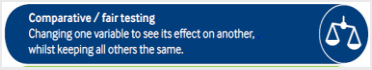
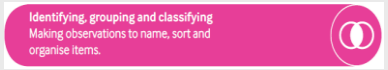
Mendell Primary School

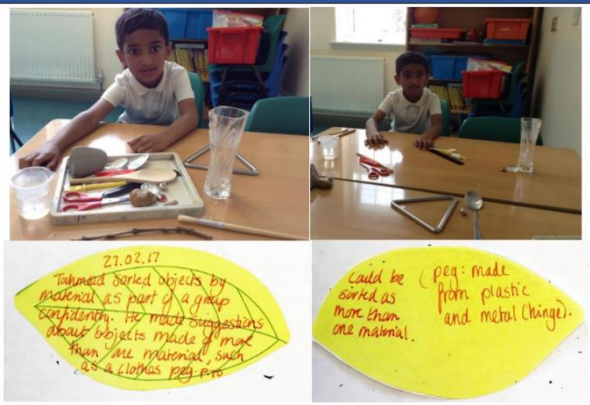
Aspire Challenge Achieve

Medium Term Plan Science

Year Group: 1	**Term:** Autumn 1	**Teacher:** Nicole Morning	**Subject lead:** Sarah Bride	**Overview:** **Everyday Materials:** - 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.  	**Key End Points:** **By the end of this unit children will be able to:** Talk about and notice objects throughout the year. Talk about and describe different objects/materials. Talk about and describe objects that we use every day. Talk about how everyday objects are made (in a simple way). Compare objects. Talk about how we look after our objects or belongings.
Common Misconceptions: **Some children may think:** • only fabrics are materials • only building materials are materials • only writing materials are materials • the word 'rock' describes an object rather than a material • 'solid' is another word for hard.		**Unit key Vocabulary:** 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, see-through, not see-through			

Links to other learning:	**Prior Learning:**	**Future Learning:**	**Scientist to study:**	**Risk Assessment:**	**Teacher CPD:**
Design Technology, Art.	Explore collections of materials with similar and/or different properties.(**F2**) Talk about the differences between materials and changes they notice. Explore how different materials sink and float. (**F2**)	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (**Y2** - Uses of everyday materials) • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (**Y2** - Uses of everyday materials)	**Charles Macintosh**	Take care using sharp/glass objects. Litter picking in forest school	Examples of Work Tahmeed Everyday materials - Year 1 Knowledge Matrices Y1 Reach Out CPD - https://www.reachoutcpd.com/ sign up for free.

	Learning Intention	Lesson Outline (Key Questions in colour)	Resources	Vocabulary	Lowest 20% Adaptations
1	L.I. I can identify the material an object is made from.	**This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is asking questions and recording data.** What do we know about materials? – Gather children's responses – see prior learning above. Pre assessment task - return after lesson 6 to dd what they children now know in a mind map on working wall. **Big question – What is material?** **Word of the week – Material** - **What does the word material mean? –** Explain to the children that all things are made from 'materials'. Establish that this does not mean that objects are cloth/fabric (material) but that the word 'material' refers to the matter from which a thing is made. - **What materials can you name?** Listen to the materials song - https://www.youtube.com/watch?v=_oK8CRa2rXY	Books about materials for children to explore around the classroom.	**Object, material, wood, metal, plastic, rock, wool, fabric, glass and paper.**	

		Introduce the children to the following materials and ask them to give any examples of objects they know that are made from each material – wood, metal, plastic, rock, wool, other fabric, glass and paper. Now share the names of three objects – pencil, ladder and bottle – ask the children for suggestions of materials that these objects can be made from, is there more than one answer? Go on a materials hunt and ask the children to name the object, draw a picture of the object and label the material it is made from in their books. Encourage children to organise their work by drawing their own table.			
2	L.I. I can group objects according to the material they are made from.	**This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is observing and asking questions.** Recap – what is a material? Recall vocabulary - wood, metal, plastic, rock, wool, fabric, glass and paper – can the children give examples of objects made from these materials? **Big question – how can we sort different objects?** Put a small collection of objects in the middle of the carpet (e.g. spoons made from different materials) and ask the children to think like investigators and discuss – **how are these objects the same?** Then ask the children to consider different ways of grouping. In pairs, provide the children with a matching activity to ensure the children understand different vocab – e.g. wooden chair – wood, brick – rock, plastic bottle – plastic, jumper - fabric etc… In groups at tables, provide the children with a range of objects to sort according to the material they are made from. Come together and discuss the children's sorting – identify and discuss an misconceptions. Did they find some objects more difficult to sort than others? E.g. scissors made from metal and plastic, peg made from wood and metal. **Children sort the objects according to their material.** Take a photograph of the children's sorting. Gather children's voice to include on a post it notes. **EVIDENCE OF LEARNING** / **ASSESSMENT** Oral evidence: "I can see plastic, wood, rock, metal, water and glass. The twig goes here because it is made of wood. Water is a material. It's liquid. It's transparent." Examples of work:  Knowledge: Tahmeed names all the objects that he was given and correctly identifies … describe water. Teacher observations: Tahmeed's group sorted the objects according to the material they were made from. Tahmeed noticed that the peg could go in two groups – metal and wood. He placed it between them. Working scientifically: Tahmeed sorts the objects according to the material they are made from.	A collection of objects made from different materials, hoops for sorting. Object – materials matching cards.	**Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool,**	

<table>
<tr>
<td>3</td>
<td>L.I. I can identify whether a material is man-made or natural.</td>
<td>
This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is asking questions and recording data.
Recap previous learning by playing I spy. e.g. I spy an object made from wood – children may say table, cupboard, door etc… . In their explanations, make sure they distinguish between the object and the material it is made from and use the terms: wood, plastic, glass and metal, paper, fabric, rock. Children could then play in pairs allowing the teacher to observe the children's knowledge.

Take the children out to forest school and allow them time to collect different objects. Bring the children back together and discuss the items they have found. Ask the children how we could sort these different objects according to their material. (health and safety provide litter pickers/gloves for collecting items)

Big Question – where do materials come from? – discuss the big question in relation to the materials collected. E.g. bark/wood comes from trees – what other materials come from wood? - paper. Ask children to think about the materials they know and some they don't. Orally create questions e.g. where does plastic come from? - Plastics are made from materials such as cellulose, coal, natural gas, salt and crude oil and is man made.

Word of the week – man-made and natural – discuss with the children if they have heard of these words before, can give a definition or examples? Take feedback.

Ask the children to sort the objects into man-made and natural. Discuss the difference between the different materials. Ask the children to name any other examples of natural or man-made materials that haven't been found in forest school. Introduce water as a material if the children do not suggest it. Write any additional materials suggested by the children on whiteboards and then add to the natural/man-made sorting pile.

<table>
<tr><th>Man-made</th><th>Natural</th></tr>
<tr><td>Paper
Plastic
Glass
Metal
Brick
Cardboard</td><td>Stones
Wool
Wood</td></tr>
</table>
Back in class provide the children with a range of materials that they have come across so far in their learning plus examples found outside and ask them to sort them into natural and man made into their books.
</td>
<td>Water, two teacher whiteboards, a tarpaulin for sorting.</td>
<td>Natural, man made, plastic, wood, rock, plastic, glass and metal, paper, fabric</td>
<td></td>
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<tr>
<td>4</td>
<td>L.I. I can identify properties of materials.</td>
<td>
This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is making observations and asking questions.

Recap of prior learning:
What rough materials can you name?
What soft materials can you name?
What see through materials are in our classroom?

Odd one out – plastic water bottle, wooden log, sand. – do the children apply their knowledge of natural and man made materials in their explanations? – record children's voice on post it notes for class floor book.

Big question – How are materials different?

Explain to the children that all materials have different properties, which make them good for making different objects. Watch this video to introduce the children to properties. https://www.youtube.com/watch?v=AhrZ7bTwQ54
</td>
<td>Feel bags a range of objects made from different materials.

Word bank of vocabulary to support the LA.</td>
<td>hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbant, breakable, rough, smooth, shiny, dull, see-through, not see-through.</td>
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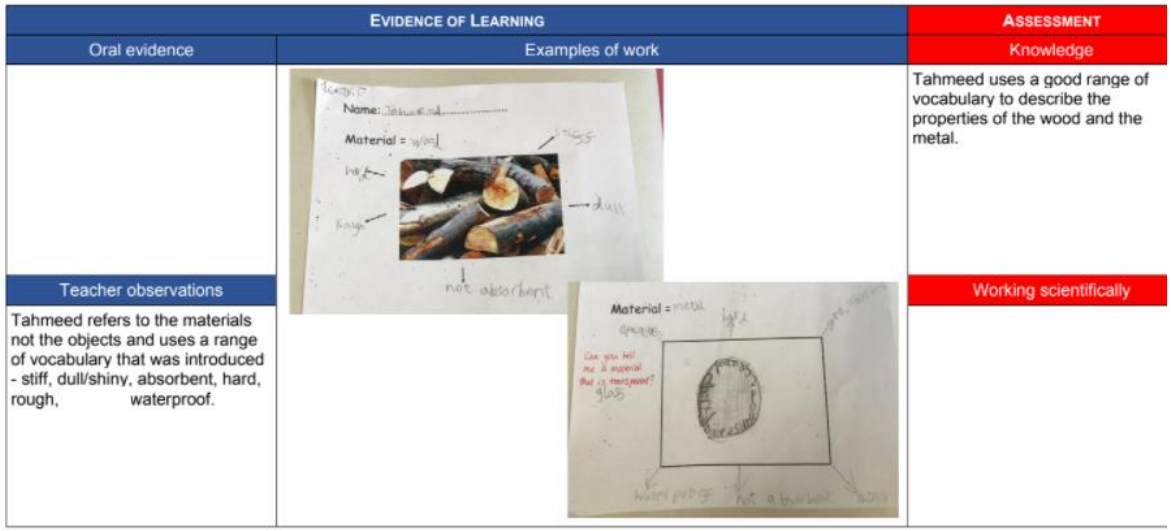
</tr>
</table>

		Make a list on the board of all the properties the children can recall from the video and any of their own include: hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbant, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through. – discuss meanings. **Words of the week – absorbant and waterproof** – **Can the children give examples of materials and definitions?** Feely bag activity – Teacher model an object first. **My object feels hard, it feels bumpy and rough and it feels heavy what could it be?** I think it is a rock. Lift it out – **what other properties does it have?** E.g. not see through, rigid – challenge the children to use vocabulary introduced in the video. Repeat and provide each group with their own feely bag, teacher to observe the children encourage them to use the word list on the board. Children then use this information and vocabulary to label different materials with their properties. Model a material on the board so children understand the expectation – as a class do the material wood and list all its properties. Then ask children to select another material and complete the same task, see example below.  Play I-Spy again but move onto spotting materials with certain properties (rough/smooth, etc.). Ask volunteers to play this game too. In their explanations, make sure they distinguish between the object and the material it is made from and use the terms: wood, plastic, glass and metal. e.g. I spy something see through and made of plastic – (a bottle)		
5	L.I. I can sort materials according to their properties	**This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is making observations and grouping.** Recap prior learning - Play quiz quiz trade, give all children a material, ask them to pair up on a signal, the children show their card to their partner who must name a property of the material and vise versa. e.g. wood-strong, glass-see through. CH: Can they think of another property for their material? **Big Question: How can we sort materials according to their properties?** On the carpet, have the items from lesson 2 sorted according to their material. Ask the children how the objects have been sorted and then challenge them to think of a different way of sorting the objects. Allow a short discussion time on the carpet. Hold up two of the	Quiz quiz trade cards A range of materials for the children to sort.	**hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through.**	

		objects e.g. wooden spoon and scissors – **What is similar about them? What word could describe them both?** E.g. hard. **Choose another item e.g. sponge is this hard? How can we describe this material? Could we sort all of the objects into hard or soft materials?** Take feedback from the children and sort the objects together on the carpet. Provide each group with a range of materials and ask them to sort them according to their properties. Children work in mixed ability groups and choose their own criteria – teacher to give support where needed. Encourage children to use scientific vocabulary in their discussions – children who are able can record their sorting otherwise take photographs and encourage children to comment on a post it note. Exit Pass: **Why are windows made of glass?** Encourage the children to begin to consider the suitability of materials.			
6	L.I. I can carry out a simple test to see which materials are waterproof.	**This is a Science lesson. In Science, we study nature and the behaviour of natural things. The skill we will be using this lesson is setting up a test and communicating results.** Recap previous learning including – what a material is, types of materials and properties of materials. Odd one out – wooden chair, umbrella and a fabric sofa. – discuss how they are similar, how are they different? Encourage children to orally use scientific vocabulary in their explanations – record children's voice on post it notes for class floor book. E.g. the wooden chair is the odd one out because it is made from wood which is hard. E.g. the umbrella is the odd one out because it is waterproof. E.g. the odd one out is the fabric sofa because it is soft. **Big Question – Which material is best for a raincoat?** Display a picture of a raincoat and ask the children to suggest properties for the material we might use – ensure understanding of waterproof. Introduce the children to Charles Macintosh and the journey of the raincoat – see resources. As a class, plan an investigation to test which material is waterproof. Provide the children with a range of materials to test. Take suggestions of how we could test the materials to see if they are waterproof. **How can we make sure our test is fair? If I poured a whole glass of water on one material and one drop on another would this be fair?** As a class, decide on an appropriate amount of water and size of material to test. Take photographs for evidence. Children present their findings in a similar way to the example below (not as a worksheet use the sentence stem) – **Which is the best material for a raincoat?**	Journey of the raincoat. Range of materials to test for each group. Water Pipettes	**Fair test, waterproof**	

Sentence stem: The best material for a raincoat is … because …

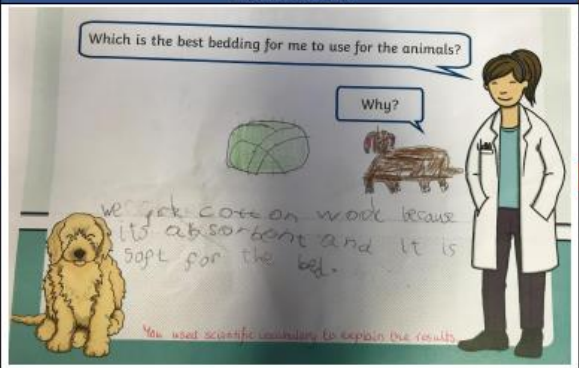
Year	1	Topic	Everyday materials

Focus of assessment (National Curriculum statements)

- 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.

Description of activity

Using their learning from the previous simple test, the children suggested a material that they felt would be suitable for the bedding and explained why.

Evidence of Learning		Assessment
Oral evidence	Examples of work	Knowledge
		Tahmeed refers to two properties of cotton wool when selecting this as the most appropriate material.
Teacher observations		Working scientifically
		Tahmeed uses the evidence from his simple test when making his suggestion.