

Pre-lesson preparation, materials and equipment

The LEARN ABOUT WOOL factsheets *Properties of wool* and *Different types of wool fabrics* combined with the suggested teacher reference resources listed below provide ample background information to carry out this lesson and answer a range of questions posed by students.

This activity will involve asking students to reflect on what they have learnt about the properties of wool during the past few lessons and encouraging them to think about how these properties influence the suitable end uses for wool.

Useful resources:

LEARN ABOUT WOOL factsheets

- [*Properties of wool*](#)
- [*Different types of wool fabrics*](#)

Videos

- [*Sam the Lamb – Properties of wool*](#)
- [*Sam the Lamb – What is wool?*](#)
- [*Tested by nature – tested by us*](#)
- [*Discover wool*](#)
- [*The innovator*](#)

Materials and equipment

- A range of woollen clothing items suitable for active/sporting activities
- Woollen bedding e.g. blankets, quilts
- Science journal to record student observations

Lesson objective:

- To allow students to reflect on their observations regarding the properties of wool and draw conclusions about the suitability of wool for a range of everyday uses and activities.

Students will have the opportunity to:

- consider the implications of wool's unique properties and draw conclusions about its suitability in a range of everyday uses.
- take part in informal and guided discussions relating to their observations
- use science journals to record observations and ideas and discuss their representations with others
- communicate ideas through role play.

Setting the context

Wool's range of unique properties make it an ideal fibre for many everyday applications. Wool is soft, comfortable, safe and environmentally sound.

During this lesson and possibly through their own experience, students will see wool used in a range of contexts; for babies' clothing and bedding, for sportswear, business and luxury wear and activewear.

Lesson focus

The focus of this lesson is to encourage students to think about the link between the varied properties of wool fibre and the implications for its end use.

Introduction

Using their science journals, reflect with students what they now know about wool — where it comes from, how it feels, some of its hidden properties (fire and stain resistance, biodegradability and thermoregulation).

Explain to students that during this lesson they are going to think about some of the ways wool can be used in everyday items of clothing and furnishings, such as curtains and bedding.

Body of lesson

1. Using the [Properties of wool](#) and [Different types of wool fabrics](#) factsheets as reference guides, review with students the different properties of wool they have investigated (e.g. softness, fire resistance, biodegradability, stain resistance, thermoregulation) and some they may not yet be aware of (e.g. breathable, renewable etc.).
2. Draw students' attention to the *Did you know?* and *Fun facts* on the factsheets, which expand upon how these properties are applied in end products (such as sportswear).
3. Show students the [Sam the Lamb — Properties of wool](#) video and discuss the concepts shown in the video with students. Ask questions such as:
 - Why is wool clothing good for sportswear?
 - What makes wool safe to wear?
 - What makes wool comfortable to wear?
4. Using their science journals as a prompt, ask students what they have learnt about the properties of wool during the past few lessons. Encourage them to think about how wool feels, whether wool is a 'safe' fibre in the case of a fire and what happens when wool is exposed to water. Ask students if they have any wool clothing at home and when they might wear wool clothing.
5. Explain to students they are going to explore how wool might be used in a range of everyday situations through a role-play activity. Divide the class into small groups (3 – 4 students) and provide each group with one of the following scenarios — a trip to the snow | bushwalking or going to the park on a cold day | going to a bonfire night | playing football or riding a bike in summer | buying clothes and bedding for a newborn baby.
6. Ask students to sort through the range of items provided and pack a suitcase or bag with items that will be suitable for their given situation. Tell them they will need to explain to the rest of the class the situation they are in and why they have chosen those particular items. For example, the group going skiing might select layers of wool items such as t-shirts, long-sleeved pull-overs and a wool jacket and the group playing football or riding a bike in summer might choose a wool t-shirt to protect them from the sun and keep them cool while they are active. If you do not have access to a wide range of wool items students could investigate wool products available online that would suit their scenario and describe them and how they would be used.
7. When students are ready, ask each group to present to the class. Encourage them to explain their situation, describe the items they have chosen and why they have chosen these items. Draw out from the students the particular properties of wool that have led them to make these choices during their presentation. Record these on a whiteboard or equivalent as a mind map.

Conclusion

Regroup in front of the class mind map. On the board write the heading, *Properties of wool*. Ask students to name one property of wool they have investigated during this unit.

Ask the students the following questions:

- Where does wool come from?
- Is wool a natural or synthetic fibre?
- How does wool protect sheep?
- What does wool feel like?
- Is wool flammable?
- Could you wear wool on a rainy day?
- Why is wool good to wear in summer and winter?
- How can wool be used in your home to keep you warm and cool?
- How does wool help reduce landfill?

Make the links on the mind map following the student's suggestions.

Extension activity

Ask students to select one of the properties of wool studied in this unit of work and consider how wool can be used to improve the lives of the user or the environment.

Students are to link their chosen property (e.g. fire resistance, biodegradability, stain resistance etc.) with the performance of the fibre in a chosen setting selected (e.g. the home, sporting arena, leisure activity or in the case of the environment, at the end of a product's useful life). A comparison between wool and cotton or synthetic fibres is to be included.

Students can be present their findings as a digital infographic (no larger than A3) or hand-drawn poster.

If the student chooses to present their work as an infographic, ask them to create a hand-drawn draft indicating the key messages they wish to convey, before generating the digital infographic.

As a reminder, infographics are a visual representation of data. When students create infographics, they are using information, visual, and technology literacies.

Some questions to ask students to help them reflect on specific infographics:

- Why is this infographic useful to me?
- What is the purpose of the visuals (charts, maps, drawings, etc) in this document?
- Is the text important for me to understand this infographic? Why?
- How can I evaluate this infographic? What does it do well? Where could it be improved?
- What information am I learning thanks to this infographic?
- Is this infographic helping me learn? How? Why?

Allow your students to spend some time investigating different forms of infographics. [The Daily Infographic](#) is a site dedicated to curating the most interesting infographics available on the web.

There is a variety of freely available tools to create infographics online, such as Canva. Most online infographic tools provide templates students can use for their own purposes. Students can adapt available infographic templates and add their own content, images, designs, etc.

The following article from EducationHQ Australia provides more information on using infographics in the classroom: <http://au.educationhq.com/news/33589/using-infographics-in-class/> (Accessed 11 May 2020)

Links to the Australian Curriculum:

- Natural and processed materials have a range of physical properties that can influence their use. ([ACSSU074](#))
- Science involves making predictions and describing patterns and relationships ([ACSHE061](#))
- Represent and communicate observations, ideas and findings using formal and informal representations ([ACIS071](#))
- Science knowledge helps people to understand the effect of their actions ([ACSHE062](#))