

## Theme Overview

Year	3	Term	Summer 1
Theme	Why is metal mighty?	Big Question	Why is metal mighty?
<p>Focus of unit and scope of unit:            This unit allows children to explore magnetism including looking at what a magnet is, how it works and explore which metals are magnetic. The units gives children opportunities to investigate magnets and present their results using a bar chart.            The DT topic - introduces levers and linkages. It is a practical unit that where children get the opportunity to explore some different types of levers and linkages and then design and make a moving Iron man using their learning.</p>			
Caring	Creative	Critical	SMSC/Equalities/British Values
<p>Children work collaboratively in groups to plan, carry out and present findings of a science investigation. They share their learning and research respectfully with others.</p>	<p>The children enjoy investigating magnets and different materials and come up with their own ideas for investigations.            The children use their knowledge of levers and linkages to design and make their own moving Iron Man</p>	<p>The children make detailed observations and record results. They present their results in graphical results and use this to draw conclusions.            They are encourages to evaluate a science investigation and also to make improvements to designs to create better moving models.</p>	<p>Innovation is creating a design encourages spirituality.            The children understand that metals are part of the Earth's resources and are precious. Socially children share science knowledge and use peer assessment and support to improve plans and models.            Culturally children understand how the discovery of magnetism has shaped the world.            Children have respect for each other's idea and have individual liberty to explore their own science experiments and draw their own conclusions.</p>
Big Start		Big Finish	
Play and Exploration of Magnets in First Session		Children share their moving Iron Men with parents and explain to them how they work.	
Experience		Magna Science Museum	

## Science

Year 3	Term			
Sequence of Learning	Previous Learning		Next Steps in Learning	
	Magnets are not met in Key Stage 1 at all. However, the children may well have come across them and seen that they can attract some other materials.		Children will extend their knowledge of forces and learn about other non-contact forces such as gravity. They will extend their knowledge of properties of materials including those that are good insulators and conductors.	
Knowledge and Skills	Planning an Investigation	Carrying Out an Investigation		Presenting Evidence and Drawing Conclusions
	<i>I can set up a simple practical enquiry and I am beginning to understand how to make a test fair.</i>	<i>I am beginning to make systematic and careful observations. With help, I can use information sources provided to find things out.</i>		33. <i>I present my data in a variety of ways using e.g. Venn diagrams, bar charts, simple scatter graphs and keys.</i>
	<i>I make suggestions about what observations and measurements to make and what equipment I need</i>	<i>I record my findings using a drawing and/or words.</i>		34. <i>I can use my results when I talk about what happened and am starting to link to my conclusions</i>
	Substantive Knowledge		Famous Scientists	
<p><b>Forces and magnets</b>  <i>Know about and describe how objects move on different surfaces.</i>  <i>Know how some forces require contact and some do not, giving examples.</i>  <i>Know about and explain how objects attract and repel in relation to objects and other magnets.</i>  <i>Predict whether objects will be magnetic and carry out an enquiry to test this out.</i>  <i>Know how magnets work.</i>  <i>Predict whether magnets will attract or repel and give a reason.</i></p>		The Englishman <a href="#">William Gilbert</a> (1540-1603) was the first to investigate the phenomenon of magnetism systematically using scientific methods. He also discovered that the Earth is itself a weak magnet.		
Vocabulary	<p><b>Attract:</b> pull towards. <b>Repel:</b> push away. <b>Magnetic:</b> attracted to a magnet. <b>Non-magnetic:</b> not attracted to a magnet. <b>Iron:</b> a metal that can be made into a magnet. <b>Pole:</b> the area of a magnet where the magnetic force is strongest. <b>Magnetic North:</b> the direction of the Earth's magnetic North pole.</p>	<p><b>Force:</b> a push, pull, twist or turn caused when two objects interact with each other. <b>Magnet:</b> an object or device that attracts iron or another magnetic material. <b>Contact:</b> touching. <b>Non-contact:</b> not touching</p>	<p><b>Compass:</b> a device that aids navigation by pointing the to Earth's North and South poles. <b>Prediction:</b> what you think might happen in a scientific test.</p>	

## Design Technology

Year 3	Spring Term: Moving Arm		
Sequence of Learning	Previous Learning		Next Steps in Learning
	<p>Children have had the opportunity to follow the planning structure. This is the first experience of more formal learning about mechanisms including linkages and levers.</p>		<p>Children will build on their knowledge of levers and linkages to create movement in future DT topics, such as the moving model in Y5 and Year 6 that also uses CAD.</p>
Knowledge and Skills	Design	Make	
	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>• Create a design that meets a range of requirements.</li> <li>• Consider the equipment and tools needed when planning.</li> <li>• Describe a design using an accurately labelled diagram, and in words.</li> <li>• Choose a material for both its suitability and its appearance.</li> </ul>	<p><b>Make</b></p> <ul style="list-style-type: none"> <li>• Follow a step-by-step plan, choosing the right equipment and materials.</li> <li>• Use a range of tools and equipment with accuracy.</li> <li>• With some support measure, mark out, join, assemble materials and components with increasing accuracy.</li> </ul>	
			Evaluate
			<p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>• Identify how I could improve my product.</li> </ul>
Cooking & Nutrition / Construction & Structures / Textiles / Mechanisms		Famous Designers	
<p><b>Create a moving robot arm for the Iron Man.</b></p> <ul style="list-style-type: none"> <li>• Understand how levers and linkages create movement.</li> <li>• Create a simple lever system to make a desired motion.</li> <li>• Use simple lever system to create a simple moving picture of a robot.</li> <li>• Select materials due to their functional and aesthetic characteristics.</li> </ul>		<p>Archimedes – make link to previous learning e.g. Ancient Greeks and Archimedes screw.</p>	
Vocabulary	<p>Mechanics Levers Linkages pivot</p>		<p>Input Output Diagram Step-by-step</p>