

REFERENCE GUIDE FOR TEACHERS

CURRICULUM BASED WOOL ACTIVITIES



GET STARTED



WOOL

AND THE JOURNEY FROM FARM TO FINISHED PRODUCT

HEY THERE - WELCOME TO THE WOOLSHED / TEIHANA KUTI HIPI

My name is Ramsay, and this is where my friends and I get a haircut (ever heard of shearing/*kuti hipi*?). Our barber (called a shearer/*kaikutikuti*) comes to the farm and we come in from the paddocks.

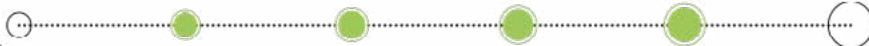
Today you'll get a chance to touch some wool/*wūru* from a recent haircut (not mine!) and then some that's been cleaned and brushed. You will be able to see how wool/*wūru* is transformed into a fibre/*weu* that has many, many important uses.

By the way, I'm learning **te reo Māori** and have used some kupu / words from the wool shed to build my vocabulary of the Māori language. Have a look throughout the workbook and see how many kupu / words you can identify, say, and use in a sentence.



the dawn of time

TIMELINE



earlier today

BEFORE YOU VISIT THE WOOLSHED/TEIHANA KUTI HIPI, LET'S FIND OUT ABOUT MY FAMILY HISTORY. HERE ARE SOME QUESTIONS TO GET YOU THINKING:

How important have sheep/*hipi* been in the history of the world?

How important has wool/*wūru* been to New Zealand?

What are some of the different breeds of sheep that live in New Zealand?

Which ones are best suited to wool production, and why?

What happens in a year on a sheep farm, when and why?

Now you know how wool/*wūru* fits into our history and the history of the world. It's time to muster you all together and begin our wool journey. I'll give you some tasks as we make our way through this workbook and The Woolshed/*Teihana Kuti Hipi*:

1. When you get to a **GREEN** question, the answer is something you can probably work out pretty easily. You might even already know the answer.
2. A **GOLDEN FLEECE/KOTI WŪRU CHALLENGE** is a bit trickier, but give it a go.
3. Hidden within the workbook are five everyday words or phrases that also have a meaning that relates to sheep/*hipi* or wool/*wūru*. You might have noticed the first one, at the top of this page. It was muster (which means gather together, and is what a farmer and dogs do when they want to gather together a flock/*mapu* of sheep/*hipi*). Find the other four and highlight or circle them.

Make notes about anything else that catches your interest or you want to know more about. You might have time to investigate later on.

Once you get to The Woolshed/*Teihana Kuti Hipi* there are activities and experiments your class and teacher can complete.

Take this workbook with you, plus a pencil and an eraser. A camera would be handy, if your class has one.

Last thing - when you get there, remember to remove your shoes and put them in the shoe storage wall. Just like a wool/*wūru* shed on a farm, we want to keep The Woolshed/*Teihana Kuti Hipi* nice and tidy. Thank you!

NOW IT'S TIME TO BEGIN YOUR WOOL/*WŪRU* JOURNEY.



Now you're inside The Woolshed/Teihana Kuti Hipi... HOW IS WOOL/WŪRU MADE?

HAVE A LOOK AT THIS POSTER. SEE THE WOOL GUY ON THE LEFT? WE ALL LOOK A LOT LIKE HIM BEFORE WE ARE SHORN/*KUTIA* (I'M BETTER LOOKING, THOUGH).



DESCRIBE IN YOUR OWN WORDS WHAT YOU THINK MY WOOL WOULD FEEL LIKE.

DESCRIBE THE COLOUR OF MY WOOL ON THE OUTSIDE.



Watch this video of some of my relations being shorn/*kutia*. Keep an ear out for answers to the questions below. <https://www.youtube.com/watch?v=BLaSrp876G4>
(check with your teacher that you are allowed on Youtube)

HOW LONG DID IT TAKE FOR THE SHEARER/*KAIKUTIKUTI* TO SHEAR THE SHEEP/*HIPI*?

The shearers/*kaikutikuti* are very skilled, so our haircuts don't take long. The shearer/*kaikutikuti* is careful not to hurt us, too.

IS THE WOOL/*WŪRU* THE SAME COLOUR CLOSE TO THE SKIN AND AT THE VERY END?
CAN YOU IMAGINE WHY?

DO YOU KNOW WHAT THE WOOL/*WŪRU* ON MY BACK IS CALLED? (IT'S A WORD THAT
IS SOMETIMES USED FOR THINGS THAT HAVE NOTHING TO DO WITH WOOL).

In the video there are people working with the shearer/*kaikutikuti*, clearing the wool/*wūru* away.
They are called a 'rousie' or wool handler. Their job is to collect the shorn fleece (yes, that's the word I was
looking for earlier) off the floor. They throw it across the wool table so it can be sorted and classed.

Sorted: removing any soiled wool or low-quality bits from the edges of the fleece/*koti wūru*.

Classed: separating higher quality fleeces from lower-quality fleeces because they have different
values and different uses.

GOLDEN FLEECE QUESTION / *HE PĀTAI KOTI WŪRU*

WHAT IS THE WORLD RECORD FOR THE MOST SHEEP/*HIPI*
SHORN BY ONE SHEARER/*KAIKUTIKUTI* IN ONE HOUR?
ONE SHEARER/*KAIKUTIKUTI*, ONE HOUR AND _____ SHEEP/*HIPI*.

(Does it help if I tell you one sheep/*hipi* was shorn/*kutia* every X minutes?)

WHY ARE SHEEP SHORN/*KUTIA* AT LEAST ONCE A YEAR?
WRITE DOWN TWO POSSIBLE REASONS.

(Maybe it's the same reason you get a haircut).

1. _____

2. _____

Now, have a look at the opposite wall, where there are three words written under the heading
'WHY WOOL?'

WHICH ONE OF THESE WORDS MEANS THAT WE HAVE A SUSTAINABLE/*TOITŪ* SUPPLY OF
WOOL IN NEW ZEALAND?

WHAT DOES SUSTAINABLE/*TOITŪ* MEAN? CAN YOU GIVE ME AN EXAMPLE OF WHY SUSTAINABILITY IS SO IMPORTANT IN THE WORLD TODAY?

GOLDEN FLEECE QUESTION / *HE PĀTAI KOTI WŪRU*

DO YOU KNOW THE NAME OF THE SHEEP IN THIS PICTURE (WITH AND HALF WITHOUT HIS FLEECE)? HE BECAME VERY FAMOUS A FEW YEARS AGO FOR HIDING OUT IN CAVES ON HIS FARM.



TIME FOR MY HAIRCUT!

WHAT TIME OF THE YEAR DO SHEEP USUALLY GET SHORN? CAN YOU REMEMBER FROM YOUR EARLIER STUDY OF LIFE ON A FARM?



You should have reached the three bins now - **greasy**/*hinuhinu*, **scoured**/*wakua* and **combed**/*wania*.

Start with the greasy bin. This could get messy, so put your workbooks on the counter above the bin.

GREASY/*HINUHINU* WOOL (JUST SHORN)

Open the bin labelled 'GREASY'. Without taking anything out, reach in and feel the wool/*wūru*. This is what my wool feels like, straight after my haircut.



DOES THE WOOL FEEL LIKE YOU THOUGHT IT WOULD?

CAN YOU DESCRIBE IT?

Now take some of the wool/*wūru* out of the bin. Do you see any sticks, leaves or anything else in the wool? Well, we live outside in a paddock and things catch in wool very easily.

Now take a closer look at the wool ...

ARE THE WOOL FIBRES/*WEU WŪRU* STRAIGHT OR WRINKLED?

WHY DO YOU THINK THIS IS?

AS YOU HANDLE THE WOOL/*WŪRU* DESCRIBE WHAT YOU FEEL ON YOUR HANDS?

WHY DO YOU THINK IT FEELS GREASY/*HINUHINU*?

HOW MIGHT THE GREASINESS HELP THE SHEEP/*HIP*?

DO YOU KNOW THE NAME OF THE GREASY/*HINUHINU* SUBSTANCE?

GOLDEN FLEECE QUESTION / HE PĀTAI KOTI WŪRU

IT'S CALLED LANOLIN/*HINU WŪRU* AND IS REALLY A WAX, NOT AN ACTUAL GREASE OR OIL.
IT CAN BE USED TO MAKE HANDCREAM, AMONG OTHER THINGS.

TRUE OR FALSE

Please put the greasy/*hinuhinu* wool back in the bin, so that more people can look at it.
Remember to take your workbook with you.

SCOURING (OR CLEANING)

Bath time! Just for the wool/*wūru* this time, not me!

Now open the bin labelled 'SCOURED'. Same as before,
just feel inside the bin and don't take any out.



IN WHAT WAY DOES THE WOOL FEEL DIFFERENT
TO THE GREASY/*HINUHINU* WOOL?

DESCRIBE THE WOOL COLOUR:



CARDING/*HĪEWEWE* & COMBING/*WANI*

My wool has now been washed and
brushed/*paraihe* into nice straight lines. From
here, it is easier to make the fibre/*weu* into yarn.

Have you ever seen someone plait hair?
It's very similar to making fibre/*weu*. When it is
done, it is called a wool sliver/*kōripi wūru*.

Now open the bin labelled 'COMBED'. Just like before, reach in and feel but leave the wool in there.

It feels a bit different now, doesn't it?



HOW WOULD YOU DESCRIBE THE WOOL/*WŪRU* NOW?

DYE/*WAITAI*

The wool/*wūru* is ready to be dyed/*waitai* any colour.

WOOL/*WŪRU* IS NATURALLY WHITE AND TRICKY TO DYE/*WAITAI*. TRUE OR FALSE?

Now you know what wool feels like and how it gets cleaned, untangled, and coloured. Let's find out how it gets turned in to yarn.



*Earlier we investigated how important wool/*wūru* has been through the centuries.*

*You might have read that wool was spun/*takahuritia* by hand until big spinning machines/*mihini takahuri* were invented, during the industrial revolution. Even so, some people still spin wool/*takahuri wūru* by hand today.*



In fact, you can show me how skilled you are at making yarn. Let's go to The Cubbies and spin a yarn.



If you've reached THE CUBBIES
it's time for a bit of investigation
and experimentation.

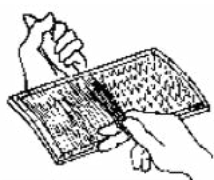
CUBBY ONE - CARDING



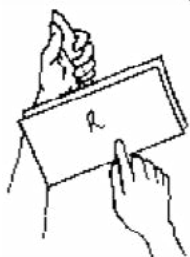
Watch this video (it's just under 3 minutes long)

<https://www.youtube.com/watch?v=rDqY2mLoolw>

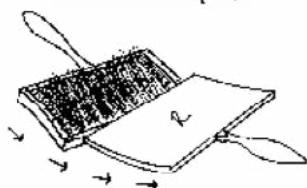
Can you see the wool slivers/*kōripi wūru*? What about the two things that look like big hairbrushes? They are called hand carders. You can use them to separate and straighten the wool fibres/*weu wūru*, to make it easier to spin them. (You would have seen them in the carding/*hīeweewe* video earlier).



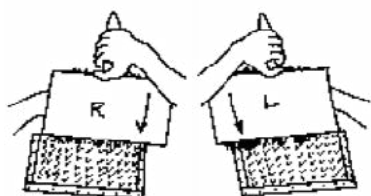
1. Take one of the carders in your left hand and with your right hand, lay staples of wool (a bunch of the wool slivers/*kōripi wūru*) across the teeth/*niho* of the carder. Distribute the wool evenly across the entire card until the teeth/*niho* are barely showing through.



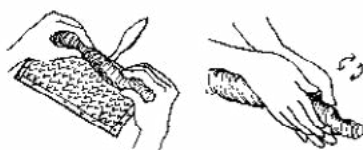
2. Take the second carder in your right hand and position it directly over the left card. Hold the carders as shown, one handle up and one down.



3. Gently brush/*paraihe* the right carder across the teeth/*niho* of the left, towards you. Do this five to ten times until the fiber is evenly distributed on both cards.



4. Most of the wool/*wūru* should be on the right card now. Transfer the right card to your left hand and repeat the same process. Complete this process three or four times.



5. To finish, take the right paddle – this should have most of your wool on it. Starting at the side of the card away from the handle, roll the wool towards the handle. This roll of wool is called a rolag/*pū wūru*.

Pull off the rolag/*pū wūru* and roll it out between your palms. It's ready for spinning.

LOOKING AT YOUR ROLAG/*PŪ WŪRU* CAN YOU SEE THE INDIVIDUAL FIBRE/*WEU* OF WOOL?
TAKE ONE FIBRE/*WEU* OF WOOL AND HOLD IT IN YOUR HANDS.
HOW LONG DO YOU THINK YOUR FIBRE/*WEU* IS?

_____cm

HOLDING YOUR ROLAG/*PŪ WŪRU* IN YOUR HANDS IS IT EASY TO PULL APART?

I think you found it easy to pull apart. Can you believe you're now going to spin that soft wool into a strong fibre/*weu*! That's one of the reasons wool/*wūru* has so many valuable uses.



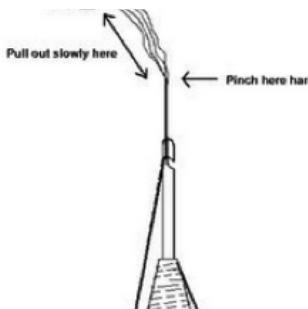
CUBBY TWO - SPINNING YARN



See the wooden stick with a round disc in the middle and a hook on the end? It's called a DROP SPINDLE and has been used for centuries for spinning yarn.

Using the ROLAG/*PŪ WŪRU* you made at Cubby One (or one your teacher/helper has already prepared), follow these instructions:

1. Wrap some of your rolag/*pū wūru* around the hook on the end of the drop spindle
2. Hold the unhooked end of your spindle between your legs. Hold your attached rolag/*pū wūru* in your left hand above the spindle hook.
3. Using your right hand, gently pull down from the rolag/*pū wūru* towards the hook of your spindle until you have approximately 10cm of fibres ready to twist.
4. Lift your left hand and take the spindle in your right hand and gently twist clockwise.
5. You should see some yarn forming like this. Don't worry if it breaks – just add some more rolag/*pū wūru* and continue spinning.



NOW YOU HAVE SOME YARN, TAKE ONE END IN YOUR LEFT HAND AND THE OTHER IN YOUR RIGHT HAND. TRY TO PULL THEM APART. IS IT EASIER OR HARDER TO PULL APART, COMPARED TO WHEN IT WAS JUST A ROLAG/*PŪ WŪRU*?

CAN YOU GIVE TWO REASONS TO EXPLAIN YOUR ANSWER ABOVE?

1. _____

2. _____

CUBBY THREE - WOOL PRODUCTS

Wow, you have been busy. Let's explore some of the ways wool/*wūru* yarn can be used. You might see wool products at home/*te kāinga*, at school and in places that you visit.

Carefully pull out the three examples of wool/*wūru* products, some made by hand and some made by machine.

See if you can work out which one was made by:

- knitting/*kōtui*
- weaving/*whatu*
- felting/*papa wūru*.

You'll be able to find out more about wool products when you get back to the classroom.

There's lots of information and ideas on our Wool in Schools Website. <http://woolinschools.co.nz>



WOOL/*WŪRU* SCOURING



Watch this video on wool/*wūru* scouring (3:52m)

<https://youtu.be/p0sKloVoFIU>

HOW MUCH GREASY/*HINUHINU* WOOL IS SCoured/*WAKUA* IN A WEEK AT EACH OF THE TWO FACTORIES?

THE TWO FACTORIES ARE THE SMALLEST IN THE WORLD. TRUE/FALSE

WHAT HAPPENS TO THE GREASY LANOLIN/*HINU WŪRU*?
IS IT THROWN AWAY OR USED IN COSMETICS AND OTHER HEALTH PRODUCTS?

WHY IS THE SCOURING/*WAKUWAKU* SO IMPORTANT?

HOW MANY BOWLS/*IPU WŪRU* DOES THE WOOL GO THROUGH IN THE SCOURING PROCESS?

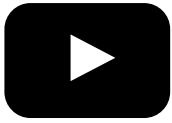
WHAT ARE THE TWO AUTOMATIC RECYCLING/*HANGARUA* SYSTEMS THAT ARE KEY TO KEEPING THE SCOURING FACTORIES ENVIRONMENTAL ACCREDITATION?

1.

2.

WHAT ARE SOME OF THE OTHER THINGS THEY DO AT THIS FACTORY TO TRY TO REDUCE THEIR ENVIRONMENT IMPACT?

FELTED YARN



Watch this video on felted yarn (3:05m)

<https://youtu.be/t-nmp4uy5Ak>

WHAT DOES WOOL HAVE THAT HELPS THE FIBRE/*WEU* COMBINE TOGETHER
AND CAN'T BE COPIED BY MAN-MADE FIBRE/*WEU*? DESCRIBE FELTED YARNS
- THEY ARE _____, _____, _____ BUT _____.

You are nearly at the end of the first wall. You have learnt lots about:

- Manufacture of wool/*wūru* as a fibre/*weu*
- Products made from wool/*wūru*.





EXPLORE

In the drawers below the posters on the wall, you will find many wool/wūru products.

Pull out the drawers with care, then look and explore.

In the table below, name as many products as you can and where they might be used.

You might not have enough information to complete the table below yet. Have another look once you've completed your wool journey.

WOOL/WŪRU PRODUCTS

Are all the products decided or sourced?

CHOOSE SELF, HOME OR WORK	PRODUCT NAME	BENEFIT OF BEING MADE FROM WOOL/WŪRU
Self	Softball/ <i>poiuka</i>	Wool is used at the core of the softball/ <i>poiuka</i> to give it bounce and resilience.
Home/ <i>kāinga</i>	Carpet/ <i>whāriki</i>	Absorbs toxic chemicals, insulates and keeps the house warm.
Work/ <i>mahi</i> or industry/ <i>ahumahi</i>	Wool boom	Wool is a great absorber so is used in the ocean to soak up oil spills.

It is hard to 'pull the wool over your eyes' as you start to realise how special wool/wūru is as a fibre/weu.

Turn to your left, towards the end of the wall, and look at the map of the world.



Look closely at the map. You can see where in the world we send our wool/wūru - read the information to the left of the globe as well.

As you have already discovered, wool/wūru and the wool industry have been a very important part of New Zealand's history. Wool has been the backbone of New Zealand's economy (our ability to make money as a country, through buying and selling things). We sent out wool to the United Kingdom in the early years (some 165 years ago). Now, as you can see, we send our wool/wūru to many countries. It is made into many products.

WHAT DO I MEAN BY THE 'BACKBONE' OF NEW ZEALAND'S ECONOMY?

WHICH COUNTRY DO WE SEND THE LARGEST AMOUNT OF WOOL/WŪRU TO?

CAN YOU WRITE DOWN TWO POSSIBLE REASONS FOR US SENDING MOST OF OUR WOOL/WŪRU TO THIS COUNTRY?

At the bottom of the map, on the right-hand side, you will see a drawing of me pretending to hit a tennis ball/*pāoro tēnehi* all the way up to the United Kingdom. Of course, I can't really hit a ball that far!

But I'm trying to show you how far some of our special New Zealand wool/*wūru* travels, to be made into tennis balls/*pāoro tēnehi* for the famous Wimbledon Tennis Tournament in London.

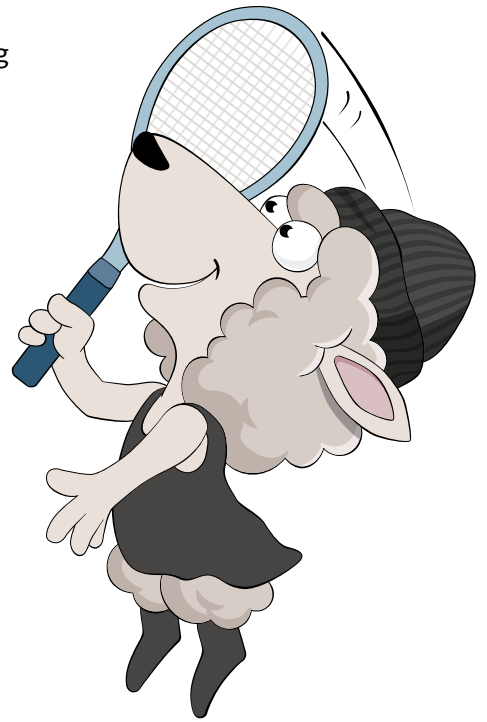
Our wool travels 40,000km from New Zealand to England to be made into felt. Actually the tennis ball/*pāoro tēnehi* flies more than 80,000km in total, across 11 countries and four continents because parts of the process happen in different countries. It has been described as one of the longest journeys for a product and just shows the global nature of production these days. Our wool felt is eventually attached to the rubber of the tennis balls/*pāoro tēnehi*.

When I say 'special New Zealand wool' that's because it is high quality wool/*wūru*, sourced from a variety of sheep/*hipi* breeds. It has to have good crimp/*pirikahu* characteristic (remember the wrinkles in the just shorn wool, called crimp/*pirikahu*). Crimp/*pirikahu* adds the bounce factor – quite important for tennis!

Every single ball is hand tested for bounce, compression and weight, and has to meet this strict rule.

A ball dropped from 100 ft (30.48 m) must:

- bounce between 53 and 58 inches (1.3462m and 1.4732m)
- and weigh 56.7g.



GOLDEN FLEECE QUESTION / HE PĀTAI KOTI WŪRU

HOW MANY TENNIS BALLS/*PĀORO TĒNEHI* ARE USED AT WIMBLEDON EACH YEAR?

- A) 5,000 B) 50,000 C) 500
-

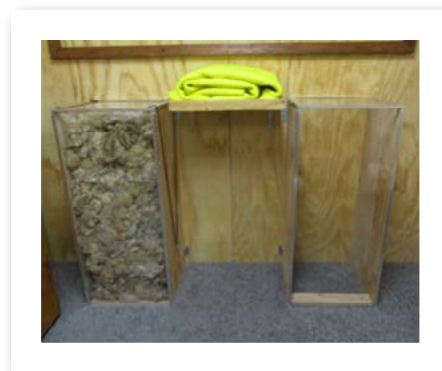
AVERAGE BEDROOM CARPET/*WHĀRIKI* HAS THE WOOL FROM HOW MANY SHEEP/*HIPi*?

- A) 2 SHEEP B) 4 SHEEP C) 6 SHEEP
-

Now look below the TV Screen. There are two containers and a piece of felted fabric folded-up like a blanket.

Container 1 has the wool produced from one sheep's fleece/*koti wūru*. The fabric in the middle is a sample of the wool felt used to cover top level tennis balls/*pāoro tēnehi*, straight from the manufacturer.

SO, CAN YOU GUESS THE NUMBER OF TENNIS BALLS/
PĀORO TĒNEHI MADE FROM THE FELTED FABRIC OF
ONE FLEECE/*KOTI WŪRU*?



**“A TENNIS BALL/*PĀORO TĒNEHI* IS LIKE PLANET EARTH.
ALL THE BETTER FOR BEING WRAPPED IN WOOL”**

WHAT DO YOU THINK THIS STATEMENT MEANS?

WHY IS NEW ZEALAND WOOL SOUGHT AFTER FOR THE TENNIS BALLS/*PĀORO TĒNEHI*?



*My grandfather, Sir Romney Flock started a sheep/hipi farm to sell wool. This was very important for our family and it still provides an income today. However we are only one part of the whole wool industry. No matter how much wool/*wūru* we produce it will be of no use if there are no products made from it.*

Wool is a globally traded commodity (people sell it to make money). It is sent all over the world, including to the other side of the world to make tennis balls and many other things.

You can use wool in lots of ways, and there are increasing opportunities to sell it. For example, you can make and sell woollen/*wūru* apparel and fashion, flooring, interior furnishing, insulation and medical equipment.

USING THE HEADINGS I JUST MENTIONED, NAME SOME OF THE PRODUCTS YOU EITHER ALREADY KNOW ABOUT OR SAW IN THE DRAWERS

Sport:

Work/*mahi* or industry/*ahumahi*:

Flooring:

Interior furnishing:

Insulation:

Medical:






Apparel and fashion:

Can you imagine a 'School Wool Company'? Have a look at the diagram below.

If you had a 'School Wool Company' you would need people doing each of the five jobs in the headings above the arrows.

Which job would you like to do - manufacturing, finance, marketing, operations or research and development? Why?

THE SCHOOL WOOL COMPANY

Manufacturing	Finance	Marketing	Operations	Research and Development
				
Resources	Costs	Promotion -wool properties -values	Planning	Breeding
Processes	Returns		Strategies	Farming
Products	Investment	Competition	HR-Human Resources SR-Sheep Resources	Manufacturing
Quality -Control	World Influence	Read the Label	Legal - Ethics	Processing
	Climate Influence			Product uses



We are now on to a very important part of our journey.

We're going to find out WHY WOOL is an important fibre/*weu*.

First, have a look on the wall, at the picture of my family sitting on wool/*wūru* bales. You can do this too. We have a fleece/*koti wūru* for you to try on for size. You can see what it feels like to be a sheep. You could take a sheepie (our version of a selfie), or get someone else in your group to photograph you.

Let's 'rattle our dags' and get a move on to learn a bit more about wool.

WOOL IS AN ECO-FIBRE/*WEU TAUTAIAO* HERO

WOOL IS ANNUALLY RENEWABLE (WE ALL HAVE A HAIRCUT AT LEAST ONCE A YEAR). CAN YOU THINK OF ANY OTHER NATURAL FIBRE/*WEU MĀORI* AND ARE THEY ANNUALLY RENEWABLE?

WOOL CAN EASILY BE RECYCLED/*HANGARUATIA*. WHY IS THAT IMPORTANT IN TODAY'S WORLD?

WOOL/*WŪRU* IS 100% RENEWABLE IN SOIL. IN YOUR OWN WORDS DESCRIBE WHAT YOU THINK THAT MEANS?

WOOL IS A NATURAL/*MĀORI* SUSTAINABLE/*TOITŪ* RESOURCE, BECAUSE IT USES LESS ENERGY TO PRODUCE THAN MAN-MADE MATERIALS. IT IS ONLY LIMITED BY THE NUMBER OF SHEEP/*HIPI* IN THE WORLD.

WHAT DOES IT MEAN 'IT USES LESS ENERGY TO PRODUCE'? GIVE A REASON WHY.

WHAT ARE SOME OF THE OTHER BENEFITS OF WOOL/*WŪRU* THAT HAVE MADE IT A VALUABLE, POPULAR FIBRE/*WEU* FOR MORE THAN 10,000 YEARS.



WOOL IS GROWN NOT MADE

RAMSAY'S FACT - WOOL/*WŪRU* IS SAFE

Wool is a very safe fibre/*weu* because of its high water and nitrogen content. This makes it naturally flame retardant - to burn, there would need to be more oxygen than is normally available in the atmosphere. When it does burn, wool does not melt, drip or stick to the skin .



Have a look at the video 'Wool Doesn't Burn'.

Wearing wool clothing also provides you with UV protection.

WHAT ARE THREE GOOD REASONS FOR HAVING PRODUCTS MADE OF WOOL/*WŪRU* IN YOUR HOUSE (FOR EXAMPLE, BEDDING AND CARPETS/*WHĀRIKI*)? CAN YOU PUT A REASON WITH EACH OF YOUR ANSWERS?

1.

2.

3.



SIR ROMNEY FLOCK'S FACT – WOOL/WŪRU IS SAFE

Wool does not contain dangerous chemicals and can actually absorb them and clean the air.

Voc's (Volatile organic Compounds) are pollutants in the air. Wool does not produce any voc's and actually absorbs unhealthy and toxic carbons produced by other materials and locks them within the Wool fibres/*weu wūru* core permanently.

Dust mites (a major cause of allergy and asthma suffering) don't like wool, as it does not provide the hot and humid environment they like to live in.

Wool is also a perfect natural/*māori* sound insulating material, as it can absorb both low and high frequency sound.

WHAT ARE VOCS?

HOW DO VOCS GET TRAPPED BY WOOL? AND CAN THEY EVER ESCAPE?

AS HOMES TODAY BECOME MORE EFFICIENT THE MOISTURE FROM HUMAN BREATH AND PERSPIRATION, COOKING AND WASHING CAN CREATE HIGH INDOOR HUMIDITY. WHAT DOES 'HUMIDITY' MEAN?

A WOOL CARPET WILL HELP TO CONTROL HUMIDITY. WRITE IN YOUR OWN WORDS WHETHER YOU AGREE/DISAGREE WITH THIS AND GIVE A REASON WHY.

CAN YOU THINK OF ANY OTHER PRODUCTS IN THE HOME/*KĀINGA* THAT COULD BE WOOL/*WŪRU*? SEE IF YOU CAN LIST AT LEAST FOUR?



BOUNCE'S FACT – WOOL/*WŪRU* IS WARM

Wool has the natural/*māori* ability to breathe. It can also absorb moisture (up to 35% of its own weight) and release humidity (naturally released as vapour) due to its core make up. As a result wool could be termed the original 'smart fibre/*weu*', as it is capable of adjusting to the individual situation and ensuring the correct temperature is maintained. This humidity and temperature control is essential for comfort in both apparel and home/*kāinga* flooring and furnishings.

WOOLLEN CLOTHING ALLOWS OUR SKIN TO BREATHE MORE EASILY, KEEPING US WARM IN WINTER AND COOL IN SUMMER. EXPLAIN HOW WOOL CAN BE SO CLEVER.

AS HOMES TODAY BECOME MORE EFFICIENT THE MOISTURE FROM HUMAN BREATH AND PERSPIRATION, COOKING AND WASHING CAN CREATE HIGH INDOOR HUMIDITY. WHAT DOES 'HUMIDITY' MEAN?

A WOOL CARPET /*WHĀRIKI* WILL HELP TO CONTROL HUMIDITY. WRITE IN YOUR OWN WORDS WHETHER YOU AGREE/DISAGREE WITH THIS AND GIVE A REASON WHY.

WOOL/*WŪRU* IS ABLE TO MOVE MOISTURE AWAY FROM THE SKIN. TRUE OR FALSE.

THE MOISTURE CAN THEN BE RELEASED FROM THE WOOL INTO THE AIR KEEPING OUR CLOTHES DRY AND COOL. TRUE OR FALSE.

GOLDEN FLEECE QUESTION / *HE PĀTAI KOTI WŪRU*

WHAT DO YOU THINK THE WORD 'WICKING' MEANS?



WOOL KEEPS US WARM AS IT TRAPS AIR WITHIN THE FIBRE/*WEU*. THESE AIR GAPS ACT AS A BARRIER AND PREVENT/INCREASE THE LOSS OF BODY HEAT TO THE SURROUNDING COLD AIR. CIRCLE THE CORRECT ANSWER.

CORRIE'S FACT – WOOL/*WŪRU* IS STRONG

Did you know wool fibres/*weu wūru* could be bent 20,000 times without breaking and still have the power to bounce back to its natural/*māori* shape. Wool can last hundreds of years without losing its structure. That makes wool/*wūru* a long lasting fibre/*weu*.

WOOL FIBRES/*WEU WŪRU* ARE STRONG AND THEREFORE PRODUCTS MADE FROM WOOL/*WŪRU* ARE DURABLE AND LAST A LONG TIME. TRUE OR FALSE?

It helps to clean the air by trapping toxic chemicals – home, school

It helps with allergies caused by dust mites – home/*kāinga*, school

It absorbs moisture (humidity) from the air – home/*kāinga*, school

It absorbs perspiration away from the body – self

It is a strong fibre/*weu* so that products made from wool/*wūru* last a long time – self, home/*kāinga*, school

It protects against UV – self, home/*kāinga*

It keeps us warm in the winter and cool in the summer – self

It insulates against noise – home/*kāinga*, school

It provides warm insulation – home/*kāinga*, school

It is natural/*māori*, renewable/*whakahou*, recyclable and sustainable/*toitū*

WOOL – the ultimate smart fibre



NOW YOU KNOW ALL THESE GOOD WOOL THINGS, MAKE THE DECISION TO CHOOSE WOOL/*WŪRU*. AND BE SURE TO READ THE LABEL SO YOU KNOW IT'S WOOL AND NOT AN IMITATION TRYING TO PULL-THE-WOOL-OVER-YOUR-EYES.

NOW IT'S TIME TO SAY GOODBYE ...

Hey there my name is Bounce. You might have seen me earlier, on the bale marked Warm. I live with the flock/*mapu* family.

Today you have seen and felt ramsay's wool, and turned it into yarn.

You have discovered how wool becomes a product that is sold and sent all over the world.

You have also learnt why wool is the smart fibre/*weu* of the future, even though it has been used for 10,000 years.

It's a pretty amazing fibre/*weu*, isn't it?

I have a very special gift for you, to remind you of your journey through The Woolshed / *Teihana Kuti Hipi* (and maybe remind you of me)!



I hope you enjoyed your visit to The Woolshed / *Teihana Kuti Hipi*.

Remember to take your shoes with you, as you go back out the door you came in.

Baa, baaaa. I mean bye bye.

WOOL/WŪRU IN SCHOOLS

Te Reo Māori Glossary

Kupu	English Translation
Wūru	Wool
Hēti wūru	Wool shed
Kaikutikuti	Shearer
Kuti hipi	Shearing
Hipi	Sheep
Kaiāwhina	Rousie / sheep handler
Kuti (-a)	Shorn
Toitū	Sustainable
Pirihō	Fleece
Hinuhinu	Greasy
Waku (ā)	Scoure (-ed, -ing)
Wani	Combed
hīeweewe	Carding
Pātiki	Paddock
Hinuwūru	Lanolin
Weu	Fibre
Kōripi wūru	Wool sliver
Waitai (-hia)	Dye (-ing)
Takahurihuri	Spun
Mihini takahuri	Spinning machine
Wīra takahuri	Spinning wheel
Takahuri wūru	Spin wool
Pū wūru	Rolag
Porotaka wūru	Drop spindle
Niho	Teeth (of card)
Paraihe	Brush
Kōtui (tui)	Knitting
Papawūru	Felting
Whatu (a)	Weaving
Ipu wūru	Bowls
Pūnaha hangarua	Recycling systems
Hangarua	Recycle
NA	Environmental accreditaton
Kāinga	Home
Mahi	Work
ahumahi	Industry
NA	Wool boom
Poiuka	Softball

Kupu	English Translation
Whāriki	Carpet
Pāoro tēnehi	Tennis ball
Pirikahu	Crimp
whakahōu	Renewable
pōpopo	Biodegradeable
māori	Natural
Ramahe	Ramsay
Romene	Romney
Māpu	Flock
Peke	Bounce
Kori	Corrie
NA	wicking