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| **Topic** | **Once upon a time**  |
| **Science Unit** | Everyday materials  |
| **Curriculum Objectives** | Content:* Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Lesson 1-3)
* Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (L8-9)

Working scientifically: * Ask simple questions using everyday language and year 2 scientific language. (Anchor Tasks)
* With support, suggest some ideas regarding the method. (Lesson 4, 8)
* Make a simple prediction about what might happen. (Lesson 4, 8)
* As a group, follow instructions to perform simple tests/comparative tests. (Lesson 5, 9)
* Gather and record simple data, using a variety of pre-constructed tables/charts (tally charts) (Lesson 5, 9)
* With support and scaffolds, begin to simply record how to set up and complete a test using pictures and simple scientific language. (Lesson 6, 10)
* Talk about findings using simple scientific language from year 2. (Lesson 6, 10)
* With support, recognise if results matched predictions. (Lesson 6, 10)
* Recognise that questions can be answered in different ways such as: observing changes over time, grouping and classifying, simple tests, researching using secondary sources and noticing patterns.
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| **Lesson Objectives** | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| To learn about the uses of materials.  | To learn to group materials based on their uses.  | To learn to compare the suitability of materials.  | To learn to plan an investigation.  | To learn to test materials. | To learn to present findings.  |
| Week 7 | Week 8 | Week 9 | Week 10 | Week 11  | Week 12  |
| To learn to explore how materials can be changed. | To learn to plan an investigation. | To learn to investigate materials can be changed. | To learn to present findings. | To learn how new materials were created.  | To learn about recycling. |
| **Key Vocabulary**  | *Year 1 vocab +* | **elastic** | **foil** | **rubber** | **wool** | **sponge** |
| **opaque** | **translucent** | **transparent** | **reflective** | **non-reflective** | **flexible** |
| **rigid** | **shape** | **push** | **pull** | **twist** | **squash** |
| **bend** | **stretch** | **rolling** | **pressing** | **prediction**  | **instructions** |
| **test** | **findings/results** | **Gather data**  | **Record – (tally) chart, diagram, data, pictogram** | **questions** | **answers**  |
|  | **sort** | **compare** | **classify** | **group** |  |  |
| **Possible lesson ideas** | * Lesson 1: Complete a survey around the school about the different ways materials are used in schools e.g wood – table, shelf
* Lesson 2: Use hoops to group materials based on their uses and begin to justify their choice for grouping them. Pupils to come up with their own groups.
* Lesson 4-6: Investigation ideas based on properties:
* Which material is the most transparent to make a window?
* What material would be the strongest to build a castle for a princess?
* What material would be the strongest to build a bridge for Three Billy Goats Gruff?
* Which material stretches the most?
* Which type of kitchen roll is the most absorbent for Cinderella to use to mop up?
* Which materials are the most flammable? (Great Fire of London)
* Which material bends the most? <https://explorify.wellcome.ac.uk/en/activities/the-big-question/which-is-the-bendiest>
* Lesson 7: Range of materials for pupils to explore the effects of squashing, bending, twisting and stretching <https://www.hamilton-trust.org.uk/science/year-2-science/everyday-materials-squash-bend-twist-stretch/>
* Lesson 8-10 <https://www.hamilton-trust.org.uk/science/year-2-science/everyday-materials-squash-bend-twist-stretch/> Investigation ideas based on changes to material:
* Which ball is the bounciest?
* Which material stretches the most?
* Which is the strongest paper?
* Lesson 11: Learn about new materials made by John Dunlop (tyres) <https://developingexperts.com/s/missions/55> Learn about new materials made by John McAdam (tarmac) <https://developingexperts.com/s/missions/57>
* Lesson 12: Re-using plastic -<https://explorify.wellcome.ac.uk/en/activities/problem-solvers/plastic-fantastic>
* Whole unit plans <https://developingexperts.com/s/unit-library/units/10>
* Whole unit plans <https://www.hamilton-trust.org.uk/science/year-2-science/everyday-materials-materials-matter/>
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