

# Y3 Science – Forces and magnets

<p><b>Inspiration</b> Creativity (problem solving)</p>	<p><b>Partnership with parents</b> Community –</p>		
<p><b>Key Questions</b></p> <ul style="list-style-type: none"> <li>- What is a force?</li> <li>- What forces can you see in these images?</li> <li>- What is friction?</li> <li>- Which surfaces have less/more friction?</li> <li>- Which car will travel the greatest distance? Why?/On which surface will the paperclip move more easily? Why?</li> <li>- What is a magnet?</li> <li>- How can we test to see which materials are magnetic?</li> <li>- How many poles do magnets have?</li> <li>- Will these magnets attract or repel each other?</li> </ul>	<p><b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>- asking relevant questions and using different types of scientific enquiries to answer them</li> <li>- setting up simple practical enquiries, comparative and fair tests</li> <li>- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>- identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>- using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<p><i>Also covered in:</i> Y5 - Forces</p>	
<p><b>At the end of this unit, children will be able to:</b></p> <ul style="list-style-type: none"> <li>- compare how things move on different surfaces</li> <li>- notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>- observe how magnets attract or repel each other and attract some materials and not others</li> <li>- 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</li> <li>- describe magnets as having two poles</li> <li>- predict whether two magnets will attract or repel each other, depending on which poles are facing</li> <li>- set up enquiries, comparative and fair test to investigate forces and magnets</li> </ul>			
<p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>- Know about forces in action in everyday lives such as: the park, a school playground, the seaside, draw a picture to show where they may see pushes, pulls and twists.</li> <li>- Understand that some forces require contact between them.</li> <li>- Friction is a force between two surfaces that are sliding, or trying to slide, across each other. For example, when you try to push a book along the floor, friction makes this difficult. Smoother surfaces have less friction. Friction is the resistance that one surface or object encounters when moving over another.</li> <li>- The more friction the surface of a ramp has the shorter the distance a toy car will travel or the more friction a surface has the more difficult it is for a magnet to move a paperclip attached to a book.</li> <li>- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>- Magnets are objects that produce an area of magnetic force called a magnetic field. Magnetic fields by themselves are invisible to the human eye.</li> <li>- Magnets always contain two poles (north and south) and that if a magnet is broken in two, each piece will still have two poles.</li> <li>- Magnets work by using their poles to either attract or repel objects. Two poles which are the same will repel each other, and the two poles which are different will attract each other.</li> <li>- Not all metals are magnetic only metals which contain iron, nickel or cobalt are magnetic.</li> </ul>			
<p><b>Topic Specific Vocabulary</b></p> <p>Forces, push, pull, twist, contact, friction, resistance, magnet, magnetic, magnetic field, poles, north, south, attract, repel,</p>	<p><b>NC Subject content</b></p> <ul style="list-style-type: none"> <li>- compare how things move on different surfaces</li> <li>- notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>- observe how magnets attract or repel each other and attract some materials and not others</li> <li>- 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</li> <li>- describe magnets as having two poles</li> <li>- predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>		
<p><b>Subject Specific/Academic Vocabulary</b></p> <p><b>This vocabulary should be explicitly taught in context. Other tier 2 words should also be explored as they are encountered.</b></p>			
<p><b>Year 3</b></p>	<p><b>Year 4</b></p>	<p><b>Year 5</b></p>	<p><b>Year 6</b></p>
<p>Benefit, impact, issues, occur, process, sequence, source, variables</p>	<p>Appropriate, consequences, identified, procedure, range, relevant, significant, specific, theory, transfer</p>	<p>Factors, affect, analyse, contribute, demonstrate, outcome, react, volume,</p>	<p>Component, exclude, function, imply, initial, justify, sufficient.</p>
<p><b>We are scientists</b></p>			