Wool in Schools

Teaching and Learning Activities

THE CAMPAIGN FOR WOOL

Kia ora & Haere Mai!
Hello & Welcome!

These activities are designed to further develop your students' understanding and knowledge of the NZ Wool industry (and to realise how awesome wool is!)

The activities have been designed to suit primary and intermediate aged students.

We have deliberately not put specific year levels on the resources as we know not all students abilities, needs and interests match their level or age. Have a look through and decide what would best suit your ākonga.

Make sure you check out the **Teacher Notes and Guide** for more information, tips and ideas for using these resources alongside the container.

A few notes...

3RD PARTY APPS, SITES AND VIDEOS

Some of our resources use 3rd party links and sites like YouTube, Book Creator etc. Being a 3rd party site means we have no control over any changes they make that may impact the resources. Some require sign ups. We have checked and chosen 3rd party sites that are frequently used in education settings. We endeavour to check and update our resources to make sure links and topics are relevant and working.

It is your responsibility to check all 3rd party apps and YouTube videos are suitable for your students and are approved in your school setting.

A NOTE ON SAFETY WITH SCIENCE EXPERIMENTS

Always read the instructions carefully. Wear protective clothing, glasses and gloves. If in doubt as to whether your students can do this safely, model this or get other adults to help. We advise not letting children handle matches, lighters, hot plates, stoves, ovens, hot water, etc.

You are responsible for the risks and for the safety of yourself and others.

What's inside?

Container **scavenger hunt**

When you visit the container, can you find/spot these items or complete these challenges?

- ☐ **1** How many tennis balls are there in the wall? _____
- ☐ **2** Who donated the carpet in the container? Look for the little sign!

  _____
- ☐ **3** Have a look inside the Peak Pots box. What are the 3 seed packets in there?

  _____
- ☐ **4** Find the sheepskin off cuts. How many are there? _____

  What shapes are there? _____
- ☐ **5** Smell the lanolin. What do you think?

  _____
- ☐ **6** There is a coat for an animal in one of the drawers. What animal is it for?

  _____
- ☐ **7** What are the numbers on the big knitting needles? _____
- ☐ **8** Open the All Birds shoe box. What colour are the shoes? _____
- ☐ **9** How many triangle shapes can you count on the wool panel? _____
- **10** Can you find these:
  - ☐ Shearer's hand piece
  - ☐ Wool boom for the boat
  - ☐ 2 little tigers
  - ☐ Find a toy made of wool
  - ☐ Toadstool – What's inside?

    _____
  - ☐ Sheets of tennis ball felt
  - ☐ Dryer balls – How many are there?

    _____
  - ☐ Find the fleece/sheep skin
  - ☐ The egg, egg cup and egg cosy

Order the **process**

Cut and glue the tiles at the bottom of the page to show the process of how wool is made.

Put them in order.

HINT: Have a look at the fact file if you're stuck!

1	2	3	4
5	6 → 10	11	12

SHEARING

CARDING & COMBING

WASHING & SCOURING

RECYCLING

FINAL PRODUCT

PROCESSING

PACKAGING

GROWING

THE CAMPAIGN FOR WOOL

Order the **process**

Drag and drop the tiles at the bottom of the page to show the process of how wool is made.

Put them in order.

HINT: Have a look at the fact file if you're stuck!

1	2	3	4
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SHEARING

CARDING & COMBING

WASHING & SCOURING

RECYCLING

FINAL PRODUCT

PROCESSING

PACKAGING

GROWING

Matchy matchy

Match the wool processing technique with the description.

WEAVING

Loose fibres of wool are twisted together to make a longer and stronger fibre called yarn.

SPINNING

A special machine weaves the yarn together to make them into a fabric.

DYEING

The carded wool is rubbed together with water and soap, which matts it into a special cloth.

KNITTING

Wool can be dyed any colour!

FELTING

Creating a fabric by interlacing yarn loops.

Literacy
Activities

Writing prompts

Get your pencils and keyboards ready... Here are some great writing ideas to try!

DESCRIBING WOOL

Use our templates or write down some adjectives to describe the wool you felt in the wool shed.

WOOL ACROSTIC POEM

Create an acrostic poem about wool. You can use the word wool or pick another woolly word.

FIVE FACTS ABOUT WOOL

Research or find 5 facts about wool. Make a fact file or flip book to share with a classmate or your whānau to teach them about wool.

TIME'S UP

Set a 2 minute timer and write down every word you can think of that has to with the wool!

Do it with a small group or your class and for every word that you have the same you both get a point!

Bonus points if it is te reo Māori.

NEWS REPORT

Find an article about wool on **stuff.co.nz** or from our suggestions on the literacy links page.

Use information from the article to write a script for a news report. Record yourself on iMovie, Seesaw or Flip.

SHEEP SCHEDULE

Imagine you are a sheep - what might your day look like?

Have a quick watch of this episode of **The Pen**. Could you make your day as a sheep more exciting? Create a schedule for your day as a sheep.

SHREK THE SHEEP

Research and find out more about Shrek the sheep. You can **watch a video about him here**. Then imagine you are Shrek! What is a day in your life like?

CREATE A QUIZ

Write a quiz about wool for a classmate to quiz them about what they have learned about wool. You could make it on Google Forms or on paper.

FLOWCHART

Create a flow chart of the process of farm to fibre. How is wool made?

RECOUNT YOUR VISIT TO THE CONTAINER

Write down some things you saw in the container. What did you learn? What did you see? What did you touch? What was your favourite part?

MAKE AN AD

Pick a wool product and create an advert poster for that wool product. Include some benefits of why wool is so great!

PERSUASIVE WRITING

Write a persuasive argument for why we should use more wool in our product manufacturing.

MAKE A DESIGNER SHEEP

Create a "designer" sheep, selecting specific traits from different breeds to create a new breed.

Use **Sheep Breeds New Zealand** to find out about the traits.

Describing **wool**

Remember touching the wool in the wool shed?
Write some adjectives to describe how it looked, felt and smelt!

TYPE OF WOOL: GREASY WOOL

FEEL?

LOOK?

SMELL?

Describing **wool**

Remember touching the wool in the wool shed?
Write some adjectives to describe how it looked, felt and smelt!

TYPE OF WOOL: SCOURED WOOL

FEEL?

LOOK?

SMELL?

Describing **wool**

Remember touching the wool in the wool shed?
Write some adjectives to describe how it looked, felt and smelt!

TYPE OF WOOL: COMBED WOOL

FEEL?

LOOK?

SMELL?

Describing **wool**

Remember touching the wool in the wool shed?
Write some adjectives to describe the different types of wool!

GREASY WOOL

Type here or delete if printing

SCOURED WOOL

Type here or delete if printing

COMBED WOOL

Type here or delete if printing

Question cards

Use these question cards to prompt writing, research or kōrero.

Do you think shearing is hard?

Why?

What makes wool so special?

Why choose wool?

Have a look at Wool Aid.

Why are their plasters better for the environment?

Question cards

How many sheep are there in New Zealand?

What is felting?

Find a product made from felted wool.

Why would you wear wool instead of other materials?

What is the fastest record for shearing sheep?

Question cards

Are there any other animals that produce wool?

What are they?

What are some of the different types of wool?

What are some common items we use or wear that are made from wool?

What do they use wool for in Scotland?

Discussion cards

Use these prompts as a starting point for debate, writing, opinion, research or discussion.

Why does NZ wool have such a good reputation for producing quality wool?

The wool industry has been an important part of New Zealand's economy for many years. What are some of the challenges it faces today?

How has the demand for wool changed in recent years, and what factors have contributed to these changes?

What are some innovations or advancements in wool technology that are being developed in New Zealand?

How has the COVID-19 pandemic impacted the wool industry in New Zealand?

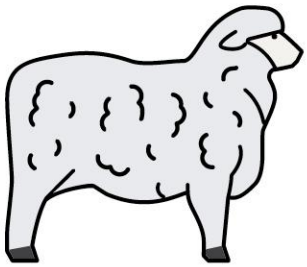
What are some potential environmental benefits of using wool?

How can the wool industry support the development of local communities and promote economic growth in rural areas?

What are some opportunities for collaboration and partnership between the wool industry and other industries, such as fashion, agriculture, or technology?

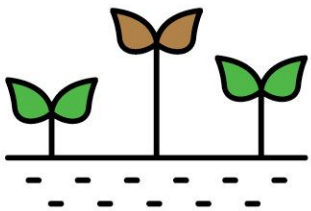
Why is wool **so wonderful?**

CLICK HERE TO LISTEN

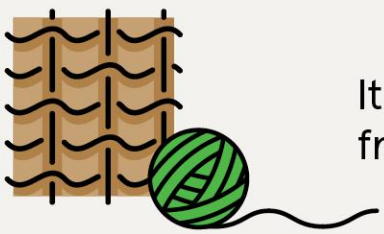


Wool comes from sheep, and it's soft and cosy like a blanket or sweater. You can use it to make all kinds of things, like clothes and toys.

It is a natural fibre and can keep you cool when it's hot and warm when it's cold. That's why it is great for making clothing, like jumpers and hats.



Wool is good for the environment. It breaks down quickly and is safe if it gets into the oceans, unlike plastic.



It's also very strong, which means things made from wool can last a long time.

So, wool is a great choice for making all sorts of products!

Why is wool **so wonderful?**

Fill in the gaps with the words from the box to make the sentences make sense.

environment		strong	fibre
soft	plastic	products	sheep

Wool comes from _____, and it's _____ and cosy like a blanket or sweater. You can use it to make all kinds of things, like clothes and toys.

It is a natural _____ and can keep you cool when it's hot and warm when it's cold. That's why it is great for making clothing with, like jumpers and hats.

Wool is good for the _____. It breaks down quickly and is safe if it gets into the oceans unlike _____.

It's also very _____, which means things made from wool can last a long time.

So, wool is a great choice for making all sorts of _____!

Why is wool **so wonderful?**

Complete the comprehension questions and vocabulary tasks.

What kind of animal does wool come from?

_____

What are some things you can make with wool?

_____

_____

Why is wool a good material for making clothing?

_____

_____

_____

Why is wool better for the environment than plastic?

_____

_____

Find the **synonym** and **antonym** for these words:

WORD	**SYNONYM** (same)	**ANTONYM** (opposite)
Hot	warm	cold
Strong		
Natural		
Soft		

Why is wool **so wonderful?**

CLICK HERE TO LISTEN

Wool is an amazing material that has been used for thousands of years to make all kinds of useful and beautiful things. One of the reasons wool is so great to make products from is that it is a natural fibre. That means it comes from a living thing - sheep! - and not from a factory or chemical process. Because wool is natural, it is soft, warm, and breathable, which means it's comfortable to wear and use.

Another reason wool is so great to make products from is that it is incredibly versatile. Wool can be spun into yarn, which can be knitted or crocheted into all sorts of things like hats, scarves, and blankets. It can also be woven into fabric to make clothes, bags, and even rugs!

Wool is also very durable, which means products made from wool can last a long time and be passed down from generation to generation. So whether you're looking for a cosy sweater or a sturdy rug, wool is an excellent choice for making all kinds of products!

Why is wool **so wonderful?**

Fill in the gaps with the words from the box to make the sentences make sense.

natural	useful	yarn	cosy	versatile
comfortable	fabric	durable	chemical	
excellent	breathable	blankets	material	

Wool is an amazing _____ that has been used for thousands of years to make all kinds of _____ and beautiful things. One of the reasons wool is so great to make products from is that it is a _____ fibre. That means it comes from a living thing – sheep! – and not from a factory or _____ process. Because wool is natural, it is soft, warm, and _____, which means it's _____ to wear and use.

Another reason wool is so great to make products from is that it is incredibly _____. Wool can be spun into _____, which can be knitted or crocheted into all sorts of things like hats, scarves, and _____. It can also be woven into _____ to make clothes, bags, and even rugs!

Wool is also very _____, which means products made from wool can last along time and be passed down from generation to generation. So whether you're looking for a _____ sweater or a sturdy rug, wool is an _____ choice for making all kinds of products!

Why is wool **so wonderful?**

Complete the comprehension questions and vocabulary tasks.

1 Where does wool come from?

2 What are 4 properties of wool that make it comfortable to wear and use?

3 What are some things that can be made from wool?

4 Why is wool considered a versatile material?

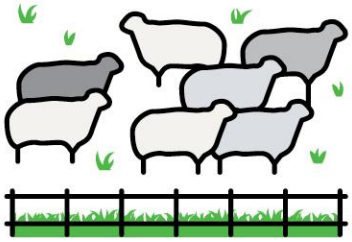
5 Can products made from wool be passed down from generation to generation?

6 Find 3 adjectives, 3 verbs and 3 nouns from the text and add them to the box. We've done one of each for you!

ADJECTIVES	VERBS	NOUNS
amazing	spun	wool

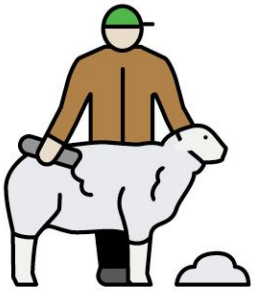
How is **wool made?**

CLICK HERE TO LISTEN



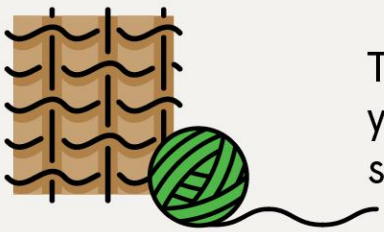
In New Zealand, there are many farms with lots of sheep.

These sheep have special fur called wool that can be made into warm and cosy things.



The farmers take good care of the sheep and when their wool gets too long, they give them a haircut called shearing.

It doesn't hurt the sheep and they feel much better afterwards.



Then the wool is cleaned and made into soft yarn that can be used to make blankets, sweaters, and hats.

So, next time you use something made of wool, remember it came from a happy and fluffy sheep on a farm!

How is **wool made?**

Fill in the gaps with the words from the box to make the sentences make sense.

wool		**hurt**	**hats**
farms	**sheep**	**cleaned**	**happy**

In New Zealand, there are many _____ with lots of sheep.

These sheep have special fur called _____ that can be made into warm and cosy things.

The farmers take good care of the _____ and when their wool gets too long, they give them a haircut called shearing.

It doesn't _____ the sheep and they feel much better afterwards.

Then the wool is _____ and made into soft yarn that can be used to make blankets, sweaters, and _____.

So, next time you use something made of wool, remember it came from a _____ and fluffy sheep on a farm!

How is **wool made?**

Complete the comprehension questions and vocabulary tasks.

What is the special fur that comes from sheep called? _____

What is it called when farmers give sheep a haircut to remove their wool?

_____

What happens to the wool after it comes off the sheep?

_____

What kinds of things can be made from wool?

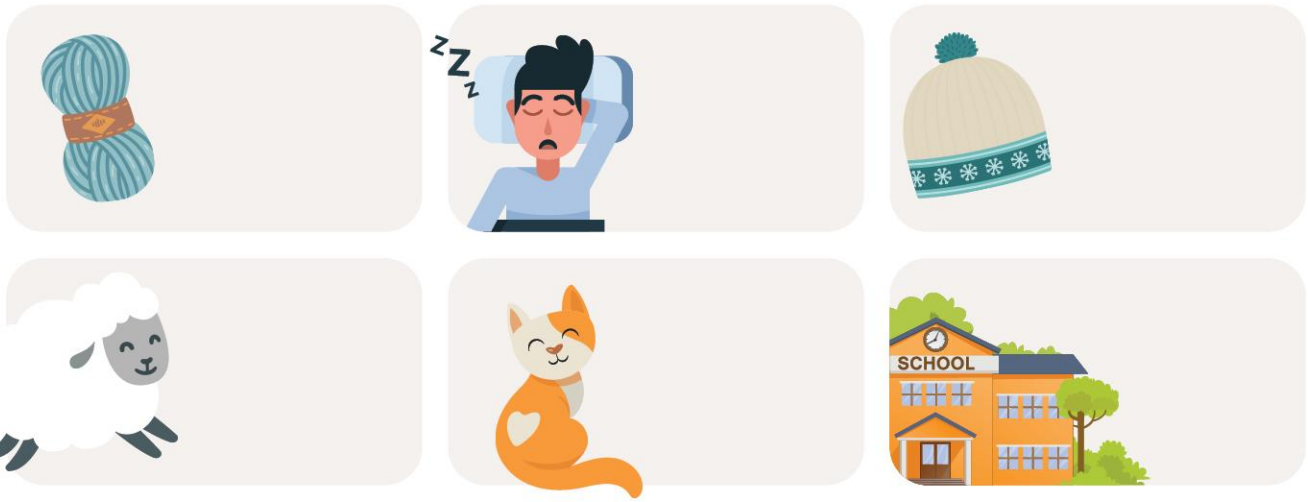
_____

_____

Can you think of any other animals that have wool or fur used to make items?

_____

Match the pictures that rhyme and write or type the word beside the picture:



How is **wool made?**

CLICK HERE TO LISTEN

On farms all around Aotearoa, New Zealand there are millions of sheep grown for their wool. They are well looked after by farmers to grow big and healthy.

Wool is a special kind of fibre that comes from the fluffy coats of sheep. These sheep are carefully raised on farms. Once the sheep's wool has grown long enough, it's time for the farmers to carefully remove it. This is called shearing, and it's like giving the sheep a big haircut and it doesn't hurt the sheep! The farmers use special tools to carefully cut the wool off the sheep, making sure not to hurt them.

After the wool has been shorn, it's cleaned and processed to make it soft and ready to use. This involves washing it, carding it (removing the knots), combing and spinning it into yarn. From there, the wool can be made into all kinds of cosy things like blankets, sweaters, and hats. So, the next time you snuggle up in a soft wool blanket, you can remember that it all started with a fluffy sheep on a farm!

How is **wool made?**

Fill in the gaps with the words from the box to make the sentences make sense.

carefully	raised	Aotearoa	millions
hats	shears	fibre	sheep	processed
haircut	farmers	carding	yarn

On farms all around _____, New Zealand there are _____ of sheep grown for their wool. They are well looked after by _____ to grow big and healthy.

Wool is a special kind of _____ that comes from the fluffy coats of sheep. These sheep are carefully _____ and looked after on farms. Once the sheep's wool has grown long enough, it's time for the farmers to _____ remove it. This is called _____, and it's like giving the sheep a big _____ and it doesn't hurt the sheep!

The farmers use special tools to cut the wool off the sheep, called _____ or clippers. After the wool has been cut off, it's cleaned and _____ to make it soft and ready to use. This involves washing it, _____ (removing the knots), combing and spinning it into _____.

From there, the wool can be made into all kinds of cosy things like blankets, sweaters, and _____ So, the next time you snuggle up in a soft wool blanket, you can remember that it all started with a fluffy _____ on a farm!

How is **wool made?**

Complete the comprehension questions and vocabulary tasks.

1 What animal is grown for its wool in New Zealand? _____

2 How are sheep looked after on farms?

_____

3 What is shearing?

_____

_____

4 Does shearing hurt the sheep? _____

5 What is done to the wool after it is cut off the sheep?

_____

_____

6 What kinds of things can wool be made into?

_____

7 Put these words into alphabetical order:

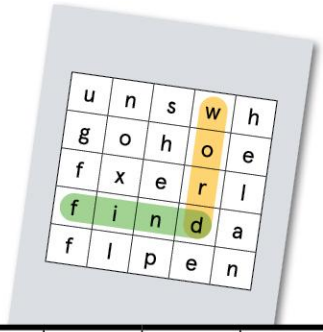
fibre, spinning, sheep, farmers, Aotearoa, cosy

8 ee and oo

Sheep and wool are examples of words that have double same vowels in them. Can you come up with some more?

Woolly **wordfind**

Can you find these words about wool?



b	o	n	f	g	c	h	y	u	n	s	s	h
v	b	c	o	m	b	i	n	g	o	h	e	e
p	a	a	y	h	n	d	v	f	x	e	h	l
f	a	r	m	v	b	u	s	c	r	e	p	a
d	r	d	n	b	c	y	u	f	l	p	e	n
e	c	i	e	l	a	n	f	o	l	i	n	o
b	a	n	l	e	w	o	l	o	l	o	e	l
r	s	g	c	b	a	l	e	a	r	d	i	i
l	e	e	c	f	l	r	e	s	v	b	y	n
n	w	o	o	d	e	m	c	a	r	b	i	n
w	o	o	l	f	i	l	e	b	e	g	g	i
n	y	o	u	n	o	o	l	w	m	z	r	s
r	i	n	g	s	s	h	e	a	r	i	n	g

wool **sheep** **shearing**

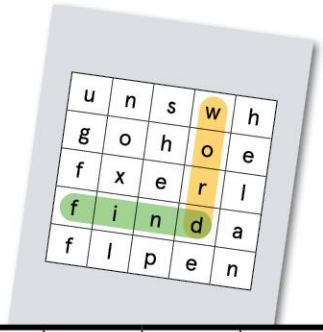
fleece **lanolin** **bale**

combing **farm** **carding**

THE CAMPAIGN FOR WOOL

Woolly **wordfind**

Can you find the 14 benefits of wool?



b	i	o	d	e	g	r	a	d	a	b	l	e
e	s	u	n	s	c	r	e	e	n	p	s	r
a	o	r	o	o	s	t	r	o	n	g	r	u
u	f	e	e	r	r	c	a	d	n	d	a	t
t	t	o	c	a	e	n	y	o	t	h	b	a
i	i	n	o	g	n	r	a	r	c	h	s	r
f	e	l	l	t	e	o	n	i	i	s	o	e
u	a	m	o	a	w	z	i	s	n	g	r	p
l	o	n	g	l	a	s	t	i	n	g	b	m
m	s	o	i	p	b	a	y	n	h	e	e	e
r	r	h	c	e	l	a	p	g	s	y	n	t
a	o	u	a	i	e	d	i	o	t	s	t	h
w	o	n	l	g	l	h	e	a	l	t	h	y
n	o	n	f	l	a	m	m	a	b	l	e	b

warm **absorbent** **deodorising** **strong** **beautiful**

renewable **biodegradable** **temperature** **non-flammable**

long-lasting **ecological** **sunscreen** **healthy** **soft**

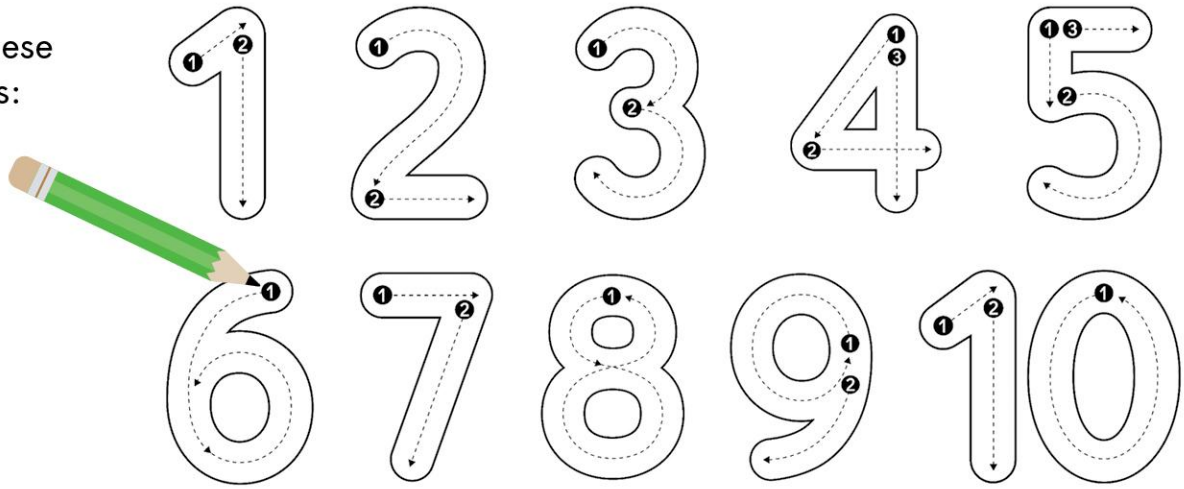
Numeracy
Activities

STAGE 2–3

Woolly **problems**

Count how many sheep there are:

Trace these numbers:

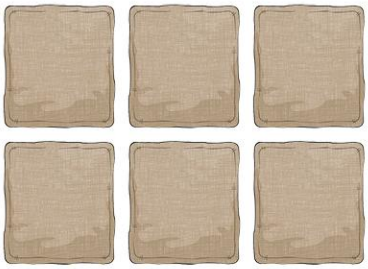


Colour the next ball of wool in the pattern:

Add 2 more sheep to the paddock:

+ 2 = ☐

There are 6 wool bales. 3 bales were sold. How many are left?



– 3 = ☐

Woolly **problems**

STAGE 4

There are 6 sheep. Double them: _____

kg stands for: _____. This is the weight of an item or object.

Order these bales from smallest amount of kg to largest. Put a 1 under to the largest, then a 2 under to the next largest until all bales have a number.

_____ _____ _____ _____ _____

Here are 4 balls of wool to be split between 2 people. How much wool would each person get?

_____

Each sheep has 4 legs. How many legs are there altogether?

_____

THE CAMPAIGN FOR WOOL

STAGE 5–6

Woolly **problems**

1. If a sheep has 4 legs, how many legs do 8 sheep have altogether?

2. Farmer John has 10 sheep. If he shears 2 sheep every day, how many days will it take him to shear all the sheep?

3. A farmer has 30 balls of wool. If each ball of wool weighs 100 grams, how many kilograms of wool does the farmer have?

4. A sheep can produce 2.5 kg of wool each year. How much wool can 4 sheep produce in 2 years?

5. A farmer has a field that can hold 50 sheep. If he has 60 sheep, how many sheep does he need to move to another field?

6. If a sheep eats 2 kilograms of hay every day, how much hay will it eat in 5 days?

7. A farmer has 100 bales of hay. If each bale of hay weighs 50 kg, how much hay does the farmer have in total?

8. The wool from one sheep can make 5 sweaters. If a farmer has 20 sheep, how many sweaters can he make in total?

9. If each sheep produces 2 kg of wool, and Farmer Joe has 14 sheep, how many kg of wool does he have in total?

10. If it takes 2 bags of feed to feed 1 sheep for a week, how many bags of feed will Farmer John need for his 10 sheep for a week?

11. If it takes 3 shearers to shear 20 sheep in a day, how many shearers will Farmer Sue need to shear her 15 sheep in a day?

Digital Activities

Digital tasks

Find some digital activities here to engage and excite your ākonga and get them creating!

PĀTAITAITANGA - QUIZ

Create a pāitaitaitanga - quiz on **Kahoot** or Google forms for a classmate!

Check out our **word set** on Quizlet for some ideas.

Teachers - check out our **wool Quizlet here** and play live with your class!

MAPI - MAP

Explore the places on **Google Earth** that we export wool to.

Use Google Earth Projects to create a tour of the places we export wool to.

PUKAPUKA - BOOK

Use **Book Creator**, or Google Slides to create a book all about wool or the story of a sheep!

Check out our pukapuka we made about the how wool is made on Book Creator:
How is Wool Made?

MEKA PUKAPUKA - FACT BOOK

Create your own fact file on a sheep breed - **use our Google Slides template!**

WAEHERE - CODE

Use **Scratch** or Scratch Jr to make an animation about wool or sheep! Or you could create a wool themed game.

Check out our **wool catching game here**
Learn **how to make this game here**
Or **this game** made by another Scratcher!

PANGA - PUZZLE

Create your own word find with some wool themed words you have learned!

Make it digital
Make it on Google Docs or print

PĀNUI WHAKAAHUA - POSTER

Create your own poster on **Canva** or Google Drawings to share the one or more benefits of wool!

RANGAHAU - RESEARCH

Explore our curated collection of websites, videos and articles about wool on **Wakelet**.

KIRIATA - MOVIE

Check out these stop animations made with clay about sheep:
Shaun the Sheep
The Pen NZ - Schedule

Can you make your own stop animation showing how wool is made?

MAHIMAINA - MINECRAFT

Explore and complete challenges in our Minecraft World!

Teachers check out our top tips on using this Wool world and challenges in your classroom.

Minecraft
Activities

Woolly **Minecraft Challenge**

Suggested age level: Year 3+
(there is a bit of reading needed)

TEACHER NOTES

This world is built like a scavenger hunt where students complete a series of challenges related to the wool industry and get to put some of their wool learning into virtual action!

It is designed to challenge students to look, search, read, and problem solve! We have created a step-by-step guide which you could give to your students (or you could use as a guide) depending on how much support they need.

TEACHER TIPS

- If your students are new to Minecraft they would need to learn/know the basics before doing this challenge.
- This world is designed for students to be working in independently, it is not designed to be a collaborative task.
- Although, you could pair students up in real life - 2 students to 1 device and 1 Minecraft character in the world.
- Students will need to have Minecraft already installed on their device. They will then need to download the world from the folder on their own device.
- You will need to share the folder. **Here is the link.**
- You could give students the step-by-step guide to make it easier for them to follow/tick off/read.
- There is a bit of reading required - Minecraft has an immersive reader function. When you talk to a person in the game, students can click the icon that looks like this:

  Immersive Reader

  It will open a tab and read the words to the student.

Woolly Minecraft Challenge
Task List

- [ ] Download the world onto your device.
- [ ] Meet the shepherd. Click on them to find out challenge.
- [ ] Read how to lure a sheep.
- [ ] Get some wheat.
- [ ] Find the missing sheep.
- [ ] Lure the sheep back into the paddock and shut the gate.
- [ ] Go see the farmer in the barn. Click on them to find out the challenge.
- [ ] Read how to shear a sheep in the barn.
- [ ] Get the shears and shear the sheep in the paddock.
- [ ] Go see the farm hand. Click on them to find out the challenge.
- [ ] Put wool blocks in the delivery station.
- [ ] Go to the factory and find the factory boss. Click on them to find out the challenge.
- [ ] Use the wool dying station to dye any wool that is not already white.
- [ ] Go visit the manager at the hotel. Click on them to find out the challenge.
- [ ] Go to the factory and make 12 tiles of carpet.
- [ ] Take the carpet back to the hotel and lay it in the gaps.
- [ ] Go and find the housekeeper. You will need to look through the rooms to find her. Click on them to find out the challenge.
- [ ] Go to the factory and make 3 beds.
- [ ] Take the beds to the hotel and put them in rooms 1, 3, 6.
- [ ] Go and visit the factory worker in the factory. Click on them to hear what they have to say.
- [ ] Go and see the sheep you sheared before.

You are all done! Ka Rawe!

Woolly Minecraft Challenge
Notes

Click on this link which will take you to the woolly world file.

Once open, double click on the file or click this icon in the top right corner:
It will open in Minecraft and pop you straight into the world.

You will be dropped in next to the sheep paddock and the shepherd.
He's got a problem that he needs your help to solve!

1: MEET THE SHEPHERD

One of my sheep has escaped from the paddock. It's an Arapawa, a rare NZ breed of sheep. His wool is brown – you'll see him. You need to lure him back in.

Read the sign below to learn how to lure that naughty sheep back into the paddock! He could be anywhere – get looking.

Thank you!

HOW TO LURE A SHEEP:

Step 1: Get some wheat from the farm on the other side of the barn.

Step 2: While the wheat is in your hand, all sheep that you're close to will follow you.

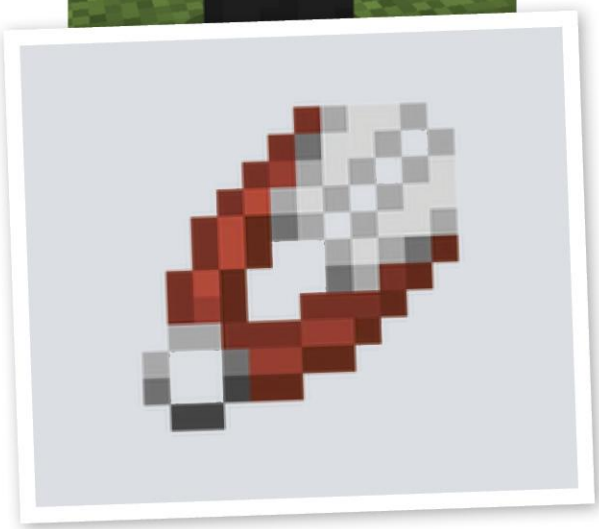
TIP: You can open the gate by right clicking on it or tap the gate if you are on an iPad.

Woolly Minecraft Challenge **Notes**

2: GO SEE THE FARMER IN THE BARN

It's that time of the year to shear my sheep. My shearer has called in sick, so I need your help!

Read how to shear the sheep on the wall next to me and get shearing!



HOW TO SHEAR A SHEEP:

Step 1: Get the shears from the box on the ground.

Step 2: Make sure the shears are in your hand.

Step 3: Walk up to an unshorn sheep.

Step 4: Right-click the sheep if you're using a mouse or two finger tap on your touchpad or tap and hold on an iPad or touch screen.

Woolly Minecraft Challenge **Notes**

3: GO SEE THE FARMHAND

(She is beside the wheat field)

Ka rawe! Nice job shearing the sheep! You now need to gather the wool blocks.

Then put the wool blocks in the chest at the Wool Delivery Station next to the paddock.

Did you know that a bale of wool weighs about 180kg and contains about 20–30 fleeces.

WOOL DELIVERY STATION

HOW TO USE:

Step 1: Open the chest and put in all your wool blocks.

Step 2: Press the button to send the cart to the factory. It will travel underground and pop up in the factory.

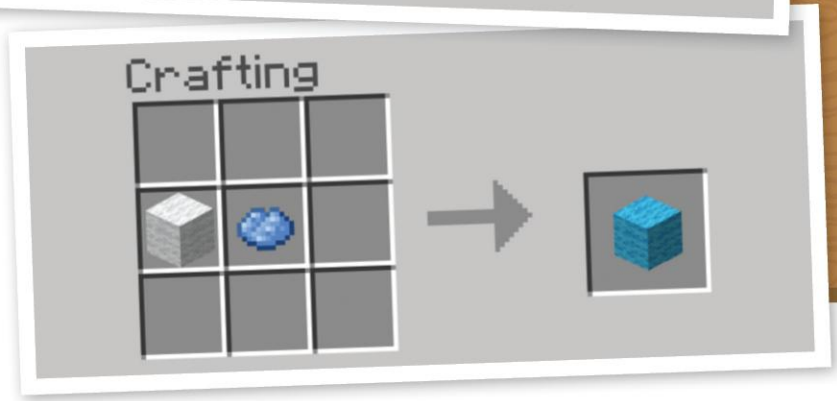
TIP: If you lose or break the minecart there is a spare beside the station.

Woolly Minecraft Challenge
Notes

4: GO TO THE FACTORY AND FIND THE FACTORY BOSS

The wool has been scoured/ cleaned and carded and combed.

Time to dye any wool that's not white. Take it out of the chest and go to the wool dyeing station and use the bleach.



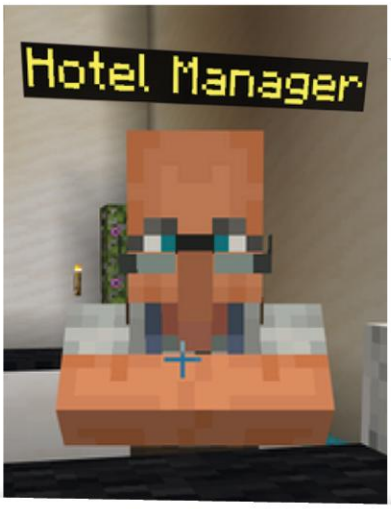
WOOL DYEING STATION

Step 1: Get the bleach/ dye out of the chest.

Step 2: In the crafting table, add 1 bleach/dye for 1 block of wool.

Woolly Minecraft Challenge
Notes

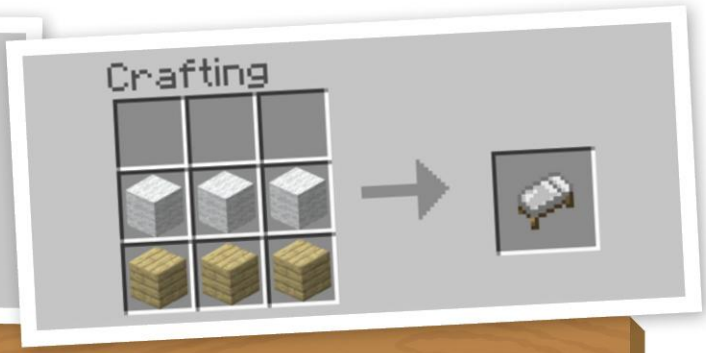
5: GO VISIT THE MANAGER AT THE HOTEL



Kia ora! We had a leak in our roof and some of our beautiful wool carpet needs replacing.

We need 12 tiles of carpet. It needs to be light blue. Wool is a great insulator and helps block sound.

Anyway, head back to the factory and get making!



TO MAKE CARPETS:

Make sure you have dyed the wool the colour you need **FIRST**.

Open the crafting table put two blocks of wool in spaces next to each other.

TIP: For every 2 blocks of wool it will make 3 tiles of carpet.

Can you remember how many tiles the hotel manager said he needed?

TO MAKE BEDS:

Make sure you have dyed the wool the colour you need **FIRST**.

Open the crafting table, add three blocks of wool and three planks of wood underneath.

TIP: The blocks need to be in spaces next to each other.

Once you have made your carpet take it back to the hotel and lay the carpet in the gaps.

Woolly Minecraft Challenge **Notes**

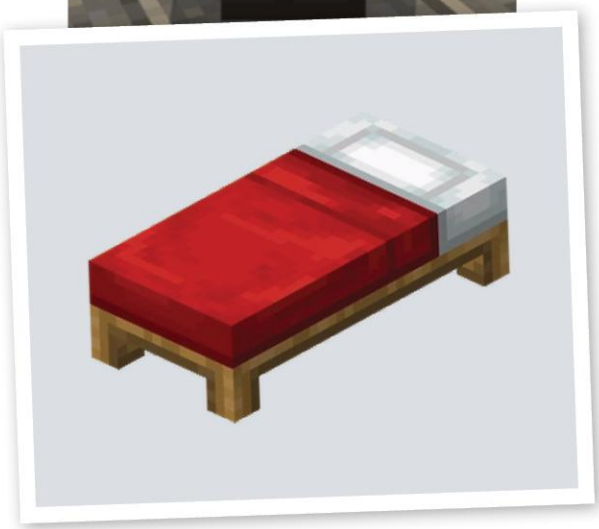
6: THEN GO CHAT TO THE HOUSEKEEPER

(You will need to look through the rooms to find her)

Oh hi there! The Hotel has decided to replace its bedding with wool bedding because it keeps you warm in the winter and cool in the summer!

I need you to make 3 beds for rooms 1, 3, 6. You can choose what colour you dye them! Just remember each room needs a double bed in it, so that will be two beds per room.

Head back to the factory and get making!



Once you have made your beds take them to the hotel and put them in the right rooms. Then head back to the factory and see the factory worker.

Woolly Minecraft Challenge **Notes**

7: TALK TO THE FACTORY WORKER

Thanks so much for all your help - you're all done! Go back to the farm and see what has happened to your sheep! Has the wool grown back? That's because wool is a renewable resource!

You did it!

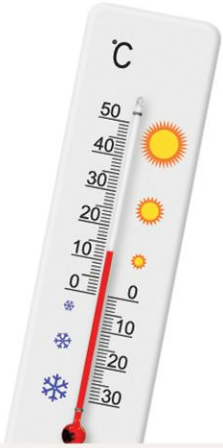
Ka rawe!

Thanks for all your mahi

Art Activities

Make a yarn thermometer

Make and measure the temperature with these yarn thermometers by pulling the string. Bonus maths too!



MATERIALS

White paper

Cardboard

Scissors

Glue

Red yarn and white yarn

METHOD

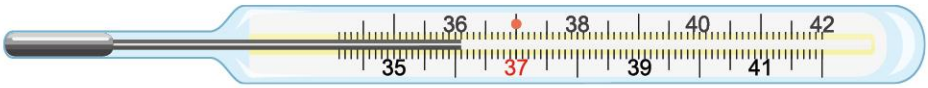
1. Cut your pieces of cardboard and paper to the same size (20cm x 15cm).
2. Draw and colour a thermometer on the paper or use **this template**.
3. Add measurements (degrees celsius) to your thermometer.
4. Glue the paper to the cardboard.
5. Cut or use a hole punch to make a round hole at the top and bottom of the thermometer (see template for example)
6. Measure the gap between the two holes. Cut the red and white yarn 5cm more than the length of the gap.
7. Thread the yarn through the holes and tie the red yarn and white yarn together at both ends with a knot so it can be pulled through in a circle motion.

TIP:

In New Zealand we use degrees celsius!

DID YOU KNOW?

Old glass thermometers used to contain **liquid mercury**. It expands even with the smallest rise in temperature.



Images from and lesson inspired by: **Craftlian**

THE CAMPAIGN FOR WOOL

Finger knitting

Watch the video tutorial here:

https://onelittleproject.com/finger-knitting/

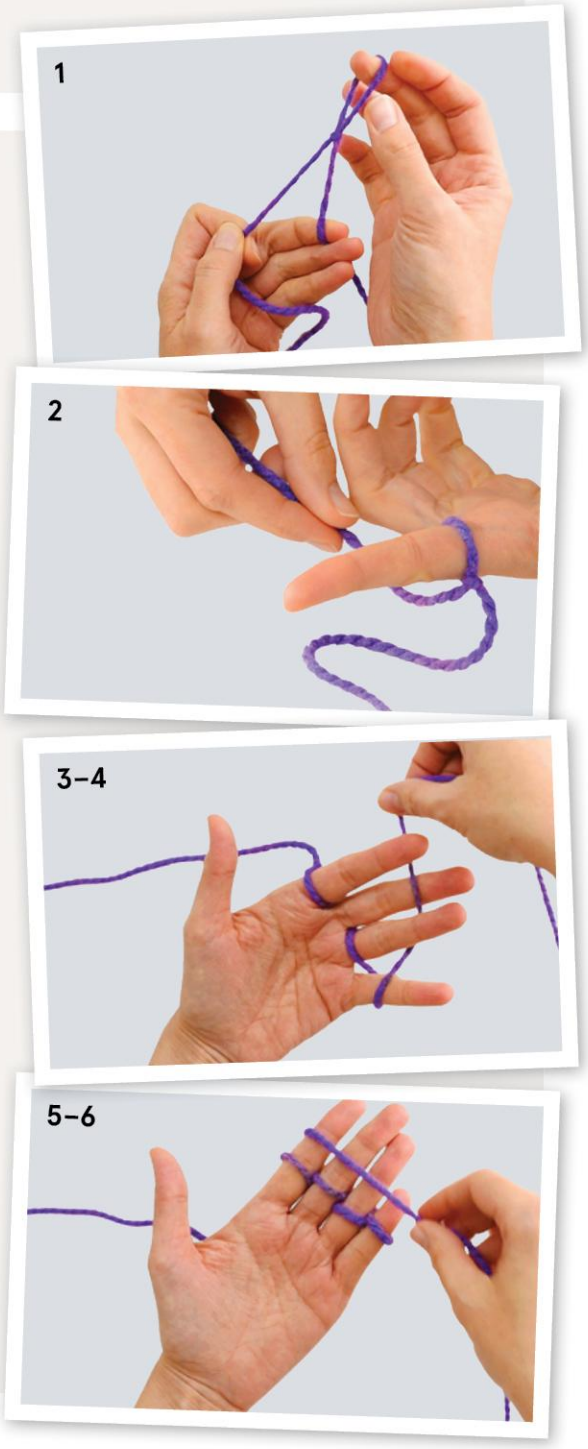
Let's make a bracelet!

MATERIALS

Yarn & your hands!

METHOD

1. Start by tying a slip knot near the end of the yarn. Leave yourself about 15cm of yarn after the knot.
2. Place the loop over your pointer finger and tighten it a little. Take the 15cm length of yarn and move it out of the way. You'll need it so you can tie your bracelet at the end.
3. Using yarn from the ball from the yarn (not the 15cm end), weave the yarn UNDER your middle finger, then OVER your ring finger and UNDER your pinky.
4. Then wrap the yarn around and OVER your pinky, UNDER your ring finger, OVER your middle finger and UNDER your pointer finger.
5. You'll end up with a loop on each of your four fingers. Push the loops to the same spot on your fingers so they line up in a straight line, like in the photo.
6. Then wrap the yarn (which will be coming from UNDER your pointer finger) over and across all of your fingers, above the line of loops that you just finished weaving.



Continued on next card...

THE CAMPAIGN FOR WOOL

Finger knitting *continued*

METHOD

7 Starting with your pointer finger, take the bottom loop, lift it up and over the top yarn that you laid over your fingers, and then over your finger and to the back.

You'll be left with one loop on your pointer finger.

8 Then move on to your middle finger, and do it again – take the bottom loop, lift it up and over the yarn that you laid over your fingers, and then over your finger and to the back.

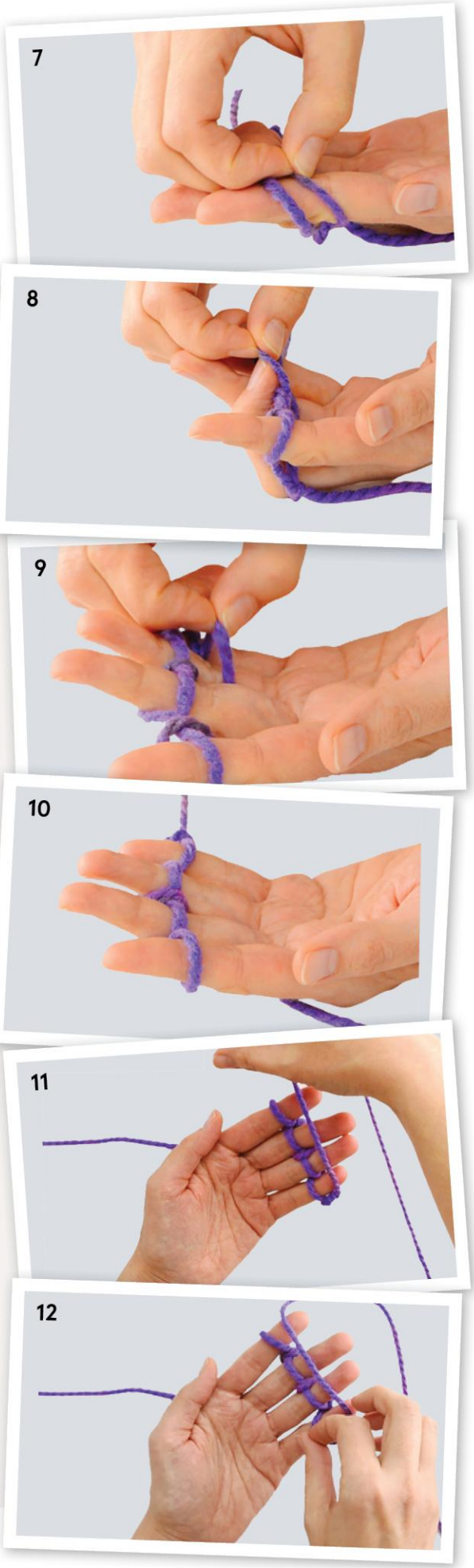
9 Repeat for your ring finger and your pinky.

10 You should be left with one loop on each finger.

11 Now take the yarn and lay it over your fingers above the loops, just as you did before.

12 Starting with the bottom loop on your pinky, lift it up and over the yarn that you laid over your fingers, and then over your pinky and to the back.

Keep lifting the bottom loop on each finger up and over in this way. Every time you finish a row you should be left with one loop on each finger. Then you'll take the yarn and lay it over your fingers above the loops, and you'll lift the loop on each finger up and over it.



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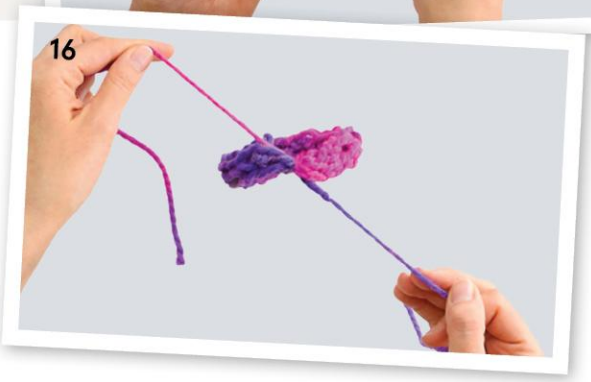
Finger knitting *continued*



METHOD

13 Repeat, repeat, repeat until you're happy with the length. See the next card to learn how to tie it off when you are done.

How to tie off when you're done:

14 When you're done, cut the yarn, leaving yourself about an 20cm length at the end.

15 Take the end, and pull it through the loop on the last finger you knitted. In the picture, it finishes on the pinky, so that's where the end is pulled through first. Once the end has been pulled through the loop, you can take that loop off your finger.

16 Take the two loose ends of yarn and tie them together. You can tie them in a knot and trim the ends, or you can tie it in a bow.

Images from and lesson inspired by:
https://onelittleproject.com/finger-knitting/

Weaving

Weaving can be done on the loom supplied in the container, or by creating your own loom out of cardboard!

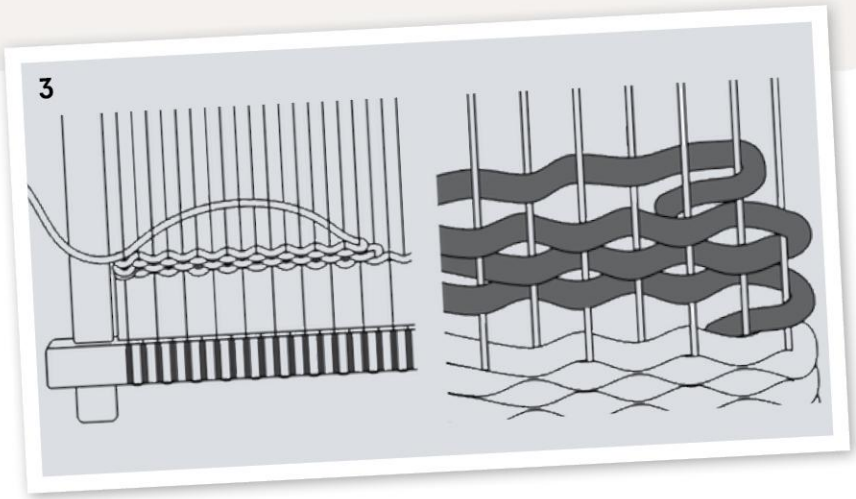
MATERIALS

The Loom/
Weaving Frame

Wool, cotton,
yarn, fabric
(You can use
different kinds of
yarns or materials!)

METHOD

1. Lie the loom on a table or surface in front of you.
2. Take your yarn (weft) and tie the end to the first warp of the loom.
3. Weave it in and out of the warps.
4. Leave the weft loose.



TIPS:

LOOM:
A frame used for weaving.

WARP:
The strong tight threads that are stretched onto a loom for weaving.

WEFT:
The fibres that are woven into the warp to create a fabric.

Looms & weaving frames

Miss out on the weaving in the container?

You can make your own weaving frame!

Wet felting

This is a fun and easy activity to do at any age.

Let's make a felted wool bead! Did you see the felted items in the drawers in the container?

MATERIALS

Bowl of warm water

Liquid soap or bar of soap

Unspun wool

METHOD

1. Mix 4 tablespoons of liquid soap to 6 cups of warm water.
2. Start with a length of wool of around 20cm (or longer for a larger ball)
3. Form the ball by folding the wool around itself firmly. More wool can be added as needed to form the ball. Don't worry if it's not perfectly round, the felting process will help with this.
4. Wet the ball gently in the warm water and lather up hands with soap, or if using liquid soap dunk wool in soapy water.
5. Gently roll wool ball between your two hands until it starts to felt. Every minute or so add more water and soap to maintain a warm soapy lather.
6. As it felts you can start rolling it more vigorously.
7. Stop felting once the ball is nice and firm. This should only take around 5 minutes of rolling.
8. Rinse the ball in cold water to remove soap and leave to dry.

Friction and heat cause the wool fibres to lock together, forming a strong bond. This is called ***felting.***

Create your own loom

Create your own loom to weave!

MATERIALS

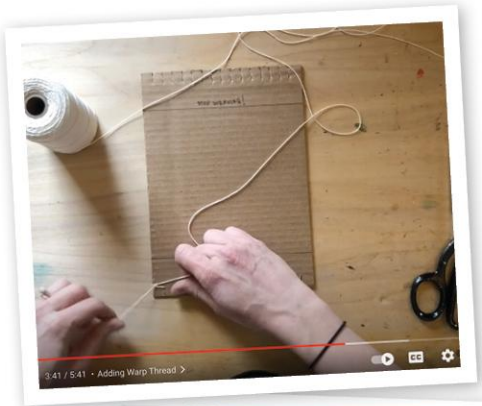
Cardboard (the stronger the better)

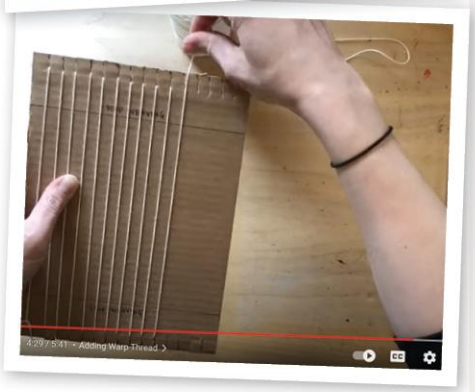
Ruler + pencil

String

Scissors

Yarn (for weaving)





METHOD

1. Make sure your cardboard is a rectangle shape. Any size you like.
2. Use a ruler and mark a line with your pencil every 1 cm on the top and bottom of the piece of cardboard. Your top and bottom marks should align.
3. With the scissors, cut each of your marks about 1cm deep.
4. Using some spare cardboard, cut two strips of cardboard as long as your loom and about a 2 cm wide. Glue these two pieces to your loom at the top and bottom just beside your cut marks (see the image above!).
5. Now we need to warp the loom: Take your string and tie a knot and put the knot at the back of the first cut mark on the top. You could tape it to secure it.
6. Once the knot is secure, warp across the loom. Bring the warp (string) around the tab in the back of the loom and then across the front - this can be tricky so watch the video below if you can!
7. Keep warping until the end and tie your warp thread in a single knot at the back of the loom, making sure to have the knot end on the bottom of the loom also.

   Then comes the super fun part - start weaving with your yarn!

Watch the video tutorial here:

https://www.youtube.com/watch?v=GQHf8TlYC50

Carding

Use the hand carders to make soft and airy rolags for fine spinning. You can also blend colours and fibres!

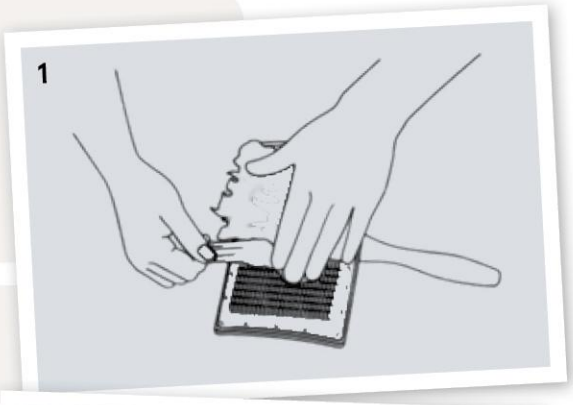
MATERIALS

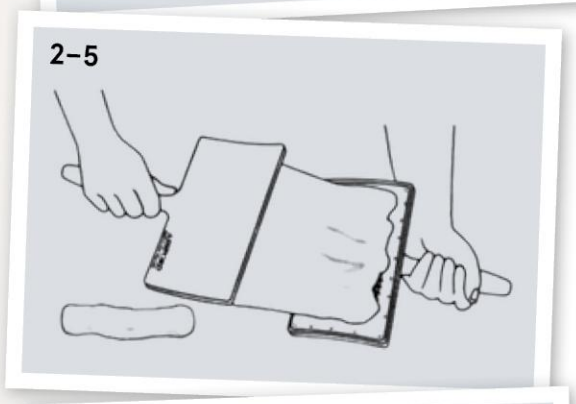
Small pieces of wool (inside the seat in the container)

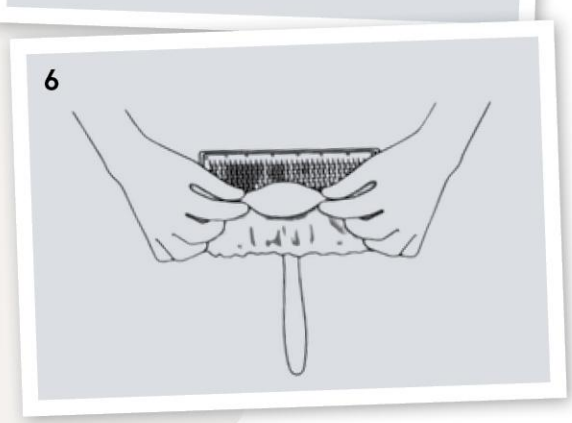
2 carders from drawer 3

METHOD

1. Place the wool on one carder.
2. Hold the carder with the wool in your left hand using an underarm grip.
3. Hold the other carder in your right hand with an overhand grip and gently brush the fibre starting at the tips.
4. Continue brushing gradually working up the fibre until the carders overlap completely.
5. Repeat the process until all the fibre is transferred from one carder to the other and it is soft and airy.
6. Make a rolag by rolling the carded fibre from the edge towards the bottom (handle end) and remove from the carder. Spin from one end.







Rolag is a roll of fibre used to sin yarn usually created by carding the fibre.

Watch the video tutorial here:

https://www.youtube.com/watch?v=rDqY2mLoolw&t=19s

ashford WHEELS & LOOMS

THE CAMPAIGN FOR WOOL

Knit Kitty

This little kitty is a knitting pattern for those with basic knitting skills. Knit it flat in 3 pieces and then seam it together.

Did you spot this cat in the container?

MATERIALS

Yarn - Worsted weight yarn

Size 8 straight knitting needles

Stuffing

KNITTING

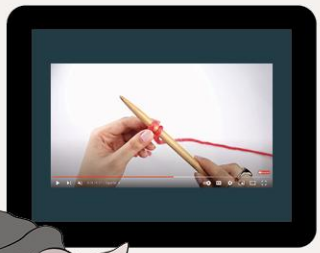
1. For the body:
   Cast on 24 sts. Garter stitch 48 rows. Bind off.
2. For the head:
   Cast on 14 sts. Row 1-15 knit. Rows 16-19 Knit 2 together, knit to end. Rows 20-23 Knit 1, K1 FB, Knit to end. Rows 24-37 knit. Bind off.
3. For the tail:
   Cast on 16. Row 1: Knit Row 2: Knit 10, turn. Row 3: Knit.
4. Repeat rows 1-3, 3 times. Bind off.

Continued on next card...

How to cast on

Watch the video tutorial here:

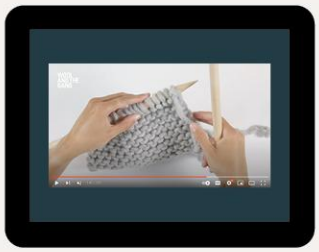
https://www.youtube.com/watch?v=1vm6oaYzHyA



How to garter stitch

Watch the video tutorial here:

https://www.youtube.com/watch?v=2Gth9LGDvo8



How to bind

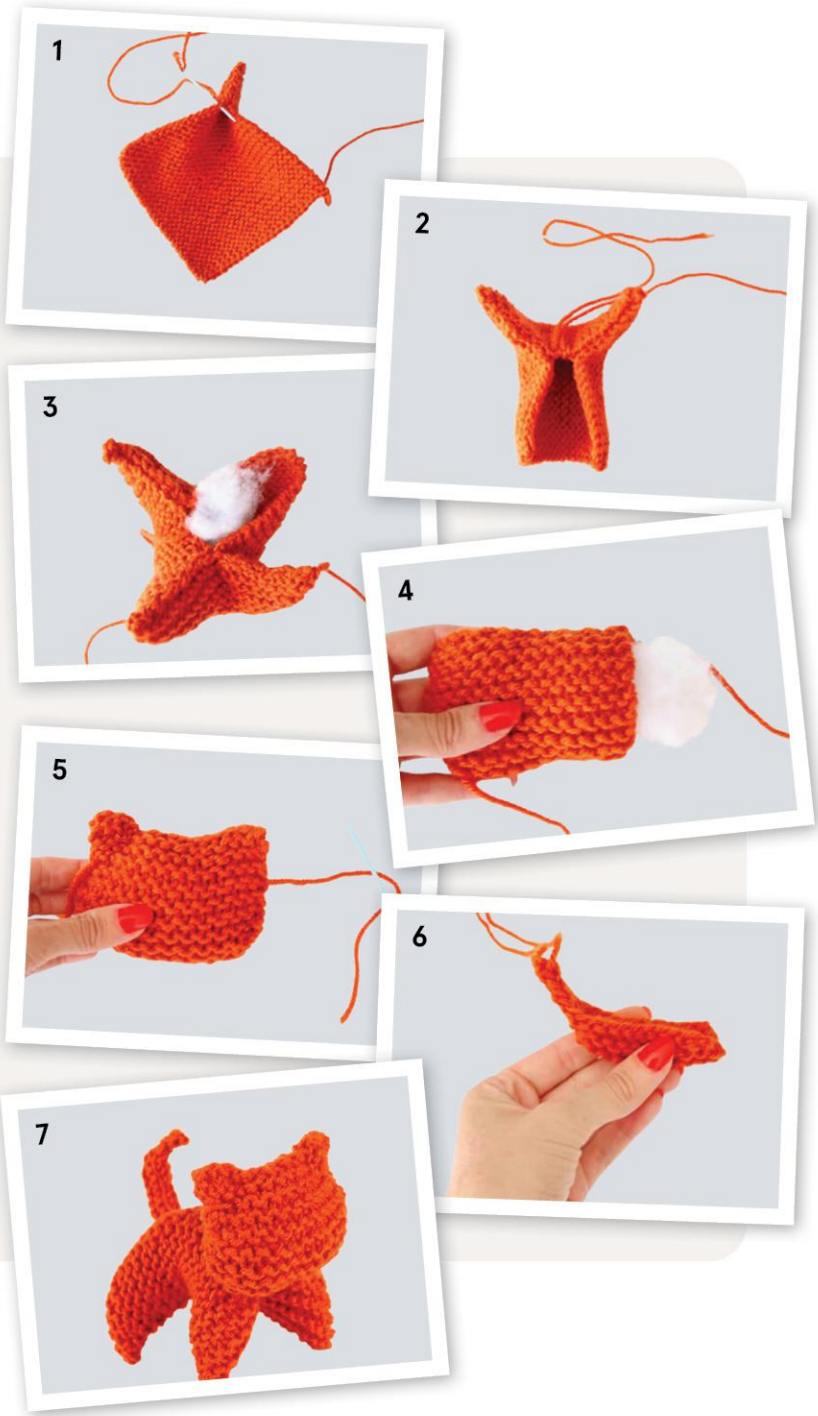
Watch the video tutorial here:

https://www.youtube.com/watch?v=VSwjIUiQZlM

This pattern and many more can be found at:

https://gina-michele.com/2017/08/21/easy-plush-cat-free-knitting-pattern-2/

Knitting *continued*



PUTTING IT TOGETHER:

1. Take the body piece and sew to corner sides together. This creates the cat's legs.
2. Sew the sides together at the other side.
3. Sew the 3rd leg and add the stuffing. Sew the 4th leg closed.
4. Fold the head over and sew 2 of the seams. Add stuffing and sew the 3rd seam closed.
5. To make the ears look more defined, I added a stitching line at the base.
6. Fold the tail in half and stitch closed.
7. Sew the tail and head on to the body.

This pattern and many more can be found at:
https://gina-michele.com/2017/08/21/easy-plush-cat-free-knitting-pattern-2/

Paint with yarn

Create an abstract design or Vincent Van Gogh's starry night using coloured yarn and no paint!

MATERIALS

Paper

Scissors

Double-sided sticky tape or glue or clear duraseal

Yarn of all different colours

METHOD

1. **Either** spread glue on the paper **or** tape strips of double-sided tape side by side so most of the paper is covered or cut a piece of duraseal slightly smaller than your paper and tape the edges to your paper (sticky side up).
2. Tape down the edges of your paper to keep it still while you work.
3. Now arrange your yarn to make shapes, swirls and patterns!

TIP:

You could also use clear book duraseal instead of glue and tape!

Images from and lesson inspired by:
https://picklebums.com/yarn-painting/

Pom-poms

Use colourful yarn to make a pom-pom!

MATERIALS

Different coloured yarn

2 cardboard tubes

Scissors

METHOD

1. Hold the two toilet paper rolls together and wrap the yarn around them. The more yarn you wrap, the thicker your pom-pom will be.
2. Thread a piece of yarn between the two rolls and tie.
3. Slide the yarn off the toilet paper rolls.
4. Now tie the yarn around the pom-pom again, but tighter this time.
5. Cut through the loops of yarn on both sides.
6. Use your scissors to trim the pom-pom until it is round and fluffy.

Scan the QR code

to watch the video tutorial!

TIP:

You can create multiple pom-poms and string them together into a **garland**, use them as **decoration**, add them as **'bows'** to a gift, or even make a **necklace** with smaller pom-poms!

Images from and lesson inspired by:

The Artful Parent YouTube channel

Wool sewing

Sew the stars with these constellations or create your own designs!

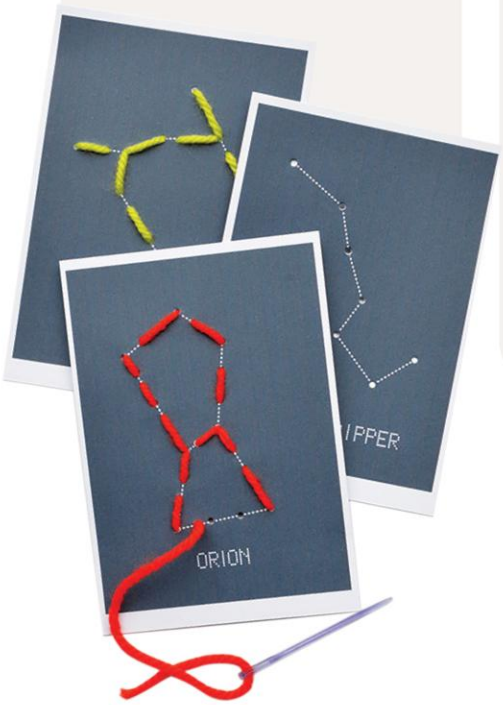
MATERIALS

Yarn

Printouts
Download here

Hole punch

Pipe cleaner



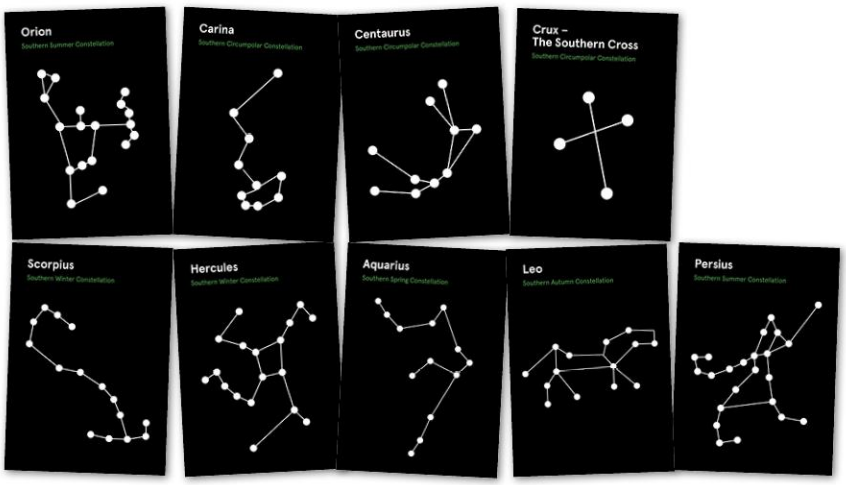
METHOD

1. If you are using the constellation templates – hole punch the holes.
2. Use the pipe cleaner to make a 'needle' by twisting a loop at the end of the cleaner.
3. Tie or thread the yarn to the pipe cleaner.
4. Sew in and out of the constellation holes.

To create your own design:

1. On a paper plate or cardboard create a design and use a hole punch to make holes.
2. Repeat the steps above.

CONSTELLATION PRINTOUTS **Download here**



This pattern and many more can be found at:
https://kidsactivitiesblog.com/53553/star-sewing-cards-kids/

Woollen ornament

Create an ornament by wrapping glue soaked in yarn around a balloon and then pop!

MATERIALS

Balloon

Orange yarn

Glue
(Tacky glue from Spotlight works best!)

Pipe cleaners
(brown and green)

Scissors

Bowl and fork

Newspaper

METHOD

1. Blow up a balloon to about half full.
2. Cut about 20 pieces of yarn about as long as your arm.
3. Tie one of the pieces of yarn to the end of the balloon - hang this from the top of your desk or chair (it makes it easier to create than lying flat).
4. Place newspaper on the ground underneath your balloon so the mess is contained!
5. Pour the glue into a small bowl.
6. Dip the yarn into the bowl of glue, and swirl it around gently with a fork to get it completely covered with glue.
7. Run the yarn through the prongs of the fork to get rid of the excess glue.
8. Wind your glue soaked yarn around the ballon and press it down - repeat with all the yarn you have.
9. Once finished, hang the balloon and allow it to dry (watch for drips!). It can take up to 24 hours.
10. Once dry, carefully detach the glue/wool from the balloon by poking your finger between balloon and yarn. Be careful and go slow!
11. Make a small hole near the knot of the balloon and slowly leak out the air.
12. Carefully pull the deflated ballon through the holes in the yarn.
13. Make the pipe cleaner stems and vines and wrap them around your yarn pumpkin!

TIPS:

You could make any type of fruit, ball or decoration!

The bigger the balloon, the more yarn and glue you will need.

Images from and lesson inspired by:
https://onelittleproject.com/yarn-pumpkins/

Science
Activities

THE CAMPAIGN FOR WOOL

What's Inside?

Get your ākonga thinking like scientists and exploring the benefits and properties of wool with these hands on experiments.

These experiments demonstrate the properties and characteristics of wool and show why wool is such a wonderful material with a whole heap of benefits for us and the planet!

SCIENTIFIC EXPERIMENT RECORDING SHEET

With a space for students to record the materials, method, observations and conclusion.

BASIC EXPERIMENT RECORDING SHEET

With a space for students to record the experiment, what they saw and what they think.

EXPERIMENT LIST & OVERVIEW

An overview of the 12 experiments to explore!

12 EXPERIMENT ACTIVITY CARDS

12 experiment cards with materials, instructions, questions and information on how to do them with your ākonga.

MATERIALS

All of these experiments require some materials to do. And of course wool! Some require basic materials and some require more specialised equipment.

A NOTE ON SAFETY

Always read the instructions carefully. Wear protective clothing, glasses and gloves. If in doubt as to whether your students can do this safely, model this or get other adults to help. We advise not letting children handle matches, lighters, hot plates, stoves, ovens, hot water, etc.

You are responsible for the risks and for the safety of yourself and others.

Name: Type here or delete if printing

Science experiment **recording sheet**

Experiment: Type here or delete if printing

Hypothesis: Type here or delete if printing

MATERIALS

Type here or delete if printing

METHOD

Type here or delete if printing

Type here or delete if printing

Type here or delete if printing

Name: Type here or delete if printing

EXPERIMENT:

Type here or delete if printing

I SAW:

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I THINK:

Type here or delete if printing

Think Like a **Scientist**

A collection of activities to get thinking like a scientist and learning more about the wonder that is wool!

Find the instructions and materials you need for these experiments on the following slides.

IS IT REALLY WOOL?

Explore whether materials are made from wool or synthetics by doing the bleach test.

WOOL AS INSULATION

Explore how wool can be used as insulation by testing its ability to retain heat.

WOOL FELTING PROCESS

Explore the physical and chemical changes that occur when the wool is agitated in the water through the process of felting.

WOOL ABSORPTION

Explore why wool is a good material for absorbing moisture.

WOOL FIBRES

Explore wools structure and properties and why this makes for quality final products.

WOOL DYEING

Explore the process of dyeing wool by using natural dyes like beetroot juice or turmeric.

WOOL STRENGTH

Explore the strength of wool by testing its tensile strength.

ELECTRIC WOOL

Explore wool and static electricity.

FIRE AND WOOL

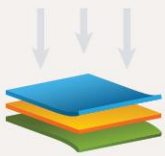
Explore the flame resistance of wool by testing how it reacts to a flame compared to other materials.

WOOL REPELS WATER

Explore the natural oils in wool by observing how they repel water.

WOOL COMPRESSION

Explore the compression properties of wool by testing how it retains its shape under pressure.



WOOL BIODEGRADES

Explore the biodegradability of wool by testing how well it decomposes in soil.

Is it **really wool?**

Explore whether materials are made from wool or synthetics by doing the bleach test.

KEY QUESTION: **Which materials are biodegradable?**

MATERIALS

4–5 small pieces of fabric (make sure 1 of them is wool!)

4–5 separate bowls or petri dish

Bleach

METHOD

1. Cut the pieces of fabric if you need to so they fit in the bowl or petri dish
2. Place each fabric in a separate bowl
3. Label the fabrics
4. Cover each fabric with bleach
5. Put the bowls in a well ventilated area overnight
6. After 8 hours, look at the fabrics

OBSERVATIONS

What do you notice?

Which fabrics look the same? Which fabrics look different?

Have any fabrics disappeared?

Which fabrics break down quickly?

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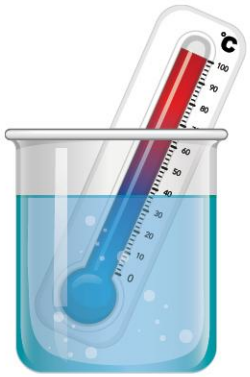
Be careful around bleach. An adult needs to help.

Wool as **insulation**

Explore how wool can be used as insulation by testing its ability to retain heat.



KEY QUESTION: **Is wool an insulator?**

MATERIALS

Wool

2 x containers, eg. jars

2 x thermometers

Hot water

METHOD

1. Wrap one of the jars in wool and leave the other one unwrapped
2. Pour hot water into both jars
3. Place a thermometer in each jar
4. Observe

OBSERVATIONS

What do you notice?

How long does it take for the water to cool down?

Which jar cools down faster or slower?

Do you think wool is an insulator?

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Wool **felting process**

Explore the physical and chemical changes that occur when the wool is agitated in the water through the process of felting.

KEY QUESTION: **How does wool change when felted?**

MATERIALS (per child)

Wool roving*

Soapy water

Towel

*You can get wool roving from **Spotlight**

METHOD

1. Lay a towel on the table
2. Roll the wool in your hands and then dip it in the soapy water
3. Repeat

OBSERVATIONS

What do you notice?

What is happening chemically between the water and the wool?

What is happening physically to the wool and the water?

What happens when wool is felted?

Type here or delete if printing

Wool **fibres**

Explore why wool is a good material for absorbing moisture.

KEY QUESTION:

How might the structure and properties of the fibre affect it's function and performance?

MATERIALS

Microscope

Slides

Coverslips

Wool

Cotton

Polyester

METHOD

1. Prepare the slides by placing some of the different fibres on their own slide, and a drop of water on each to hold it in place. Cover with a slip.
2. Observe through the microscope.
3. Compare the fibres' structures and properties.

OBSERVATIONS

What do you notice?

How would you describe the cotton fibres?

What do you notice along the surface of the wool fibre?

How does the structure and properties of wool affect the product?

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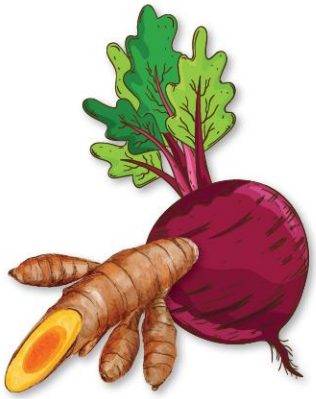
Wool **dyeing**

Explore the process of dyeing wool by using natural dyes like beetroot juice or turmeric.



KEY QUESTION:

How do natural dyes affect the colour of wool?

MATERIALS

Wool

Beetroot, turmeric, spinach, etc.

Mordant – vinegar

Large pots

Heat source

Tongs & Spoon

Water

METHOD

1. Make the natural dye by adding turmeric to a pot and heating to a simmer.
2. Add some vinegar.
3. Add the wool to the pot and stir well to make sure it is evenly coated with the dye mixture and simmer until wool has changed colour.
4. Repeat with other items like beetroot, spinach etc and other pieces of wool.
5. Gently squeeze out the excess water and hang the wool to dry.

OBSERVATIONS

What do you notice?

What chemical reaction is happening?

You could try with other materials – does it have the same affect?

Does wool change colour when dyed?

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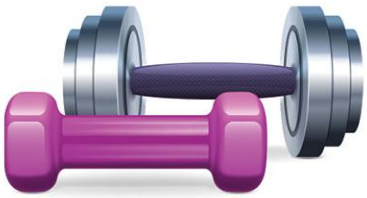
Wear gloves & get an adult to help with the stove/ hot water.

Wool **strength**

Explore the strength of wool by testing its tensile strength.



KEY QUESTION:

How does wools strength compare to other materials?

MATERIALS

Wool string

Cotton string

Nylon string

Hook or door handle to attach the string to

Weights (such as small bags of sand or metal weights)

METHOD

1. Cut a piece of wool string to a standard length, such as 30 centimetres.
2. Attach one end of the wool string to a fixed point, such as a hook or a door handle, and attach the other end to a weight.
3. Gradually add weight to the string in small increments, such as 50 grams at a time, until the string breaks.
4. Record the weight at which the string broke.
5. Repeat with the other materials, using the same length and weight increments.

OBSERVATIONS

What do you notice?

What are some real world examples of using materials with good tensile strength?

What affect does wools natural crimp have on its strength?

You may need to do some researching here!

Is wool strong?

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Tensile strength is the maximum amount of pulling force that a material can withstand without breaking!

Fire and wool

Explore the flame resistance of wool by testing how it reacts to a flame compared to other materials.

KEY QUESTION: Is wool naturally fire resistant?

MATERIALS

Small pieces of wool, cotton, polyester fabric or clothing

Lighter or matches

Fireproof surface or container

Protective gloves and eyewear

Stopwatch or timer

METHOD

1. Cut small pieces of fabric to the same size.
2. Put on protective gloves and eyewear.
3. Place each fabric sample on a fireproof surface or container.
4. Using a lighter or matches, ignite one corner of each fabric sample and observe how it reacts to the flame.
5. Time how long it takes for the flame to go out on each fabric sample.

OBSERVATIONS

What do you notice?

What are some real-world applications of using wool as a fire resistant product?

What do you notice about the smoke?

What happens to the material?

What makes wool fire resistant?

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This is for an adult/teacher to do and students to watch.

Wool **repels water**

Explore the natural oils in wool by observing how they repel water.

KEY QUESTION:

How does the natural oil in wool affect its ability to repel water?

MATERIALS

Small pieces of wool

Small pieces of materials like cotton or polyester

A bowl of water

Dropper or spray bottle

Paper towels

METHOD

1. Cut small pieces of wool to the same size
2. Use a dropper or spray bottle to place water drops on each wool piece.
3. Observe how the wool reacts to the water.
4. Blot excess water with the paper towel and feel the wool.
5. Compare the amount of water absorbed by the wool to other materials like cotton or polyester.

OBSERVATIONS

What do you notice?

Does it feel wet or dry?

Do you know what the natural oil is in wool?

How does it compare to other materials?

What makes wool repel water?

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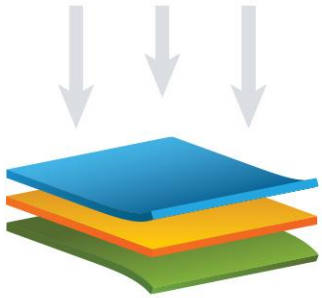
Wool is naturally water resistant! This means it repels water due to the natural oils present in its fibres.

Wool **compression**

Explore the compression properties of wool by testing how it retains its shape under pressure.



KEY QUESTION:

Does wool retain its shape under pressure?

MATERIALS

Wool fibres

Jars or containers

Heavy objects that fit in the containers (eg. weights)

Measuring tape or ruler

METHOD

1. Cut small pieces of wool fibres to fit into the jars or containers.
2. Place one piece of wool in each jar or container.
3. Use a heavy object to compress the wool in each container.
4. Remove the pressure and observe how the wool retains its shape.
5. Measure the height and width of each compressed piece of wool to determine the amount of compression.
6. Repeat the experiment with different amounts of pressure to observe how the wool responds.

OBSERVATIONS

What do you notice?

Why would it be a benefit for wool to retain its shape?

Try it with other materials. How does it compare?

What does the wool's crimp have to do with it?

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This can be an independent or group activity

Wool **biodegrades**

Explore the biodegradability of wool by testing how well it decomposes in soil.

KEY QUESTION:

How does wool biodegrade compared to other materials?

MATERIALS

Small pieces of wool, plastic, and paper

Soil

Plant pots or containers

Labels for identifying the samples

METHOD

1. Cut small pieces of wool, plastic, and paper to approximately the same size.
2. Fill each plant pot or container with soil.
3. Bury one sample of each material type in each pot or container, ensuring they are buried at the same depth.
4. Label each pot with the material in it.
5. Water the soil to ensure it is moist.
6. Place the pots or containers in a location where they will receive adequate sunlight and air.
7. Monitor the samples regularly and observe how they decompose over time.

OBSERVATIONS

What do you notice?

Why is biodegradability important to the planet?

What does this mean for wool products?

What factors affect its decomposition in soil?

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