Year 2 – Uses of Everyday Materials



|  |  |
| --- | --- |
| National Curriculum Outcomes: Knowledge* Identify and compare the suitability of a variety of everyday materials, including wood, metal, glass, plastic, brick, rock, paper and cardboard for particular uses
* Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
 | National Curriculum Outcomes: Working Scientifically* Asking simple questions and recognising that they can be answered in different ways
* Observing closely, using simple equipment
* 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
 |
| Children might work scientifically by:Comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs). Observing closely, identifying and classifying the uses of different materials, and recording their observations (*taken from the National Curriculum*). |
| Links to prior learning**Year1:** Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple 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 | Links to future learning**Year 3:** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties**Year 4:** Compare and group materials together, according to whether they are solids, liquids or gases**Year 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 |
| When to teachThis module could be taught at any point in the year. | Key VocabularyMaterial, property, use, wood, metal, plastic, glass, paper, cardboard, fabric, brick, rock, hard, soft, shiny, dull, rough, smooth, flexible, rigid, waterproof, opaque, transparent | Common Misconceptions* Children often think the term ‘material’ refers only to fabric.
* They may think that ‘rock’ is an object rather than a material
* Children often confuse the terms rough/hard and soft/smooth
 |
| Important Scientists **William Addis** – Toothbrush inventor**Charles Mackintosh** – Invented the waterproof coat, Mackintosh raincoat named after him**John MacAdam-Roads Chester** – invented earmuffs | STEM Career Links**Architect** (designs buildings)**Builder** (builds your structures)**Chemical engineer** (solves problems involving chemicals)**Materials Scientist** (researches structures and properties of materials) | Links to real life* What materials are my toys/clothes made out of?
* What is your favourite material? What properties does it have?
* What different materials can you find in your home?
* What if we didn’t have wood/metal/plastic?
 |
| Key knowledge/facts that the children need to knowMaterials can have a number of different properties. They are chosen for various uses based on their properties.Materials can be hard or soft, shiny or dull, rough or smooth, flexible (bendy) or rigid (not bendy), waterproof or permeable and opaque, translucent or transparent. |
| Suggested Enquiry Activities |
| Identifying and Classifying* What materials are our toys made out of?
* What materials can I identify in the classroom/at home?
* How can we group these materials?
* Compare the uses of everyday materials in and around school.
* Identify materials found in different places e.g. at home, the journey to school, on visits, in stories / rhymes / songs.
* Identify and classify the uses of different materials.
* What materials have been used to build our school?
* How can we group materials by the changes that can be made?
 | Simple Comparative Testing* Which kind of paper is the strongest?
* Which material would be the best to make a gymnast’s outfit/an umbrella/a castle out of?
* What are the best materials to build a castle?
* Waterproofing materials.
* Are bricks absorbent?
* Which ball is the bounciest?
* Which material is the scratchiest?
* Paper bridges – make and test.
* Testing rigidity
 | Observation over Time* Observing closely the uses of different materials.
 | Pattern Seeking* Are all flexible materials stretchy?
* Are all hard materials waterproof?
* How can you change the shape of these materials?
* What materials can you bend and twist?
 | Research using Secondary Sources* Interview someone who uses materials in their job to find out more about them (e.g. someone who sells crafts, someone who works in recycling or someone who designs clothes)
 |
| **Outdoor Learning** |
| * Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
* Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
 | * Pupils talk about objects in the playground or local environment and identify the materials they are made from and how this makes them appropriate for use outside.
* Pupils explore whether they can change the shape of objects found in the playground or local environment
* Nature Play Activity: create a house for a mouse
 |

|  |
| --- |
| Wow Factor Experiences* Go on a materials walk to identify materials being used in the environment (this works well at parks and playgrounds, as well as within the school grounds).
* Use knowledge of properties of materials to design and build something, such as a boat or bridge, and test it to see how successful the design is.
 |
| Maths Links* Take measurements of how much water different materials can absorb, or how far they can stretch and record in tables and/or bar charts
 | Literacy Links* Create (and act out!) an advert for a particular material for a given purpose, for example a materials that would make a good umbrella or lunchbox.
 | Broader Curriculum Links**History:** What common materials were not available to the people in the civilizations we are learning about? What did they use instead of plastic?**D&T:** Use knowledge of the properties of materials to design something such as a boat or item of clothing**Art:** How can we use different materials to make an effective collage? |
| Story LinksCentrally Heated Knickers – Michael Rosen (poetry book)Little Lumpty – Miko ImaiSanta is Coming to Leeds – Steve SmallmanAliens Love Underpants – Claire FreedmanThe Three Little Wolves and the Big Bad Pig – Eugene Trivisas |
| Helpful WeblinksTeacher CPD on materials and their properties (free) – <https://www.reachoutcpd.com/courses/lower-primary/everyday-materials/>Assessment exemplification (could also be useful with planning ideas) – <https://www.planassessment.com/product-page/examples-of-work-everyday-materials-y2-glory>BBC Class Clips (useful videos) – <https://www.bbc.co.uk/bitesize/topics/zrssgk7/resources/1>STEM Learning’s online resource library for Plants – <https://www.stem.org.uk/resources/community/collection/12724/year-2-uses-everyday-materials> |