Year 3 Science Medium Term Planning – Forces and Magnets

Term	N.C. EXPECTATIONS	Learning question	Associated Substantive Knowledge	Disciplinary Knowledge and skills	Key Vocabulary
1	Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. 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.	**LQ: What are forces and magnets?**	Children will explain what a force is and give examples including the concepts of pushes and pulls, with examples from everyday life. Children learn to categorise scenarios based on whether they involve a push, pull, or a combination of forces Children learn to describe other ways to make objects move, such as twisting, dropping, or sliding. Children will group objects based on the type of force applied to cause movement (e.g., push, pull, lift, spin).	Identifying, grouping, and classifying. Setting up simple practical enquiries, Making systematic and careful observations taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, Make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes.	Force Magnet Push Pull Gravity
2		**LQ: How do things move on different surfaces?**	Children will know a force is a push or a pull.	Comparative/Fair testing.	Surface Texture Accelerate Decelerate

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	Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.	**Outdoor lesson – take ramps outside.** **Use TAPS assessment to check that children are WS.**	Children will know that when an object moves on a surface, the texture of the surface and the object affect how it moves. Children will know it may help the object to move better, or it may hinder its movement.	Setting up simple practical enquiries - comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings.	Measure
3		**LQ: What makes it move?**	Children will know what contact and non-contact forces are. Children will know how objects move through a contact force and non-contact forces.	Identifying, grouping, and classifying. Setting up simple practical enquiries. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language.	Contact force. Non – contact force. Magnet Magnetic Magnetism

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			Children will know magnets are a non-contact force and air is a contact force.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings	
4		**LQ: Can I explore magnets?**	Children will know what materials are attracted to magnets. Children will use scientific language when discussing magnets (attract, repel, north pole, south pole). Children learn to describe how magnets work, including the concepts of attraction and repulsion.	Identifying, grouping, and classifying. Setting up simple practical enquiries. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes.	Attract, Attraction Repel, Repulsion North pole, South pole Non-magnetic

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				Using straightforward scientific evidence to answer questions or to support their findings	
5		**LQ: Are all metals magnetic?**	Children will know magnets can attract or repel each other. Children will explain the function of a magnet's poles and demonstrate how like poles repel and opposite poles attract. Children learn that only a few metals are magnetic. These include: • Iron • Nickel • Cobalt T Non-Magnetic Metals: Most other metals, such as aluminium, copper, gold, and silver, are not magnetic.	Comparative/Fair testing Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings	Iron Steel Cobalt Bronze Silver Gold

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6		**What is the strongest magnet?** **Use TAPS assessment to check children are WS**	Children will know how to test different magnets. Children will use different ways of measuring and recording my data. Children will make predictions and draw conclusions.	Comparative/Fair testing Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings	Wand magnet Bar magnet Circular magnet Horseshoe magnet
		Can I test a paper clip on different surfaces?	Children will test the strength of magnets on different surfaces. Children will use different ways of measuring and recording my data.	Comparative/Fair testing Setting up simple practical enquiries, comparative and fair tests.	Recap all vocabulary.

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			Children will make predictions and draw conclusions.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings	