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Exploring uses of materials Second/Third Level

Suggested Participants - p6/7

Wool is an under-utilised material in Scotland. There are 6.61 million sheep in Scotland and all those sheep over one year old need to be sheared once a year. The price the farmer gets for sheep wool is generally low and depends on many different characteristics, including the breed of sheep the wool comes from and how clean the wool is.

What this pack contains:	• All the links and content required to deliver our 'Exploring Uses Of Materials' activity. • Learning Intentions, Success Criteria and Suggested Experiences & Outcomes. • Learning for Sustainability links. • Lesson plan. • Suggested additional activities.
Learning Outcomes	• We are learning about wool as a material.
Success Criteria	• I can recognise the characteristics of wool. • I can discuss what wool can be used for.
Experiences and Outcomes	• TCH 2-10a I can recognise basic properties and uses for a variety of materials and can discuss which ones are most suitable for a given task. • TCH 3-10a I can explore the properties and performance of materials before justifying the most appropriate material for a task.
Learning for Sustainability	• Goal 4 Quality education: achieve literacy and numeracy. • Goal 12 Responsible consumption and production achieve the sustainable management and efficient use of natural resources.

Natural and man made materials

What to do

Sheep fleece is a natural fibre. You can find out more about its properties. This activity looks at identifying natural and man-made materials.

1. Worksheet 1 – Natural and manmade materials can be used to identify natural and synthetic fibres. You could encourage some research in pairs to find out more about the materials on the list.

Fibres are an important material in manufacturing articles, but not all fibres have the same properties.

1. Discuss with the students how garments and articles made from fabrics have different purposes (some absorb, repel or allow water to evaporate; some keep a person warm, cool or comfortable; others allow the wearer to stretch and move easily). You can find out about synthetic and natural materials.

2. Explain that a material must have certain properties if the article it is made into is to be functional.

3. Divide the students into small groups and give each group an article made from one or more fibres. Ask the students to use their sense of touch, vision, smell and hearing to examine the materials that make up the article. They should then answer the questions on Worksheet 5 Natural and manmade materials to create a profile.

4. Gather the articles and put them on view for all the students to see. In turn, each group describes the properties of the article it has examined, without naming the article. The other students try to guess the mystery article by looking at, handling and sorting all the articles on show.

5. Read any labels on the articles to find out the names of the fibres used to make them. Using a bar chart, help the students identify which fibres are used most often.

Further learning

Investigate some items made from different materials like silk or linen.

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Exploring uses of materials Second/Third Level Lesson Plan

Introduction	• Share/discuss the learning intentions and success criteria. • You can find out more about the properties of wool with our Exploring Wool resource. • There is also a short video about sheep shearing. • There also is a properties of wool poster.
Suggested discussion points	• When are sheep shorn? • What properties does wool have? • Is wool a sustainable material? • How does it compare to plastic?
Learning	• **Technologies outcomes:** The ability to discuss the properties of wool. The ability to compare different materials.
Additional tasks	• Visit UAN wool an Angus based company and find out more about the selection of products that are being produced using Scottish Wool.
More information	• Find out more about sheep and wool at the Journey of Sheep & Wool website.
Social media	Please tag **therhet.bsky.social (Bluesky)** or **@TheRoyalHighlandEducationTrust (Facebook)** in your lesson photos/comments.

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The Journey of Food
Sheep and Wool

Worksheet 1. Natural and man-made materials

Some materials are natural and some are man made.
Can you put the materials listed below into the correct box

cotton	elastane	nylon	hemp	linen
polyester	wool	bamboo	viscose	silk

Natural materials	Man-made materials

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Choose one of these materials and do some research to find out more about it.

The article I'm examining is a(n) _____

It's used for _____

1. Flexibility. Does the material fold easily?

   Yes, the material is flexible. No, the material is stiff.

2. Stretch. Can the material be stretched, and does it then regain its original shape?

   Yes, the material is stretchy. No, the material is not stretchy.

3. Water Repellency. Does the material repel water?

   Yes, the material is water repellent. No, the material is water absorbent.

4. Softness. Does the material feel pleasant to touch?

   Yes, the material is soft. No, the material is rough.

5. Transparency. Can light be seen through the material?

   Yes, the material is transparent. No, the material blocks the light.

Use this chart to record the data you have gathered.
Circle the words that correspond to you answers to the questions.

	The material is...	
Flexibility	Flexible	Stiff
Stretch	Stretchy	Not stretchy
Transparency	Transparent	Not see through
Water Repellency	Water repellent	Water absorbent
Softness	Soft	Rough

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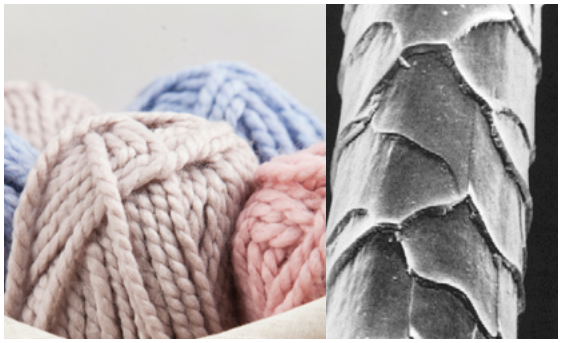
Worksheet 2. Fibre challenge

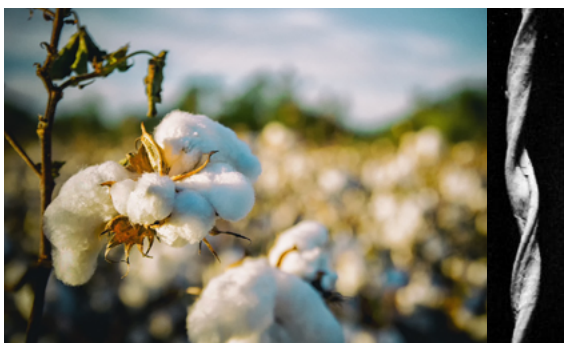
Draw a line to match the image of the material with the description provided.

I grow from a sheep's skin. I have to be sheared (cut off) every year. My surface scales repel water but my core absorbs water. The scales make me scratchy to touch. I am wool.



I'm a type of plastic, often made from recycled bottles. Once melted, the plastic comes out of tiny holes in a machine, like long, thin strands of spaghetti. I retain water on my surface, but I cannot absorb water. I am polyester.

I grow in long, thin wavy tubes on the surface of a plant's seeds. When the plant dies, these tubes become empty, flat cavities. That's where I can store a lot of water. I am cotton.



I'm manufactured from chemicals and the crushed parts of a plant. Many tiny fibres are combined in the process. I can absorb lots of water. I am bamboo.