

DOWN AMPNEY PRIMARY SCHOOL

<u>Term 2</u> <u>Unit Overview: LKS2 Science</u> <u>Forces and Magnets</u>

Nat	ional Curriculum Objectives	Substantive knowledge	Vocabulary		
*	Compare how things move on different surfaces.	A force is a push, a pull or a twist that can change the	Force, push, pull, twist, contact force, non-contact force,		
*	Notice that some forces need contact between two objects, but magnetic forces can act at a distance.	 speed, direction or shape of an object. When an object moves on a surface, the texture of the surface and the object affect how it moves. It may halp 	magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material metal iron steal pales, parth pale south pale		
*	Observe how magnets attract or repel each other and attract some materials and not others.	the object to move better, or it may hinder its movement e.g. ice skater compared to walking on ice	Phonics / polysyllabic words magnetic /g/ force /au/		
*	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.	 in normal shoes. A magnet attracts magnetic material. Iron and nickel and other materials containing these, e.g. stainless 			
*	Describe magnets as having two poles.	steel, are magnetic.	Newton /oo/		
*	Predict whether two magnets will attract or repel each other, depending on which poles are facing.	 Magnets have two poles – a north pole and a south pole. If two like poles, e.g. a north and south, are 			
Working Scientifically Skills		brought together they will pull together – attract.			
*	Gathering, recording, classifying and presenting data in a variety	 For some forces to act, there must be contact e.g. a 	Reading support		
*	of different ways. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Make systematic and careful observations	hand opening a door, the wind pushing the trees. Some forces can act at a distance e.g. magnetism. The magnet does not need to touch the object that it attracts.	 Word mats Scaffolded recording / choice of recording Pre teaching of vocab Word / picture association 		
*	Record classifications, e.g., using tables, Venn diagrams, Carroll diagrams.		Extension deeper thinking		
*	Select from a range of practical resources to gather evidence to carry out a comparative test.		*		
*	Draw conclusions based on their evidence and current subject knowledge.		Key People Isaac Newton 		



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 Use straightforward scientific evidence to answer questions or to support findings. Set up simple practical enquiries, comparative and fair tests. Possible misconceptions Some children may think: the bigger the magnet the stronger it is all metals are magnetic 	 Disciplinary knowledge Carry out investigations to explore how objects move on different surfaces e.g. rolling balls/cars, soles of shoes etc. Explore what materials are attracted to a magnet. Classify materials according to whether they are magnetic. Explore the way that magnets behave in relation to each other. Explore how magnets work at a distance e.g. through table, in water, jumping paper clips up off the table. 	a						
 Assessment Evidence Can children give examples of forces in everyday life? Can children give examples of objects moving differently on different surfaces? Can children name a range of types of magnets and show how the poles attract and repel? Can children draw diagrams using arrows to show the attraction and repulsion between the poles of magnets? TAPS assessment focus: Can children decide on an approach to compare magnet strength? Can children recognise and control variables where necessary? 								
 Prior learning Explore how things work. (Nursey – Forces) Explore the natural world around them. (Reception – Forces) Describe what they see, hear and feel whilst outside (Reception – Forces) Find out hoe the shapes of solid objects made from some materials of by squashing, bending, twisting and stretching. (Y2 – Uses of everydate the stret is that unsupported objects fall towards the Earth because of the force of gradet ween the Earth and the falling object. (Y5 – Forces) 	 British Values Democracy Take the views and opin others into account. Take turns and instructions from others. The rule of law Understand the imp of safety rules when working scient make choices when planning an investigation as others may have dil points of view as to where to start. 	Christian Values nions of Courage Asking our own questions and investigating new ideas. ifically Respect fferent Supporting other's ideas, even if they differ to our own.						



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 Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. (Y5- Forces) Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (Y5- Forces) Magnetic fields by plotting with compass, representation by field lines (KS3) 	*	Tolerance Scientific discoveries have come from other cultures and religious beliefs often compete with scientific understanding. <u>Mutual respect</u> Work as a team, discuss findings and offer support and advice to others.	*	<u>Trust</u> Celebrating everyone's unique ideas and working together collaboratively.
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