**Year 3 Science Curriculum – Spring 1**

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| **Theme: Forces, Friction and Magnets** | | | | | | | | | |
| **Curriculum objectives** | | | **Vocabulary** | | | | | | **Links across the curriculum** |
| To notice that some forces need contact between two objects, [but magnetic forces can act at a distance].  To compare how things move on different surfaces.  To observe how magnets attract or repel each other [and attract some materials and not others]  To describe magnets as having two poles.  To predict whether two magnets will attract or repel each other, depending on which poles are  facing.  To observe how magnets attract or repel each other and attract some materials and not others.  To 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.  To notice that some forces need contact between two objects, but magnetic forces can act at a  Distance. | | | **Contact** | Touching | **Slide** | | To slip | | Maths:   * Presenting data in tables * Interpreting data   English:   * Oracy | |
| **Pendulum** | A weight hanging from a fixed point which swings backwards and forwards | **Smooth** | | Flat and even, not rough | |
| **Pull/Pulling** | (Verb) to move toward  (Noun) a move toward | **Surface** | | The outside or top of something | |
| **Push/Pushing** | (Verb) to move away  (Noun) a move toward | **Texture** | | How a surface or material feels | |
| **Rough** | Uneven, not smooth | **Tier 3 vocabulary** | | [SNAP23\_Y3\_M3\_forces\_ms.docx (live.com)](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fstatic.collins.rhapsode.com%2FSnap_Science%2FTeaching_Science%2FYear_3%2FSNAP23_Y3_M3_forces_ms.docx&wdOrigin=BROWSELINK) | |
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| **Prior knowledge:** *What specifically have pupils learned that is relevant to this unit that they are building upon?* | | | | | | **Future knowledge:** *What specifically will pupils learn in the future that is relevant to this unit?* | | | |
| Children have previously learnt:   * that the shape of an object can be changed by squashing, bending, twisting and stretching (Year 2 Chemistry – Uses of everyday materials). | | | | | | This prepares children for later learning:   * about friction, water resistance and air resistance and the forces involved in simple   mechanisms (Year 5 Physics – Forces)  how magnetism can be used to separate magnetic materials from a mixture (Year 5 Chemistry  – Properties and changes of materials). | | | |
| **Lesson Sequence** | | **Key Knowledge** | | | | **Key Skills** | | | |
| What makes it move? | | * A force is a push or pull that can make something move * When the object providing the force is touching the object it is moving. This is called a contact force. * How pushing and pulling forces can move a table tennis ball. * Record observations of the movement and forces using diagrams. | | | | Working scientifically:   * recording findings using [simple scientific language] drawings, [labelled diagrams, keys, bar   charts, and tables] | | | |
| How long does a top spin on different surfaces? | | * Learn to use a stopwatch to measure time passing. * Measure how long a spinning top spins on different surfaces. * Record results in a table. * Analyse results to answer the lesson question: ‘How long does a top spin on different surfaces?’ * The top moves more easily on smooth surfaces and therefore spins for longer. * The top moves less easily on rough surfaces and therefore spins for less time. | | | | Working scientifically:   * [making systematic and careful observations and, where appropriate,] taking accurate   measurements using standard units, [using a range of equipment, including thermometers and  data loggers]   * recording findings using [simple scientific language, drawings, labelled diagrams, keys, bar   charts, and] tables.  Scientific enquiry type:   * carrying out simple comparative tests | | | |
| How well can an object slide on different surfaces? | | * Use a ruler to measure a height. * Make predictions based on results gathered. * Record results in a table. * Analyse their results to answer the lesson question: ‘How well can an object slide on different surfaces?’. * The object slides more easily on smooth surfaces. * The object slides less easily on rough surfaces. | | | | Working scientifically:   * reporting on findings from enquiries, including oral and written explanations, [displays or presentations of results and conclusions]   Scientific enquiry type:   * comparative testing | | | |
| Which materials are magnetic? | | * Some metals, but not all, are magnetic and that non-metals are not magnetic. * Use a magnet to test objects to identify if they are magnetic or not. * Identify the material each object is made from. * Record their observations in a table. * Use the results to identify and classify magnetic and non-magnetic materials. | | | | Working scientifically:   * using straightforward scientific evidence to answer questions [or to support their findings]   Scientific enquiry type:   * identifying and classifying | | | |
| How strong are magnets? | | * There is no pattern linking the size of a magnet and its strength. * Identify evidence to prove that a magnetic force is a non-contact force. * Test magnets to find out how strong they are. * Record their results in a table and use these to prove that there is no pattern linking the size of a magnet and its strength. | | | | Working scientifically:  - making systematic and careful observations and, where appropriate, taking accurate  measurements using standard units, using a range of equipment, [including thermometers and  data loggers]  Scientific enquiry type:   * pattern seeking | | | |
| **Themes and links** | | | | | | | | | |
| **Themes (types of enquiry)** | **Where these are covered:** | | | | | | | **Links across the science curriculum** | |
| **Observation over time** |  | | | | | | | |  |  | | --- | --- | | **EYFS** |  | | **1** | Properties and used of materials | | **2** | Growing seeds and bulbs | | **3** |  | | **4** | Human impact on the environment | | **5** | Plant and animal lifecycles | | **6** | Human circulation | | |
| **Research** |  | | | | | | |
| **Pattern seeking** |  | | | | | | |
| **Comparative and fair testing** | * Lesson 2 * Lesson 3 * Lesson 4 * Lesson 5 | | | | | | |
| **Identifying, classifying and grouping** | * Lesson 1 | | | | | | |  | |