



BRONZE

School name: _____ FOUNDATION PLANNING YEAR A

Theme: Uses of everyday Materials – linked with The Jolly Postman

Year: 1/2

Term: Autumn 2



ART	D&T	Geography	History	ICT	MFL	MUSIC	PE & SPORT	PSHE/SMSC	RE	SCIENCE X
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Lesson	Learning Objective and Success Criteria	Learning Tasks & Activities	Resources/ICT	Links to the Arts	
1	<p>LO: I can identify a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard</p> <p><i>Success Criteria:</i></p> <p>I must be able to name different materials</p> <p>I should be able to describe a property of these materials</p> <p>I could use a variety of different language to describe properties of these materials</p>	<p>Start by having a variety of different objects in each of the 8 materials groups – see below. Ensure that there are enough so objects can be passed round, manipulated and discussed within each group of pupils.</p> <p>Do the pupils know what the materials are? What language can they use to describe them?</p> <p>Can they group them in different ways: Solid, transparent, hard, bendy etc.?</p> <p>Can they group them according to the material? Introduce the word: property.</p> <p>Introduce pupils to different vocabulary that can describe these materials. Eg: rigid,</p> <p>Write some word banks to describe each of these materials.</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Wood</p> <p>Metal</p> <p>Plastic</p> <p>Glass</p> <p>Brick</p> <p>Rock/stone</p> <p>Paper</p> <p>cardboard</p> </div>	<p>Take photos of the groups of materials – to be stuck in science books as evidence.</p>	

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2	<p><u>LO: I am able to suggest why these materials are suitable for a particular purpose/a variety of purposes.</u></p> <p><i>Success Criteria:</i></p> <p>I must say why a material is suitable for its purpose</p> <p>I should be able to discuss why an object is suitable for its task by describing its properties</p> <p>I could identify all of the properties of a variety of objects and explain why they are suitable for their uses.</p>	<p>Recap last week and remind pupils of the different materials.</p> <p>The Twinkl PPs are good recaps. Comparing Suitability and Identifying Uses</p> <p>Take a walk around the school and look at lots of different materials and discuss what they are used for.</p> <p>Discuss why the different objects are made from particular materials.</p> <p>Pupils can draw/write/take photos during the walk.</p> <p>See link below for photos of materials if needed.</p> <p>https://www.outstandingscience.co.uk/index.php?action=view_page&page=view_unit&unit=2d</p> <p>After the walk around the environment and discussion time, pupils are to choose a variety of objects. Draw them, label them and write what they are made from. Additionally, how the property fits the objects purpose.</p>		

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3	<p><u>LO: I know why certain objects can be made from more than one material</u></p> <p><u>LO: I know that one material can be used to make more than one object</u></p> <p><i>AT1:</i> <i>observing closely, using simple equipment</i> <i>performing simple tests</i> <i>using their observations and ideas to suggest answers to questions</i> <i>gathering and recording data to help in answering questions</i></p>	<p>Show the pupils 3 different spoons made out of metal, plastic and wood. Have the pupils ever used spoons made out of a different material? What about a spoon made out of paper or glass? Why not?</p> <p>Discuss toys that they may have. What are toys made out of? Why are they made from different materials?</p> <p>Introduce Investigation: A roof can be made out of different materials too: Slate, concrete tiles, wooden slats, metal, plastic ...</p> <p>Explain that the 3 Little Pigs roof needs rebuilding and they are going to find out which material is the strongest and the most waterproof.</p> <p>Let the pupils investigate the different materials: Straw, cardboard, wood (lollysticks), plastic (lego), metal (foil), cotton wool. What will their prediction be and why?</p> <p><u>What material will be the best roof for the Three Little Pigs?</u></p> <p>The LP house could be made of lego. They need to make a roof made out of each of these materials and test them.</p> <p>Discuss and decide on a fair test.</p> <p>Take photos of the houses and pupils to write down their most successful roof. Explain why it was the best roof with reference to its properties.</p> <p>Additionally, more than one material can be used for one object. Use wood as an example. What can wood be used for? Have a discussion. What is wood not suitable for? What is it not suitable for?</p>		

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4	<p><u>LO: I can identify and discuss the materials and properties of objects</u></p> <p><u>LO: I can test materials for their durability and toughness and consider the usefulness of materials for our everyday lives</u></p> <p>AT1: <i>observing closely, using simple equipment</i> <i>performing simple tests</i> <i>using their observations and ideas to suggest answers to questions</i> <i>gathering and recording data to help in answering questions</i></p> <p>Success Criteria</p> <p>I must be able to say why a material is tough</p> <p>I should be able to explain what a material could be used for</p> <p>I could be able to describe a material and why it is suitable for its use</p>	<p>Place the materials (<i>a variety of objects with different material properties, a range of objects with the same material properties</i>) on a central table and ask the class to gather around you. Ask them: <i>Who can spot an odd one out?</i> Don't give them clues just yet, but allow them time to observe the objects and to decide the criteria themselves, and therefore which one is odd. There could be any number of answers. Tell them the odd one out and ask if anyone can explain why, or if anyone is surprised. Encourage any other ideas.</p> <p>Then - <i>a selection of old clothes (sock, jeans, thin vest, overalls, sweatshirt)</i></p> <p>Show the chn the old sock, jeans and thin vest. Ask them: <i>What happens to socks when you wear them a lot? And jeans? What is good about the fabric jeans are made from? What useful properties does it have?</i> (Durable, strong, thick) Say: <i>Some materials are used a lot for certain things because they have really useful properties. Fabric sometimes has to be strong and durable, especially when we need clothes for running around the playground or playing football etc.</i></p> <p><i>Investigation – what material is best for wear and tear and protection?</i> <i>Introduce the investigation (link to the woodcutter in Little Red Riding Hood)</i> Ask them to make a prediction for the hardest wearing trousers for the woodcutter.</p> <p>Cut the old clothes you have into strips. Split the chn into groups and give them the coarse grain sand paper and a block of wood. Show the chn how to wrap the sandpaper round the wood and how to rub the fabric. Ask them: <i>what is the sandpaper doing to the clothes?</i> (Rubbing it away, acting like it is in the playground, pretending to be 'wear and tear'). Ask them, in their groups, to test the fabric for 'wear and tear', for durability. Remind them to keep their fingers out of the way and that they will need to count how many times they rub the fabric before it wears or makes a hole. They will also need to make notes of the amount of rubs for each piece of fabric they test.</p> <p><i>Based on their results, ask the pupils - which fabric has the properties of strength and toughness? Remind the chn that lots of materials are useful and we often take them for granted. What clothes are used to give us extra protection?</i></p>		

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5	<p><u>LO: 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</u></p> <p><u>LO: I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</u></p> <p>AT1: 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</p> <p>Success Criteria:</p> <p>I must articulate my learning about materials and their properties</p> <p>I should work in a small groups to design and make a paper bridge to hold a BGG, selecting the paper I think will work best</p> <p>I could explain my selections and predictions for the success of my bridge</p>	<p>Billy Goats Gruff – designing and building a bridge from paper and a limited amount of tape (A STEM Investigation)</p> <p><i>Today I would like you to work in teams to design and build a bridge strong enough to hold a little BGG. Chd can only use paper.</i></p> <p><i>Discuss ideas and pass around the BGGs so the chd know how heavy he is.</i></p> <p>Move around the classroom, listening for and observing teams who are working well together. Remind groups to include everyone and make sure all members have a job to do. Limit the use of tape in the construction. It shouldn't be supporting the bridge to the point where it is contributing to its strength. Act as Tape Police and go around the bridges making sure the tape is used correctly (for sticking pieces together but not wrapped around and around large sections of the bridge). Ask groups who are stuck to consider the question: what happens if the paper is folded into a concertina shape? Ask the more able to think about how their knowledge of triangles might help in building a strong bridge.</p> <p>Come together to test the bridges by placing them all in the centre of the classroom. Ask all the chn to look at each group's efforts, predicting if it will be strong enough for the BGG. Then test each bridge. If the bridge holds the BGG ask the chn to suggest what it is about the design and paper choice that is making the bridge strong. If it doesn't hold the BGG, talk about how the design could be improved next time. Show the chn this clip of the Strongest Paper Bridge Competition: https://www.youtube.com/watch?v=gtUZclDrwo</p> <p>Pictures of bridges made out of paper: https://www.stem.org.uk/system/files/elibrary-resources/2017/08/ks1_science_yr_2_spring_2_squash_bend_session_6_resource_0.pdf</p>		

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6	<p><u>LO: 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</u></p> <p><u>LO: I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</u></p> <p>AT1: 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</p> <p>Success Criteria I must look at a selection of fabric and understand why stretchy fabric is sometimes used in clothing</p>	<p>Revision: http://www.lessonpaths.com/learn/i/states-of-matter-33/bbc-schools-science-clips-characteristics-of-materials-3 - Online interactive game about the properties of materials.</p> <p>Give out a selection of fabrics, including some stretchy ones. Ask the chn to look at the fabrics on their tables and to sort them based on criteria they choose. They may focus on properties such as 'flexibility' or 'absorbency' and sort accordingly. Then ask the chn what they know about 'stretchiness' and stretchy fabrics. Ask: <i>What makes elasticity (stretchiness) a useful property for fabric? When would you use stretchy materials? (For gymnastics, in swimsuits, etc.)</i> Ask: <i>What happens when you pull a swimsuit etc and then let go (it goes back to its original shape; it sometimes goes a bit baggy).</i> Explain that there is a point where stretchy fabric can be overstretched and won't return to its original shape and size. Ask the chn: <i>How can we test the fabrics for elasticity/stretchiness? What ideas can we come up with to help us design an investigation?</i></p> <p><i>Introduce the Investigation:</i> What material will be the best for Santa to fit the most presents in? (A STEM Investigation)</p> <p>Split the chn into groups and give them a selection of fabrics. Ask the children to think of a hypothesis, EG: It could be <i>"The smoothest piece of fabric is the stretchiest"</i> or <i>"Dark fabrics always stretch more than lighter ones"</i>. Ask the chn to start by predicting which of the fabrics will be the stretchiest and to put them in order on the table. They could photograph this to refer to later. Remind the chn that the test is essentially about observing and exploring the material but it still needs to be fair.</p> <p>Then ask them to stretch the pieces of material in both directions (i.e. along, and at right angles to, the 'grain'), and also diagonally (i.e. on the bias), and make observations. What length is the fabric at the start? To what length does it need to stretch? What length does it return to? Can they sort the fabrics into very stretchy, quite stretchy and not very stretchy? What advice will they give you about which would make the best sack for Santa?</p> <p>Before they make and test their sacks, children to write up: 1. Their hypothesis 2. What they are going to do 3. What they think is going to happen After the investigation – 4. What did happen</p>		

	I should investigate and explore the elasticity of fabric and make predictions	Use marbles to test all the children's sacks. Which was the most successful and why?		
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