



## Medium-Term Planning



### Subject: Science

<b>Term and Year:</b>	Autumn 2 2021 Year 3 and 4
<b>Teacher:</b>	Miss Swan
<b>Unit</b>	Forces and Magnets
<b>Vocabulary that will be taught:</b>	force    push    pull    contact    magnet    magnetic poles            newtons    force meter
<b><u>National Curriculum Objectives:</u></b> <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 each other</li></ul>	
<b><u>Science Skills:</u></b> <ul style="list-style-type: none"><li>• I can make observations and take measurements using standard units</li><li>• I can use a range of equipment including force meters</li><li>• I can record findings using simple scientific language, drawings, labelled diagrams, keys bar charts and tables</li></ul>	
<b>Focus of each lesson</b>	<b>Activities/Key points</b>

Lesson 1	Finish off unit from Autumn 1. Lesson 4 and 5 combined. Assessment quiz to complete.	
Lesson 2	Can I explore what forces are and notice that some forces need contact between two objects?	Y3: children sort Forces Cards into groups of push or pull forces. They can then stick the cards into their books in their groups. Y4: children think of a situation where a force is being used as a push or a pull. They illustrate this in a diagram depicting the force as an arrow, labelling the point of contact (if there is one).
Lesson 3	Can I compare how things move on different surfaces?	Provide children with a force meter and an object to pull with the force meter. Challenge children to pull the object with the force meter on different surfaces to see the force in newtons needed to make the object move. Children could test e.g. carpet, table tops, sandpaper, grass, etc.
Lesson 4	Can I explore how magnetic forces work?	Organise the children into pairs or small groups. Show them the two questions on the next slide: What will happen when you place the different coloured ends of the magnets near to each other? What will happen when you place the same coloured ends of the magnets near to each other? Encourage children to predict and share their ideas. Now give each pair or group two magnets to test out their predictions. Children answer questions, label diagrams and write explanations using what they have learnt about magnets.
Lesson 5	Can I identify magnetic materials?	Children are tasked to test ten different objects, first noting down their predictions before testing and recording whether they are magnetic or non-magnetic, as well as the material they are made from, before answering the given questions.

Lesson 6	Can I investigate uses for magnets?	<p>Children predict the strength of different magnets based on their observations, recording their ideas. They then identify ways they are going to conduct a fair test before testing each magnet. They record their results and order the magnets from strongest to weakest.</p> <p>Assessment - End of unit quiz!</p>
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