**Year 2 Science Curriculum – Summer Term 1**

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| **Theme: Changing Materials** | | | | | | | | | |
| **Curriculum objectives** | | | **Vocabulary** | | | | | **Links across the curriculum** | |
| 1. To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, and cardboard for particular uses. 2. To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting, and stretching. | | | **Keyword** | **Definition** | **Pull** | To move toward | | **English:**  Bonce, Catch, Kick, Throw: Janice Marriott, Peter Lubach  What makes a ball bounce? This and other questions, answered. | |
| **Action** | A thing that is done which usually results in a change | **Push** | To move away | |
| **Discover/**  **discovery** | To find unexpectedly or as a result of an enquiry | **Suitable** | Right for the purpose | |
| **Fit for purpose** | Well suited for its use | **Use** | The purpose for which a material is chosen | |
| **Invent/**  **inventor** | To create or design something that has not existed before | **Elastic/**  **elasticity** | Able to stretch, bend or twist without breaking and then return to original form | |
| **Test** | To carry out a science enquiry to find something out | **Squashy/**  **squash** | Can be crushed or squeezed, keeping the same volume, so that it becomes flat or out of shape | |
| **Bend** | To move from straight to a curved shape | **Stiff** | Cannot be stretched or squashed | |
| **Flexible** | Able to bend easily without breaking | **Stretchy/**  **stretch** | Can be made longer or wider, keeping the some volume, without breaking or tearing | |
| **Material** | The substance something is made of | **Twist** | To move something out of shape with a turning motion | |
| **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?* | | |
| Changing materials is a Chemistry topic building on children’s learning and experiences in Year 1 and the previous Year 2 Materials module.  Children have previously learnt:   * To identify a range of everyday materials and compare their suitability for certain uses (Year 2 Chemistry – Uses of everyday materials). | | | | | | | This prepares children for later learning:  About forces (Year 3 Physics – Forces and magnets). | | |
| **Lesson Sequence** | | **Key Knowledge** | | | | | **Key Skills** | | |
| 1. *How can I change the shape of an object?* | | Materials have properties which may include being flexible, rigid, stretchy, squashy, elastic, stiff. Squashing, bending, stretching, and twisting can change the shape of some materials. | | | | | **Working scientifically**  **Skills children will learn, use and develop**   * Asking simple questions and recognising that they can be answered in different ways. * Performing simple tests. * Identifying and classifying. * Using their observations and ideas to suggest answers to questions. * Gathering and recording data to help in answering questions.   **Knowledge about science children will learn:**  Children will learn about the methods scientists use to build scientific knowledge about materials and how they can be used in different ways.  They will learn how scientists and inventors have to be persistent and keep going when the things they are trying to do don’t work the first time.  They will develop an understanding of the following types of enquiry: identifying and classifying, comparative testing. | | |
| 1. *What properties allow materials to be changed?* | | Objects can be tested and sorted according to the properties of the materials from which they are made. Different properties allow the shapes of materials to be changed in different ways. | | | | |
| 1. *Which material is fit for purpose?* | | Objects are made from materials with properties that make them fit for purpose. | | | | |
| 1. *What can pushes and pulls do?* | | Different actions, such as a push or a pull, can be used to change the shape of a material and/or an object. | | | | |
| **Themes and links** | | | | | | | | | |
| **Themes (types of enquiry)** | **Where these are covered:** | | | | | | | | **Links across the Science curriculum** |
| **Observing closely (using simple equipment)** | Lessons 1, 3 and 4  Can use simple scientific language to describe how suitable a material is for a given use.  Can describe observations using sensory and context-specific vocabulary (for example, stretchy, squashy, flexible, rigid, stiff, elastic). | | | | | | | | |  |  | | --- | --- | | EYFS | To explore the natural world around them, making observations and drawing pictures (EYFS framework; ELG The Natural World). Within the framework they might have also explored: the movement of sand, water, and other materials. To choose clothing to suit the day’s weather conditions. To explore materials that could be used to build animal and human homes. | | 1 | Distinguish between an object and the material from which it is made  describe the physical properties of a variety of everyday materials.  Compare and group together a variety of everyday materials on the basis of their simple physical properties. | | 2 |  | | 3 | 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. | | 4 | Compare and group materials together, according to whether they are solids, liquids, or gases. | | 5 | Compare and group together everyday materials on the basis of their properties, including their hardness, [solubility,] transparency, conductivity (electrical and thermal), and response to magnets.  Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. | | **6** |  | |
| **Gathering and recording data to help in answering questions** | Lessons 1 and 2  Can use first-hand observations and simple practical tests to group and compare the properties of different materials  Can record observations in simple prepared tables to show which objects can have their shape changed by being bent, stretched, twisted or squashed, which materials are flexible, rigid, elastic or stiff.  Lesson 3  Can identify a material that has properties that would make it suitable for a particular object and recognise that there may be other materials that are also fit for purpose. | | | | | | | |
| **Comparative and fair testing** | Lessons 1, 2 and 4  Can follow simple instructions to carry out comparative tests on a variety of materials, testing, for example: if a material can be bent, stretched, squashed, or twisted; if a material is flexible, rigid, stiff or elastic; how a material can be shaped by pushing and pulling. | | | | | | | |
| **Identifying and classifying** | Lessons 1, 2 and 3  Can use simple scientific language to describe properties of materials.  Can compare, sort and group materials using their properties.  Can sort and group materials according to how the shape of the material can be changed. | | | | | | | |