

British Wool LEARNING



Materials

Ages 5 to 7

Aims and objectives

- To understand that everyday items are made from a range of different materials and to distinguish between them
- To identify and name a variety of everyday materials, including wood, plastic, glass, wool, water and stone
- To compare and group together a variety of everyday materials according to simple physical properties
- To recognise and describe the physical properties and characteristics of materials, such as strong, soft etc.
- To understand that certain materials are suitable for making certain objects due to their specific properties
- To begin to understand the thermal properties of materials and the benefits of these properties
- To recognise materials and their uses and to consider where wool comes from and how it is used
- To take part in discussions with the whole class
- To recognise materials and processes used in making art, craft and design
- To improve vocabulary

Activity One - Sorting Materials

Sorting and classifying materials using their properties and characteristics.

Introduction

This game can be used as an introduction, as a plenary resource for the end of a lesson or as an activity for half the class to do whilst you assist the other half in carrying out practical work.

Discussion

Can we sort the materials? Provide the class with a selection of everyday items and ask the children what material they think each one is made from. Make a list of the materials on the whiteboard or a large sheet of paper. Examples might be a plastic ruler, a wooden pencil, a wool jumper, a newspaper etc.

Ask the children to think about how the objects feel to touch. Are they hard? Soft? Warm? Cold? Smooth? Rough? Can you see through any of the items? Write and explain the word 'transparent' to the children. How could we sort them? Ask what categories the children would like to use, for example hard or soft objects, warm or cold objects etc.

What do we use these everyday items for? Explain that some materials are much better at making certain objects than others. Can the children imagine a chocolate pan or a stone window. Can they think why these objects would be useless to us made out of these materials?

Online Activity

Part One - The **Sorting Materials Game** - www.britishwoollearning.com/interactive/materials/sortingmaterials.php is a simple classification exercise, during which children are asked to complete a basic table by sorting the items into the right places. Children can be left to complete the game on their own or in pairs, or you may choose to play the game as a whole class on the whiteboard. An item or word in the table is selected by clicking to highlight it then by selecting the correct space to place it by clicking in that space. If the chosen space is incorrect a 'try again!' message will appear and the object will not move.

The children should be encouraged to think carefully about the material type shown at the top of the table. Focusing on which objects are made from which of the materials is the best way to begin the activity, especially for younger or less able children. This helps when choosing the word or characteristic that best describes the specific item. Characteristics are selected in the same way as the items.

Once this part of the game is complete and the table is full, a congratulatory message will display. The completed table will continue to show until the user chooses to continue on to the next game using the arrow. This pause provides the opportunity to use this table to explain any words the children do not understand and for further class discussion. Why do the children think wellies need to be waterproof? What do they protect us from? Why might a door need to be hard? Why does a jumper need to be warm? What does a jumper help to protect us from? Why does a window need to be transparent? Can the children think of any other materials that might do these jobs as well?

Part Two - The next game continues the task of sorting and classifying according to the characteristics of materials. This part of the activity focuses on the jumper and provides the opportunity to explore the characteristics of this object further. Four blank spaces are provided for the user to select four words that describe/are characteristics of the jumper. The correctly chosen words will then appear in orange boxes next to the image of a jumper.

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The correct four words are: • Wool • Warm • Stretchy • Soft

What material is this jumper made from? Why might a jumper need to be stretchy, warm and soft? What would a jumper be like if it was made from a material that didn't have these properties?

This activity could be expanded by repeating the exercise for each of the objects shown in the first part of the game. Selecting the 'back' arrow will take you back to the previous screen showing the completed table from part one of the game.

Practical Activity

An associated practical activity would be to test which materials are waterproof. We know that wellies are waterproof because they keep our feet dry when we splash in puddles, but could they be made from any other material and do the same job? Give groups of children a bowl and a jug of water. Supply similar sized sheets of various everyday materials such as cling film, kitchen foil, tissue, fabric, newspaper, card, etc. Ask children to make predictions as to which of the materials will stop the water passing through before they begin the experiment. Children should carry out tests to work out which of these materials do not let the water pass through and are therefore waterproof.

The test can be done by placing each sheet of material over an empty bowl in turn and by watching carefully to see how easily a small amount of the water passes through, if at all. The water may take a little time to pass through some of the materials. How do each of the materials behave when water is poured on them? Do some bend? Do some go soggy? Do some stay dry? Do some fall apart? Children should make a list of the apparatus used and should make notes about how they conducted their tests and what the results were. Were they surprised by the results? Were their predictions correct? Which of the materials tested do they think would be best for making a pair of wellies? What would happen if they paddled in wellies made of paper? What would wellies made of kitchen foil be like to wear? Creating cling film or foil socks will help to answer this question!

Activity 2 - Thinking About Materials

Considering which materials are best for making a jumper.

Introduction

Begin with a discussion. Let's think about materials. Some materials are much better at doing some jobs than others. Imagine wellies made from tissue paper or blowing your nose on rubber! What materials do the children think a jumper could be made of? Ask for suggestions. What do they think a jumper would be like if it was made from stone or rubber, for example?

Online Activity

The **Thinking About Materials** activity www.britishwoollearning.com/interactive/materials/thinkingaboutmaterials.php provides six different materials shown as words. Children can click to select a material. Once selected, the image and text reveal what it might be like to wear a jumper made of that material. This game is a fun way to discover more about the properties of materials such as wood, glass and paper. It is a basic 'click to reveal' exercise and encouraging children to complete the activity on their own will help to develop confidence to work independently. The changing expression of the character will help children to identify how it feels to wear the selected jumper! Children may benefit from having physical items made from the materials mentioned. A ball of wool, a metal pan, a small piece of fencing, for example. This will allow the children to identify some of the properties themselves using touch and sight.

Practical Activity

Designing and making items of clothing from newspaper, kitchen foil, bubble wrap etc. in groups and having a class fashion show is a fun way to encourage teamwork while exploring how items of clothing made from these materials might feel to wear. A paper waistcoat, foil hat, cardboard shoes and cling film socks for example.

Conclusion

Provide the children with some of the keywords and vocabulary used in this activity. Recap the meaning of each word in turn or ask if there are any specific words the children do not understand. Some examples may be:

Flexible	Soft	Hard	Heavy	Sharp	Shatters	Dangerous	Transparent	Warm
Cold	Shiny	Soggy	Itchy	Stiff	Uncomfortable	Wet	Dry	

Worksheet Activity

Included in this document is a small crossword puzzle that contains clues to six of the words above. This provides a fun way to further help with vocabulary and with understanding of the word meanings in relation to materials and their properties.

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Activity 3 - Keeping Warm

Exploring the ways we keep warm.

Introduction

This activity has been designed to appeal to younger or less able children and to children with special needs. It is also a useful, fun extension activity for lessons on materials and their properties. Children can be left to complete the game on their own, in pairs or you may choose to play the game as a class on the whiteboard to aid discussion.

Discussion

Talk to the children about what it feels like to be cold. When can we feel cold? What can we do to warm up? When we go outside in cold weather how do we keep our bodies warm? How do we keep our houses nice and warm when it is cold outside? Do we like being cold?

Online Activity

The **Keeping Warm** activity www.britishwoollearning.com/interactive/materials/keepingwarm.php allows children to select items to discover whether they contribute to us being cold or warm. For example, a jumper made from wool will help but a t-shirt worn on its own will not keep us very warm outside in the cold weather.

This game is an engaging way to discover more about the materials used to make everyday items and their thermal properties. It is a basic 'click to reveal' exercise. The expression on the face of the character helps the children to identify how he is feeling about the changes the children have made. You may like to provide physical examples of some of the materials so that children can see and feel them. This is particularly useful with stone and carpet. Children will notice obvious differences in texture and in the temperature of each surface. Do the children know what carpet is made from? Where does the wool to make it come from? Historically houses did not have fitted carpets. Sometimes straw was used to keep a stone floor warmer. Why do the children think stone is cold?

Practical Activity

Provide a dressing up box. Include coats, jumpers, hats, gloves, scarves and socks. In small groups, the children should dress up one volunteer from the group in as many items from the box as they can in 2 minutes. Which team managed to put the most clothes on their volunteer? How does the dressed-up child feel? Warm? Heavy? Hot? Which child do the teams think will be warmest? Why?

Conclusion

Explain that our bodies naturally make heat. By wearing layers of clothing we can help to trap that heat, keeping it close to our body and helping to keep us warm. This works well when we need to stay warm in cold weather. When it is warm outside however, we wear fewer clothes. This is so the warmth from our bodies can escape, which keeps us cooler.

Lots of the things in the game were made from wool. Sheep grow a wool coat every year. Because sheep live outside through all seasons and in all weathers they need a nice, warm coat to keep them warm. Sheep's wool traps the warmth made by their bodies to keep them warm, the same way as our clothes do. In the warmer months, the farmer will cut the sheep's wool - like a haircut! This helps the heat from their body to escape, which helps to keep them cooler. Because it is warm we can use the wool cut from a sheep to make items like jumpers and carpets. Wool is very good at trapping warm air which means it is a good material to wear in cold weather.

Worksheet Activity

Explain to the children that wool is grown by a sheep. A sheep is an animal, which makes wool a natural material. This means that it comes from nature and is not made by people (man-made). Provide the children with the **Natural or Not?** worksheet included in this document and ask them to sort the materials. The blue boxes can be cut out and placed under the correct heading or can be written.

Follow-on Activities

The second set of testing, sorting and investigating materials activities www.britishwoollearning.com/interactive/materials continues work on the properties and characteristics of materials.

Related activities and information that may also be useful to work on materials can be found here:

Information on the wool process - www.britishwoollearning.com/pdf/journeyofyourjumper_factsheets.pdf

On the Farm lesson ideas - www.britishwoollearning.com/pdf/onthefarm_notes.pdf

On the Farm online game - www.britishwoollearning.com/interactive/whatarewe/

Various art, design and craft ideas can be found in the families & community section of the website.



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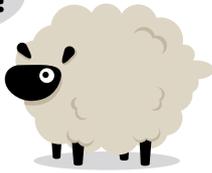


Crossword

Describing materials

Fill in the crossword using the clues and the words in the word bank box.

Good Luck!



1.	2.				
3.			4.		5.
	6.				

WORD BANK	
Sharp	Heavy
Shiny	Dry
Itchy	Hard

Across

- 1. A knife is _____ and can cut you. (5)
- 3. A rock is _____ and will not bend or break easily. (4)
- 6. Metal reflects light and is _____. (5)

Down

- 2. Wood weighs a lot and can be too _____ to carry. (5)
- 4. When the sun comes out it can make the wet ground ____ again. (3)
- 5. When you get a tickle and want to scratch it is because something is _____! (5)



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Natural or Not?

Sorting Materials

Are these materials natural or made by people?

Natural	Made by people

Wool

Stone

Glass

Paper

Plastic

Wood

