Year 2 - Science: Uses of everyday materials

Key vocabulary: *Y1: object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull.*

Y2: transparent, opaque, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching, bottles, scanned, sorted, shredded, melted, cleaned, pellets, machine.

*Most of the worksheets are differentiated. The 1-star sheets are the easiest and the 3-star sheets are the most challenging – ask your child how confident they feel before choosing a sheet for them; most children should be able to complete the 2-star sheet (the answers are mostly provided). The **Knowledge Organiser** gives an overview of the learning for the whole unit.*

Learning goal:	Key information & Activities:	Resources:
I can identify uses of different everyday materials.	**Watch** the PowerPoint (and video clip). **Complete** the Identifying Uses worksheet. • The same materials can be used for a number of different things, for example metal can be used for coins, keys, cars, cans and bridges. **Choose 1** of the following 3 activities to **do throughout this week**: 1. Spot it: Keep a list of the different uses of materials you spot at home or at school and whilst out and about. 2. Tally it: Keep a tally of the number of times you see a material, such as metal, being used for a different purpose. How many different purposes do you find for one material? Which material has the most purposes? 3. Paint it: Choose one material and paint as many different uses of that material as you can think of.	• Identifying uses PowerPoint • Materials and their uses – video clip https://www.bbc.co.uk/bitesize/clips/zm2jmp3 • Identifying uses worksheet • Range of household items made from different materials (wood, plastic, glass, metal, rock, brick, paper, cardboard) **or** everyday materials photo cards
I can identify and group the uses of everyday materials. I can record my observations.	**Watch** the PowerPoint. **Go** out for a walk (take the worksheet, a pencil & ideally something to lean on like a clipboard). **Keep** a record of the uses of everyday materials that you see – by **filling in** the table on the worksheet with your findings. When you get home, **talk** to someone about what you saw. - Explain what 3 different materials can be used for. - What different uses of materials did you find? - Is there any way we can group some similar uses together? - Did you spot any unusual uses of materials? - Why do you think that material was chosen for that purpose?	• Out and About PowerPoint • 'Spotting uses of materials out and about' worksheet – e.g. material – wood, use – fence • Clipboard (if possible) & pencil

	- Explain what 3 different materials can be used for. Group similar uses of materials together. **Extension ->** <u>Invent it:</u> Invent different uses of materials. Be as creative as you can! Share your ideas on a poster (or in a more creative way!).	
I can compare the suitability of different everyday materials. For a given object, I can identify what properties a suitable material needs to have.	**Watch** the PowerPoint. • A material may come in different forms which have different properties. • A material can be suitable for different purposes and an object can be made of different materials. • All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task. For example, a water bottle is made of plastic because it is transparent allowing you to see the drink inside and waterproof so that it holds the water. **Complete** the Comparing Suitability worksheet. **List it:** Make a list of objects which are made from more than one material, e.g. spoons (metal, wood, plastic).	• Comparing suitability PowerPoint • Comparing suitability worksheet
I can tell you about an inventor of a new material.	**Research** (using books and the internet) <u>one</u> of the following inventors/scientists and **create** a fact file about their life and work: - John Dunlop (rubber tyres) - informative PowerPoint available. - Charles Macintosh (waterproof fabric) – template available and informative PowerPoint. - John McAdam (tarmac roads) – template available, informative PowerPoint, word mat and video.	• John McAdam fact file template (if he is your chosen inventor/scientist) **and** John McAdam useful word mat **and** information PowerPoint • John McAdam - The invention of tarmac – video clip https://www.bbc.co.uk/bitesize/clips/zmr634j • Charles Macintosh fact file template **and** information PowerPoint • John Dunlop information PowerPoint
I can explain how the shapes of objects made from some materials can be changed.	**Watch** the PowerPoint. • Objects made of some materials can be changed in shape by bending, stretching, squashing and twisting. • For example, clay can be shaped by squashing, stretching, rolling, pressing etc. • This can be a property of the material or depend on how the material has been processed e.g. thickness. Have a go at **squashing, bending, twisting and stretching** the different items (see resource list). **Record** your findings on your work sheet. • When choosing what to make an object from, the properties needed are compared with the properties of the possible materials, identified through simple tests and classifying activities. <u>Extension (choose 1 of the following 3 activities):</u>	• Changing shape PowerPoint • Playdough, pipe cleaners, tea towels, socks, drinks can, elastic bands, drinking straws, sponges • Changing shape worksheet • <u>Extension:</u> camera

	1. Change it: Change the shape of object, take pictures of the object before and after. Get others to try and guess the technique used to change the shape of the object (squash/bend/twist/stretch). 2. Guess it: Change the shape of an object, take pictures and ask others to guess the object which has been changed. 3. Film it: Make a short film explaining how the shape of some objects can be changed.	
I can explain the process of recycling.	**Watch** the PowerPoint (and video clip – scroll down afterwards and sort the rubbish into the correct recycling bins). **Cut out and sort** the items on your recycling sorting activity worksheet into the appropriate recycling bin. Work with a family member or friend on video chat. **Watch** the video clip https://www.bbc.co.uk/bitesize/clips/z7x2tfr **Complete** the recycling sequencing worksheet. **Choose 1** of the following 3 activities to **do this week**: 1. Estimate it: Use the Recycling Week Estimation Quiz (https://www.twinkl.co.uk/resource/t-he-058-recycling-week-estimation-quiz-powerpoint) to estimate the answers to the questions and learn some interesting facts about recycling. 2. Find it: Use the Recycling Week Scavenger Hunt (worksheet) to search for the recycling symbols and try and work out what they mean. 3. Act it: Create and use role play to show the recycling process.	• Recycling PowerPoint • What should I do with my rubbish? – video clip and interactive activity (sort the rubbish) https://www.bbc.co.uk/bitesize/topics/zrssgk7/articles/z9w26sg • Recycling sorting activity – categories: cans, paper and card, plastic, compost, glass, clothes, reusable items, waste services • Recycling – what's the best way to sort waste? - video clip https://www.bbc.co.uk/bitesize/clips/z7x2tfr • Recycling sequencing worksheet • Recycling Week Scavenger Hunt worksheet