



# St Felix RC Primary School



## Forces

Understanding of the World: Science <b>Age 3 /4</b> <ul style="list-style-type: none"> <li>• Feel forces</li> <li>• Explore how things work</li> <li>• Explore how objects/materials are affected by forces</li> </ul> <b>Reception</b> <ul style="list-style-type: none"> <li>• Explore how to change how things work</li> <li>• Explore how the wind can move objects</li> <li>• Explore how objects move in water</li> </ul>		KS1 National Curriculum Statement: <b>Year 1</b> <ul style="list-style-type: none"> <li>• compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <b>Year 2</b>		KS2 National Curriculum Statement: <b>Year 3</b> <ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> <li>• notice that some forces need contact between 2 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 2 poles</li> <li>• predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul> <b>Year 4</b> <b>Year 5</b> <ul style="list-style-type: none"> <li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>• Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul> <b>Year 6</b>			
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Journeys</b> They will encounter planes, trains, bicycles, rockets and even hot air balloons when they think about how people	<b>Journeys</b> Forces: push, pull, twist Air transport Water transport	-To understand that materials can be sorted according to whether they are or are not		-To know that force is a push or a pull. -To know that friction is the force between two surfaces and understand the effects of friction -Magnets have an invisible push or pull force.		A force is either a push or a pull.  Friction occurs when two objects move against each other.	



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can travel on journeys. They will learn that some people take journeys across water and that special kinds of transport are used for these journeys. Floating and sinking.	Transport in the winter; snow ploughs, gritting roads, snow tyres.	attracted to magnets.		<p>-To know that magnets have poles and a magnetic field.</p> <p>To know that magnetic forces are not all the same strength.</p> <p>To be able to explain that we cannot see forces, but we can see the impact they have, using examples of gravity, friction and magnetism.</p>		<p>Objects with a large surface area will have greater air resistance than other objects with a small surface area.</p> <p>Simple machines help us to increase the force we apply to an object to help us move it.</p>	
Knowledge Goals							
		<p>-Certain materials are attracted to magnets.</p> <p>-We cannot see the force of magnetism.</p> <p>- Magnets can be useful, for example in toys or around the home.</p>		<p>-Gravity is a force that makes objects fall to the ground. -The effect of a force is to make something move, or change speed, direction or shape. -We can change the amount of force we use when we push and pull things. When a car rolls down a slope, the force of friction can slow it down. Rough surfaces create greater friction. Smooth surfaces create less friction. - Magnetic force is an invisible push or pull force.</p> <p>-When a magnet pushes an object away, we say it repels it. If a magnet pulls an object towards it, we say it attracts it.</p> <p>-A lodestone is a naturally occurring rock that has magnetic properties.</p> <p>-Larger magnets are often, but not always, the strongest.</p>		<p>-A force is either a push or a pull that can cause an object to increase speed, decrease speed, change direction, change shape.</p> <p>-Gravity is a force that pulls objects towards the centre of the earth.</p> <p>-Friction gives us grip which allows us to start and stop moving.</p> <p>-Air resistance is a kind of friction that slows down objects moving through the air.</p> <p>-Water resistance is a kind of friction that slows down objects moving through water.</p> <p>-Upthrust is the force that can keep objects afloat.</p> <p>-Air and water resistance are both a kind of friction that slows down moving objects.</p> <p>- We can change the shape of objects to change the air or water resistance acting upon them.</p> <p>-Parachutes work to slow down a falling item because they have a large surface area.</p>	



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				<ul style="list-style-type: none"><li>-The strength of magnetic force can be tested.</li><li>- Magnetic strength can be weakened over time.</li></ul>	<ul style="list-style-type: none"><li>-Levers use a long pole and a pivot point to increase a force.</li><li>-Pulleys use a rope running over a pulley wheel to increase a force.</li><li>-Gears use cogs with teeth to increase the force.</li></ul>	
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