



# Year 3: Forces and Magnetism



## Kindness Enjoyment Achievement

<p><b><u>Key Concepts:</u></b>  A force can cause things to:</p> <ul style="list-style-type: none"> <li>- Speed up</li> <li>- Slow down</li> <li>- Change shape</li> <li>- Change direction.</li> </ul> <p>It is a push or a pull on an object.</p> <p>Some pushes and pulls are directly applied to the object (contact force) and some act at a distance, and do not directly touch the object (non contact force- examples magnetism, gravity, static electricity).</p> <p>It is easier to pull or push something on a hard, smooth surface than a rough or soft one.</p> <p>The name given to the force that affects how easy it is to move objects on surfaces is friction.</p>	<p><b><u>Types of Enquiry:</u></b>  <u>Sorting and classifying:</u>  Forces sorted into pushes &amp; pulls  Forces sorted into contact and non contact  Sort materials by whether they are magnetic or not.  <u>Fair test:</u>  How far do cars go on different surfaces  Test strength of magnets- devise own test.  <u>Use of secondary sources:</u>  How does a compass work?  <u>Change over time:</u> NA to this topic  <u>Pattern seeking:</u>  What do the "best" surfaces have in common?  Does the size or shape of a magnet determine its strength?</p>	<p><b><u>Vocabulary:</u></b>  Force  Push/ pull/ twist  Contact force  Non contact force  Gravity  Static electricity  Friction  Magnet  Ring/ bar/ button/ horseshoe magnets  Magnetic (force)  Magnetic material  Metal/ iron/ steel  Magnetism  Poles  Attract  Repel  Strength  compass</p>
<p>Gravity is a non contact force that pulls objects to the centre of the earth.</p> <p>Magnets are objects that push or pull things with an invisible force called magnetism. It has the ability to attract some metals such as iron and nickel.  Stainless steel contains these and so is magnetic.</p>	<p><b><u>Working scientifically skills:</u></b>  <u>Questioning:</u>  Develop own question for strength of magnets.  Distinguish between relevant and irrelevant questions; identify the type of enquiry needed to answer them with support.  <u>Observing:</u></p>	<p><b><u>How it fits in with the rest of the curriculum:</u></b>  NB: no forces objectives in KS1 in NC.  Y5: Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.  Identify the effects of air resistance, water resistance and friction, which act between moving surfaces.</p>



# Year 3: Forces and Magnetism



## Kindness Enjoyment Achievement

<p>We can sort materials by those which are attracted to magnets and those which are not. Wood, plastic and metals such as copper and gold are not magnetic. Objects that are attracted to magnets are called magnetic.</p> <p>The ends of a magnet are called its poles. Identify poles on bar, horseshoe and ring magnets. Like poles attract, opposite poles repel</p>	<p>Similarities and differences between different surfaces and different magnets.</p> <p><u>Predicting:</u> Suggest a good/ bad alternative material for the ramp to make the car go furthest. Predict whether magnets in given configurations will attract or repel.</p> <p><u>Identify and classify:</u> Recognise different types of magnets (eg ring, horseshoe, bar) and identify their poles.</p> <p><u>Testing:</u> Set up given experiments. With support, set up own experiments.</p> <p><u>Recording:</u> In tables, diagrams and writing. Oral feedback of own experiment re strength of magnets.</p> <p><u>Concluding:</u> Use straightforward results to make simple conclusions.</p>	<p><u>Cross curricular links:</u> DT: magnetic toy</p>
---	--	--