magnetic forces at a distance
Researching	Functions of magnets

- National curriculum:**
- 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.

- Working Scientifically:**
- Set up simple practical enquiries
  - Make systematic and careful observations
  - Record findings
  - Use results to draw simple conclusions

**Assessment for learning**  
 Recapping prior knowledge- beginning of unit- what do children already know?  
 Beginning of each lesson- focus on recall of previous learning (quick quizzes)

**Respect**  
**Do for other people the same things you want them to do for you.**  
**Matthew 7:12**

<b>Key Learning- what will the children know by the end of the unit?</b>	
<b>To answer the question: what is a force?</b>	A force is a push or a pull.
<b>To answer the question: how do different surfaces affect how an object moves?</b>	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.
<b>To answer the question: what is a magnet and what does it do?</b>	<p>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.</p> 
<b>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet,</b>	
<b>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</b>	
<b>To explore how magnets make objects move on different surfaces.</b>	
<b>To use my results to draw simple conclusions.</b>	Use understanding of magnets and forces to draw conclusions about findings from enquiry.
<b>To research key scientists.</b>	<p>Some suggestions:</p> <p>Isaac Newton (1643 - 1727) published a comprehensive theory of gravity in 1687. Though others had thought about it before him, Newton was the first to create a theory that applied to all objects, large and small, using mathematics that was ahead of its time.</p> <p>Andre-Marie Ampère (1775-1836) founded the science of Electro-Magnetism.</p> <p>Michael Faraday (1791 –1867) was an English scientist who contributed to the study of electromagnetism.</p> <p>William Gilbert (1544 - 1603) is known for his theories on Magnetism.</p>
<b>British Science Week activity</b>	