WOOL STORY
Teacher Overview

What is the National Wool Museum and why visit?

A class visit to the National Wool Museum offers an exciting look at the extensive history of a product which has had an enduring impact on Australian social and economic life.

Our two core galleries include information, displays and hands-on activities following wool from the sheep’s back to the clothes rack. Students can see, hear, smell, and feel the wool as it changes from raw fleece through scouring, combing, and so on to become a finished fabric. They can explore the re-created homes of a shearer and mill worker from days past. Students may also have the opportunity to see our 1910 Axminster Gripper Carpet Loom or the 1960s Komet Knitter in operation.

Overview of Wool in Geelong:

It is likely that the first white settlers to land at Point Henry were sheep, put overboard to swim ashore from the barque Henry after its voyage from Tasmania. From its earliest days, Geelong was an important supply base for the settlers in the Western District and the Riverina, while from 1840 wool was shipped out of Geelong to markets in England and Europe. The scouring and tanning industries were developed along the Barwon River from the early days and during the first slump in wool prices in the 1840s, tallow and rendering works were established. Several firms were producing wool and textile processing machinery, like the Humble and Nicholson wool press on display. The first woollen mill in Victoria was established in Geelong in 1865, the world’s biggest wool textile research laboratories were run by CSIRO in Belmont, and the Gordon Wool School, established in 1890s trained generations of wool classers and handlers until its closure in 2008. From the sheep to the shop, all aspects of wool production have at some point impacted the development of Geelong into the city it is today.

Key ideas in the exhibition:

- Early colonisation of Australia was impacted greatly by the immature but very successful wool industry.
- External factors and fashion trends have affected the wool industry.
- Farmers take into account many factors in planning and managing their properties and stock.
- Introduced species have an effect on a new environment – not always in a positive way!
- Purpose built buildings can be adapted for other uses.
- Wool, as a natural fibre, has many advantages over alternative fibres.
- Wool production is complex.
- Wool and its production have shaped communities, affected the Australian economy, and have raised political issues.
**Key Words**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Artesian Water</td>
<td>Underground water which rises to the surface in a continuous flow.</td>
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<tr>
<td>Bale</td>
<td>A bag of wool. Bales weigh approximately 172kg each.</td>
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<td>Bare-Bellied Yoe</td>
<td>A sheep with a completely shaved belly.</td>
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<td>Blades</td>
<td>Hand shears used by shearers before the introduction of machine driven shears.</td>
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<td>Blow</td>
<td>A single sweeping cut of fleece.</td>
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<tr>
<td>Board</td>
<td>The floor along the wall of the shearing shed where the sheep are shorn.</td>
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<tr>
<td>Carding</td>
<td>Untangling of wool fibres.</td>
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<tr>
<td>Catching Pen</td>
<td>Small yards or pens inside the shearing shed. Used to pen sheep before shearing.</td>
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<tr>
<td>Chute</td>
<td>The opening next to each shearer where the sheep exit out to the counting-out pens.</td>
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<tr>
<td>Classer</td>
<td>The person who sorts the shorn wool into type and micron count.</td>
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<tr>
<td>Cocky</td>
<td>A sheep or cattle farmer (on a small property).</td>
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<tr>
<td>Comb</td>
<td>The cutting blades that attach to a shearing handpiece.</td>
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<td>Combing</td>
<td>Removing short wool fibres, blending long wool fibres.</td>
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<tr>
<td>Counting Out Pen</td>
<td>Pens situated outside of the shearing shed which hold each shearers shorn sheep. The shed boss counts the shorn sheep and adds them to the shearsers tally.</td>
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<tr>
<td>Dag</td>
<td>Wool clotted with dung around a sheep's hindquarters.</td>
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<td>Dungas</td>
<td>Shearers pants, double layer at the front to avoid prickles.</td>
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<tr>
<td>Dyeing</td>
<td>Colouring wool by dipping.</td>
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<tr>
<td>Ewe</td>
<td>An adult female sheep.</td>
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<tr>
<td>Floor Walker</td>
<td>Supervisor of a section of the factory.</td>
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<tr>
<td>Gilling</td>
<td>Drawing out and evening up wool fibres.</td>
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<tr>
<td>Grazier</td>
<td>A sheep or cattle farmer (large property).</td>
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**national wool museum**

26 Moorabool Street, Geelong, 3220 Tel: 03 5272 4701
Email: nwminfo@geelongcity.vic.gov.au
Web: www.nwm.vic.gov.au
Open: Mon-Fri 9.30am-5.00pm, Sat & Sun 10.00am - 5.00pm
Closed: Christmas Day, Boxing Day and Good Friday.
<p>| <strong>Gun</strong>  | The top shearer, or the best shearer in a shed or gang. Usually able to shear more than 200 sheep per day. Can also be known as a ‘Ringer’ |
| <strong>Handpiece</strong> | Tool that shearers use to shear sheep. |
| <strong>Harness</strong> | A sprung device hung from the shearing shed roof which helps support the shearers back while shearing. |
| <strong>Hogget</strong> | Also known as a two-tooth. A sheep that is one year old. |
| <strong>In the grease</strong> | Shearing sheep with unwashed wool. In the early days wool was washed on the sheep’s back before they were shorn. Rams and ewes heavily in lamb were not washed for fear of damaging them. Since the introduction of machine shears all sheep are shorn in the grease. |
| <strong>Jumbuck</strong> | An early term for a sheep usually used by shepherds and shearers. |
| <strong>Knitting</strong> | Forming a single yarn into fabric of interlocking loops. |
| <strong>Long blow</strong> | The long sweeping cuts the shearer takes across the first side and back of the sheep while being shorn. |
| <strong>Moccasin</strong> | Footwear shearers made, usually made from felt or sheepskin. |
| <strong>Micron</strong> | The diameter of wool fibres. A micron is one millionth of a metre. |
| <strong>Mill</strong> | Wool processing factory. |
| <strong>Mill community</strong> | Population of workers’ families living near the factory. |
| <strong>Pioneer</strong> | An explorer, or one who moves into a new area or field. |
| <strong>Press</strong> | The machine used to press wool into bales. |
| <strong>Ram</strong> | An adult male sheep. |
| <strong>Rouseabout</strong> | Shed hand who does odd jobs. |
| <strong>Run</strong> | A two hour shearing period. A typical shearing day involves four runs. |
| <strong>Settler</strong> | A person who settles in a newly developed country. |
| <strong>Skirting table</strong> | The table onto which fleece is thrown to begin sorting and classing. |
| <strong>Spinning</strong> | Twisting wool into a yarn. |
| <strong>Squatter</strong> | A person who lives on land they do not own or rent. |</p>
<table>
<thead>
<tr>
<th><strong>Staple</strong></th>
<th>The length of wool shorn from a sheep, usually a year’s growth equals approximately ten centimetres.</th>
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<tr>
<td><strong>Tally</strong></td>
<td>The number of sheep shorn by each shearer.</td>
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<td><strong>TAR BOY</strong></td>
<td>The young shed hand whose job it was to put Stockholm Tar onto the wounds of badly cut sheep.</td>
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<td><strong>Textile</strong></td>
<td>Woven or knitted fabric.</td>
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<td><strong>Weaving</strong></td>
<td>Interlacing of two yarns, each at right angles to each other.</td>
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<td><strong>Whipping Side</strong></td>
<td>The short, quick blows taken by a shearer while the sheep is in the sitting position.</td>
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<td><strong>Wigging</strong></td>
<td>The removal of wool from around the eyes of a sheep to prevent wool-blindness.</td>
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<tr>
<td><strong>Wool Blind</strong></td>
<td>Sheep that are unable to see due to the amount of wool around their eyes.</td>
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<tr>
<td>Level</td>
<td>Historical Knowledge &amp; Understanding</td>
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<td></td>
<td>How the stories of families and the past can be communicated, for example through photographs, artefacts, books, oral histories, digital media, and museums (ACHHK004)</td>
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<td>Differences and similarities between students’ daily lives and life during their parents’ and grandparents’ childhoods, including family traditions, leisure time and communications (ACHHK030).</td>
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<td>The history of a significant person, building, site or part of the natural environment in the local community and what it reveals about the past (ACHHK044). The importance today of an historical site of cultural or spiritual significance (ACHHK045)</td>
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<td>One important example of change and one important example of continuity over time in the local community, region or state/territory (ACHHK061).</td>
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<td>Stories of the First Fleet, including reasons for the journey, who travelled to Australia, and their experiences following arrival (ACHHK078).</td>
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<td>The impact of a significant development or event on a colony (ACHHK095). The reasons people migrated to Australia from Europe and Asia, and the experiences and contributions of particular migrant group within a colony (ACHHK096)</td>
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</tbody>
</table>
| 6 | **Historical Knowledge & Understanding**  
Stories of groups of people who migrated to Australia and the reasons they migrated (ACHHK115).  
The contribution of individuals or groups to the development of Australian society (ACHHK116)  
**Historical Skills**  
Identify and locate a range of relevant sources (ACHHS120) |
|---|---|
| 7 | **Historical Knowledge & Understanding**  
Key features of ancient societies (farming, trade)  
How historians and archaeologists investigate history, including excavation and archival research (ACDSEH001)  
The methods and sources used to investigate at least one historical controversy or mystery that has challenged historians or archaeologists (ACDSEH030)  
**Historical Skills**  
Identify and locate relevant sources, using ICT and other methods (ACHHS208)  
Identify the origin and purpose of primary and secondary sources (ACHHS209) |
| 8 | **Historical Skills**  
Use historical terms and concepts (ACHHS149)  
Identify a range of questions about the past to inform a historical inquiry (ACHHS150)  
Identify the origin and purpose of primary and secondary sources (ACHHS152)  
Identify and describe points of view, attitudes and values in primary and secondary sources (ACHHS155)  
**Historical Knowledge & Understanding**  
The technological innovations that led to the Industrial Revolution and other conditions that influenced the industrialisation of Britain and of Australia (ACDSEH017)  
The population movements and changing settlement patterns during this period (ACDSEH080)  
The experiences of slaves, convicts and free settlers upon departure, their journey abroad, and their reactions on arrival, including the Australian experience (ACDSEH083)  
Changes in the way of life of a group(s) of people who moved to Australia in this period, such as free settlers on the frontier in Australia (ACDSEH084)  
Living and working conditions in Australia around the turn of the twentieth century (ACDSEH090)  
**Historical Skills**  
Use historical terms and concepts (ACHHS165)  
Identify the origin, purpose and context of primary and secondary sources (ACHHS169)  
Identify and analyse the perspectives of people from the past (ACHHS172) |
| 9 | **Historical Knowledge & Understanding**  
Continuity and change in beliefs and values that have influenced the Australian way of life (ACDSEH149)  
The contribution of migration to Australia’s changing identity as a nation and to its international relationships (ACDSEH147)  
**Historical Skills**  
Use historical terms and concepts (ACHHS183)  
Identify the origin, purpose, and context of primary and secondary sources (ACHHS187)  
Identify and analyse the perspectives of people from the past (ACHHS190) |
Activities that link to standards in *Physical, Personal & Social Learning* and *Interdisciplinary Learning* are indicated with the following symbols:

- **Health and Physical Education**: 🏋️‍♂️
- **Interpersonal Development**: 🤝
- **Personal Learning**: 😊
- **Civics and Citizenship**: 🌍
- **Communication**: 💬
- **Design, Creativity and Technology**: 🎨💡
- **Information and Communications Technology**: 📱🌟
- **Thinking Processes**: 🧠
Preparing: Pre-Visit Activities

**Sheep in the Home**

**Activity 1: Read Aloud**

**Concept:** Introduce students to new words they will hear at the Museum.

**Suggested Books:**
- Charlie Needs A Cloak, by Tomie dePaola
- Wool Gathering: A Sheep Family Reunion, by Lisa Wheeler
- Farmer Brown Shears His Sheep: A Yarn About Wool, Teri Sloat
- Sherman the Sheep, Kevin Kiser
- Neville the sheep, Rebecca Johnson
- Pete the Sheep, Jackie French
- The Silly Sheepdog, Heather Amery & Stephen Cartright
- Where is the Green Sheep?, Mem Fox & Judy Horacek

**Activity 2: Fill a Sheep**

**Concept:** Establish students existing knowledge relating to wool, its production and its use.

**Materials:**
- Sheep template for each student (p. 9)
- Colouring materials (crayons, markers, etc)
- Magazine, flyers

**Directions:**
1. Distribute sheep templates to students.
2. In small groups, give students 5 minutes to think of all the different parts of a sheep they can find at home. (eg. meat, wool blanket, sheepskin, lanolin in handcream, etc.)
3. Fill the sheep template with words or images (cut pictures from magazines) relating to the parts of a sheep we use and the products we create from sheep/wool materials.
4. After 5-10min of small group work share ideas as a class. How many different products can students come up with? Then, continue with collage.

**Activity 3: Innovate / Invent**

**Concept:** Introduce students to the concepts of innovation and invention; and some of the products that have resulted when imaginative Australians faced challenges.

**Definitions:** innovate: to make changes to an established idea/process/object by adding new ideas/processes/objects; invent: to create or design something entirely new

**Materials:** Pencil, paper, internet access

**Directions:**
2. Have students explore their own homes for items or ideas that are “Made in Australia.”
3. Share lists in small groups. How many items did students have in common? How many items were invented/developed in Australia? In groups, choose one item to investigate further.
4. Visit the Museum to learn about some early wool-related developments like the mechanical shears and the Kelpie.
THE WOOL HARVEST

Activity 1: Sheep family portrait

Concept: Introduce students to new words they will hear at the Museum – ram, ewe, lamb.

Materials:
- Sheep family template for each student (p. 12)
- Colouring materials (crayons, markers, etc)

Directions:
1. Discuss the names of different family members – mom, dad, brother, sister, baby, etc. We have different words for ‘boy’ and ‘girl,’ and different words for older and younger family members. What words could we use for sheep that are boys, girls, babies, etc?
2. Distribute sheep family template to students. Colour a mom, dad, and baby sheep – then identify each with the right word.

Activity 2: Word Wall

Concept: Familiarize students with some of the vocabulary they will encounter at the Museum.

Materials:
- Key Word list (pp. 3-5)
- A4 sheet of paper for each student
- Colouring materials (crayons, markers, etc)
- Dictionary

Directions:
1. In a class discussion, invite students to share any words they can think of relating to wool. Discuss simple definitions for these terms and explain that students will encounter many new words during their excursion. Expand the brain-stormed list with terms from the Key Word list.
2. Assign each student one word.
3. Have students find their word in a dictionary and create a simple definition in their own words. Or, distribute the definitions from the Key Word list and students can work from these to produce their own definitions.
4. Distribute paper and colouring materials to students.
5. Fold A4 sheet in half length-wise.
6. Lift the flap and write the definition on the inside.
7. Use pictures and creative lettering to write the word in a way that illustrates its meaning on the outside face.
8. Post these words on a classroom bulletin board.

Extra words that students encounter during their visit to the Museum may be added to the wall following their excursion.

Activity 3: Dress the shearer

Concept: Introduce children to the link between occupation and clothing.

Materials:
- Shearer template for each student (p. 13)
- Scissors
- Colouring materials (crayons, markers, etc)
- Glue sticks

Directions:
1. Discuss what people do and how they are dressed. For example, a fireman and cook do not dress the same. Why do different people wear different clothes?
2. Look at pictures of shearsers: they wear moccasions to keep their feet flat on the floor and help them not slip; they wear trousers with two layers of fabric on the front to protect their legs; they wear a singlet, because it is hot work, with a long tail to cover their back when they bend over.
3. Distribute character template to each child.
4. Colour and decorate your character and their clothes.
5. Cut and paste the clothing in the correct spot.
Activity 4: Measuring Wool
(Adapted from: CSIRO. Woolly threads not Woolly Thoughts, p.23)

Concept: Judging wool fibre size use to be subjective, then it was discovered that lasers could be used to find an objective measurement for wool diametre. The size of the wool fibre determines how it will be used, and therefore its value. During your visit to the Museum you will see the Million Dollar Bale, the finest wool ever measured at that time. Discuss the terms subjective, objective, and micron with your students before beginning.

Materials:
- Small He-Ne laser (0.5mW is ample)
- Human hair
- Wool fibre
- Matt white cardboard screen
- Sticky tape or blue tack
- Plastic millimetre ruler
- 2 cardboard rectangles 50mm x 50mm

Directions:
1. Cut a square from the centre of each 50mmx50mm rectangle.
2. Tape a single human hair across one piece of cardboard and wool across the other as shown in image to right.
3. Set up the laser, cardboard, and matt as shown below.

   ![Diagram of laser setup]

   - laser
   - cardboard rectangle
   - screen
   - 1 metre (L)

4. Centre the hair or wool fibre in the beam from the laser

SAFETY NOTE: Before turning on the laser you MUST read all the safety instructions and follow them. Take care that no laser light is reflected into anyone’s eyes.

5. Place the screen about 1 metre away. You will see a pattern of bright and dark lines each side of a central spot. Notice that the pattern spreads perpendicular to the direction of the fibre, so this technique can reveal the orientation of small objects.
6. Measure the distance between the first pair of dark lines as shown above.
7. Calculate the diametre of the fibre by using the formula:

   \[ D = 2 \frac{\lambda L}{d} \]

   Where:
   \( D \) = distance between dark lines
   \( \lambda \) = wavelength of laser (a helium-neon laser has a wavelength of 632.8nm)
   \( L \) = distance from fibre to the screen
   \( d \) = diametre of the fibre
FROM FLEECE TO FABRIC

Activity 1: Sorting Laundry

Concept: Introduce students to wool as a material, develop their descriptive vocabulary, and build on sorting skills.

Materials:
- Selection of fabrics of different types
- Word flash cards
- Clothes line and pegs

Directions:
1. Talk about how children think wool is used – like warm jumpers, hats, and scarves. Consider, are all your clothes made of wool? Do they all feel the same?
2. Explore your classroom feeling different textile surfaces (like carpets, curtains, tablecloths, jackets, clothes, towels, etc).
3. What sort of words can be used to describe these materials (soft/hard/smooth/bumpy/fluffy/warm/cold/etc)?
4. Bring out a laundry basket full of different scraps of materials. Have children explore feeling the different fabrics.
5. Sort the laundry. Encourage children to pile materials together that feel the same.
6. Hang your sorted laundry on a line, with a big word to describe the feel of each group.

Activity 2: What am I wearing?

Concept: Encourage students to think about which fibres are used in making clothing and why.

Materials:
- A length of string, rope or twine
- Pegs
- Fabric samples of known content (eg. wool, cotton, bamboo, polyester, rayon, etc)
- Cards listing material types to match materials of known content (eg. 100% wool; 60% cotton/40% polyester; etc.)
- Access to school uniform items with materials information tags

Directions:
1. In a class discussion, determine what the students already know about the types of materials used in garment production.
2. Place the fabric samples and content cards separately in the centre of the group.
3. Hold up pieces of fabric individually to determine if any of the students can match the fabric to a card.
4. Once fabrics and cards are matched, peg the samples with their corresponding cards to a ‘washing line’ of string placed in the classroom.
5. Inspect items of school uniform. Discuss their materials content.
6. Record, or graph on a chart, the predominant material used in the production of your school’s uniform. Discuss why this material may predominate – wearability, washability, cost etc.
7. Extra labelled materials may be added to the clothes line as students look for material types not covered by the initial activity and bring them in to school.

NATURAL FIBRES
- wool
- silk
- linen
- cotton

REGENERATED FIBRES
- viscose rayon (artificial silk)
- acetate

SYNTHETIC FIBRES
- polyester
- nylon
- acrylic

Extension: Choose a fibre to investigate. How is it produced? How does this affect the fibre’s properties?
Activity 3: Extensibility and Elasticity
(Adapted from: CSIRO. Woolly threads not Woolly Thoughts, p.9)

Concept: The strength of wool fibres varies considerably as the shape of fibres are subject to natural variation along their length and between fibres. Wool is naturally elastic – it will extend when weight is added and retract when weight is removed.

Materials:
- Board with 4 nails spaced (see diagram), graph paper pinned beneath nails
- Yarn samples 250mm long (wool, cotton, polyester, flax, etc.)
- Selection of masses (5g, 10g, 20g, 50g, 100g)
- 3 different coloured markers

Directions:
1. Tie one end of each thread to the nails.
2. Measure 20 cm, tie a small loop at the end of the thread.
3. With a pencil, make a mark on the graph paper at the bottom edge of each thread.
4. Hook mass onto end of each thread.
5. Mark the new bottom edge of each thread on the graph paper (extension length).
6. Remove the mass and mark the bottom edge of each thread.
7. The result of 6 will indicate the amount of elasticity the yarn has.
8. Have each student comment on the strength of different yarns and their elasticity.

Activity 4: How Wet Would You Get?
(Adapted from: CSIRO. Woolly threads not Woolly Thoughts, p.13)

Concept: Wool naturally repels water, absorbs water vapour (it can absorb up to 35% of its dry weight in water vapour). Which clothes do students think will keep them driest? Do all clothes interact with water in the same way?

Materials: (for each group)
- Fabric samples (wool, cotton, polyester, linen, etc.) – larger than cup diameter
- Clear plastic cups
- Coloured water (food dye)
- Rubber bands
- Eye dropper
- Magnifying glass
- Stopwatch

Directions:
1. Construct an observation table, with a table for predictions and for observed outcomes. Have each group predict how they feel each fabric will behave (repel water longer / shorter time relative to other samples; absorb water; etc.)
2. Stretch a square of fabric over each plastic cup, secure in place with a rubber band.
3. With the eye dropper, add 15 drops of water to the centre of each fabric sample. Start the stopwatch.
4. Count how many drops pass through the fabric and how long it takes for them to do this (record the results in observation table).
5. Average the results of each group for a more accurate measurement of each fabric.
6. Construct a picture graph of the results.
7. Examine the structure of each fabric with a magnifying glass and sketch your observations.
8. Have each group construct a statement relating the structure of each fabric with how waterproof the fabric was.
Engaging: Museum Visit

Prep to Grade 2: Ramses and Eunice
Perfect for your first visit to the Museum! Find out what happens to wool, from growing sheep, to clipping the wool, to processing the wool into a finished piece of clothing, all from the perspective of Ramses the ram. Students will be taken on a guided tour, with a chance to see, touch and smell the wool as it changes along the way and finish up making their own character to take home with them.

Prep to Grade 2: I Spy (I hear, I smell, I feel) @ the Museum
Get to know the Museum from a whole new perspective as you feel, listen, and smell your way through the galleries. Students will ‘collect’ different sensory experiences as they are guided through the galleries with crayon rubbings, listening exercises and movement activities.

Grade 1 to 4: A Day in the Life of Geelong
How far would you walk to buy a sheep? Find out how far one early immigrant walked to build her flock and other interesting settler tidbits. Travel through time on the sheep's back as you find out about the life of early immigrants and pioneers to the region. As they explore, students will be collecting time stamps to complete a clock tracking their “Day in the Life of Geelong.” Each stop features an early story of Geelong; students will be introduced to people and occupations that have featured in Geelong’s history. The visit will conclude with making an old-time paper toy to take home.

Grade 4 to 10: Sold! At the Wool Auction
Learn about the production and sale of wool as you prepare for an auction. Then re-enact the wool auction on the original podium in the sale room – can you sell your bale for $1 million? Students will explore the galleries to learn what goes into producing a marketable bale of wool and about why different people want different classes of bale.

Students will then take on the role of different members of the auction crowd (auctioneer, farmer, buyer) based on the information they have gained and attempt to sell their bale for the highest price.

Grade 4 to 10: Wool Is
What is wool? Sheep were some of the earliest domesticated animals, with evidence stretching back approximately 10,000 years for their use and cultivation. So what is it that makes their fleece so special? Students will explore sheep through history, leading to an examination of the fibre we use today.

All Ages: Tour and Loom Demonstration
Learn about wool from growing to selling to wearing in a tour of “The Wool Harvest” and “Fleece to Fabric” and see our 1910 Axminster Carpet Loom in action. At the end, make a simple wool craft to take home with you.
Reviewing: Post-Visit Activities

Activity 1: Wonderful, Wearable Wool
Create a cartoon strip that traces the life of a wool fibre from the sheep’s back to your back. Remember to include growing (e.g. drought-affected sheep are poor wool producers), shearing, sorting, packing, selling, scouring, carding, combing, spinning, dyeing, weaving/knitting (template p. 19).

Activity 2: Fibre of the Future
Investigate how wool fabrics are being adapted for new or improved uses. What new textile materials are in development (for example, check out the wearable air guitar)? What properties can be added to fabrics (for example, anti-wrinkle, stain repellent, etc)?

Design your own futuristic material. What properties will it have? Who will use it and why? Create an advertisement to tell the public about your new material.

Activity 3: Learn a New Skill
Recall the different ways you saw wool being used in the Museum (woven into carpet and scarves; knit into socks; spun into thread). Try your hand at a new craft skill like weaving or knitting. For example, try spinning cotton buds into yarn.

FINGER SPINNING
(adapted from B. Greenwood (1994), A Pioneer Story, p. 98)

Materials: cotton balls

Directions:
Left hand – pinch one section of a cotton ball loosely between your thumb and index finger.
Right hand – with your thumb and index finger pinch a tiny piece of the cotton ball and slowly pull out a few fibres, twisting as you pull.

DROP SPINDEL

Materials:
- Pencil
- Cardboard
- Scissors
- 2 x rubber bands
- Metal hook

Directions:
1. Cut a 6-8cm diameter circle out of the cardboard.
2. Mark the center of your circle and poke a small hole with the scissors.
3. Push the pencil, eraser end first, through this hole (should fit snugly), about 2-3cm.
4. Secure by twisting one rubber band around the pencil above the cardboard, and the other around the pencil below the cardboard. Bands will act as stoppers.
5. Screw the metal hood into the eraser.
6. You are ready to spin!
Resources

Australian Wool Innovation (awi). [www.wool.com](http://www.wool.com)


School to Industry Links: National Pack (collaborative project managed by the University of Tasmania) [http://www.woolwise.com/School_Links/Science%20Adventures%20with%20Igor.html](http://www.woolwise.com/School_Links/Science%20Adventures%20with%20Igor.html)
Activities focus on science content and inquiry-based science skills.

[http://www.woolwise.com/resources.html](http://www.woolwise.com/resources.html)
General list of wool-related online educational resources.