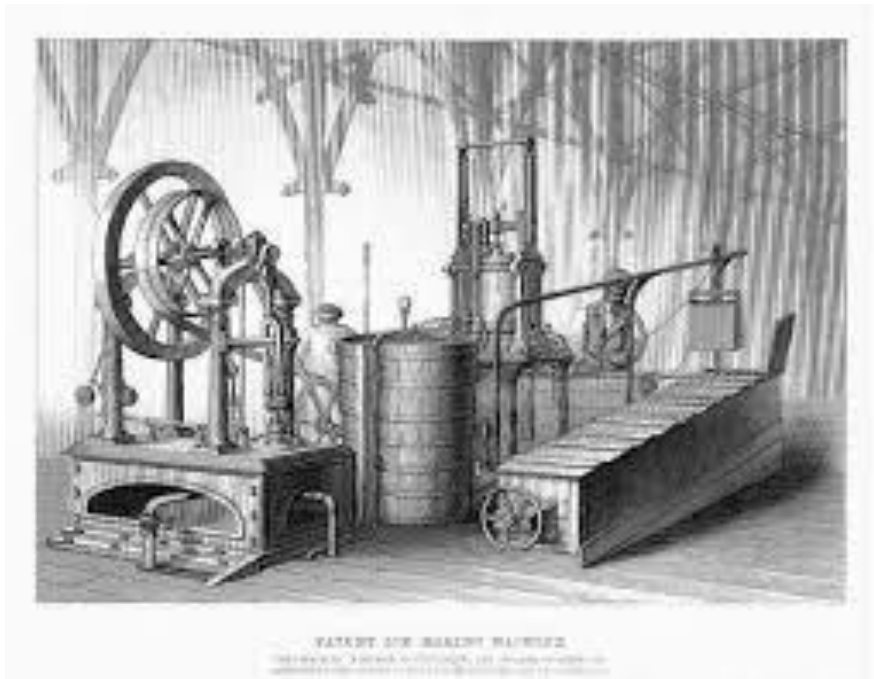


Unit 10

“Pioneer Australians (& Resourcefulness)”



Prep to
Grade
6

SCIENCE +
Technology & Health



Science, Technology & Health (Pre-school to Grade 6) – Unit 10

“Pioneer Australians (& Resourcefulness)”

SUMMARY:

Australians have a talent for resourcefulness, ingenuity and creative thinking. From ancient times, Australians have used the materials around them to develop unique and practical tools to help them live and prosper. In this unit we explore the science, technology and medicine of both the Aboriginal people and the early Australian pioneers.

RESOURCES:

All the information you need is included within the **informational story** in each lesson plan. The hands-on or creative activities are designed to use materials you will likely have already in your home, but you should maintain some **art and craft materials**. Each child will also need a **Science Journal** (i.e., a lined exercise book or Botany book for nature study notes, writing responses to questions, and writing activities). It is also helpful to have a good **dictionary**.

Three lessons each week, with hands-on activities and extra research will keep the children fully engaged. To enjoy a richer learning experience, you could supplement the lessons with extra books about topics of interest that arise during the course.

Some suggestions for extra reading include but are not limited to...

- to be announced...
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Topic 9	Assessment: Final Review and Challenge: The Great Resourcefulness Build-Off! If you are enrolled in a school or correspondence course, then they may require you to hand in your Science Journal including any final assessment task. You could include photographs of any practical activities or creative projects. We aim to continually improve these study guides and make them more family-friendly, so we value your comments. To provide valuable feedback on the lessons in this study guide, contact Homeward Education Support 2226 Murphys Creek Rd., Ballard, Qld 4352 or via email at info@hesupport.com.au or 0438614452.	

TOPIC 1

THE RESOURCEFULNESS & INVENTIVENESS OF THE AUSTRALIAN PIONEERS (PART 1)

Lesson 1.1 – How the Pioneers Built Their Homes

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 1)

Character Trait Focus: *Resourcefulness – using what you have to solve problems creatively*

Curriculum Links: AC9TDE2K02, AC9S2U02, AC9TDE4K01

A) Introduction

Tutor/Parent Says:

"Today we're going to learn how early Australian pioneers built their homes. When they arrived in the bush, there were no shops, no trucks of timber, no bricks, and no cement mixers! So what did they do? They had to use what they could find in nature – and that takes **resourcefulness**. That means using what you have, thinking creatively, and solving problems on the spot.

God wants us to be wise with what He's given us. When the pioneers arrived, they prayed, planned, and got to work. Let's hear their story and see what we can learn about using our minds and hands like they did."

B) Informational Story: "The Bark Hut Builders"

Parent/Tutor says before reading:

"I'm going to read you a story about some early settlers who had to build their homes with whatever they could find. Listen very carefully because at the end, I'll ask you to tell me everything you remember."

The Bark Hut Builders

When the Taylor family arrived in New South Wales in the 1830s, everything was different from the stone cottages they'd left behind in England. There were no houses waiting for them – only thick bushland, dry grass, and gum trees as far as the eye could see. They stepped off the bullock cart with their meagre supplies: a few axes, a saw, a kettle, and a box of nails. Their goal? Build a home before the next rain.



Father James looked around. “We’ll have to make a bark hut,” he said. “There’s plenty of stringybark nearby.”

Twelve-year-old Billy, wide-eyed, asked, “How can bark be a house?”

James smiled. “With enough effort, it can be warm, dry, and strong.”

First, they needed shelter from the weather. They started by clearing a patch of ground near a small stream. Then they gathered fallen branches and cut poles from young saplings. James showed Billy how to dig holes in the earth with a pointed stick and plant the upright poles in the ground to make a frame.

“Just like a skeleton,” he said, “but for a house!”

They used strong vines and strips of green bark to tie the poles together at the top, forming a ridge beam and sloping sides. Billy’s arms ached, but he kept going.

Next came the hard part: collecting bark. You couldn’t use just any bark. James carefully selected tall stringybark trees and showed Billy how to score around the trunk with a small axe, then gently peel off long sheets of bark. It was hard work, and they had to be careful not to damage the tree too much – because they knew they’d need more bark in the future.

The bark was heavy and awkward, but they carried it back and leaned the sheets against the frame to make sloping walls and a roof. It didn’t look like much yet, but Billy began to understand. With each sheet added, the hut looked more and more like a real home.

Mother Sarah gathered leaves and dried grass to scatter on the earthen floor. She used flat stones to create a small fireplace, and placed the black kettle nearby. Even baby Lizzie helped, handing small sticks for kindling.



Inside the hut, it was dark but cool. When it rained two nights later, the bark roof held. Billy lay on his bed of rolled blankets, proud of what they’d built.

Over the next few weeks, they added improvements: mud-packed walls between the bark for warmth, shelves made from planks split from logs, and a slab door. Every piece of their home had been made by hand, from the ground up. They had no blueprint – just observation, ideas, and trial-and-error.

Sometimes things broke or fell down. One windy night, the door blew off its hinges. “Let’s try leather straps instead of nails,” suggested Sarah, and it worked. They began to see that solving problems was part of everyday life.

Neighbours began to arrive too – Mr O’Reilly and his family set up a hut nearby. He showed them how to make shingles from wood and how to line a chimney with clay to stop it catching fire. In return, James taught Mr O’Reilly how to make a fence from twisted saplings.

Billy began carving pegs for hanging clothes, making a bench for the kitchen, and inventing ways to keep mice out of the flour.

Years later, their hut was still standing. It had changed a lot – wooden slabs replaced some of the bark, and a new iron roof had been added – but Billy always remembered that first hut they made with nothing but bush tools, clever hands, and God’s help.

“We didn’t build it with riches,” he would tell his children. “We hand-built it with a few simple tools, with faith and resourcefulness.”



C) Narration Prompt

Tutor/Parent Says:

“Now I want you to tell me everything you remember from the story. Try to picture it in your mind like a movie. What happened first? What did they build? What tools did they use? Who helped? What problems did they solve?”

Let the child retell as much as they can in their own words.

D) Reflective Thinking Questions

Ask the questions below, adjusted to the student’s age.

For Foundation to Year 2:

- What did the pioneers build their house out of?
- How did they get the bark off the trees?
- What do you think was the hardest part?

For Years 3–4:

- Why did the family choose a bark hut instead of building with stone or bricks?
- What creative ideas did they use to solve problems when things went wrong?
- Why is it important to be resourceful when you only have natural materials?

For Years 5–6:

- How did the family’s design choices (like sloped bark walls, mud-packing, or door hinges) help make the hut more weatherproof?
 - In what ways might the family have observed nature (trees, animals, weather) to learn how to build and live in the bush?
 - Apart from resourcefulness, what other character traits were needed to help this family?
-

E) Activity: Build a Model Shelter or Sketch a Bark Hut

Parent/Tutor Says:

“Let’s imagine we are early settlers too! We’re going to either build or draw a model of a pioneer-style shelter.”

Option A: Build a Mini Shelter (outdoors or indoors using natural materials)

F–2:

- Collect leaves, bark, and sticks and help your child build a small hut for a toy animal or doll.
- Talk about what materials work best and why.

Years 3–4:

- Build a stronger model shelter using small branches, vines, cardboard, or bark.
- Test it by blowing on it or dripping water on top to see if it holds.

Years 5–6:

- Build a more refined model that uses a frame, tied joints, and a sloped roof.
- Evaluate the strengths and weaknesses of your design and sketch it afterwards.
- “What features from Billy’s hut did you include?”
- “How did you try to solve rain or wind problems like the family did?”

<https://kidbucketlist.com.au/>

Example Model:



Option B: Draw a Bark Hut Design

- Draw your own pioneer hut based on what you heard in the story. Label the parts and the materials used.
- Add notes about how it keeps out wind, rain, and animals.

F) Biblical Connection

Parent/Tutor Says:

“In Proverbs 24:3–4 it says, ‘By wisdom a house is built, and through understanding it is established; through knowledge its rooms are filled with rare and beautiful treasures.’

God gives us wisdom, understanding, and creativity. When we use those gifts well – like the pioneers did – we can make something useful and even beautiful, even with very little.”

“Today we learned how early settlers like the Taylor family used their surroundings, their skills, and their faith to build a home from nothing but the bush. They didn’t have shops, builders, or plans – but they had determination and resourcefulness. With God’s help, we can be just as clever, creative, and courageous in solving problems.”

G) Wrap-Up

Parent/Tutor Says:

“Today we learned how early settlers used what they had to build homes. They didn’t wait until they had all the right tools or materials – they used their brains and worked hard. That’s what resourcefulness is. God can help us be clever, brave, and hardworking too.”

Lesson 1.2 – Cooking Without a Kitchen

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 1)

Character Trait Focus: *Resourcefulness – using what you have to solve problems creatively*

Curriculum Links: AC9S2U02, AC9TDE2P01, AC9TDE6P01

A) Introduction

Tutor/Parent Says:

"Today we're going to learn how early pioneers cooked their food – without ovens, stovetops, or even kitchens! When families moved to the bush, they had to cook out in the open using fire, pots, and anything they could find around them. That meant they had to be resourceful and clever with how they prepared meals.

We'll listen to a story about a pioneer family and how they made food using campfires, hot coals, and even tin cans! Then we'll try something fun ourselves."

B) Informational Story: The Bush Kitchen

Parent/Tutor says before reading:

"Listen carefully to this story about how pioneer families cooked their meals in the bush. Remember as many details as you can – you'll be asked to retell it afterwards."

The Bush Kitchen

The Murphy family had just finished building their bark hut. It was rough but sturdy, with bark walls, a slab door, and a small stone fireplace inside for warmth. But cooking inside was smoky and risky – too much firewood made the air thick with smoke, and the risk of sparks igniting the bark on the roof was high.

"We'll make a bush kitchen," said Dad one morning. "Just like the other settlers do. Cooking outside is safer, and it keeps the hut cool, especially in summer."

Ten-year-old Annie and her brother Samuel followed their father to a flat patch of dirt near a shady eucalypt tree. Before settling on the spot, they looked up at the tree to check for any dead branches that might fall down and hurt them. Once they knew it was safe under the tree, they cleared away the scrub and dug a shallow pit, then circled it with large stones from the creek bed nearby.

"First, we need a fire pit," Dad explained. "Then we'll build a chimney wall to reflect the heat and block the wind."

They placed flat rocks around the edge to form a horseshoe-shaped wall. Nearby, they stuck three long iron rods upright into the ground in a triangle. It was just right for hanging a kettle or billycan over the flames.

Annie wiped her brow. "Will this really work like a kitchen?"



Dad nodded. “If we’re smart with heat and careful with coals, we can cook almost anything.”

Soon, Mum arrived carrying a bundle wrapped in cloth. Inside was a blackened billycan, a bowl of damper dough, a slab of salt-cured meat, and some carrots and potatoes. “We’re making stew and fresh damper today,” she smiled. “We’ll eat like kings.”

Cooking outside was an art. First came the fire – Samuel laid dry sticks in a teepee shape and struck flint and steel until sparks caught on the bark. The flames rose quickly, and the smell of burning gumwood drifted on the breeze.

<https://www.aussiecampfirekitchens.com/>

After the fire burned down to red coals, they scraped some to the side. Mum placed the **camp oven** – a big, cast-iron pot with a lid – on top. Inside went chunks of meat, sliced carrots, potatoes, onions, and water. She added salt and wild herbs she had foraged from the bush.

The lid went on, and more hot coals were piled on top. “It works like an oven in the ground,” explained Dad. “The heat cooks from above and below.”

While the stew simmered, Mum rolled the damper dough into a neat round and placed it on a flat slab of stone near the coals. Other times, she would bury it directly under warm ash, then brush it off once baked. The outside would be crusty, the inside soft and steamy.

The children learned which woods made good cooking fires. Ironbark gave long-lasting coals. Stringybark burned hot and fast. Greygum crackled but smoked less.



On special days, Mum made **bush tea** using leaves from lemon myrtle or wattle. When no tea leaves were available, dried berries and herbs were boiled instead. The billycan swung gently on the iron bar, steam rising as it bubbled.

“We may not have a fancy oven,” Mum would say, “but we’ve got everything we need to eat well.”

The bush kitchen grew with time. They built a **lean-to roof** from bark and saplings to keep off the rain. A log bench became the food prep table, and a shelf made from bark slats stored mugs, wooden spoons, and bowls. Mum hammered nails into a tree to hang pans and cloths. Annie loved the smell of the open-air kitchen – woodsmoke, eucalyptus, and stew.

Sometimes visitors came from nearby huts. Mr Jenkins once brought a tin of preserved peaches and taught them how to boil tins in water to make cakes. In return, Dad showed him how to make a grill from old fencing wire.

When the handle on their best pot broke, Dad didn’t throw it away. “We’ll fix it with wire and a bit of gum tree sap,” he said. And they did – twisting it into a new loop and sealing the joint.

In winter, they still cooked outside. Thick coats, scarves, and wool socks kept them warm. They gathered closer to the fire, hands outstretched, waiting for stew and tea. Somehow, food tasted better in the cold.

On Sundays, they made sweet damper with honey or dried apples. Sometimes, Mum baked little puddings in tins and set them in the ashes to steam. They might not have had pies or cakes from town, but what they made was nourishing – and delicious.

One evening, Annie sat with a slate and scratched a sentence into her journal.

“We cook in the dirt, with fire, stones, and sticks. It is hot, smoky, and hard work. But the food is good. And we are thankful.”



C) Narration Prompt

Tutor/Parent Says:

“Can you tell me everything you remember from the story? Where did the Murphy family cook their food? What did they use instead of an oven? What tricks did they learn over time?”

Encourage the child to retell the story in sequence.

D) Reflective Thinking Questions

For Foundation to Year 2:

- Where did the family do their cooking?
- What did they use instead of a kitchen oven?
- What food do you remember from the story?

For Years 3–4:

- Why did pioneers choose to cook outdoors?
- What materials did they use to build their cooking setup?
- Can you think of something they reused or invented?

For Years 5–6:

- What were the advantages and disadvantages of a bush kitchen?
 - How did trial-and-error help them solve cooking challenges?
 - Why is cooking outdoors a good example of resourcefulness?
-

E) Activity: Build a Mini Bush Kitchen or Try Damper Baking

Option A: Build a Mini Bush Kitchen (No fire required)

F–2:

- Collect small sticks, stones, and leaves to build a model cooking area outside.
- Use a small toy pot or lid for pretend cooking.

Y3–4:

- Build a more detailed pretend cooking area using a shallow dirt patch, stones for a fireplace, and props like tin cans or toy kettles.
- Add a “bench” using a plank or thick bark piece.

Y5–6:

- Sketch a plan for a bush kitchen and build a scale model using pebbles, twigs, bark, and cardboard.
- Label the cooking zones, bench, fire pit, and storage areas.

Option B: Make Real Damper (Baked in an Oven)

Parent/Tutor Says:

“Here’s a traditional damper recipe we can bake in the kitchen, just like pioneers did over fire!”

Early pioneers had a simple recipe, just a few ingredients – sometimes just as simple as flour and water. Aboriginals also made their own version of damper with wattle seed crushed into a flour, and ground saltbush leaves plus water. Today, a vegan version might substitute with Almond milk and plant-based butter or oil instead of dairy.

For a larger family, double the ingredients.

Ingredients:

- 2 cups self-raising flour
- A pinch of salt
- $\frac{3}{4}$ cup milk (or water)
- 1 tbsp butter (optional)

Instructions:

1. Mix all ingredients in a bowl.
2. Shape into a round loaf and place on a baking tray.
3. Bake at 180°C for 25–30 minutes.
4. Enjoy warm with butter, golden syrup, or honey or jam.



F) Biblical Connection

Tutor/Parent Says:

“God provided manna in the wilderness for the Israelites (Exodus 16), just like He helped the pioneers find

ways to cook in the bush. The Bible also tells us to ‘give thanks in all circumstances’ (1 Thessalonians 5:18) – even when meals are simple or we’re cooking with hot coals and pots instead of fancy kitchens.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw how pioneer families used fire, stones, and pots to cook without kitchens. They didn’t give up when they had no oven – they made one! That’s resourcefulness. With prayer, creativity, and hard work, they could feed their families well. And so can we.”

Lesson 1.3 – Water Supply and Rainwater Collection

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 1)

Character Trait Focus: *Resourcefulness – making the most of the natural resources God has given*

Curriculum Links: AC9S2H01, AC9TDE2P02, AC9TDE4P02

A) Introduction

Tutor/Parent Says:

"Today's lesson is about how early settlers found water and kept it safe to drink. There were no taps, tanks, or water trucks – pioneers had to find, collect, and store their own water using whatever was around them.

Clean water was essential for drinking, cooking, washing, and growing food. In this lesson, we'll discover how families used resourcefulness to catch rainwater, store it safely, and share it wisely."

B) Informational Story: Every Drop Counts

Parent/Tutor says before reading:

"Listen carefully to this story about how one family used clever thinking and hard work to make sure they always had enough water. Try to picture it in your mind."

Every Drop Counts

The Jackson family had settled on a dry stretch of land near the edge of the bush. The soil was sandy, and the trees thin. Their hut, built from bark and logs, stood beneath a wide sky with no nearby neighbours and no flowing river. The nearest creek only ran after heavy rain – and even then, only for a short time.

"If we're going to make it here," said Mr Jackson on their first day, "we'll have to make every drop of water count."

Ten-year-old Elsie and her brother Jack stood beside him, looking out at the dry earth. Mum was unpacking the last of their belongings from the cart, and little Beth toddled about collecting gum nuts.

Mr Jackson knelt beside the corner of their hut. "We'll start with a rain trap," he said. "God sends the rain, but it's our job to catch it."

The family had been blessed to receive some leftover sheets of corrugated iron from a nearby settler. They used them to build a sloped section of the hut's roof. At the lowest corner, Mr Jackson placed an old tin barrel. With wire and care, the spout was held in place to guide the water straight from the roof into the tin.

Elsie was fascinated. "It's like we've made our own tap."
"We'll build more," said Mr Jackson. "Every corner counts."



Over the next few days, they scavenged old tins, broken barrels, and rusted buckets from abandoned camps. With Jack's help, they attached strips of bark and bent tin to guide water like gutters. They tied the guttering on with rope made from twisted bark fibres and hung hessian sacks nearby to act as simple filters.



When it rained two days later, the family rushed outside. The water gurgled through the homemade spout and splashed into the tin. Jack danced around it. "It's working! It's working!"

Mum placed a cloth over the barrels to stop leaves and insects from falling in. "Clean on the inside and dark on the outside," she said. "That keeps the water fresh."

Still, the water had to be used wisely. There was no room for waste. Dishes were washed in a single basin. Afterward, the water was poured onto the vegetable patch. Clothes-washing water was reused to clean tools or soak goat feed. Even water used for bathing – rare as it was – was shared between the children and then fed to the garden.

On dry weeks, Mr Jackson and Jack would walk two kilometres to a spring at the base of a hill. The water was always cool, but sometimes slow to fill. "We can't rely on rain alone," said Dad. "God provides, but He also teaches us to plan and work."

Sometimes they boiled creek water to make it safe to drink. Other times, they filtered it through cloth. One day, Elsie made her own filter with a large tin, a bit of clean cotton, and some ash. "It still smells smoky," she said, "but it's clean!"

At the back of the hut, they dug a shallow soak – a pit lined with stones. Morning dew and hillside runoff slowly filled it. Every day they checked it, and often there was enough to fill a tin for the chickens.

During one particularly dry summer, the rains didn't come for five weeks. The vegetable patch wilted. The goats became restless. The barrels dried down to the rust. The creek bed was nothing but cracked mud.

That night, the family prayed together. "Lord, help us use what we have. Teach us how to live wisely."

Mum had an idea. They placed pans, cloths, and jars out on the ground overnight. By morning, the dew had soaked the fabric. They wrung it into a bowl and collected nearly half a cup. "Not enough for a bath," said Jack, "but enough for hope."

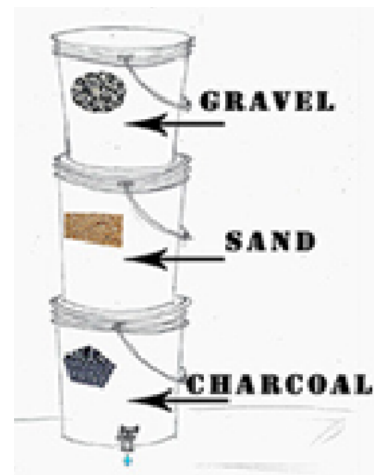
That week, Mr Jackson built something new.



He stacked three buckets on top of each other. The top one had holes in the bottom and was filled with layers – charcoal, sand, gravel. As water was poured in, it slowly dripped through, each layer cleaning it further. The bottom bucket held the finished water.

“It’s like we’ve made a spring of our own!” Elsie exclaimed. “Only smarter.”

Over the years, they improved everything. They replaced bark gutters with cut tin, sealed barrels with wax and cloth, and added a small stone water tank built from river rocks and mud. They even ran gutters from the barn roof to an extra storage barrel. The lean-to collected water too. Each new season brought a new problem – and a new idea.



When other settlers visited, they were amazed. “You’ve got a whole waterworks here!” said one man. “I’ve never seen anything like it.”

Jack smiled. “You just have to think like a drop of water – where would it fall, where would it go, and how can we catch it?”

Elsie kept a notebook of everything they tried. Some things worked. Others didn’t. But they learned from every experiment.

And whenever the rain finally came again – filling every tin, splashing into the soak, and soaking the garden – the family stood together and gave thanks.

Because every drop counted.

C) Narration Prompt

Tutor/Parent Says:

“Can you tell me everything you remember from the story? What kind of water system did the Jackson family build? What challenges did they face, and how did they solve them?”

Encourage the student to retell in order, using details from the story.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did the family do when it rained?
- Where did they collect their water?
- Why did they try not to waste any?

For Years 3–4:

- What were some of the ways they improved their water system over time?
- How did they make dirty water clean again?
- Why do you think water was so precious?

For Years 5–6:

- What does this story teach us about designing for survival?
 - How could you test or improve a water filter like theirs?
 - What role does resourcefulness play when natural resources are limited?
-

E) Activity: Design a Rainwater Collection System

Parent/Tutor Says:

“Let’s become resourceful water collectors too! You’ll design or build your own rain-catching or water-filtering system.”

Option A: Mini Rain Catcher Design or Build

F–2:

- Set out a plastic bowl or container to catch rainwater or pretend with a watering can.
- Use a piece of cardboard or a toy roof to see how the water flows into the bowl.

Y3–4:

- Build a simple gutter using rolled cardboard or foil. Use it to guide water into a cup or bucket.
- Try it with gentle pouring from a watering can.

Y5–6:

- Design and sketch a full rainwater harvesting system: gutters, barrels, and filters.
- Optional: Build a working model using plastic bottles, fabric, sand, and gravel as a filter and test with muddy water.

Alternative Option: Dew Collection Experiment

- Lay out different materials (plastic wrap, cloth, foil) on the ground overnight and check in the morning to see which collects the most dew.
-

F) Biblical Connection

Tutor/Parent Says:

“In Isaiah 41:18, God says, ‘I will make rivers flow on barren heights, and springs within the valleys. I will turn the desert into pools of water.’

God is the ultimate provider. He sends rain and dew, but He also gives us the minds to invent ways to use it wisely. When we are resourceful with what He gives us, we honour Him.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw how pioneers didn’t waste a single drop of water. They caught it, filtered it, and reused it. With simple tools and clever thinking, they made sure their families had enough to live. That’s the kind of resourcefulness God wants to see in us too – using His creation well and being thankful.”

SOAP MAKING: **Note- this one definitely needs adult supervision.**

Have you ever wondered what the best way is to make soap if you are living off the land?

The hard-working pioneers had to be resourceful and learn how to make their own soap from wood ashes and waste fats. They realized it's easy to craft soap using the overflowing amount of hardwood ashes that built up in their daily fires, along with the ample amount of animal fat from the butchering livestock they used for food.

For a lot of the pioneers, soap making became a semi-annual yearly affair on the homestead.

the butchering of livestock occurred in the autumn, soap was crafted at that time on many farms and homesteads to utilize the abundant supply of lard and tallow. For the homes that did not butcher their livestock for food, soap was generally crafted in the springtime, from saving the ashes from the wintertime fires and the cooking grease which they salvaged throughout the year.



of



or
As



How to Craft Good Old-fashioned Soap Directly in Your Pan

For all the campers out there, many likely have already discovered that by just throwing some white ashes into the hot frying pan, the lye from the ashes will combine with the fat or oil in the pan to form a crude soap.

Emergency Backup Power In The Palm Of Your Hand

Old-fashioned soap

This is an excellent way to wash out that dirty frying pan. However, this is not a great way to make enough soap to say, go take a bath.

How to Craft a Larger Amount of Soft Soap

Step One: Saving up Supplies

1. Wear goggles and gloves.
2. Boil the white ashes from hardwood fires in a little bit of water for about ½ an hour. Rainwater is said to be the best because it is considered to be soft water.
3. Let the ashes settle to the bottom of the pan.
4. The **liquid lye** will float to the top. Skim this off of the water. Save it in a container.
5. You will need to do this daily until you have a nice amount saved up.
6. At the same time, you want to be keeping any leftover cooking **lard** from your everyday This includes solid animal fats from your food and animal lard from cooking. [Shop-bought lard is usually pig fat that has been slowly cooked and filtered to make it cleaner.]
7. When you have saved up enough of both, you are ready to begin old-fashioned soap making process.



Step Two: the Soap-Making Process

1. You will need to find a pan or pot that is not aluminium. This is important because this process will eat through aluminium. You want this first pan or pot to be large enough to boil your lye in, and then add the hot grease to, as discussed in a later step.
2. Begin by boiling the still weak lye that you have been saving. (It is said that you should boil it down until you can float an egg on it. Now, I know that not everyone always has an egg on hand, so improvise here!)
3. Now put the fat, lard and oils that you have saved up into a separate pot. Depending on how much you have actually saved up, you might want to use a large pot or kettle for this. Make sure not to go over the halfway point of the pot you are using because you don't want the fats to bubble over.
4. Heat the fats until all of the water has been rendered out. This is especially important if you have solid fats.
5. You should still have the lye going at a slow boil in the other large pot. Now, you want to slowly stir in the new, hot, clean cooking grease into the lye. Slowly! Keep stirring until the mixture becomes a consistency of mush.
6. Save any extra, clean grease to use next time.



Step Three: the Pouring

1. You will need to have ready a wooden box of sorts if you want to pour this into an actual bar. If not, any container will do.
2. Cover whatever container you have in grease. so that the mixture won't stick to the container.
3. Pour the mixture into the container.
4. Let it cool and set.
5. This mix will turn solid but remain soft. Use a knife to release it from the container, if needed, or chop it up into usable pieces depending on your needs.
6. Now you have soft good old-fashioned soap!



How to Craft a Harder Form of Soap

Some people might want to harden up their crafted soap a bit more. Here's how:

1. You make it exactly the same way, but you will need to add salt to the mushy mixture before pouring.
2. Add a bit less than a cup of salt for each 4 litres of mix. Proportion this amount as needed — if you make 2 litres, use a bit less than ½ a cup of salt, and so forth.
3. Pour into a greased container, let it cool and then set before cutting it out with a knife.
4. You can cut it up into blocks or pieces, depending on your needs.

For homesteaders and outdoorsmen alike, making soap from what you are already using in nature is convenient — and costs you nothing.



Making soap



Washing clothes in the 'copper'.

WARNING: Pioneer families boiled their clothes in a copper. When our McNeice children were homeschooling, we tried doing the same; but found the modern clothes (made of nylon etc) melted and the plastic buttons melted as well. In olden times, the natural fabrics could stand the heat better than modern materials.

TOPIC 2

WORK, LEVERAGE & SIMPLE MACHINES

Lesson 2.1 – The Science of Lifting Heavy Things (Levers)

Unit Theme: Work, Leverage & Simple Machines

Character Trait Focus: *Resourcefulness – using tools and ideas to solve problems*

Curriculum Links: AC9S4U03, AC9TDE4K01

A) Introduction

Tutor/Parent Says:

"Today we're going to learn about a clever science idea called a lever. A lever is a simple machine that helps us lift or move heavy things without needing as much strength."

Pioneers didn't always have modern equipment or machines, but they used levers every day – in lifting logs, moving stones, or prying open stuck doors. Levers are everywhere – God has designed the world so we can use simple tools to do big jobs more easily. Let's find out how!"

B) Informational Story: Billy and the Log That Wouldn't Budge

Parent/Tutor says before reading:

"Here's a story about a boy on a pioneer farm who learns how to use a lever. Listen carefully and try to picture what's happening in your mind."

Billy and the Log That Wouldn't Budge

Billy Jenkins lived with his family on a pioneer farm surrounded by thick bushland and tall gum trees. His father, a carpenter, often used timber from fallen trees to build fences, carts, tools, and even furniture. Everything they needed, they either grew, built, or bartered for.

One morning after a wild storm, Billy and his dad went out to gather firewood. Twigs, bark, and broken branches littered the ground. "Look at that one," said Dad, pointing to a long, thick log resting across the path. "That would be perfect for the woodpile."



Billy ran ahead and tried to lift it. He grunted and puffed, wrapping his arms around the log. “It’s stuck!” he called out.

His father chuckled. “It’s not stuck – it’s just too heavy to lift with your arms alone.”

Billy sat back on the grass, breathing hard. “So how do we get it to the cart?”

“We don’t need to be stronger,” Dad said. “We just need to be smarter. Time to learn some pioneer science.”

Billy raised an eyebrow. “Science?”

“Yep,” said Dad. “Let me show you something that can turn one boy into ten.”

He walked over to a nearby pile of cut branches and selected a long, sturdy one. Then he picked up a round stone and carried it back to the log. He placed the stone near one end of the log and wedged the branch underneath it, using the stone as a pivot point.

“This,” said Dad, “is a **lever**. And that stone is the **fulcrum**. When we push on one end, the other end rises.”

Billy jumped on the far end of the stick with both feet. To his surprise, the heavy log lifted off the ground – just a little at first, then more as he balanced and bounced.

“It’s working!” he cried.

“You’re using **distance and pressure** to move something heavier than you,” Dad explained. “You’re turning your small weight into a big force.”

Billy was amazed. “I didn’t even use my arms!”

“That’s the beauty of levers,” said Dad. “Even the ancient Egyptians used them to build pyramids. Farmers use them to lift stumps. God designed the laws of physics to help us work wisely.”

From that day on, Billy started seeing levers everywhere.

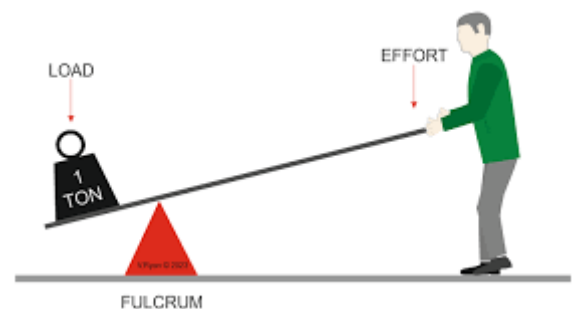
When Mum dropped a heavy pot and it rolled under the verandah, Billy grabbed a broomstick and a brick. He pushed one end under the pot and leaned on the other. The pot slid out easily.

“Another victory for lever-boy,” he grinned.

In the garden, Billy used a crowbar and a tree root to shift a water bucket stuck in mud. He even made a toy catapult using a spoon, a lump of clay, and a rubber band, launching pebbles into a tin can from across the yard.

He showed his younger sister Sarah how to lift the lid of the flour box using a broomstick and a block of wood. “This is science,” he told her. “Real science – no lab coat needed!”

Later that week, the family received a wooden crate of supplies. But the lid was nailed down tight.



Billy didn't reach for a hammer. He fetched the crowbar, slid it under the edge, placed a piece of firewood underneath as the fulcrum, and leaned back. *Pop!* The lid flew off.

Mum clapped her hands. "Looks like we have a lever expert in the family."

The next day, while Billy and his Dad were doing farm chores, Dad showed him how there were three types of levers, and you could see them all around the house.

First was the **see-saw**, which he and Sarah balanced on the log outside. The fulcrum was in the centre – one person's weight lifted the other. This is a simple 'first class lever'.

Next was the **wheelbarrow**. His Dad explained that if the load was between the wheel (fulcrum) and the handles (effort), it is a 'second-class lever'.

And finally, Dad showed Billy the **tongs** Mum used by the fire – two sticks joined at one end. When she squeezed the middle, the far end gripped the bread. "That's a third-class lever!" Dad declared.

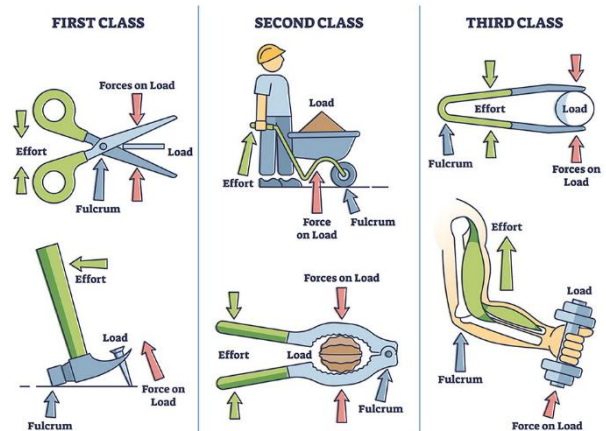
Even sweeping the floor with a broom made more sense now. The broom handle was a long lever, letting him clean further with less effort.

"I'm not stronger than the log," he said one evening while watching the sun set over the bush. "But I'm smarter now."

Dad smiled. "And that's what being resourceful is all about. Knowing what tools to use and how to use them."

Billy grinned. "Thanks to God's good design – and a little bit of lever science."

LEVERS



C) Narration Prompt

Tutor/Parent Says:

"Can you retell the story in your own words? What did Billy learn about lifting heavy things? What tools did he use? What is a lever and how does it work?"

Allow your child to narrate freely and guide them if needed.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Billy use to lift the log?
- What was the rock for?
- Can you think of something in your house or yard outside, that works like a lever?

For Years 3–4:

- How does a lever make work easier?
- What happens if you use a longer stick?
- Why is it important to know about levers when you don't have strong machines?

For Years 5–6:

- Explain the role of the **fulcrum**, **load**, and **effort** in a lever.
 - Can you think of three different kinds of levers and where we use them?
-

E) Activity: Make and Test a Lever

Parent/Tutor Says:

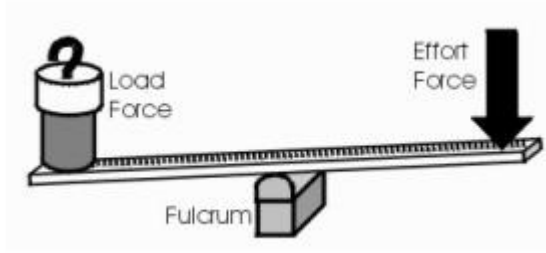
“Let's build our own lever to see how it works. We'll experiment with different sizes to see what works best.”

Materials (for all age groups):

- Ruler or wooden stick
 - Small stone or block (fulcrum)
 - Weights (toy car, rock, small books)
 - Optional: scale, second stick, timer
-

Foundation to Year 2:

- Set a ruler on top of a block.
- Place a small item (like a toy) on one side and push down on the other.
- Try moving the fulcrum closer or further and see what happens.



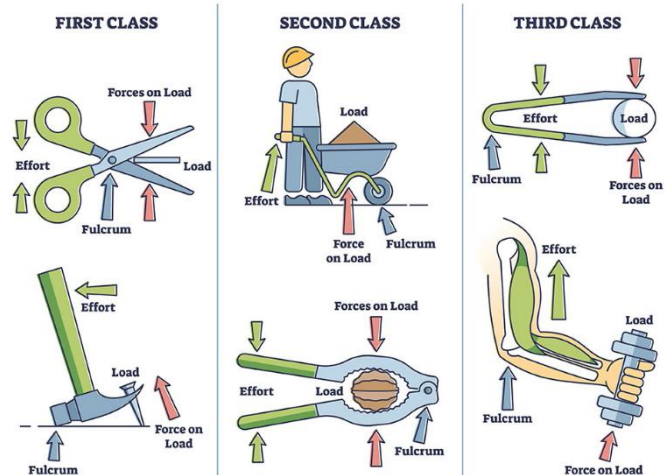
Years 3–4:

- Use different sticks or rulers as levers.
- Test lifting heavier objects with longer sticks.
- Record which setup makes it easiest.

Years 5–6:

- Build 3 types of levers:
 1. **First-class lever** (e.g. seesaw): load–fulcrum–effort
 2. **Second-class lever** (e.g. wheelbarrow): fulcrum–load–effort
 3. **Third-class lever** (e.g. tongs): fulcrum–effort–load
- Draw diagrams and label parts: fulcrum, effort, and load.
- Predict and test which lever types work best for different tasks.

LEVERS



F) Biblical Connection

Tutor/Parent Says:

“God gives us strength, but He also gives us wisdom. Proverbs 8:12 says, ‘I, wisdom, dwell together with prudence; I possess knowledge and discretion.’

When we use knowledge like levers to solve problems, we are using the wisdom God gave us. Just like Billy in the story, we don’t always need more strength – we sometimes just need to think differently.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how pioneers used levers to do heavy work without machines. With a stick, a rock, and a little thinking, they could move logs, open crates, and lift big things. God designed the world with these patterns so we can learn, invent, and be resourceful.”

Lesson 2.2 – Water Wheels and Cranes (Pulleys and Gears)

Unit Theme: Work, Leverage & Simple Machines

Character Trait Focus: *Resourcefulness – creating systems to do more with less effort*

Curriculum Links: AC9S6U03, AC9TDE6P01

A) Introduction

Tutor/Parent Says:

"Today's lesson is all about how early Australians used pulleys, gears, and water wheels to make work easier. These are examples of **simple machines** – tools that use God's natural laws to help us lift, turn, spin, and move things with less effort.

Pioneers and farmers used pulleys to draw water from wells, hoist heavy bags of grain, or move loads in barns. Aboriginal communities and settlers alike learned to harness water power through spinning wheels. Let's explore how these clever inventions helped build Australia!"

B) Informational Story: The Turning Wheel

Parent/Tutor Says Before Reading:

"Listen closely to this story about two brothers on a farm who discover how water wheels and pulleys can make hard work easier. Try to imagine what their machines looked like as you listen."

The Turning Wheel

Tom and Jesse Harper lived on a small dairy farm nestled in the rolling hills of colonial New South Wales, not far from a gently flowing river. Their family worked hard – milking cows, tending the garden, cutting firewood, and hauling buckets of water to and from the stream each day. Their parents believed in hard work and taught the boys to do their part.

But hauling water was the worst job of all. The riverbank was steep, and the buckets were heavy. By the time Tom and Jesse returned from each trip, their arms ached, and they had spilled half the water.

"There must be a better way," said twelve-year-old Jesse one morning, panting as he set down a sloshing bucket.

Tom, who was ten, scratched his head. "Like what?"

"I don't know," Jesse replied. "But I'm sure there's something we can build to help us."

That afternoon, Tom rummaged through the old toolshed behind the barn. He came back grinning, holding up a dusty metal pulley.

As he was cleaning the dust and dirt off the pulley, Tom exclaimed “Grandpa used this in the hayloft”. “He said it helped him lift bales without breaking his back.” Now that the pulley was clean it spun more freely.

The brothers got to work. They tied the pulley to a low tree branch near the river and looped a length of rope through it. On one end, they tied their water bucket. The other end became their handle.

When they pulled on the rope, something amazing happened. “It feels lighter!” said Tom.

“It’s because the pulley changes the direction of the force,” said Jesse, recalling something he’d read in a book. “It spreads the weight and lets us use our strength more efficiently.”

Encouraged, they added a second pulley, then a third, creating a simple **block and tackle** system. With a longer rope and more pulleys, they could now hoist a full bucket straight up the riverbank without spilling a drop. Even their younger sister Maisie could help!

But Jesse wasn’t done. That evening, he sat by the fire, sketching on a scrap of brown paper. “What if we didn’t have to pull at all?” he said. “What if the river lifted the bucket for us?”

Tom looked puzzled.

“I mean,” Jesse explained, “what if we built something that used the river’s flow to do the lifting – like a spinning wheel that turns with the current?”

“Oh! A water wheel!” said Tom. “Mr Barnett told us about those once. His grandfather used one to grind flour.”

The next morning, the boys began gathering materials. They collected wooden planks, old broom handles, rusty nails, and pieces of tin. With Dad’s permission and their own tools, they built a rough wooden wheel. They added paddles made from bark and tin, and mounted the whole structure onto a thick axle made from a tree branch.

They hauled their creation down to the river and anchored it between two rocks. The flowing water caught the paddles, and – slowly – the wheel began to spin.

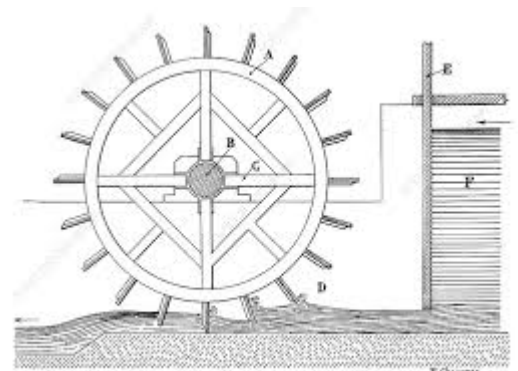
“It’s working!” shouted Tom.

With each rotation, the axle turned a spool wrapped in rope. They tied the other end of the rope to a small tin filled with stones. As the water wheel turned, the rope wound up – and the tin rose out of the river.

They had built a **working machine powered by water**.

The days that followed were full of tinkering and testing. They adjusted the paddle size to increase speed. They replaced the rope with a stronger one, then attached a larger drum. They even tried turning the motion sideways using a wooden gear Jesse carved by hand.

Eventually, their invention powered a small grinder that crushed dried corn into meal. Mum was thrilled. “You’ve saved me hours of work!” she said.



Later, the boys added a second system using gears to turn a butter churn. With each spin of the water wheel, the churn paddles turned inside the barrel. No more sore arms from hand-churning!

“I never knew we had so much energy right in front of us,” said Mum.

“All it took was a little inventiveness,” added Dad.

By the end of the month, the Harpers had a pulley at the well, a water wheel by the river, and a new barn hoist using a rope and crank. The farm ran more smoothly than ever.

“God gave us brains,” Jesse said, “and laws like gravity and motion. When we use them well, we can do more with less.”

“And that,” Tom added proudly, “is what I call good design.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell me the story again in your own words? What did the boys build? How did they use pulleys and water power to help their family?”

Let your child narrate freely and support them in remembering key moments.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did the boys use to lift heavy buckets?
- What happened when the water wheel turned?
- Why did their jobs become easier?

For Years 3–4:

- How does a pulley reduce the effort needed to lift something?
- What is the benefit of using water power like a wheel?
- Where else might pulleys or spinning wheels be used?

For Years 5–6:

- Explain how a pulley system spreads out force to reduce effort.
 - How did gears and rotation allow the boys to transfer motion from one place to another?
 - How does this story show resourcefulness in design and invention?
-

E) Activity: Build a Simple Pulley or Water Wheel

Parent/Tutor Says:

“Let’s see if we can design a simple machine just like Tom and Jesse did!”

Option A: Build a Simple Pulley System

F–2:

- Tie a string or shoelace over a broom handle or tree branch.
- Tie a small bucket or cup to one end. Pull on the string to raise it.
- Try lifting different items and observe what’s easiest.

Y3–4:

- Use two or three spools, curtain rings, or small wheels to build a simple pulley system.
- Mount them on a ruler or beam. Test lifting objects with and without the pulleys.
- Record what works better.

Y5–6:

- Design and construct a compound pulley (two or more pulleys).
 - Predict and measure how many pulls are needed to lift a set weight.
 - Graph results or write a short report explaining the mechanical advantage.
-

Option B: Build a Mini Water Wheel

All Ages:

- Use cardboard circles, paddle-pop sticks (for paddles), and a skewer for an axle.
- Mount the wheel between two cups or blocks.
- Pour water slowly over the paddles using a jug and watch it turn.

Extension for Y5–6:

- Attach a string and spool to the axle so it can lift a small object as the wheel turns.
 - Explore adding gears or turning the motion 90 degrees.
-

F) Biblical Connection

Tutor/Parent Says:

“Psalm 104:10 says, ‘He makes springs pour water into the ravines; it flows between the mountains.’

God gives us water not just to drink, but to use wisely. When we harness His creation with respect and inventiveness – like using pulleys and wheels – we honour Him by being good stewards.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how pulleys and water wheels helped people lift, move, and do work more easily. The pioneers didn’t have machines like we do, but they used simple tools, gears, and God’s design in nature to make their work lighter. That’s real resourcefulness!”

Lesson 2.3 – Make Your Own Machine: Invent Like a Pioneer

Unit Theme: Work, Leverage & Simple Machines

Character Trait Focus: *Resourcefulness – designing something useful from what you already have*

Curriculum Links: AC9TDE2P01, AC9TDE4P02, AC9TDE6P01

A) Introduction

Tutor/Parent Says:

"Over the past two lessons, we've seen how pioneers used levers, pulleys, gears, and even water-power to make their work easier.

Today you get to become a resourceful inventor, just like a pioneer child might have done. Imagine there were no shops, no batteries, and no machines – only sticks, string, and scraps. How would you solve a problem?

God gave us minds to think, hands to build, and a world full of materials to use wisely. Let's learn to invent like a pioneer!"

B) Informational Story: Millie's Invention Day

Parent/Tutor says before reading:

"Here's a story about a girl named Millie who used what she had to solve a real problem on her family's farm. Listen carefully to find out what she built." Then you can tell the story back to me.

Millie's Invention Day

Millie liked building things more than she liked playing games. While other children ran around with hoops or played knucklebones, Millie could usually be found hammering pegs into fence posts, tying pulleys to tree branches, or scribbling sketches in her notebook. Under her bed, she kept a wooden box full of string, buttons, pegs, bottle caps, rubber bands, broken toys, scraps of wire, tin lids, sticks, and all sorts of odds and ends. Her mother called it her "junk box." Millie called it her "invention kit."

"Don't you ever throw anything out?" her older brother teased one morning.

"Not if it might become useful," Millie replied.

One warm spring morning, Millie was given her usual chore – feeding the chooks and refilling their water dish. But when she reached the coop, she groaned. The water bowl had tipped over – again – and the chickens had scratched feed all over the ground, wasting half of it.

"Why do they always knock it over?" she muttered.

She carried the empty bowl back to the house. On the way, she passed the barn, where her dad was using a pulley to lift a sack of grain into the loft.

Millie stopped and stared. The rope looped over a pulley wheel, and Dad only needed to pull down gently to raise the sack.

“That’s it!” Millie grinned. “That gives me an idea.”

That afternoon, she sat beside the verandah with her “invention kit” spread out in front of her. She pulled out an empty golden syrup tin, a long piece of string, a few wooden offcuts, a rubber band, and a small wheel from a broken toy truck.

“I’m going to make something that tips water into the bowl but doesn’t get knocked over,” she told her little brother.

She began by attaching the tin to the small wheel and setting it on a short wooden track made from two sticks. She tied the string to one end of the tin and ran it over a small pulley she’d made from the toy wheel. At the other end of the string, she tied a small rock as a counterweight.

When she lifted the rock, the tin tilted forward and poured. When she let the rock drop, the tin rolled back into place.

“It’s like a seesaw, but with water,” she said. “I’ll call it the Rock-Tilt Feeder.”

Next, she turned her attention to the chicken feed. She wanted to make sure it only came out when needed. She rolled an empty toilet paper tube into a funnel and attached it to a tin dish. She tied a button to a rubber band, creating a flap that held the grain in place until it was pulled.

She poured in some dry seed and pulled the flap gently. The seed slid out in a neat stream.

“I just built a mini silo!” she exclaimed.

She tested both inventions three times. Each time, the water tipped and returned without falling over. The seed chute delivered just the right amount of feed.

The next day, Millie called her dad to the chook pen.

“I’ve made something,” she said. “Actually, two things.”

She showed him how the tin tipped when the rock was lifted, then rolled back. Then she demonstrated how the chute dropped seed when the button was pulled.

Dad squatted beside the invention and examined it with a nod. “Well now, that’s a tipping mechanism and a gravity-fed dispenser,” he said. “Did you think of all this yourself?”

Millie beamed. “I just used what I had.”

Mum came over to see what all the fuss was about. “You built this from the junk box?” she asked.

“Not junk,” said Millie proudly. “Spare parts.”

Her parents laughed, but they were impressed. By the end of the week, the Rock-Tilt Feeder was installed inside the chicken coop, secured between two fence posts. The feed chute was mounted on the wall. The chickens pecked happily, and nothing spilled.

Even Millie's little brother was amazed. "Can you build me a toy that throws balls?"

Millie tapped her chin thoughtfully. "That'll need a lever. And a spring, maybe. I'll have to check my box."



From that day on, Millie became the go-to inventor of the family. When the pantry door stuck, she fixed it with a pulley and a string. When Mum's broom handle broke, she made a new one from bamboo and tied it with wire. When Dad's boot wouldn't stay upright, she built a wooden wedge.

And whenever someone said, "We've got a problem," Millie would smile and say, "Let me check my invention spare-parts box."

C) Narration Prompt

Tutor/Parent Says:

"Can you retell the story? What problem did Millie face? What did she invent, and how did she make it work?"

Let your child explain in their own words.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Millie use to make her invention?
- How did the rock and string help tip the water?
- What else could you build with junk and string?

For Years 3–4:

- What problems did Millie solve with her invention?
- Why is it useful to build things with materials you already have?
- What did she learn by testing and improving?

For Years 5–6:

- What mechanical principles did Millie use in her designs? (e.g., gravity, wheels, tipping point)
- How can inventing help solve problems in your home or community?

- How is trial-and-error a part of creative design?
-

E) Activity: Invent Like a Pioneer – Design and Build Your Own Useful Machine

Parent/Tutor Says:

“Now it’s your turn to be resourceful. You’re going to build a machine or tool using only materials you find around the house. You can sketch your idea first or start building straight away!”

Materials to Collect:

String, rubber bands, sticks, cardboard, cups, tape, pegs, paper clips, bottle caps, straws, buttons, spoons, lids, blocks, etc.

Foundation to Year 2:

Task: Make a simple machine that can tip something, slide something, or move something.

- Ideas: A scoop, a tipper, or a rolling cart.
- Tape together parts and test how it works.

Years 3–4:

Task: Design a device that solves a problem (e.g., a seed dropper, a pencil holder, or a game launcher).

- Sketch the idea, build it using household items, test it, and make improvements.
- Write a label explaining what it does and how it works.

Years 5–6:

Task: Invent a working mechanical device using at least one simple machine (lever, pulley, wheel, ramp, screw).

- Draw a detailed design first, then build and test.
 - Write a brief explanation of how the machine works using scientific terms.
-

F) Biblical Connection

Tutor/Parent Says:

“In Exodus 35:31, the Bible says that God filled Bezalel with ‘the Spirit of God, with wisdom, with understanding, with knowledge and with all kinds of skills.’

God gives us the ability to invent, create, and design. When we use those skills to solve problems, we reflect His creative nature. Even a simple machine made from bottle tops and string can be an act of wisdom!”

G) Wrap-Up

Tutor/Parent Says:

“Today you were a problem-solver like Millie. You looked at a problem, thought of a solution, and used what you had to invent something useful. That’s real resourcefulness – being creative, practical, and wise with what God has given you.”

Create a Children's "Inventor's Box" for Recycled Crafting

- October 25, 2022
- [Activities](#) [Recycling](#) [Your OSHC](#)

Discover the magic of an "inventor's box" to let children indulge their creativity using recycled packaging and discarded household items.

National Recycling Week is a great time for parents and educators to get children involved in recycling. Creating an "inventor's box" is an easy way to encourage children to be creative while they learn about problem solving, and the importance of eco-friendly practices such as recycling. So, what is an inventor's box, and how can you create one?

What is an inventor's box?

An inventor's box is basically a box of recycled items to be used for craft play. You can use a cardboard box or a plastic storage tub and simply regularly add recycled odds and ends to it. When you're ready to use it, you can just add a few basic craft supplies such as scissors, glue, tape or string and let your little inventors get to work.



An inventor's box can be played with freely by your child, or you can direct their play a little bit by suggesting that they build a specific thing such as the tallest building that they can, or the fastest marble run, or a bird feeder.

An inventor's box offers children an opportunity to explore using different materials, be creative, problem solve and to learn as they play. Yes, it might get a little messy, but at the end of inventing, leftover supplies can simply go back in the box for next time.

How to make an inventor's box

The first step is to get a large box to house all your supplies. This can be a large cardboard box or a plastic storage tub or large zip-up storage bag. Then, simply fill it up with random recycled bits and pieces that would otherwise be destined for the bin. This might include things like:

- Small cardboard box packaging;

- Old wrapping paper and ribbons;
- Milk or juice bottle lids;
- Empty plastic bottles;
- Cleaned empty yoghurt containers;
- Toilet paper tubes; or
- Shredded paper. Always make sure that all the recycled items are safe and clean for use. Avoid using sharp metal items like cans or items that haven't been properly washed.

How to play with an inventor's box

When it comes to using an inventor's box you will need to also offer children access to some craft supplies. What craft supplies you offer them may depend on the age of the children using the box, or how messy you're willing to let them get. Here are some suggestions:

- Child-safe scissors;
- Icy pole sticks;
- Glue;
- Sticky tape;
- String;
- Pens or pencils;
- Googly eyes;
- Plasticine; or
- Marbles.

You may also choose to direct children's creations. This is particularly useful if the children using the box are a little older and up for a challenge. Here are some suggestions:

- Can you make a multi-storey building?
- Can you make a robot?
- Can you make a marble run?
- Can you make a spaceship?
- Can you build a bird feeder?

Don't forget to discuss inventions with the inventors!

Talking about their creation is a great way to encourage children to think critically about their design and will give them a sense of pride in their creation. Ask them about their design and whether there's anything that they feel didn't work as well as they had hoped, or anything that they're particularly proud of.

Why is craft creative play so important for childhood development?

Creative play is crucial for children's development, both from a mental and physical perspective. It offers children a chance to work independently, think critically, develop their problem solving skills and fine motor skills. It can also be a great way for children to enjoy some downtime away from screens without needing to be entertained by others.

How does an inventor's box teach children about recycling and sustainability?

An inventor's box is a great way to encourage children to think about recycling by allowing them to see how items that would otherwise be discarded can be reused. Through playing with an inventor's box, children will also develop a better understanding of the composition of different materials and how they can be used, for instance cardboard disintegrates when it gets wet and plastic doesn't.

Creating an inventor's box is not only a fun and educational activity for children, but it's also a great opportunity to talk with children about how recycling and sustainable practices can have a positive impact on our planet.

Celebrate Rubbish Robots for National Recycling Week with us in Your OSHC After School Care, from 13-17 November!

Article sourced from <https://campaustralia.com.au/blog/create-a-childrens-inventors-box-for-recycled-crafting/>

TOPIC 3

THE SCIENCE, TECHNOLOGY, AND MEDICINE OF THE ABORIGINAL PEOPLE

Lesson 3.1 – Aboriginal Tools, Weapons & Tracking

Unit Theme: The Science, Technology & Medicine of the Aboriginal Peoples

Character Trait Focus: *Resourcefulness – learning from nature and using it wisely*

Curriculum Links: AC9HS2K02, AC9S3H01, AC9TDE4K01

A) Introduction

Tutor/Parent Says:

“Today we’re going to learn how Aboriginal people – the First Australians – used science and invention in everyday life. They didn’t have factories, shops, or machines. But they lived successfully for thousands of years by using what God provided in the land around them.

They were experts at making tools from stone, wood, bone, shell, and plants. They used heat, pressure, carving, shaping, and clever design. Their tools helped them hunt, gather food, prepare medicine, and build shelters. Let’s hear a story that shows how they used resourcefulness to live wisely in God’s creation.”

B) Informational Story: The Tools of Bunjil’s People

Long ago, before there were cities, roads, or machines, a young boy named Wari lived with his family in the lands of Bunjil – the Creator Spirit of his people. His mob belonged to one of the Kulin nations of southeastern Australia. They followed the rhythms of the land, moving from place to place as the seasons changed.

Wari was learning to become a hunter and provider. He watched the older men carve spears from wattle wood, sharpen them with stone flakes, and fire-harden them over hot coals. He watched the women gather edible roots with digging sticks and weave string bags from plant fibres to carry bush foods.

“Everything has a purpose,” Grandfather would say. “Even a stick or a stone can become a tool – if you see it with the right eyes.”

Wari loved learning. One morning, he followed his Uncle Bira to the riverbank. Bira squatted by a flat rock and picked up a round grinding stone.

“See this?” he said. “This is how we turn seeds into flour.”

Wari watched as Bira poured dry seeds onto the rock and used the smaller stone to crush and grind them. The fine powder was mixed with water and cooked on a hot flat stone into a kind of bush bread.



Later, they climbed a ridge to gather wood. Uncle Bira stopped near a tree and pointed. “Good for coolamons,” he said. Using a stone axe, he carefully cut and shaped a long piece of bark into a shallow carrying bowl. It would be used for holding water, carrying babies, or grinding berries.

Wari asked, “How do we make the axe sharp?”

“With stone,” Bira replied. “But not just any stone. We use greenstone or quartzite – hard rocks we find in special places.”

That night, Grandfather showed Wari his toolkit. It included a flint blade, a kangaroo bone awl for sewing, a spear-thrower called a woomera, and a fire stick used to spark flames by friction.



“See this?” Grandfather said, holding up a sharp-edged flake. “This cuts better than a metal knife – if you know how to use it.”

They used the awl to punch holes in kangaroo skin, then threaded plant fibre string through to make a warm cloak.

Wari learned that even weapons like the famous boomerang were not just toys. Some were curved and returned when thrown to scare flocks of birds. Others were heavy and straight for hunting kangaroos. They were shaped precisely, with knowledge passed down from generation to generation.



In the cool season, the women prepared medicine. Wari helped his mother gather eucalyptus leaves, which they boiled to make a healing steam for coughs. They crushed the sap from bloodwood trees to clean wounds. Every plant had a purpose – if you knew how to find it and what to do with it.

“God made this land,” his mother would say. “And He gave us what we need to care for each other.”

One hot day, Wari watched as the men dug a deep hole near the creek. They lined it with heated stones, placed meat and tubers inside, and covered it with leaves and earth. Hours later, the food emerged tender and cooked through. It was a traditional ground oven – used for generations.

Wari also learned how to make glue from spinifex resin, how to shape a canoe from bark, and how to store water in animal skins and coolamons. There were tools for carrying fire, traps for catching eels, and nets woven from rushes.



What amazed Wari most was how nothing was wasted. Bones became needles, teeth became fishhooks, shells became scrapers. Even ashes from the fire could be used to preserve meat or help clean.

One day, Grandfather said, “Wari, tell me – what is a tool?”

Wari thought for a moment. “It’s something you use to do a job,” he said. “Something you shape.”

“And what makes a good tool?” Grandfather asked.

Wari smiled. “Knowing what to use. And how to use it.”

Grandfather nodded. “You’re ready.”



That night, Wari shaped his first hunting spear from a straight branch. He carved it with care, hardened it in the fire, and tied a stone head using kangaroo sinew and resin. It was his tool. His creation. His responsibility.

As the fire crackled and the stars filled the sky, Wari felt proud. Not just because of the spear – but because he had learned how to listen to the land, to see what others might miss, and to use what God had already provided.

C) Narration Prompt

Tutor/Parent Says:

“Can you retell the story? What kinds of tools did Wari learn to make? What were they used for? How did his people use things from the land around them to survive and care for others?”

Let your child speak freely and guide them if needed.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What tools did Wari and his family make?
- What did they use them for?
- Can you name some things in nature that could be made into a tool?

For Years 3–4:

- How did Wari’s people use stone, wood, and plant materials?
- What did they do to make their tools strong or useful?
- Why do you think nothing was wasted?

For Years 5–6:

- Describe how knowledge, skill, and observation helped Aboriginal people create effective tools.
- What can we learn from their resourcefulness and respect for nature?
- How does their science and technology show intelligent design and practical wisdom?

E) Activity: Create a Model or Display of Traditional Aboriginal Tools

Parent/Tutor Says:

“Let’s make our own model tools or a poster to show what we’ve learned about Aboriginal science and invention.”

Option A: Make a Model Tool (All Ages)

Use cardboard, clay, sticks, bark, leaves, feathers, or string to make a replica of:

- A boomerang
- A coolamon
- A grinding stone
- A spear or spear-thrower (woomera)
- A digging stick or fishing net

F–2:

- Help your child choose one tool to copy. Use simple shapes and natural materials.
- Talk about what it’s used for.

Y3–4:

- Choose 2–3 tools to make or draw. Label their names and what they’re made from.

Y5–6:

- Make a small toolkit display or shoebox diorama. Include labels and a short explanation of how each tool worked and why it was important.

Option B: Poster or Drawing

- Draw a diagram of different Aboriginal tools and how they were used.
- Include materials, purpose, and which part of the body they helped (cutting, carrying, sewing, cooking, etc.)

F) Biblical Connection

Tutor/Parent Says:

“In Genesis 1:29, God says, ‘I give you every seed-bearing plant... they will be yours for food.’

God gave His people everything they needed in the world He made. Aboriginal people showed wisdom by learning how to use His gifts in respectful and clever ways. Their tools were designed to care for others, provide food, and live in balance with the land. When we use the earth wisely, we honour God’s design.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw how Aboriginal people were scientists and inventors. They used the land wisely and made everything they needed from God’s creation. They didn’t waste. They didn’t rush. They were observant, clever, and thankful. That’s what resourcefulness looks like when we live in harmony with nature and honour God’s good design.”

Lesson 3.2 – Bush Medicines and Plant Knowledge

Unit Theme: The Science, Technology & Medicine of the Aboriginal Peoples

Character Trait Focus: *Resourcefulness – finding healing in God's creation*

Curriculum Links: AC9S2U01, AC9S4H02

A) Introduction

Tutor/Parent Says:

"Today's lesson is about the bush medicine knowledge of Aboriginal Australians. Long before modern pharmacies existed, Aboriginal people understood how to use plants, bark, and sap to treat wounds, soothe coughs, and help the body heal.

They didn't have textbooks or microscopes – but they carefully watched what worked, remembered it, and passed it on. That's the kind of resourcefulness that takes both wisdom and patience – and it reminds us that God has placed healing right inside His creation."

B) Informational Story: Nali and the Medicine Walk

Nali lived in a small camp near the northern coast of Australia, where red dirt met green bushland and the tall trees sang in the breeze. Her people had lived on this land for many generations. They understood the seasons, the animals, and the plants. They listened to the land and learned from it.

One warm morning, just as the sun painted the sky pink, Auntie Bina touched Nali's shoulder. "Time for a medicine walk," she whispered.

Nali sat up quickly and smiled. She loved walking through the bush with Auntie. She slipped on her sandals and picked up her woven basket. "What are we looking for today?"

"Leaves that cool, bark that cleans, and sap that heals," Auntie replied with a nod.

They stepped quietly into the bush. The air smelled fresh. Birds called from the trees, and the grass sparkled with dew. Auntie walked slowly, her eyes scanning every plant, every tree. "You don't need many plants," she said softly. "Just the right ones. We only take what we need."

Their first stop was a tall melaleuca tree – its bark soft and papery. Auntie peeled back a small section of bark and held it in her hand.

"This can be used as a bandage," she explained. "It keeps wounds clean and dry."

She crushed some of the leaves between her fingers and held them up to Nali's nose.

"Smells sharp!" said Nali, breathing in.

"That's the oil," Auntie said. "It clears blocked noses. If someone has a cold, we boil the leaves and breathe in the steam."



They walked on, and soon came across a grevillea bush with bright red flowers. Auntie Bina gently picked a few blossoms. “These hold nectar – sweet and soothing for sore throats. You can suck it straight from the flower, or mix it with warm water.”



Next, they stopped by a stringybark tree. Auntie carefully sliced the bark with her stone knife and caught the thick golden sap that oozed out.

“This dries into a hard seal. It’s like a plaster. Good for cuts.”

Nali held up the bark and sap together. “Bandage and plaster from the same tree,” she said thoughtfully.

“God is wise,” Auntie smiled.

Further along the path, they knelt by a bush mint plant. The smell filled the air as Auntie crushed some leaves in her palm.



“Rub this on your chest when you have a cough,” she said. “The oils help you breathe.”

They passed a termite mound and a stand of tall grass trees. Nali pointed. “Isn’t that the one with sticky sap?”

Auntie nodded. “Yes, and that sap mixed with warm water can be used for toothache. That’s called fire sap, because it also helps start fires when dried.”



Down by a small creek, they found bracken fern. Auntie said its leaves could soothe itchy skin. They also dug gently in the soft soil and uncovered yam roots – good for eating, but also used as a poultice for sore muscles when mashed.

Nali’s basket was now half-full. She looked up. “Auntie, how do you remember what every plant does?”

Auntie Bina looked at the sky and then back at the trees. “We learn by watching. We follow the seasons, the animals, and the old ones. Some plants bloom only when another fruit ripens. Some help certain birds – we know they can help us too. It’s not just plants – it’s knowledge. It’s connection.”

They sat beside the creek and laid out the leaves, bark, and sap in neat little piles. Auntie wrapped them in a coolamon made from bark and tied it with twine.

“We give thanks for what God has made,” she said, “and we use it wisely.”

That night, Nali helped prepare the medicine. Uncle had a cough, so they crushed bush mint and eucalyptus leaves, poured boiling water over them, and placed the bowl on the ground beside his mat. The strong, sweet-smelling steam filled the hut.

Uncle breathed it in and smiled. “Better than anything from the chemist!” he chuckled.

Nali beamed. “All from the bush!”

The next morning, Auntie gave Nali her own small coolamon. “Time for you to start your own medicine walk,” she said. “You’ll make mistakes, but you’ll also learn. That’s how we keep wisdom alive.”

As Nali walked out into the sunlight with her basket, she knew she was holding more than bark and leaves. She was carrying knowledge. She was part of something much bigger – something passed down, protected, and now growing in her.

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words? What plants did Nali and Auntie Bina find? What were they used for? How did they know what to look for?”

Encourage detail and sequencing.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What kind of tree helped Nali’s aunt make a bandage?
- What plant helped with coughing?
- Why do you think God made plants with healing powers?

For Years 3–4:

- What methods did Aboriginal people use to figure out which plants were useful?
- Can you remember three plant uses from the story?
- Why is it important to use only what you need?

For Years 5–6:

- How did traditional plant medicine require both science and care?
 - In what ways do modern medicines still use plant knowledge?
 - What does this teach us about caring for the land and passing down wisdom?
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E) Activity: Create a Bush Medicine Guide OR Plant Scavenger Hunt

Option A: Make a Bush Medicine Guide Poster

F–2:

- Draw or colour pictures of three different plants (e.g., leaves, flowers, trees).
- Write or dictate one sentence each: what it looks like and what it’s used for.

Y3–4:

- Create a poster showing 4–5 bush medicine plants with drawings.
- Add written labels for:
 - Name
 - Healing use
 - Part of plant used (e.g. leaf, bark, sap)

Y5–6:

- Research and present a mini field guide of 6+ bush medicine plants.
 - Include botanical drawings (or photos), Aboriginal names (if available), uses, and any scientific understanding (e.g., antiseptic, anti-inflammatory).
 - Add a reflection on how this shows respect and care for the land.
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Option B: Plant Scavenger Hunt

All Levels:

- Take a walk in your backyard or neighbourhood (or look through books or online images).
- Identify any plants that match ones from the story (e.g. eucalyptus, paperbark, mint).
- Use drawings or notes to make a “found it!” chart.

 *Caution: Do not touch or taste unknown plants – this is an observation-only activity.*

F) Biblical Connection

Tutor/Parent Says:

“In Ezekiel 47:12, the Bible says: ‘Their fruit will serve for food and their leaves for healing.’

God placed healing in His creation, and Aboriginal people learned to use that gift wisely. When we care for creation, study it carefully, and use it respectfully, we are acting with wisdom and honouring God’s good design.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how Aboriginal peoples studied the land and found healing in the plants around them. They didn’t waste what they had, and they didn’t need to rely on outside help – they used what God had already provided. That’s what resourcefulness really means – watching, learning, and using wisely.”

Lesson 3.3 – Aboriginal Shelter and Survival Design

Unit Theme: The Science, Technology & Medicine of the Aboriginal Peoples

Character Trait Focus: *Resourcefulness – creating shelter and safety with what nature provides*

Curriculum Links: AC9TDE2K01, AC9TDE4P02

A) Introduction

Tutor/Parent Says:

"Today's lesson is about how Aboriginal peoples across Australia built shelters that suited their environment – from rainforests to deserts.

They didn't build with bricks or nails, but with leaves, bark, grass, and branches. Their homes were temporary but smart – quick to build, cool in summer, warm in winter, and perfectly suited for life on the move.

That kind of resourcefulness – using what's around you to meet your needs – takes careful planning, deep knowledge of the land, and creative thinking. Let's find out how they did it."

B) Informational Story: Jarra Builds a Shelter

Jarra lived with his family in the woodlands of southeastern Australia. Their clan followed the seasons – moving with the animals, gathering bush food, and camping near fresh water. They never stayed in one place for too long, because the land provided different gifts at different times of year.

One crisp autumn morning, Uncle Birran clapped his hands and called out, "Jarra! It's time to learn how to build a gunyah."

Jarra jumped to his feet. A **gunyah** was a traditional Aboriginal shelter – a small dome-shaped structure made from natural materials like bark and branches. Jarra had slept in many, but never helped build one from the beginning.

"Can I help with the whole thing?" he asked eagerly.

Uncle Birran chuckled. "More than help. You're going to learn to design."

They walked down to a shady patch beside a creek. Birds were singing, and the soft breeze stirred the leaves.

"First rule of shelter," said Uncle, kneeling, "is location. Close to fresh water, protected from strong wind, and not too low, or rain might flood the ground."

Jarra nodded, watching carefully as Uncle Birran bent low and studied the earth. He cleared a flat space with his hands. "This spot is high enough to stay dry and sheltered by trees for shade."

"Do we build the beds first?" asked Jarra.

“No,” said Uncle, smiling. “We start with the bones – the frame. The bed goes in once the roof keeps you dry.”

They gathered long branches from nearby – ones that were strong but flexible. Uncle Birran showed Jarra how to test the branches by bending them slightly.

“If it bends and bounces back, it’s good. If it snaps, it’s no use.”

They drove three forked sticks into the ground in a triangle. Across the top, they laid a longer branch like a roof beam. Two more curved branches were bent down to form the sides.

“That’s the frame,” Uncle explained. “Just like your skeleton holds your body up.”

Next, they gathered **bark from stringybark trees** – but only from fallen logs. “Never take bark from a living tree unless it’s already loose,” Uncle said. “The tree gives us shelter, so we take only what we need.”

They laid the bark over the frame in layers, like roof tiles, overlapping each sheet so the rain would slide off. “Start from the bottom, and work your way up,” said Uncle. “That way the water runs over the edges instead of leaking inside.”



To hold the bark in place, they tied it with **vines** and fastened corners with sticks.

“What stops the wind from blowing it away?” asked Jarra.

Uncle smiled. “We use more sticks to make a windbreak around the base. And we lean the roof into the wind, with the entrance away from the wind.”

Jarra’s hands were scratched and dirty, but he kept working. They added **fresh leaves and grass** over the bark to insulate the shelter. It was starting to look like a real home.

“Do people build them the same way everywhere?” Jarra asked as he stepped back to admire their work.

“No,” Uncle said. “Different Country, different shelter. Up north, they use big palm leaves. In the desert, it’s mostly spinifex and low wind walls. In the rainforest, shelters are built high and wide to stay dry and cool.”

“That’s smart,” said Jarra. “So, the land decides how you build.”

“Exactly,” said Uncle. “The best shelter fits the land.”

Once the structure was complete, they lined the inside with soft grass and spread a kangaroo skin on the ground.

Jarra sat down inside. It was dim and quiet. The bark walls blocked the wind, and the roof curved like a cosy cave.

Uncle Birran crouched outside the doorway. “See how small it is? That’s not just for hiding from weather – it keeps body heat inside.”

Next, they built a **small fire pit just outside**, with flat stones placed nearby to sit on. Uncle tied a curved stick above the doorway to hang bags or tools.



That night, Jarra and his little brother curled up inside the gunyah under a blanket of woven rushes. The wind blew softly, but the shelter didn’t move. The fire outside glowed red, casting flickers on the bark walls.

From his own shelter nearby, Uncle Birran called out, “How’s it feel?”

Jarra smiled. “Safe and warm.”

Uncle laughed. “Then you’ve built it well. Shelter is a gift from the land – and your hands helped shape it.”

Jarra closed his eyes, proud. He knew now that clever hands, wise minds, and the gifts of nature could make a perfect home – even without bricks or nails.

C) Narration Prompt

Tutor/Parent Says:

“Can you retell the story? What did Jarra and his uncle do first? How did they build the shelter? What made it strong and safe?”

Let your student retell the story with as much detail as possible.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Jarra build?
- What was the roof made of?
- Why did they build the shelter near water and trees?

For Years 3–4:

- What made the gunyah strong against wind and rain?
- Why did different Aboriginal groups use different types of shelters?
- What kind of thinking does it take to plan a good shelter?

For Years 5–6:

- How does Aboriginal shelter design show deep understanding of local environments?
 - How is temporary design sometimes smarter than permanent buildings?
 - What modern survival or eco-housing ideas can we learn from traditional knowledge?
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E) Activity: Build a Model Shelter OR Design Your Own Gunyah

Option A: Build a Model Shelter (Indoor or Outdoor)

F–2:

- Use sticks, leaves, bark, and cloth to build a small shelter for a doll or toy animal.
- Talk about what would happen in wind or rain.

Y3–4:

- Build a shelter frame using sticks or skewers.
- Add walls from bark, leaves, paper, or cardboard.
- Test with light mist from a spray bottle – does the “rain” get in?

Y5–6:

- Build a scale model of a gunyah or climate-specific shelter.
 - Draw a plan with labels: wind direction, materials, drainage, sun-shade, etc.
 - Optional: write a short builder’s explanation describing how your shelter suits its environment.
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Alternative Option: Shelter Design Drawing

All Levels:

- Draw and label your own Aboriginal-style shelter suited to your local area.
 - Include which natural materials you’d use, and what you’d do in case of rain or strong sun.
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F) Biblical Connection

Tutor/Parent Says:

“In Psalm 90:1, it says, ‘Lord, you have been our dwelling place throughout all generations.’

Even though Aboriginal shelters were temporary, they were built wisely with respect for creation. And no matter where we live, God is our true shelter and provider. When we use our knowledge to build wisely – just like Jarra – we reflect God’s wisdom.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw how Aboriginal families built homes without machines or factories. Their shelters were smart, sturdy, and suited to the land. That’s true resourcefulness – knowing what to use, how to use it, and how to live lightly and wisely in God’s creation.”

TOPIC 4

THE RESOURCEFULNESS & INVENTIVENESS OF THE AUSTRALIAN PIONEERS (PART 2)

Lesson 4.1 – Pioneer Tools and Home-Made Gadgets

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 2)

Character Trait Focus: *Resourcefulness – solving daily problems with practical inventions*

Curriculum Links: AC9TDE2P01, AC9TDE4P02, AC9TDE6K01

A) Introduction

Tutor/Parent Says:

“Today’s lesson is about the clever ways that pioneers solved everyday problems using homemade tools and gadgets. On the Australian frontier, there were no hardware stores or online deliveries – people had to make what they needed out of wood, metal scraps, or bits of wire.

They used observation, imagination, and trial-and-error to build items like butter churns, boot scrapers, fence tighteners, and hand-cranked washing boards. That’s true resourcefulness: using what you’ve got to make what you need.”

B) Informational Story: The Handy Work of Mr Potts

In a clearing at the edge of a dusty track stood the Potts’ homestead – a slab hut with a chimney made from stones and packed earth. The fence was held together with saplings and twisted wire, and smoke drifted gently from the kitchen chimney. The Potts family had lived there for six years, and though they had very little money, their home was full of clever contraptions.

At the heart of it all was Mr Potts.

“Your father could fix anything,” Mrs Potts liked to say with a smile. “And if it couldn’t be fixed – he’d build something new.”

Twelve-year-old William Potts agreed. He often followed his father around the property, watching as he turned scrap wood into something useful. One morning, Mr Potts stood with his hands on his hips, staring at the broken hinge on the front gate.

“No point going to town – takes half a day’s ride,” he muttered. “Let’s see what we’ve got.”

He rummaged through a wooden box behind the toolshed and pulled out a strip of metal from an old kettle and a pair of fencing pliers. With a bit of heating over the coals and some hammering on a flat stone, he bent the metal into a curve and attached it to the gate with hand-forged nails.

“There,” he said, testing it. “Might not be pretty, but it’ll hold.”

That same week, William helped gather eggs and carry water. Their bucket had a crack. Instead of throwing it away, Mr Potts plugged the hole with a cork and wound waxed string around it.

“You’d be amazed what you can do with string, cork, and brains,” he grinned.

Around the house were dozens of small inventions.

On the verandah was a homemade boot scraper made from an old saw blade stuck in a block of wood. A rain chain made from bent spoons guided water from the roof into the tank. The washing tub had a hand-crank paddle Mr Potts had fashioned from a butter churn and wagon wheel parts.

“Push and pull. Push and pull,” he’d say. “That’s the rhythm that cleans.”

In the kitchen, Mrs Potts proudly used a flour sieve made from a stretched piece of mesh over a circular frame cut from a cheese tin. Above the stove hung a row of hooks for hanging utensils, made from bent nails.

Mr Potts had also made a candle mould using a hollowed gum branch and a wire wick-holder. “We’ll never run out of light again,” he said.

But the greatest invention was the rat-proof grain box.

After a long dry season, the rats had found their way into the grain store. Mr Potts stayed up that night, sketching by lamplight.

In the morning, he gathered leftover timber, a sheet of tin, and some wire mesh. He built a grain bin with a sloping lid and wire bottom, raised off the ground with tin sheeting along the legs.

“They can climb, but not slide,” he explained. “Too slippery for their paws.”

And it worked. Not one rat made it in.

William watched his father with admiration. “How do you think of all this?” he asked one day.

Mr Potts rubbed his chin. “Well, I observe. I ask questions. I try things. If they fail, I try again.”

He picked up an old doorknob and turned it in his fingers. “Every bit of junk is a puzzle piece. You just need to figure out where it fits.”

One day, the family hosted a Sunday tea for their neighbours. Mr Potts brought out his latest invention – a hand-powered apple peeler. He mounted a sharp blade onto a rotating clamp and fixed it to the table. As the handle turned, the blade shaved the peel off the apple in one long curl.

Mrs O’Reilly clapped her hands. “You’ve saved me hours of work!”



Mr Potts smiled. “That’s the goal.”

That evening, William sat on the back steps and looked at the stars. “Dad,” he said, “do you think I could build something like that someday?”

Mr Potts handed him a bent nail, a strip of wood, and some twine. “Start now,” he said. “There’s no better teacher than trying.”

From that day forward, William kept a box under his bed marked “Parts for Inventions.” He collected corks, buttons, broken hinges, string, bottle caps, and wire.

Because in the Potts household, nothing was ever just rubbish – it was the beginning of something useful.

C) Narration Prompt

Tutor/Parent Says:

“Can you retell the story? What kinds of things did Mr Potts build or fix? How did he use everyday materials in creative ways?”

Encourage your child to retell with as much detail as they remember.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What kind of home did the Potts family live in?
- What did Mr Potts use to fix the bucket and the gate?
- Can you think of something you could build using scrap or old parts?

For Years 3–4:

- Why was Mr Potts able to solve so many problems?
- How do observation and trial-and-error help with invention?
- What’s something around your house that could be improved with a homemade gadget?

For Years 5–6:

- How did Mr Potts show problem-solving and scientific thinking?
 - What simple machines or physics ideas do his gadgets use?
 - How might learning to invent be more helpful than always buying new things?
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E) Activity: Design or Build Your Own Pioneer Gadget

Parent/Tutor Says:

“Now it’s your turn to think like a pioneer. You’ll either draw or build a simple invention or gadget using items around your house.”

Option A: Invent a Pioneer Gadget

F–2:

- Use blocks, cardboard, string, and tape to build a pretend washing machine, scoop, or apple peeler.
- Talk about what problem it solves.

Y3–4:

- Draw a diagram of a homemade invention. Label each part.
- Optional: Build a prototype using cardboard, wire, sticks, or recycled items.
- Write 2–3 sentences about what it does and how it works.

Y5–6:

- Design a working model or sketch of a household gadget using levers, pulleys, or wheels.
 - Use recycled materials or small hardware (supervised).
 - Write a short inventor’s note explaining how it works and why it’s useful.
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Option B: Pioneer Invention Poster or Journal Page

- Title: “How I Solved the Problem Like Mr Potts”
 - Include a drawing, a list of materials, and a paragraph explaining the steps of your invention.
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F) Biblical Connection

Tutor/Parent Says:

“Proverbs 22:29 says, ‘Do you see someone skilled in their work? They will serve before kings.’

When we use our hands and minds to build and fix things, we honour God by using the creativity He gave us. Mr Potts didn’t need a big workshop – he used wisdom, patience, and careful eyes. And we can too.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how early pioneers used practical thinking and simple materials to solve everyday problems. Instead of buying something new, they made what they needed. That’s real resourcefulness – working with what you have, and trusting that God has given you the brain and the hands to do something good with it.”

Lesson 4.2 – Soap, Candles and Useful Household Items

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 2)

Character Trait Focus: *Resourcefulness – making useful things at home with what you have*

Curriculum Links: AC9TDE2P01, AC9S4U01

A) Introduction

Tutor/Parent Says:

“Today’s lesson is about how pioneer families made everyday items themselves – like soap, candles, and other useful household things.

They couldn’t pop down to the supermarket – so they had to use fat from animals, oil from plants, ashes from the fire, and even string and jars to make what they needed. This is a perfect example of resourcefulness – not waiting for help or supplies, but using what God has already given to meet our daily needs.”

B) Informational Story: Lucy and the Soap Pot

Lucy stood on the back verandah, frowning slightly at the strong smell drifting from the yard. Her mother was bent over a large black iron pot hung above an open fire, stirring slowly with a long wooden paddle. The smoke rose in gentle curls, and steam hissed every time it hit the edge of the pot.

“Mum, what *is* that smell?” Lucy asked that’s, wrinkling her nose.

Her mother laughed. “It’s not stew, if what you’re hoping. I’m making soap.”

“Soap?” Lucy stepped closer, intrigued. “You can *make* soap?”

Her mother nodded and scooped up some of the thick yellowish liquid with a ladle. She poured it carefully into a square wooden mould lined with oiled paper. “Yes, indeed. We’re nearly out, and I don’t plan on riding into town just for soap.”

Lucy crouched beside the pot and watched the bubbles rise to the surface. “What’s in it?”



“Fat from our cooking – mostly drippings from meat – and lye made from the ashes in the fire.”

Lucy’s eyes widened. “We can *wash* with that?”

Her mother nodded again. “We use fat that would have gone to waste, and ash that would have been thrown out. That’s the pioneer way – we waste nothing.”

Over the next hour, Lucy helped measure and stir the ingredients. They added water to the ashes to make the lye, which they strained through an old cloth. The mixture had to be stirred just right – not too fast, not too slow – and then poured carefully into various moulds.

Some of the soap blocks were large and plain, meant for scrubbing clothes. Others were smaller and poured into cup-sized containers for hand-washing. A few had lavender or eucalyptus leaves added to give them a fresher smell.

“You can even carve a pattern on the top before it hardens,” her mother said, handing Lucy a small knife. “Just like the fancy ones people buy.”

Later that afternoon, Lucy’s younger brother Tom burst out the kitchen door, holding an empty jar.

“Mum, Dad needs another candle! His old one dripped everywhere and melted down.”

Mum dried her hands. “All right. Let’s make some more candles.”

They set up a second pot, cleaned out an old pan, and gathered ingredients – tallow from rendered animal fat, beeswax from a nearby farm, and bits of string for wicks.

“First we melt the tallow and beeswax,” Mum said, “then pour it into jars or old tins. The string hangs in the middle to become the wick.”

Lucy dipped her finger in the warm wax and rubbed it between her fingers. “It sets so fast!”

“That’s why we have to work quickly.”

They lined up old jelly jars, spoons, and tiny clay pots. Each one was filled with warm wax and set aside to cool. In a few hours, they had a row of finished candles with soft white tops and curled string poking out the middle.

“Old-timers used reeds or cotton rags if they didn’t have string,” Mum said. “Anything that burns slowly and evenly.”

The next morning, Lucy carefully wrapped three soap bars in cloth and tied them with twine. She added one candle to the bundle and placed it in a basket.

“What’s that for?” Tom asked.

“The Wilkins family. Mum said they’ve run out of candles and their soap is almost gone. We’re giving them some of ours.”



Lucy beamed as her mother patted her shoulder. “You’ve worked hard – and when we share what we’ve made, we bless others too.”

Later that week, Lucy had her own idea. She collected an empty tin, added dried lemon-scented leaves she’d been saving, and carefully melted wax into it. She stirred in the leaves and inserted a wick. When it cooled, it smelled fresh and clean.

She presented it to her mother that evening. “I made lemon hand soap – in a candle!”

Mum lit it and watched the soft glow. “It smells wonderful. You’ve got a gift for making useful things.”

From that day on, Lucy kept her own little supply box. Inside were scraps of wax, bits of string, dried herbs, trimmed cloth, and saved bits of tin. She made soft scrubbers from wool and string, candle jars with flower petals pressed in the sides, and even a duster using a corncob wrapped with worn-out yarn.

When the matches ran out, Lucy helped her father start the fire using flint and steel. When the soap turned out too soft one week, she figured out how to place the moulds closer to the hearth to dry faster.

“You’re thinking like a real bush girl,” her mother said proudly. “A clever mind is worth more than a full store shelf.”

Lucy didn’t miss the store anymore. She was learning to make what she needed – with her hands, her heart, and a whole lot of bush ingenuity.

C) Narration Prompt

Tutor/Parent Says:

“Can you retell the story? What did Lucy and her mum make? What ingredients did they use? What other helpful things did Lucy think of?”

Encourage detailed retelling in the right order.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Lucy’s mum use to make soap and candles?
- What did Lucy make for her mum?
- Would you like to make soap or a candle?

For Years 3–4:

- How do fat, wax, ashes, and herbs turn into useful items?
- Why did the family make things instead of buying them?
- What does this story show about being resourceful?

For Years 5–6:

- How does understanding materials (like fat, oil, and ash) help pioneers make things?
 - What scientific changes happen when something melts and sets again?
 - How can we practise creativity and self-reliance like Lucy did?
-

E) Activity: Make a Simple Candle or Create a “Pioneer Product” Poster

Option A: Make a Simple Candle

Note: Always supervise children closely when using heat or melted wax.

F-2:

- Use a cupcake liner or small glass jar as a mould.
- Place a cotton string wick in the centre.
- With adult help, melt wax (such as leftover candle stubs or crayons) and pour it in.
- Let it set and decorate the jar with paper, twine, or a label.

Y3-4:

- Add dried herbs (lavender, lemon, rosemary) or essential oils to scent the wax.
- Create a name label: *“Lucy’s Lemon Candle – Made with Wax and Herbs”*

Y5-6:

- Research how different waxes (tallow, beeswax, soy) affect scent, burn time, and smoke.
 - Write a brief comparison of your candle to pioneer-made ones.
-

Option B: “Pioneer Products” Poster**F-2:**

- Draw or paste pictures of items like soap, candles, scrubbing brushes, and labels.
- Title it: *“Things We Can Make at Home!”*

Y3-4:

- Create a labelled poster showing three homemade pioneer items (what they were made from and why).
- Include simple instructions for one item.

Y5-6:

- Make a comparison poster between store-bought vs homemade soap or candles.
 - Include notes on materials, cost, environmental effects, and usefulness.
-

F) Biblical Connection**Tutor/Parent Says:**

“Proverbs 31:13 says about the wise woman: ‘She selects wool and flax and works with eager hands.’”

God honours those who make useful things with care and skill. Lucy didn’t need fancy tools – just her hands, her brain, and some basic ingredients. That’s the kind of practical wisdom the Bible encourages.”

G) Wrap-Up**Tutor/Parent Says:**

“Today we learned how soap, candles, and other household items were made from everyday things – fat,

wax, string, and herbs. The pioneers didn't waste anything. Instead, they used what they had wisely and shared it with others. That's the heart of resourcefulness – and a great way to honour God.”

Lesson 4.3 – The Pioneer Shed: Tools, Repairs, and Ingenuity

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 2)

Character Trait Focus: *Resourcefulness – fixing, adapting, and inventing with limited tools*

Curriculum Links: AC9TDE4K01, AC9TDE6P02

A) Introduction

Tutor/Parent Says:

“Today’s lesson is about a place that was more important than a shop or a toolbox on a pioneer farm – the shed.

In a pioneer shed, you’d find old horse shoes, bent nails, broken buckets, planks, saws, and maybe even a wagon wheel or two. It was the place where things were mended, tools were made, and problems were solved. It wasn’t fancy, but it was full of creativity and clever thinking.

Let’s hear a story about a boy who discovered just how useful a shed could be.”

B) Informational Story: *Sam and the Shed of Ideas*

Sam’s family had only lived on their little block of land for three years, but it already felt like home. Their slab hut was small, and the water tank always needed filling, but it was theirs. They had a small vegie garden, a few chickens, and a cow they called Blossom who was more grumpy than grateful. Life wasn’t easy – but it was full of adventure.

Behind the house stood a weather-beaten old shed, leaning slightly to one side as if it had given up trying to stand straight. Its walls were made of mismatched boards – some smooth, some splintered – and the door creaked like a crow every time it opened. Most people would have thought it looked like a pile of junk. But Sam’s dad called it “the shed of ideas.”

“Because that’s where you go when something breaks,” he’d say, “and where you go when you don’t know what to do. The answer’s usually hiding in there somewhere – you just have to find it.”

One morning, Sam was pushing the wheelbarrow full of firewood when the wooden wheel gave a loud crack and rolled away into the dust.

“Oh no!” he cried. “That’s the second time this month!”

The barrow tipped sideways, spilling logs everywhere. Frustrated, Sam picked up the broken wheel and trudged to the shed, wheelbarrow in one hand, axle in the other.

His dad was already there, sorting through an old biscuit tin full of nails. “Trouble?” he asked, raising an eyebrow without looking up.

Sam nodded. “The wheel came off again. Same as last time.”

“Hmm,” Dad said, rubbing his chin. “Sounds like we need more than a repair. We need a better design.”

He motioned for Sam to sit on the old work stool while he rummaged through boxes and crates. The inside of the shed was a tangle of wires, hooks, saw blades, old tins, leather straps, planks, ropes, pulleys, horseshoes, and more. Everything looked like junk – until you needed it.

Sam watched as Dad pulled out a sturdy metal rod and a round disc of wood. “Let’s reinforce the axle with this metal sleeve,” he said, “and we’ll wedge the wheel tighter so it doesn’t pop off again.”

They heated the metal over a small fire outside, then carefully tapped it into place using a rock as a hammer. When they slid the wheel back on and added a spacer from an old broom handle, it turned smoothly and didn’t wobble.

“Better than new,” said Dad.

The next week, the handle broke off Mum’s flour scoop.

“Go check the shed,” Mum said. “Ask your father to help.”



Sam found him at the back wall, cutting up an old tin. “Let’s make a new scoop altogether,” he said, “but this one with a longer handle and a better grip.”

They used tin snips to shape the scoop, folded the edges safely so no one would get cut, and riveted it to a stick of wattle wood. A strip of leather from an old harness made a comfortable handgrip.

“There,” Dad said, holding it up. “No need to ride to town.”

It wasn’t just tools they fixed. One day, the water tank overflowed because the pipe was blocked with leaves. Sam’s older sister climbed up to investigate, and they used a broom handle tied to a piece of wire to poke it clean. Another time, the fence wire snapped, and Dad built a tightener out of an old spanner and a horseshoe.

Sam started to understand what made the shed so important. It wasn’t just the tools – it was what you did with them. It was the ideas. It was seeing one thing and imagining another.



Dad kept several old notebooks filled with drawings of inventions and repairs. One showed a grain scoop that filled two bags at once. Another was a plan for a wind-powered clothes spinner. And one half-finished sketch looked like a washing machine made out of a rocking chair.

“Have you built this one?” Sam asked, pointing to the wild design.

“Not yet,” Dad said, chuckling, “but one day, maybe.”

Sometimes, Dad gave Sam his own projects. One Saturday, he handed Sam a challenge: “Can you build something that can lift a heavy bucket of water without needing two people?”

Sam sat under the pepper tree thinking. He sketched a frame with a rope and pulley. He used a broom handle for the top bar, some wire from the fence, and a coat hook from the back of the door. It wobbled, but when he tried it with an empty bucket, it worked!

They added a second hook to hold the full bucket once it was lifted. “Now that’s an idea worth keeping,” Dad said.

Sam beamed. From then on, he kept a journal too. He filled it with pictures of pegs, door latches, traps, and windmill ideas. The shed became his school of invention.

One day, when a strong wind ripped the door off the chicken coop, Sam didn’t even go to the house. He ran to the shed, found a broken hinge, a tin lid, and some twine – and fixed it before breakfast.

That evening, around the fire, Dad said, “You know, it’s not the shed that’s special. It’s the thinking. That’s the tool that matters most.”

Sam nodded. He knew now that the shed was more than a place for parts. It was a place to imagine. A place to build. A place where old bits turned into new solutions. He was no longer just a boy on a bush block – he was an inventor.

And even though the roof still leaked in one corner, to Sam, it really was a shed full of ideas.



C) Narration Prompt

Tutor/Parent Says:

“Can you tell me what happened in the story? What kinds of things did Sam and his father fix or invent? What made the shed so useful?”

Encourage as much detail and sequencing as the student can recall.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Sam and his dad fix in the story?
- What did they use to build new things?
- Why was the shed important?

For Years 3–4:

- What made the shed more valuable than just the tools inside it?
- How did Sam’s father teach him to solve problems?
- What’s something in your home that could be fixed with a little creativity?

For Years 5–6:

- How does trial-and-error help inventors and problem-solvers?
 - Why is it better to learn how to fix things than to throw them away?
 - What does this story teach us about independence and resourcefulness?
-

E) Activity: Design or Build a Shed Invention

Parent/Tutor Says:

“Let’s invent like Sam and his dad. You’ll either build a simple gadget or draw your own repair or invention using materials you already have.”

Option A: Build a Shed Tool or Model

F–2:

- Make a pretend scoop, hook, or lifting device using cardboard, string, or pegs.
- Talk about what it helps with.

Y3–4:

- Build a model machine or fix-it tool using recycled materials.
- Add a label or write a sentence explaining what it does.

Y5–6:

- Invent a problem-solving device using one simple machine (pulley, lever, wheel).
- Draw a detailed plan or build a working model.
- Write a paragraph describing the process and outcome.

Option B: Journal or Poster – “The Shed of Ideas”

All Ages:

- Draw a shed. Inside it, add pictures of tools and inventions.
 - Write what each one is used for and how it helps.
-

F) Biblical Connection

Tutor/Parent Says:

“In Ecclesiastes 10:10, it says, ‘If the axe is dull and its edge unsharpened, more strength is needed, but skill will bring success.’”

God wants us to use wisdom, not just strength. Sam and his father used cleverness, not expensive things. When we solve problems with skill and thankfulness, we honour the creativity God has given us.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how important a little shed could be on a pioneer farm. It wasn’t just a place for tools – it was where people thought, fixed, and created. That’s what resourcefulness means: using what you have, learning from mistakes, and doing your best with what God has given you.”

Optional Extra Lesson 4.4:

Water Wheels and Cranes (Pulleys and Gears)

Unit Theme: The Resourcefulness & Inventiveness of the Australian Pioneers (Part 2)

Character Trait Focus: *Resourcefulness – inventing to meet local needs with limited resources*

Curriculum Links: AC9S6H01, AC9TDE6K01

A) Introduction

Tutor/Parent Says:

“Today’s lesson is about real-life inventions that were created right here in Australia during the early days of European settlement. The land was rugged, the weather extreme, and help from overseas was months away. That meant settlers and pioneers had to invent things – new tools, machines, or ways of doing things – to survive and make life better.

We’re going to hear the story of two clever children, Toby and Sarah, whose families came up with smart solutions to big problems using simple machines – pulleys and gears. As you listen, try to picture what’s happening and imagine what you would do in their place.”

B) Informational Story

Parent/Tutor Says:

“Now we’re going to read a true-to-life story filled with science and creativity. Please listen very carefully, because after the story, I’ll be asking you to tell it back to me in your own words.”

Story: The Pulley and the Wheel – Smart Solutions on the Farm

In the rolling hills of colonial New South Wales, there lived two pioneering families – the Burtons and the MacIntyres – each working hard to tame the land and make a life from the soil. These settlers didn’t have tractors, power tools, or modern machines like we do today. Every challenge they faced required quick thinking, careful planning, and good old-fashioned resourcefulness. They had to look at the world around them and ask, “What do we have? What can we do with it?”

The Burton family lived on a small property with a few cows, chickens, and a vegetable patch. But they had one big problem – their well. It was deep. So deep, in fact, that lowering and lifting the water bucket by hand had become a real struggle, especially for young Toby Burton. Each day, Toby had to wind the rope around his arms, lean back with all his weight, and drag the heavy, dripping bucket up from the darkness. Sometimes the rope slipped, and the bucket splashed back into the water with a loud *kerplunk*. Sometimes it was just too heavy for a child to lift at all.

Toby’s arms grew sore. His hands blistered. And his patience? That wore thin too.

One evening, his father noticed his son wiping sweat from his brow and wincing with every pull. Mr Burton sat down with his tools and a block of wood beside the fire and said, “There must be a better way. God gave us minds to solve problems. Let’s think this through.”

He rummaged through an old chest and pulled out a tattered book. Inside was a drawing of something sailors used on ships – a pulley. It was a simple invention: a wheel with a rope looped over it. The pulley didn't create more strength, but it changed the direction of the force, making lifting much easier.

With a few wooden scraps, a carved wheel, and some iron nails, Mr Burton built a small pulley system over the well. He fixed a strong post next to the well and fastened the pulley at the top. Now, instead of pulling the heavy bucket straight up, Toby could pull down on the rope. The wheel did the hard part. He could even tie the rope to the post if he needed to rest midway.

The first time Toby used it, he grinned from ear to ear. The bucket rose smoothly from the well. No more blisters. No more spills. Just simple, clever lifting.



What had once been a painful chore was now a satisfying task. Toby even started helping more around the property – filling buckets for the animals, watering the garden, and helping his mum wash nappies and clothes for his baby sister. The pulley hadn't made him stronger, but it had made his job easier. And that, Toby decided, was just as good.

Meanwhile, on the other side of the valley, the MacIntyre family were facing a different kind of challenge. Mr MacIntyre had built a storage shed at the bottom of a slope. It was a fine shed for storing tools and grain – but during the hot summer months, it became an oven. The tin roof sizzled. The wooden walls trapped the heat. It was too hot to work inside, and anything stored inside often spoiled.

Mr MacIntyre dreamed of a fan or a breeze or anything to keep it cool. But there was no electricity, and fancy equipment was far out of reach.

One Sunday afternoon, while walking along the creek near the shed, his daughter Sarah leaned over the bridge. The water was flowing quickly. She watched a leaf spin in a whirlpool and thought, “That looks just like a wheel turning... I wonder... could water spin a real wheel?”

An idea sparked in her mind like a flash of lightning.

Sarah ran to her father and shared her thought. At first, he chuckled. “A water wheel? Out here in the bush?” But the more he thought about it, the more sense it made. Water wheels had powered mills in Europe for hundreds of years. Why not try?

The next weekend, father and daughter got to work. They gathered old bits of wood, leftover nails, and some bent pieces of metal. With patience and teamwork, they crafted a small water wheel and placed it carefully in the running stream.



Then came the clever part – they connected the spinning axle of the wheel to a long wooden rod that stretched into the shed. There, they installed a series of gears: round, toothed wheels that turned one another like a chain reaction. At the end of the gear line, they mounted a fan made from shaped tin plates, angled just so to catch the air.

When the creek turned the wheel, the gears spun, and the fan began to turn – slowly at first, but steadily. Cool air started to move through the window, blowing over sacks of flour and swinging Sarah’s hair.

By the end of the day, the MacIntyres had done something remarkable. They had built a working air-cooling system using only water, wood, and metal scraps – all powered by the stream. That summer, while the sheep lay panting under trees, the MacIntyres’ shed became a cool retreat. And word of their invention quickly spread through the valley.

Soon, neighbours began asking questions. “How did you lift that bucket so easily, Toby?” “What’s that spinning fan in your shed, Mr MacIntyre?” And one by one, these clever contraptions began appearing on farms all around – pulleys, wheels, gears, and fans – built not in factories, but by the hands of everyday families who had learned to observe, imagine, and invent.

None of these solutions cost money. They didn’t need fancy tools. What they needed was attentiveness, a willingness to learn, and the belief that if God gave people clever minds and capable hands, then those gifts should be used.

That’s what Toby and Sarah would later tell their own children. Sitting on the grass, watching the water wheel spin or pulling water from the well with ease, they would say, “God gave us good minds and clever hands. Let’s use them well.”

C) Narration (Oral Retelling)

Parent/Tutor Says:

“Now I’d like you to tell back as much of the story as you can remember. Try to go in order. What happened first? What problem did Toby have? What solution did his father create? What about Sarah? What did she notice? What did her family invent? Take your time, and explain everything like you’re teaching someone who hasn’t heard it before.”

(Let the child retell the story orally. Prompt gently if they get stuck.)

D) Reflective Thinking Questions

Youngest Students (F–Yr 2):

- What job was hard for Toby before the pulley helped?
- What did Toby’s dad use to make the pulley?
- What did Sarah see in the creek that gave her an idea?
- Who helped build the water wheel?
- Who do you think gave them the clever ideas?

Middle Primary (Yrs 3–4):

- Why did the pulley make Toby’s job easier even though it didn’t make him stronger?
- How did gears help turn the fan inside the shed?
- What character trait did Toby and Sarah show?
- What do you think it means when they said, “God gave us clever minds and hands”?
- Can you think of another tool or invention you could make using simple materials?

Upper Primary (Yrs 5–6):

- Explain how changing the direction of force made the pulley more efficient for Toby.
- What role did careful observation play in Sarah's invention?
- What kind of thinking is required to solve problems with limited resources?
- Why do you think God values resourcefulness? Can you think of Bible examples?
- What modern machines use pulleys or gears today?

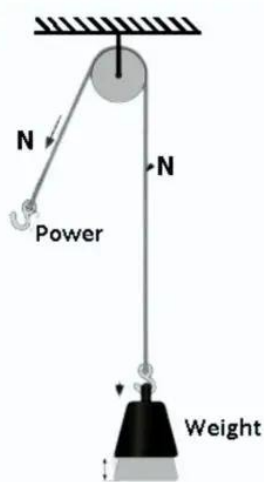
E) Hands-On Activity – Make a Simple Pulley or Water Wheel

Parent/Tutor Instructions:

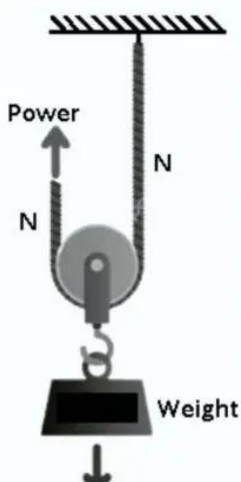
“We’re now going to build one of the simple machines from today’s story. You can choose either the **pulley system** or the **water wheel** depending on the materials you have available. Please supervise closely and help with any cutting or assembly.”

TYPES OF PULLEY SYSTEM

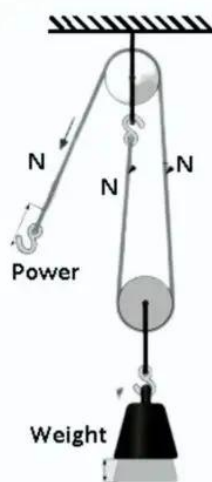
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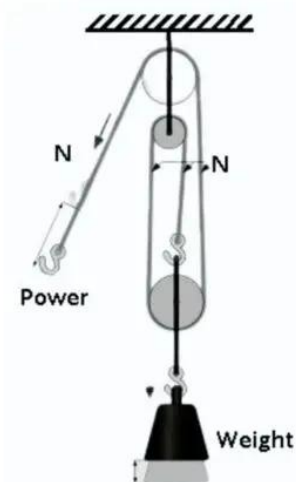
Fixed Pulley



Movable Pulley



Compound Pulley



Block and Tackle Pulley

Option 1: Build a Simple Pulley

Materials:

- A small wheel or thread spool
- String or twine
- A plastic bucket or cup
- A strong stick or broom handle
- A place to hang the pulley (e.g., a table, tree branch, or banister)

Steps:

1. Tie the spool to the top of the broomstick or hang it under a table using string so that it turns freely.
2. Loop the string over the spool.
3. Tie one end of the string to the bucket.
4. Now try lifting the bucket by pulling the other end of the string downward.
5. Try different weights (stones, toys, water) and see how it changes the effort required.

Say:

“This is just like the pulley system Toby used. See how pulling *down* lifts the bucket *up*?”

Option 2: Build a Simple Water Wheel



Materials:

- Something round for the hub = (stiff cardboard or plastic plates; or tin lid; or a round piece of fruit)
- Paddle shapes cut from cardboard or plastic, or use plastic spoons or cups
- Skewer or pencil for axle
- Blu-tack or hot glue
- A bowl or tray of water
- Optional: use a hose, stream, or kitchen tap for flowing water

Steps:

1. Cut a circle from cardboard and attach paddle pieces around the edge like a pinwheel.
2. Push a skewer through the centre to act as the axle.
3. Hold the water wheel under running water or gently pour water over it.
4. Watch the wheel spin. If possible, connect it to a simple fan or spinning paper to show power transmission.

Say:

“This is like Sarah’s water wheel. See how moving water can be turned into spinning energy?”

F) Biblical Connection – God Gives Us Clever Minds

Parent/Tutor Says:

“In the Bible, there are many times where people had to be clever and resourceful to solve problems. Noah followed God’s design to build a great ark. Joseph stored grain wisely during a famine. Paul made tents to provide for himself while sharing the gospel. These weren’t rich or powerful people – they were ordinary, faithful people who used the gifts God gave them.

Toby and Sarah's story reminds us that God has given us the ability to think, observe, and invent. When we face problems, we can pray, stay calm, and ask, 'What do I have? What can I do with it?' That's resourcefulness – and it honours God."

"Whatever your hand finds to do, do it with all your might." – Ecclesiastes 9:10

TOPIC 5

PIONEER MEDICINE & HOME REMEDIES

Lesson 5.1 – Herbal Teas, Poultices and First Aid

Unit Theme: Pioneer Medicine & Home Remedies

Character Trait Focus: Resourcefulness – using God’s creation for healing and care

Curriculum Links: AC9S2U01, AC9S4U01

A) Introduction

Tutor/Parent Says:

“Before doctors and chemists were nearby, pioneer families had to look after their own health. They didn’t have painkillers or antibiotics. Instead, they used the natural things around them – herbs, leaves, hot cloths, and clever homemade treatments like herbal teas, poultices, and simple first aid.

In this lesson, we’ll discover how resourcefulness helped pioneers treat sicknesses and injuries using what they had in the garden, kitchen, or bush. God has given us many healing plants – if we know how to use them wisely.”

B) Informational Story: *Hannah’s Healing Garden*

Hannah lived with her family in a small homestead nestled between gum trees and grassy hills. The walls were made of timber slabs, and smoke curled gently from the chimney. Behind the house, just beside the vegetable patch, was a quieter, tucked-away section of the garden. They called it “The Healing Corner.”

It was her mother’s special place. Here, mint grew wild under the shade of a wattle tree, while lavender bushes hummed with bees. Rows of lemon balm, yarrow, thyme, and chamomile swayed gently in the breeze.

“These aren’t for cooking,” Mum would say. “These are for caring.”

One cold winter morning, Hannah’s little brother Sam woke up sniffing. His eyes were glassy, and he had a sore throat and a hot forehead. “My head feels like it’s full of wool,” he mumbled.

“Mum, what can we do?” Hannah asked.

Her mother smiled gently. “God has already given us something to help. Come to the garden.”

Together they gathered peppermint and lemon balm. Inside, Mum boiled water and poured it over the fresh leaves in a teapot. The warm, minty smell filled the kitchen.

“This tea will help his throat and bring his temperature down,” she explained. “We’ll add honey too – it soothes the throat and helps the body fight infection.”

Sam sipped the tea slowly and lay back with a blanket. By the afternoon, his cheeks weren’t as red, and he was well enough to sit up and listen to a story.



A few days later, Dad came home from the paddock with a badly scraped arm. He’d tripped while chasing a runaway calf, and the grazes looked red and sore.

“Let’s clean it first,” said Mum. She used warm salt water to wash the wound, then turned to Hannah. “Go fetch the yarrow.”



Hannah picked a bunch of feathery green yarrow leaves and brought them inside. Mum crushed the leaves into a thick green paste and wrapped it in a clean cloth. She pressed it gently onto Dad’s arm.

“This is a poultice,” she said. “It draws out infection and cools the skin.”

Dad winced but gave Hannah a wink. “You’ve got your mum’s healing hands.”

On quiet nights when Hannah couldn’t sleep, Mum would warm chamomile flowers in a pot of water and let the steam fill the room. “Close your eyes and breathe deeply,” she whispered. “Chamomile helps your thoughts slow down and your heart to rest.”



One afternoon, Hannah saw the neighbour’s boy, Tom, crying after being stung by a bee. She ran to the edge of the garden and picked a leaf from the plantain weed that grew along the fence. She crushed it gently between her fingers and rubbed the juice onto Tom’s skin.

He blinked in surprise. “It doesn’t sting as much now!”

“Mum says God puts helpers in the leaves,” Hannah replied.

On another day, while collecting eggs, Hannah scraped her leg on a broken gate latch. It bled slightly, but she knew just what to do. She cleaned it with warm salt water, then pressed a crushed calendula flower and wrapped a clean cloth around it. “That should stop the sting and help it heal,” she said to herself proudly.

[Calendula is also called “Pot Marigold” but it’s not a true marigold.]



When her cousin Rachel had earache, Hannah warmed a small cloth filled with dry rice and lavender and laid it gently on her ear. “It feels nice,” Rachel whispered.



Another time, a family friend arrived with a sore tooth. Mum boiled cloves in a little water and asked Hannah to bring a spoonful. “Clove helps numb the pain,” she said. Hannah watched as the man sipped the mixture and sighed with relief.

Later that spring, the family’s cow gave birth during the night. Dad returned cold and aching from hours of helping. Hannah boiled eucalyptus leaves and poured the strong-smelling liquid into a shallow basin. “Put your feet in here, Dad,” she said. “It helps the aches and clears your nose too.”



By the time she was ten, Hannah knew how to press warm cloths on tummies to help with cramps, how to use cooled boiled thyme water for coughs, and how to soothe a headache with a damp cloth and a few drops of lavender oil. She even started helping friends who came to visit.

One summer, her friend Lucy twisted her ankle badly while playing. Hannah soaked a cloth in cold water and wrapped it gently around the swelling, then tore a strip from an old pillowcase to hold it firm.

“You’re better than the town doctor!” Lucy grinned.

“No,” Hannah said with a shy smile. “I just listen, watch, and remember.”

By twelve, Hannah had her own drawer of dried herbs, neatly labelled with string and paper. There were jars of beeswax, small bottles of eucalyptus oil, clean cloths, and even a handwritten recipe for cough syrup using honey, lemon juice, and onion. On the lid of the drawer, she had written in her best handwriting: “*The Lord is my Healer*” – Exodus 15:26.

She continued to learn by watching, helping, and gently practising care. Every time someone was sick or sore, Hannah was ready – with a prayer, a poultice, and a pot of tea.

C) Narration Prompt

Tutor/Parent Says:

“Can you retell the story? What kinds of things did Hannah and her mum use for sickness? How did they help other people?”

Encourage a full retelling using names, plants, and remedies.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What plants did Hannah and her mum use for helping sick people?
- What is a poultice?
- What do you like better – herbal tea or warm cloths?

For Years 3–4:

- How did Hannah show resourcefulness when someone was sick or hurt?
- Why do you think certain herbs work for healing?
- How do you think people remembered these remedies without books or doctors?

For Years 5–6:

- How do the plants mentioned in the story have real scientific properties that help healing?
 - What risks and responsibilities come with using home remedies?
 - How did Hannah’s knowledge help her community?
-

E) Activity: Make a Healing Tea or Create a “Home Remedies” Booklet

Option A: Make a Simple Herbal Tea (with supervision)

F–2:

- Brew a pot of chamomile or peppermint tea (store-bought is fine).
- Add honey or lemon and drink together.
- Talk about how the smell and warmth help the body.

Y3–4:

- Make a tea using fresh mint, lemon balm, or lemon juice with honey.
- Create a “tea label” with a name (e.g. “Sore Throat Soother”) and a short instruction.

Y5–6:

- Research or create a recipe card for 2–3 herbal teas and explain their traditional use (e.g. “Chamomile = calm, Peppermint = digestion”).
 - Optional: Start a mini herbal tea journal or recipe collection.
-

Option B: Create a “Home Remedies” Booklet

All Levels:

- Fold paper into a small booklet.
- Title it: “*My Pioneer First Aid and Remedy Book.*”
- Include drawings or cut-outs and 3–5 simple herbal or home treatments.
- Optional: Decorate with leaves or nature prints.

F) Biblical Connection

Tutor/Parent Says:

“Exodus 15:26 says, *‘I am the Lord who heals you.’* And in Revelation 22:2, it says *‘the leaves of the tree are for the healing of the nations.’*

God made plants with healing properties, and He gives people wisdom to know how to use them. Just like Hannah’s family, we can be thankful, wise, and careful as we learn how to care for our bodies with His creation.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw how early pioneers used plants, cloth, and prayer to care for their families. They didn’t wait for help – they got busy using what God provided. That’s real resourcefulness, and it’s something we can still practise today by learning to be gentle, wise, and helpful.”

Lesson 5.2 – Keeping Clean and Avoiding Sickness

Unit Theme: Pioneer Medicine & Home Remedies

Character Trait Focus: *Resourcefulness – preventing sickness by staying clean and careful*

Curriculum Links: AC9S2H02, AC9S4H02

A) Introduction

Tutor/Parent Says:

“Today’s lesson is about how pioneer families tried to stay healthy by keeping clean and preventing the spread of sickness. Long before hospitals and pharmacies were nearby, families had to rely on common sense, observation, and God’s good design – fresh air, clean water, boiled cloths, and warm sunshine.

They couldn’t afford to wait until they were sick. Instead, they worked hard to keep their homes and bodies clean, knowing that prevention was often the best medicine. Let’s find out how this kind of wisdom and resourcefulness helped keep pioneer families well.”

B) Informational Story: Sickness on the Station

When the Smith family heard that people in the next town had come down with the flu, they were concerned. “It’s spreading quickly,” Dad said, reading the letter from the storekeeper. “Best we take extra care out here too.”

Although their sheep station was many kilometres from the nearest neighbours, Mum wasn’t taking any chances. “Illness can travel on the wind, in dust, and even on our clothes,” she said. “We need to work smart, not just hard.”

She gathered the children – Alice, Ben, and little Maggie – and gave each of them a task.

“Alice, we’ll start by boiling the towels, dishcloths, and pillowcases. Ben, you help me scrub the verandah railings and wash the door handles. Maggie, you can shake out the rugs and hang the blankets in the sunshine.”

“Why the sun?” asked Maggie.

“Because sunlight kills germs,” Mum replied. “And fresh air chases away sickness. It’s one of God’s oldest medicines.”

They opened the windows in every room, even though the morning was chilly. The wind swept through the house, flapping curtains and airing out stale corners. “Breathe it in!” Dad said with a grin. “The cheapest doctor you’ll ever meet.”

Ben was in charge of scrubbing the kitchen table and chairs. “Every surface where hands go, germs go too,” Mum explained. He worked hard with hot soapy water, scrubbing the legs, arms, and handles of everything.

Near the back door, they set up a handwashing station: a bowl of warm water, a bar of homemade soap, and a clean towel hung on a nail.

“Every time we come inside – wash hands,” Mum said firmly. “No exceptions.”

Ben added a tin jug so they could pour fresh water for rinsing. Alice created a sign in neat handwriting: “*Clean hands = Healthy hands!*” and taped it above the basin.

“What about when we eat?” asked Ben.

“We boil the cups and spoons after every use,” said Mum. “And no more sharing cups. We each use our own, and we clean them well.”

They also washed their clothes more often that week. Even the aprons and tea towels were scrubbed and hung out in the sunshine. “We want every part of our home to smell like clean linen and gum leaves,” Mum said.

Alice helped make warm lemon and honey drinks each morning, not because anyone was sick, but to keep their bodies strong. “Lemon has vitamin C,” she explained, stirring carefully. “And honey helps your throat.”

Dad even dug a small trench to drain water away from the kitchen steps. “No puddles – no germs growing near the house,” he said. “And no chance of muddy boots dragging bugs inside.”

Little Maggie, too young to do the big jobs, helped sort clean handkerchiefs and wrap them in twine. “One for each person, no sharing,” Mum said. “And sneeze into your hanky – not the air! And if you don’t have a hanky, then sneeze into your elbow so you don’t sneeze on anyone else.”

When cousin Sarah arrived for a visit, coughing and sniffing, Mum welcomed her kindly – but carefully.

“Your own towel, your own cup, and your own spoon,” she said gently. “It’s not because we don’t love you – it’s because we do.”

Sarah was given a sunny corner on the verandah with warm blankets, fresh air, and a hot water bottle for her feet. She sipped tea, rested, and watched the others work from a safe distance.

That afternoon, Alice brought her a sketchpad and pencils. “You can draw the garden while you get better,” she said. Sarah smiled. “Thanks – I already feel a bit better just being here.”

By the fourth day, Sarah’s cough had settled. “Thank you,” she whispered. “No one else thought of sunlight and soap. I feel much better already.”

At the end of the week, the Smith family was still well. They hadn’t used a single packet of medicine or visited a doctor. But they had used something just as powerful: clean hands, warm water, fresh air, wise habits, and loving care.

As Dad said that night, sitting by the fire, “Staying healthy doesn’t take magic. It takes teamwork, wisdom – and a good bar of soap!”

C) Narration Prompt

Tutor/Parent Says:

“Can you retell the story in your own words? What did the Smith family do when they heard about sickness nearby? What kinds of cleaning and care did they practise to keep their home safe?”

Encourage your child to recall details in the correct order, using the characters’ names and specific actions.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did the family do to stay clean?
- What did they use for washing hands?
- Why did they hang blankets in the sun?

For Years 3–4:

- How did things like boiled water and open windows help prevent sickness?
- Why was it wise to give Sarah her own towel and cup?
- What can you do at home to help stop sickness from spreading?

For Years 5–6:

- What do we now know scientifically about germs, and how do these old habits still help today?
 - How did the Smith family use ordinary things like soap, sun, and water to protect themselves?
 - How could we apply this pioneer wisdom in modern times when sickness spreads?
-

E) Activity: Clean Habits Poster or Soap-Making Experiment

Option A: Make a “Stay Healthy Like a Pioneer” Poster

F–2:

- Draw and label 3–5 ways to stay healthy (e.g., wash hands, hang blankets in sun, drink warm tea).
- Add smiley faces, sunshine, and soap bubbles for decoration.

Y3–4:

- Create a colourful poster or comic strip showing the steps the Smith family took to avoid sickness.
- Add captions like “Sunlight kills germs!” or “Boil those cloths!”

Y5–6:

- Create a health-awareness poster comparing pioneer health habits with modern medical understanding (e.g., ventilation, hand hygiene).
- Include a short paragraph: “What We Can Still Learn from the Past.”

Option B: Soap-Making or Disinfection Experiment (Adult supervision required)

Simple Soap Science:

- Grate a bar of plain soap and melt it gently in a pot with a small amount of water.
- Mix in herbs like dried lavender, eucalyptus leaves, or lemon zest.
- Pour into cupcake cases or silicone moulds and allow to set.
- Use them for handwashing during the week!

Alternative Disinfection Observation:

- Place small cloths or cotton pads in different natural “disinfectants” (lemon juice, salt water, sunshine).
 - Leave them in jars or trays and observe for changes over 24–48 hours.
 - Talk about which seemed most effective (non-medical testing).
-

F) Biblical Connection

Tutor/Parent Says:

“1 Corinthians 14:33 says, ‘God is not a God of disorder, but of peace.’ And in the Old Testament, God gave His people instructions about washing, separating the sick, and maintaining cleanliness.

Clean habits, fresh air, and care for others are part of God’s wise design for living well. When we wash our hands, keep our homes clean, and look after one another like the Smith family did, we are honouring God’s gift of health and being good stewards of our bodies.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned that staying healthy doesn’t always begin with medicine – it begins with good habits: clean hands, fresh air, boiled cloths, sunlight, and wise choices.

The pioneers knew how to prevent sickness using what they had – and we can do the same. That’s resourcefulness, and it shows we care for what God has given us.”

Lesson 5.3 – God’s Design in Healing: The Human Body Fights Back

Unit Theme: Pioneer Medicine & Home Remedies

Character Trait Focus: *Resourcefulness – understanding and supporting God’s design in the body*

Curriculum Links: AC9S4U01, AC9S6H03

A) Introduction

Tutor/Parent Says:

"Today’s lesson is about the most amazing healing system of all – the one God put inside us!"

Our bodies are designed with incredible systems that fight germs, heal wounds, and repair damage. Long before there were modern doctors or medicines, people noticed that the body could often recover on its own – with rest, warmth, good food, and prayer.

When pioneers got sick or injured, they supported the body’s healing by trusting in God’s design, eating nourishing meals, and giving the body time to heal. In this lesson, we’ll learn how our immune system works – and how we can be resourceful by learning to work with it, not against it."

B) Informational Story: The Battle Inside Ben

Ben lived in a cosy timber cottage near the edge of the bush with his parents and two younger sisters. They had chickens in the yard, a veggie patch near the verandah, and tall gum trees rustling outside the windows. Life on the farm was peaceful and full of hard work, but Ben loved every minute of it – especially the time spent outdoors.

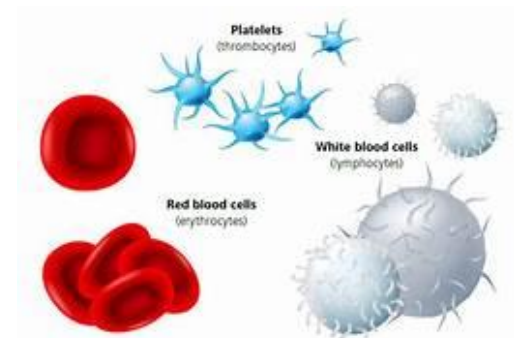
One cold afternoon, after chasing the chickens, climbing the old stringybark tree, and helping Dad repair a fence, Ben forgot to put his coat back on. The air had turned chilly, and the clouds rolled in low and grey. That night, he began to feel strange – his throat was dry and scratchy, his head was heavy, and his skin felt hot and cold all at once.

"I think you’ve caught a chill," Mum said gently, pressing her hand to his warm forehead. "Into bed with you."

She tucked him in under a woollen blanket, placed a hot water bottle at his feet, and brought him a cup of warm lemon and honey tea. "Your body knows what to do," she said, brushing his hair back. "Let’s help it along."

As Ben drifted off to sleep, something incredible was happening – deep inside his body.

Tiny white blood cells, shaped like little furry blobs with purpose, stirred to action. In Ben’s bloodstream, they zoomed along like messengers in a great city, moving through blood vessels like narrow roads, seeking out any sign of trouble.



“Alert! Invaders detected in the throat!” cried the commander cell from the lymph node near Ben’s neck.

“Prepare to fight!” shouted another. Sirens blared – chemical messages flew from cell to cell.

Quickly, different types of white blood cells moved in. Some, called macrophages, gobbled up virus particles like vacuum cleaners. Others released signals to call for backup. T-cells arrived to destroy infected cells before the virus could spread, and B-cells began preparing to make antibodies – tiny Y-shaped defenders that could lock onto viruses and stop them from infecting new cells.



Meanwhile, Ben's body began to heat up. His temperature climbed – what we call a fever. It felt uncomfortable, but it was part of the body’s battle plan. The higher temperature made it harder for the virus to multiply and helped the immune system work faster.

In Ben’s throat and nose, mucus started forming – a sticky trap designed to catch and remove the invaders. He coughed and sneezed, trying to clear his airways. He felt tired and achy, but even that was part of the body’s strategy. His body was asking for all energy to be focused on healing.

While the battle was going on inside his body, Mum was doing her part too. She made chicken broth with garlic and thyme, brought cool water to sip, and made sure the bedroom was warm but well aired. She placed a soft cloth with eucalyptus oil on Ben’s pillow to help him breathe.

“Your immune army needs fuel and rest,” she said with a gentle smile.

Ben’s sister Lucy peeked in through the door. She was only six but already wise in her own way. “I said a prayer for you,” she whispered. “Dear Jesus, help Ben’s body fight and be strong again.”

Back inside Ben’s body, the immune battle was intensifying. B-cells began producing antibodies – tiny defenders that recognised the virus and stuck to it. These antibodies acted like warning signs, telling other immune cells, “This is the enemy!”

“Lock and trap!” shouted a B-cell. “Mark and remove!”

The virus was surrounded. Some cells destroyed the invaders directly, others called in scavenger cells to clean up the battlefield.

Meanwhile, Ben’s fever had reached its peak. He was sweating and restless in his sleep. But by morning, it had broken. The body’s internal thermometer reset. The immune system had gained the upper hand.

On the third morning, Ben sat up slowly in bed. His throat was still a bit sore, but his head was clear, and he felt hungry again. “Can I have toast with my broth?” he asked.

Mum smiled. “That’s a good sign.”

“You’re healing,” she said, placing a hand on his shoulder. “Your body fought hard, and God gave it everything it needed to win.”

Ben nodded slowly. He was still tired, but a spark of curiosity lit up in his eyes.

Later that day, wrapped in his blanket and sitting on the verandah, Ben opened his nature journal and began to write:

“Today I learned that my body is like a little army. God is the General, and white blood cells are the soldiers. Rest is the battle plan. And lemon tea is the reward.”

He paused, then added a drawing of tiny cells with swords and shields fighting a cartoon virus. He grinned, shut the book, and whispered, “Thank You, God – for making my body so smart.”

That night, as the stars twinkled above and the wind rustled through the trees, Ben slept peacefully. His immune system had done its job. And now, like any good army, it would remember this battle – so it could fight even faster next time.



C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words? What happened to Ben when he got sick? What did his body do to fight the germs? How did his family help him heal?”

Encourage detailed retelling using both the imaginative parts and the real science.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Ben’s body do when he got sick?
- What were the white blood cells doing?
- What helped Ben feel better?

For Years 3–4:

- What are some signs that your body is fighting an infection?
- What do B-cells and antibodies do?
- Why is rest and warmth important when you’re sick?

For Years 5–6:

- How does the immune system recognise and respond to viruses?
 - Why might a fever be uncomfortable but helpful?
 - How can understanding our body help us take better care of it?
-

E) Activity: Immune System Poster or Science Demonstration

Option A: "God's Defence Team" Poster or Comic Strip

F-2:

- Draw your body like a castle, with white blood cells as guards.
- Label it: "God made my body to fight germs!"

Y3-4:

- Draw and label parts of the immune system: white blood cells, fever, mucus, cough, and antibodies.
- Title it: "My Amazing Immune Army"

Y5-6:

- Create a comic strip showing what happens when a virus enters the body.
- Include T-cells, B-cells, antibodies, and a fever.
- Add a short paragraph explaining how the immune system defends the body.

Optional Science Demonstration: Soap and Germs Activity (All Ages)

- Fill a shallow dish with water and sprinkle pepper on top (to represent germs).
- Dip a finger in – it gets covered in pepper.
- Now dip a clean finger into soap, then into the pepper water. Watch how the pepper moves away.
- Talk about how soap helps our immune system by removing germs before they enter the body.

F) Biblical Connection

Tutor/Parent Says:

"Psalm 139:14 says, *'I praise You because I am fearfully and wonderfully made.'*"

God created our bodies with healing systems built right in – our skin protects us, our blood cells fight germs, and our brains tell us when we need rest. That's not an accident. That's intelligent, beautiful design.

When we understand how God made us and take care of our bodies with wisdom and thankfulness, we honour the One who made them."

G) Wrap-Up

Tutor/Parent Says:

"Today we saw that even though Ben was sick, his body was working hard on the inside – fighting off germs with white blood cells, making antibodies, and using fever to slow the sickness down.

That's God's incredible design! The pioneers may not have known all the science, but they supported the body's healing by resting, staying warm, drinking broth, and praying.

And we can be resourceful too – not just with herbs and tea, but by trusting and supporting the way God made our bodies to heal."

TOPIC 6

CAMPING & SURVIVAL SKILLS

Lesson 6.1 – Fire Lighting: Matches, Sparks, and Sunlight

Unit Theme: Camping & Survival Skills

Character Trait Focus: *Resourcefulness – creating fire using simple materials and careful thinking*

Curriculum Links: AC9S4U03, AC9TDE4P01

A) Introduction

Tutor/Parent Says:

“Today we’re going to learn about something very important for survival – how to light a fire. Fire gives us warmth, cooks food, helps us boil water, keeps animals away, and can even be used to send signals or make tools.

Before we had gas stoves, electric lighters, or even matches, people used very clever methods to start a fire. They used flint and steel, magnifying glasses, dry grass, and even battery sparks.

But fire is not a toy – it’s a tool. And like all tools, it needs to be used with care, attention, and respect. When we learn how to start a fire in different ways, we’re using the character trait of *resourcefulness* – thinking wisely and using what God has already provided.”

B) Informational Story: The Day the Matches Got Wet

Eli was spending the weekend in the bush with his father. They had ridden out to the edge of the family property, where a new fence-line needed checking and repairs. It was too far to ride back before dark, so they brought supplies to camp overnight.

The afternoon was cool, with golden light filtering through the tall gums. Birds called in the treetops, and smoke from a nearby farmer’s burn-off drifted in the distance. Eli helped his dad unload the packs and find a clear, dry place to build their fire pit.

“Let’s get the fire going,” said Dad, brushing dirt from a flat circle of ground. “It’s important to clear a space around the fire-pit so no grass catches fire and spreads out of control. We always need to be very careful, because fire is dangerous, and bushfires kill people as well as plants and animals.”



He reached into his coat for the matchbox, but when he opened it, water dripped out. Rain and water from crossing the flooded creek had soaked it completely. Every match was soft and useless.

“Oh no,” Eli said. “What now? No matches?”

Dad raised an eyebrow and smiled. “Now we get resourceful.”

He rummaged through his canvas bag and pulled out a small tin box. Inside was a piece of flint, a steel striker, and a square of charcloth – blackened cotton fabric made by heating cloth in a tin without air.



“This is how people made fire before matches were invented,” he explained. “Flint and steel make sparks. The charcloth catches the spark. Then we use dry tinder to grow that spark into a flame.”

Dad placed the charcloth on the ground, struck the flint against the steel, and sent a shower of tiny orange sparks flying. After a few strikes, one spark landed and began to glow on the cloth.

“Now you blow gently,” said Dad.

Eli crouched beside him, holding his breath, then exhaled softly. Smoke curled upward. Eli placed dry paperbark and grass over it, forming a little nest. With another breath – **whoosh** – a flame appeared.

“Now we feed it,” Dad instructed. They carefully added more twigs, then finger-thick sticks. The fire caught quickly, flames licking the air.

Eli’s eyes were wide. “That was awesome! I didn’t think it would work without matches.”



Dad grinned. “It’s all about understanding what fire needs: heat, fuel, and air. And a bit of practice doesn’t hurt.”

He showed Eli how to hold the flint and striker at the right angle. Eli had to try several times before a spark landed, but when it did, he managed to blow the tinder into a small flame. He whooped with excitement.

“Just imagine,” Dad said, “if you were lost or camping in the wild with no matches, this skill could mean the difference between being cold and hungry, or warm and fed.”

The next morning, while they waited for porridge to cook, Dad showed Eli two more fire-starting methods.

The first was a magnifying glass. Dad held it steady over a small pile of dry leaves. The sun was already strong, and after a few



moments, a bright white dot appeared on the surface of a leaf. Smoke began to curl, and a smouldering spot formed.

“That’s sunlight at work,” said Dad. “It’s powerful – when used wisely.”

“That’s amazing!” said Eli. “So, the sun can make fire too?”

Dad nodded. “If it’s strong enough and you’ve got dry material, absolutely.”

Then came the third method: a small 9-volt battery and a strand of steel wool. Dad carefully stretched out the wool and placed it across both ends of the battery. In seconds, the thin strands glowed red and began to spark.



“Whoa!” Eli gasped. “That’s electricity!”

“Exactly,” said Dad. “It completes a circuit and creates enough heat to start burning.”

They used the glowing wool to light a small fire again. Then, as always, Dad demonstrated how to build a safe fire circle using rocks and cleared space around it. He poured water on the remains of their practice fire to be sure it was out.

“Fire is a gift, but it’s also dangerous,” Dad said. “We *never* leave it unattended. Always have water nearby. And when we’re done, we make sure it’s completely out – cold ashes, not just no flames.”

That night, as they sat beside the fire, Eli toasted bread on a stick and looked at the glowing coals.

“I’m glad we didn’t panic when the matches were wet,” he said. “We still made it work.”

Dad smiled. “That’s what resourcefulness is. Using what’s available, thinking carefully, and trusting that God has already provided the materials. We just need to learn how to use them.”

It also helps to be prepared that things might go wrong; so we bring a couple of different methods to start a fire.

As stars blinked above and the fire crackled, Eli wrapped his blanket tighter and whispered, “I want to learn every way there is to survive in the bush.”

“Then you’re on the right track,” Dad replied. “Start with respect – for fire, for the land, and for the One who made them both.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words? What happened when the matches got wet? What did Dad and Eli try instead? What did Eli learn about fire and resourcefulness?”

Encourage step-by-step narration with all the different methods mentioned.

D) Reflective Thinking Questions

For Foundation to Year 2:

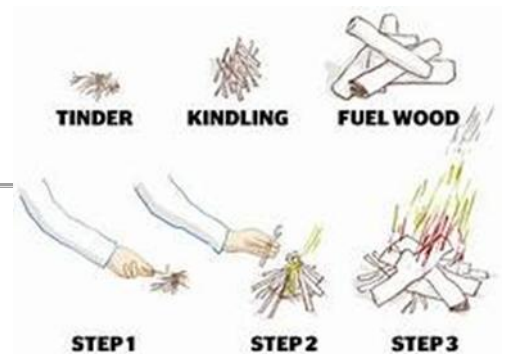
- What did Eli and his dad use when the matches got wet?
- How did they get the fire to start without matches?
- Why do we have to be careful with fire?

For Years 3–4:

- What three ways did they use to start a fire?
- Why might it be helpful to know how to make fire without modern tools?
- How do safety and resourcefulness go together?

For Years 5–6:

- What scientific principles are behind each fire-starting method (e.g., heat from friction, light, or electricity)?
- How does being prepared and calm in a problem show good character?
- What other survival skills might rely on similar thinking?



E) Activity: Fire-Starting Simulation or Fire Methods Poster

(Always supervise closely if using real materials outdoors. Indoor versions can be done safely as models or roleplay.)

Steps to starting a campfire:

- First clear a dirt space around the fire-place. Then...
- If you just try to add fire to thick wood, it won't catch alight. So, one way to build a campfire is to begin with lighting the tinder (leaves, dry grass, and light twigs); then when that is alight with fire, gradually add kindling (thin sticks); then when that is alight, carefully add thicker wood.
- Another way is to prepare the whole bundle in a way that allows enough air-space between the tinder and kindling, so it can catch alight; and enough air-space between the kindling and thicker wood so it can gradually catch fire.
- Here are a couple of structures that work well....

- The Tepee
- The Lean-to



- The Log Cabin

- The Star

The key is to make sure there is good airflow underneath and through the pile....

Option A: Fire-Starting Simulation (Supervised or Pretend)

F-2:

- Collect sticks, grass, and bark to build a pretend fire structure.
- Talk through the steps: spark → dry grass → twigs → small sticks → large logs.
- Use a torch or coloured paper to “light” the pretend fire indoors.
- Or ... do it for real...; but afterwards, parents keep the matches locked away so they don’t try it when you are not there.

Y3-4:

- Try a real flint and steel kit with supervision outdoors.
- If not available, research and make a display of 3 fire-starting methods: Flint & Steel, Magnifying Glass, Battery & Steel Wool.
- Label materials needed and what each method requires (sunlight, dry grass, metal, etc.).

Y5-6:

- Create a comparison chart with at least 4 fire-starting methods:
 - Matches
 - Flint and Steel
 - Magnifying Glass
 - Battery & Steel Wool
 - List: materials needed, success conditions (e.g., sunlight, dry air), safety tips, and pros/cons.
 - Optional: Test one method outside with adult help and write a brief report on your experience.
-

F) Biblical Connection

Tutor/Parent Says:

“In **John 21:9**, when Jesus appeared to His disciples after the resurrection, they found Him cooking breakfast for them: *‘a fire of burning coals with fish on it, and some bread.’*”

Even Jesus used fire – to cook, to comfort, and to share a meal. Fire is a gift from God. It brings light, warmth, and helps us live. But like all gifts, it must be handled with wisdom.

Being resourceful doesn’t mean taking risks – it means thinking carefully, using what we have, and being thankful for God’s design.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how fire can be made using clever, creative methods – like sparks, sunlight, and electricity.

The pioneers and early bushmen had to be prepared. They didn’t always have matches, so they learned how to use what God gave them. We can do the same. When we learn survival skills with responsibility and thankfulness, we are growing in wisdom and resourcefulness.”

Lesson 6.2 – Shelter, Warmth, and Staying Dry

Unit Theme: Camping & Survival Skills

Character Trait Focus: *Resourcefulness – using the environment to protect and care for yourself*

Curriculum Links: AC9TDE2K01, AC9TDE4K01

A) Introduction

Tutor/Parent Says:

"Today's lesson is about three important things you need to survive in the bush: **shelter, warmth, and staying dry**. Without these, people can quickly become cold, sick, or even in danger.

Early pioneers, campers, and Aboriginal peoples all had different ways to make shelter and keep warm – even with very little. That's what *resourcefulness* is all about: knowing how to use nature, design, and skill to stay safe. Today we'll read about one family's camping trip and see how they handled bad weather using what they had!"

B) Informational Story: “The Storm at Stockman’s Creek”

Parent/Tutor says before reading:

“Listen carefully to this story. It’s about a camping trip where the weather takes a turn for the worse – but the family stays calm and resourceful. What do they use? How do they solve problems?”

The Martin family were experienced bush campers. They had spent years exploring creeks, hills, and forests – setting up tents, lighting fires, and cooking under the stars. Camping wasn’t just a fun holiday for them; it was a way of life. They loved the fresh air, the sound of kookaburras laughing in the morning, and the way the stars lit up the night sky when the fire had gone quiet.

This trip, they had pitched their camp near Stockman’s Creek – a quiet bend in the bush where kangaroos came to drink and birds sang through the gum trees. The campsite was beautiful, with smooth rocks for sitting, a gentle slope for drainage, and plenty of firewood nearby.

“This is the best spot yet!” said Noah, age ten, as he helped his dad set up the tarp shelter. His younger sister Ruby was busy collecting feathers, seed pods, and interesting sticks.

But on the second night, something changed. The wind picked up. Leaves rustled loudly in the trees, and the gum branches creaked above them. Dark clouds rolled in fast, and the air suddenly felt cold and damp.

“Looks like rain,” said Dad, scanning the horizon. “Let’s prepare.”

The family didn’t panic. They just got to work. That’s how bush camping worked – you had to think ahead, stay calm, and use what you had. Mum handed out jobs.

“Noah – collect extra sticks and bark for kindling. Ruby – help me reinforce the shelter.”

Their main shelter was a tarp stretched over a rope tied between two trees. Pegs and rocks held it down. It had been fine for good weather, but a storm meant they had to upgrade their design.



Together, they added extra branches at the sides and leaned bark sheets against them to make a windbreak. They used string and extra pegs to make the tarp tighter and lower to the ground so wind wouldn't lift it.

"Let's dig a trench," said Dad, handing Noah a small spade. He showed him how to dig a shallow groove around the edge of the shelter so that rainwater would flow away instead of pooling underneath.

Inside the shelter, Mum laid down dry leaves, woven reed mats, and a plastic groundsheet to keep everyone off the wet soil. They double-checked their sleeping bags were rolled tightly and stored inside waterproof bags until they were ready for bed.

As rain began to fall in light drops, the family lit a fire using the dry kindling they had kept under cover. The flames caught quickly, and the fire began to crackle warmly.

"Let's boil water for tea," said Mum. "And heat up some stones."

Stones?

"These flat ones," she said, pointing to several round river stones they had collected earlier. "They hold heat. We'll place them near the fire for a while, then wrap them in cloth and put them near our feet tonight."

"Bush heaters!" said Ruby with a grin.

They placed wet socks and jumpers on a rope line under the tarp, using pegs to keep them secure. Nearby, their backpacks were lifted onto flat stones to stop moisture from seeping in. Noah used extra string to tie down a flap of the tarp on the windward side so that the rain couldn't blow in.

As the drizzle became heavier, the family gathered under the shelter. The sound of rain on the tarp was loud but calming. The fire glowed steadily, sending flickers of orange light across their faces.

Dad poured tea into mugs, and they all sat cross-legged on the reed mats, sipping slowly.

"This is actually really nice," said Noah.

"It's warm, dry, and we're together," Mum agreed.

Later that night, the storm rolled in properly. The wind howled through the trees, and rain pounded the tarp like drumbeats. But the shelter held. The trench kept water from pooling, the sides stayed firm, and the warmed stones gave off gentle heat.

The Martins were safe. They lay in their sleeping bags, listening to the storm rage outside while they remained dry and comfortable inside their well-prepared camp.

By morning, the rain had stopped. Everything outside was dripping, and a mist hung over Stockman's Creek like a soft white blanket.

"That was the storm," Dad said, stretching his arms. "And you all passed the test."

Noah grinned. "We stayed dry, warm, and together!"



Later that day, they went for a walk to explore how the storm had changed the bush. Small streams trickled over rocks. Frogs croaked happily in the puddles. A wedge-tailed eagle flew overhead.

As they walked, Dad said, “Most people think camping is all about gear. But it really has more to do with being smart with what you’ve got – thinking ahead, paying attention, and using the world around you.”

Noah nodded. “That’s what you call... resourcefulness, right?”

“Exactly,” said Mum. “You used your eyes, your brain, and your hands to stay safe. That’s the kind of thinking that helps in more than just camping.”

When they got back to camp, Ruby made her own pretend shelter for her stuffed koala using bark, string, and gum leaves. Noah started drawing a plan in his journal for a storm-proof camp shelter. They might have been out in the wild, but their minds were full of ideas.

And as the sun peeked through the clouds, shining on their neat little campsite, it was clear that with a bit of planning, a few simple tools, and a resourceful attitude, the bush could feel just like home.

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words?

What happened when the storm came?

What did the family do to stay warm, dry, and safe?

What materials did they use?

Try to go in order and include all the clever ideas they used.”

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did the family use to make a shelter?
- What helped them stay warm?
- What did they do with wet clothes?

For Years 3–4:

- How did the family stop water from getting into the shelter?
- What were some clever ways they stayed warm and dry using what they had?
- Why is it important to plan ahead when camping?

For Years 5–6:

- What design features helped the family stay safe during the storm?
- What lessons in engineering, heat transfer, and waterproofing can we learn from this?
- How does this story show thoughtful resourcefulness in a real situation?

E) Activity: Build a Mini Shelter or Create a Survival Plan

Option A: Build a Mini Shelter for Wet Weather

F–2:

- Use toy figures or animals and build a mini shelter using sticks, bark, leaves, paper, or cardboard.
- Pour a light drizzle of water to see if it stays dry!

Y3–4:

- Design a weatherproof shelter using natural or household items (boxes, pegs, string, paper).
- Test it using a spray bottle or light rain and record how well it worked.

Y5–6:

- Build a scale model or draw a detailed survival shelter plan for wet/cold weather.
- Include: slope, windbreak, drainage, flooring, warming techniques, and safe ventilation.
- Write a short explanation: “How My Shelter Keeps Me Warm and Dry.”

Option B: Create a “Storm-Ready” Checklist

All Levels:

- Make a poster or checklist titled "**How to Stay Dry and Warm When Camping**".
- Include items like:
 - Shelter
 - Dry kindling
 - Groundsheet
 - Warm drinks
 - Heated stones
 - Extra rope
 - Clothes drying zone

F) Biblical Connection

Tutor/Parent Says:

“In Isaiah 25:4, God is described as a ‘refuge from the storm and a shelter from the heat.’

Just as the family used the materials around them to build a strong shelter, we can trust God to be our spiritual shelter. And when we use resourcefulness to care for our families and make wise plans, we reflect His wisdom in creation.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned that staying warm and dry isn’t just luck – it takes smart thinking, planning, and *resourcefulness*. Whether you’re a pioneer, a camper, or someone just trying to stay healthy, knowing how to build shelter and stay warm is a life skill that honours God’s design and helps you care for others too.”

Lesson 6.3 – Collecting, Purifying, and Conserving Water

Unit Theme: Camping & Survival Skills

Character Trait Focus: *Resourcefulness – valuing, protecting, and using water wisely*

Curriculum Links: AC9S2U02, AC9TDE4P02

A) Introduction

Tutor/Parent Says:

"Water is one of the most important things for survival – yet it's easy to take for granted.

When you're out camping or living like the pioneers, you can't just turn on a tap. You need to *collect* water, *purify* it to make it safe, and *use it wisely* so it doesn't run out. In today's lesson, we'll see how people in the past did this using *resourcefulness* – thinking ahead, using clean tools, and learning from nature."

B) Informational Story: “No Tap at Campfire Bend”

Parent/Tutor says before reading:

“Here’s a story about two kids, Ella and Tom, who go camping with their uncle and learn how to find and protect clean water in the bush. Listen for what they do to collect it, clean it, and save it.”

No Tap at Campfire Bend

Ella and Tom were bubbling with excitement. This wasn't just any camping trip. This time, they were finally old enough to go overnight bush camping with Uncle Pete – he was part Aboriginal and a real bushman because his father had taught him all the tricks of living in the wild. He wore a wide-brimmed hat with a feather tucked into the band, and his weathered hands could light a fire faster than you could say “damper.”

Uncle Pete picked them up in his old ute, which rattled along the dirt road toward a place he called Campfire Bend. The back of the ute was packed with gear: a canvas water bag, two saucepans, rope, tarps, tin mugs, and a strange-looking funnel made from a soft drink bottle. Tom peered into the tray and frowned.

“Where’s the water?” he asked, noticing there wasn’t a single bottle.

Uncle Pete chuckled. “Out here, you don’t bring it – you find it, collect it, clean it, and use it wisely.”

Ella’s eyes widened. “What if there’s none around?”

“There’s always some,” he said, “but you’ve got to look carefully with your “bush-eyes” – and then treat it like gold.”

When they arrived, the clearing was dry and dusty, but it backed onto a rocky rise with shady trees and the distant gurgle of a stream. “We’ll make camp here,” Pete said. “Flat ground, firewood nearby, and a water source close enough to reach – but not too close in case it floods.”

They pitched their shelter using rope and a canvas tarp. Then Uncle Pete motioned for them to follow him to the rock outcrop nearby.

“Watch closely,” he said.

He dug a shallow hole in the sandy soil and placed a clean tin cup in the centre. Then he laid a sheet of clear plastic over the hole, pressing small rocks around the edge to hold it down and placing a pebble in the middle so the plastic dipped just above the cup.

“What’s this for?” asked Ella.

“It’s called a solar still,” Uncle Pete replied. “The sun heats any moisture in the ground. The water evaporates, hits the plastic, cools into droplets, and drips into the cup. It’s slow – but it’s clean.”

Tom grinned. “So it’s like the ground sweats, and we catch the sweat?”



“Exactly,” said Pete with a laugh. “Bushman’s science.”

Later that morning, they walked down to the nearby stream. The water looked clear and fresh, flowing gently over stones. But Uncle Pete warned them, “Even if it looks clean, it can carry tiny germs – so we always purify it first.”

He showed them how to scoop the water into a saucepan using a clean container. Then they returned to camp, built a small cooking fire with dry sticks and bark, and placed the pot on the flames. Once the water had boiled for several minutes, Pete poured it carefully through a funnel lined with a clean piece of cloth into bottles.

“This helps catch any grit or leaves,” he explained. “Boiling kills most things. The cloth helps with the rest.”

They also set up a rainwater trap by tying another tarp between two trees with a slight dip in the centre. Underneath, they placed a clean bucket on a rock. “If it rains tonight, we’ll have bonus water in the morning.”

Back at camp, every drop was treated like treasure. When they washed their hands, they did it over the vegetable garden patch Uncle Pete had started in the corner. Dishwater was reused to rinse off muddy boots. Teeth were brushed with one small mouthful, and they spat it out on the dry grass rather than wasting clean water.

“You use it. Then you use it again,” said Pete. “That’s how pioneers did it, and that’s how we do it.”

In the afternoon, they checked on the solar still. The tin cup now had a small amount of clean water in it – shiny and clear. “It works!” Ella said.

“Slowly but surely,” Pete nodded. “Nature takes time, but she knows what she’s doing.”

That night, they sat by the campfire sipping warm tea made from their freshly boiled stream water. The stars were bright, and the fire crackled as the cool air settled around them.

“I never thought about how much water we use at home,” Ella said. “We just turn on the tap.”

“And let it run while brushing,” added Tom. “Or forget to turn it off properly.”

Uncle Pete stirred the coals with a stick. “That’s the trouble with easy living. You stop noticing what matters most. Out here, water is life. You’ve got to work for it – and respect it.”

The next morning, they filled their water bottles again, this time collecting rainwater that had gathered in the bucket overnight. Tom helped clean the cloth filter, and Ella practiced pouring water without spilling a drop.

Uncle Pete gave them a final challenge before packing up. “Think like survivors. I want you both to find three different ways we collected or saved water – and explain which one you think is the best in a bush emergency.”

Tom thought carefully. “The stream was fastest – but only if you boil it. The rain trap is great if there’s clouds. But the solar still works even when there’s no creek or rain!”

Ella nodded. “It’s slow, but safe. I think I’d build a rain trap and a solar still – just in case.”

“Smart answers,” Pete said. “You’ve both got the right idea. That’s what resourcefulness is about – not just finding something, but knowing how to make the most of it.”

On the way home, Ella wrote in her camping journal. She drew pictures of the water funnel, the rain trap, and the solar still. Tom listed water-saving tips to teach his class.

That night, after their showers, both of them turned off the tap quickly.

And neither of them ever forgot what they’d learned at Campfire Bend.

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words? What different ways did Ella, Tom, and Uncle Pete use to collect, purify, and save water? Try to remember everything step by step – how they found it, made it safe, and didn’t waste a drop.”

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Uncle Pete use to collect water from the rain?
- How did they make the stream water safe to drink?
- Why do we need to save water when camping?

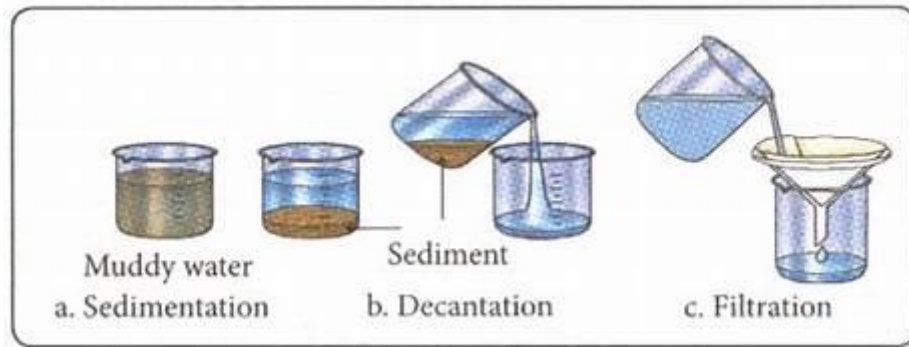
For Years 3–4:

- What is a solar still and how does it work?
- What are some dangers of drinking untreated water?
- What do you do at home that could help save water?

For Years 5–6:

- What scientific principles are used in water purification (evaporation, boiling, filtration)?
- How did Ella and Tom show they were learning to value water?
- What practical methods could modern campers use that come from pioneer or Aboriginal knowledge?

E) Collection Water Plan

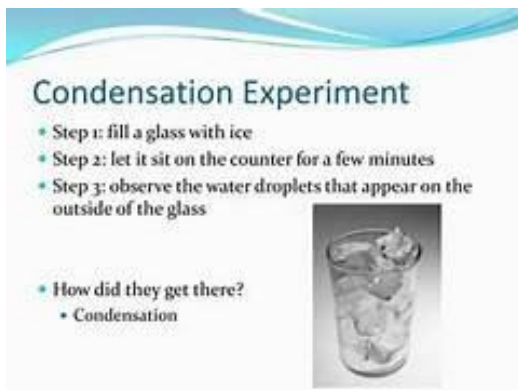


Activity: Water Model or Conservation

Option A: Build a Model of a Solar Still or Water Filter

F–2:

- Try the experiment above – turning muddy water into clean clear water...or...
- Create a solar water collector using plastic wrap over a bowl with a cup in the middle and leaves.
- Or...do this 'condensation experiment'.



Y3–4:

- Try the experiments above – turning muddy water into clean clear water...or... the condensation experiment, ...or...
- Make a model water filter using a plastic bottle cut in half, filled with gravel, sand, and cloth.
- Pour dirty water through and observe what happens.



Y5–6:

- Build and test both a **solar still model** and a **boiling & filtering system** (using kitchen-safe items).
 - Record observations: What worked best? How much clean water did you get?
-

Option B: Create a “Wise Water Use” Poster

All Levels:

- Make a poster or comic strip titled: “How to Save Water Like a Pioneer Camper”
 - Include pictures and captions for:
 - Boiling
 - Filtering
 - Collecting rain
 - Reusing water for gardens
 - Storing water safely
-

F) Biblical Connection

Tutor/Parent Says:

“In Isaiah 41:17–18, God promises: ‘I will make rivers flow on barren heights... I will turn the desert into pools of water.’

God is the great Provider of all living water – spiritual and physical. When we value water, use it wisely, and share it generously, we are honouring the gift He’s given us. *Resourcefulness* means not wasting what God has placed in our care.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how to collect water from the ground, the rain, and the stream – and how to make it safe to drink. Pioneers and campers couldn’t afford to waste a drop. When we practise *resourcefulness* by valuing water, cleaning it carefully, and using it wisely, we’re learning to care for creation and for others too.”

Lesson 7.1 – Exploring Energy: Campfire, Wind, and Sun

Unit Theme: Energy

Character Trait Focus: *Resourcefulness – using natural energy sources for life and survival*

Curriculum Links: AC9S4U03, AC9S6U03

A) Introduction

Tutor/Parent Says:

"Energy is what makes things *move, heat up, and work*. In the past, people had to rely on **natural energy** – like fire, wind, and sunlight – to cook, stay warm, and get things done. They couldn't plug things into the wall or use petrol-powered machines.

In this lesson, we'll explore how pioneers and campers used **campfires, wind, and sun** as energy sources – and how we can be *resourceful* too, by using God's creation wisely."

B) Informational Story: "Emily's Energy Adventure"

Parent/Tutor says before reading:

"Here's a story about a girl named Emily who goes on a camping trip with her family. She learns how to use different kinds of energy to cook, keep warm, and power tools – without electricity. Listen carefully for how each energy type was used."

Emily's Energy Adventure

Emily had been camping before, but this trip was different. Dad called it "**Energy Explorer Weekend.**"

"We're going to see how many different energy sources we can use – without electricity," he said with a grin as they packed up their gear.

They drove out of town and into the bush. Their favourite campsite was tucked beside a river bend, surrounded by tall eucalypts and open skies. Birds chirped in the canopy, and the smell of dry leaves filled the air. Emily and her brother, Josh, helped unload the car. There were sleeping bags, pots and pans, ropes, a small shovel – and no power cords.

“First things first,” said Dad. “Let’s build our shelter and set up the campfire.”

Emily helped gather dry sticks, bark, and twigs while Mum cleared a fire circle. They lined it with stones and built a small tepee of kindling. Dad struck flint and steel, sending sparks onto a ball of dry grass.



“Fire gives us **heat energy**,” he explained as the flames caught. “It cooks our food, warms our hands, gives us light, and even dries our socks!”

That night, they roasted damper on sticks, toasted marshmallows, and boiled water for tea in a billycan. Emily held her hands close to the fire and felt its warmth.

“Fire feels like a warm hug,” she said.

They let the fire die down safely before bedtime, then crawled into their sleeping bags under the stars.

The next morning, Josh was already up working on something beside the tent.

“What’s that?” Emily asked.

“It’s a **windmill**,” he said. He’d taken a bicycle wheel, some string, and plastic from some old folders, and placed it on a wood-stand. The blades spun when the morning breeze picked up.



“It’s a wind-powered fan,” Josh explained. “If we had a small generator, it could even charge a torch.”

Emily was impressed. “So, wind gives us **movement energy**?”

“That’s called **kinetic energy**,” said Mum, who was unpacking the breakfast things. “The moving air turns the blades – just like windmills pump water or grind grain.”

Later, they spread a dark-coloured picnic rug over a log in full sun. On top, Mum placed a black tin pot filled with river water.

“This is **solar energy**,” she said. “The dark colour absorbs heat from the sun and transfers it to the pot. By this afternoon, the water will be warm enough for dishwashing.”

“Even without fire?” asked Emily.

“Absolutely. The sun is powerful,” Mum smiled. “We’re just learning to use it.”

They checked the water a few hours later. It was warm – not boiling, but good enough to clean with.

Emily pulled out her small camping journal. She began to draw what she had seen: a campfire, a spinning windmill, a pot on a sun-warmed rug.

She labelled her drawings:

- **Fire = Heat Energy**
- **Wind = Movement Energy**
- **Sun = Light and Heat Energy**

They also used the sun to dry their clothes by stringing up a washing line. The sunlight did the job without needing an electric dryer. Dad even angled a small mirror to reflect sunlight into their cooking shelter.

“Sunlight’s not just warm,” he said. “It gives us light to see and energy to grow food.”

That afternoon, they made flatbread using flour, water, and salt. They cooked it on a flat rock that had been heated at the edge of the fire earlier. It worked perfectly – crispy on the outside and soft inside.

“This is *rock oven baking!*” laughed Josh.

Before bedtime, they sat on their camp chairs, watching the last orange streaks disappear behind the trees. No cords. No screens. No electricity.

“Today we used fire, wind, and sun,” said Emily. “And we didn’t plug anything in.”

“Yet we stayed warm, cooked our food, washed our dishes, and even had a breeze to cool off,” said Mum.

“That’s **God’s world**,” Dad added. “He’s given us so many kinds of energy in nature. We just need to use them wisely.”

As the stars began to sparkle overhead, Emily lay back and looked up. She thought about how pioneers had used these same energy sources for hundreds of years. She imagined Aboriginal people using fire to clear land and cook, using wind and water for tools, and living in harmony with sun and season.

She sat up and whispered to herself, “I want to learn to live that way – to use what God gives, without waste.”

And from that day on, she began noticing energy everywhere – not just from the wall plug, but in every flame, every breeze, and every beam of sun.

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words?

What kinds of energy did Emily and her family use?

How did each one help them during the trip?

Try to remember the order they used fire, wind, and sun – and what they did with each.”

D) Reflective Thinking Questions

For Foundation to Year 2:

- What made the fire hot?
- What made the windmill turn?

- What did the sun help to warm up?

For Years 3–4:

- What are three kinds of energy used in the story?
- How did the family use energy without plugging anything in?
- Why is it important to use energy carefully and wisely?

For Years 5–6:

- Explain the difference between heat energy, kinetic energy, and solar energy.
 - How can these energy sources be used in modern eco-friendly homes or farms?
 - What does the story teach about being resourceful with natural energy?
-

E) Activity: Energy Source Model or Observation Journal

Option A: Make a Mini Energy Demonstration

F–2:

- Build a mini windmill using a paper pinwheel on a stick. Blow to see it spin.
- Place a small cup of water in sunlight and feel the warmth after 10–15 minutes.

Y3–4:

- Create a model or diagram showing 3 types of natural energy:
 - Fire (draw or pretend),
 - Wind (pinwheel),
 - Sun (warming something dark-coloured).
- Label how each energy is used.

Y5–6:

- Conduct a simple solar energy test: Place 3 small containers in sun – one dark, one light, one clear.
 - Record which one heats up fastest using a thermometer or hand test.
 - Write a short report: “Which Material Absorbed the Most Heat?”
-

Option B: Start an Energy Observation Journal

All Levels:

- Observe and list every way your family uses energy for one day.
- Mark whether it came from:
 - Electricity
 - Gas
 - Fire
 - Wind or solar

- Add a section: “How could we use more natural energy?”
-

F) Biblical Connection

Tutor/Parent Says:

“Genesis 1:14–18 says that God made the sun to give light and warmth, and He made day and night as a rhythm for life.

When we use fire, wind, and sunlight with care and respect, we’re working with God’s good creation. *Resourcefulness* means learning how to use the energy He provides, without waste or harm.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned that energy doesn’t just come from power points – it’s all around us in the fire, the wind, and the sun. When we use it wisely, we’re being *resourceful* and learning to live more simply and sustainably – just like pioneers and campers have done for generations.”

Lesson 7.2 – Tools and Tricks for Cooking Without a Stove

Unit Theme: Energy

Character Trait Focus: *Resourcefulness – making meals with heat, tools, and creativity in the bush*

Curriculum Links: AC9TDE2P01, AC9TDE4K01

A) Introduction

Tutor/Parent Says:

"When there's no stove or microwave, how do you cook a meal? You have to be *resourceful*!"

Pioneers, bush travellers, and campers all learned how to cook using fire, hot stones, foil, sticks, and clever tools. They boiled, roasted, baked, and steamed with what they had. Today, we'll learn about **bush cooking** – using fire and heat safely to make warm food, even when you're far from a kitchen."

B) Informational Story: "Tom's Campfire Cooking Challenge"

Parent/Tutor says before reading:

"Listen to this story about Tom, who joins his cousins for a bush camping trip. They learn to cook without a stove by being creative and using natural tools and heat from the fire."

Tom's Campfire Cooking Challenge

Tom had never cooked a meal without a kitchen before. He'd helped Mum chop vegetables and stir sauce on the stove, but this weekend was going to be different. He was staying with his cousins Meg and Isaac at Uncle Ben's bush block – a rugged, off-grid campsite with no power, no taps, and definitely no ovens.

"This weekend," said Uncle Ben with a twinkle in his eye, "you're going to cook all your own meals – without pressing a single button!"

Meg clapped her hands. "We'll be bush chefs!"

Tom laughed, but he wasn't so sure. Could you really make proper meals with just fire and sticks?

That morning, they gathered around the fire circle. It was lined with stones and had a rack for hanging pots. Uncle Ben crouched beside it and began explaining.

"We'll cook over **coals**, not flames," he said. "Flames burn food too fast. Coals give steady, even heat."

They started with something simple – **toast on a stick**. They cut thick slices of bread and slid them onto green sticks they'd peeled and cleaned. Then they held them slowly over the glowing embers.

"Rotate it slowly," said Isaac. "Like a rotisserie chicken."

The bread turned golden and crisp. They added a dab of butter and ate it with steaming mugs of **billy tea**.

Uncle Ben showed them how to make it – he filled a tin can with water, swung it gently over the coals by its wire handle, and added a pinch of tea leaves once it boiled.

“The tin-can with a wire handle is called a **billy**,” he explained. “The pioneers carried it wherever they went. You’d always find one hanging over a campfire.”

After breakfast, Meg pulled out a bowl. “Damper time!”

She mixed flour, salt, and water until it formed a sticky dough. They rolled it into balls and wrapped each one in a square of foil. Then they tucked them into the edge of the fire pit where the coals glowed orange.

“Don’t forget to turn them halfway through,” said Uncle Ben.



After twenty minutes, they dug the damper out. The outside was crispy and browned; the inside was soft and fluffy. They sliced them open and filled them with butter and golden syrup.

“Yum!” said Tom. “Tastes better than bread from a toaster.”

For lunch, they upped the challenge – **foil packet meals**. Each child created their own. Tom added chunks of potato, carrot, sausage, and a few sprigs of rosemary.

“Fold the edges of the foil twice,” said Uncle Ben. “That keeps the steam in and stops the juices escaping.”

They placed the packets directly onto a bed of coals and covered them lightly with more hot embers.

When they unwrapped them later, steam rose like a bush kitchen. The vegetables were tender, the meat was juicy, and the smell was heavenly.

“This is better than takeaway,” Meg said, licking her spoon.

The next morning, Uncle Ben said, “Ready for something clever?”

He showed them how to heat large flat stones in the fire. Once they were hot, they dug a shallow pit nearby and lined it with gum leaves. On top of the leaves, they placed **wrapped eggs, corn cobs, and apples stuffed with sultanas and cinnamon**.

Then they added more leaves, placed a second hot stone on top, and covered it all with damp sacks and a layer of earth.

“This is **hot rock cooking**,” he explained. “Nature’s slow cooker.”

The food would take hours, but the kids were fascinated. “Can we really cook without seeing the fire?” asked Tom.

“You bet,” said Isaac. “The heat stays trapped in the rocks and steams everything.”

That afternoon, they dug up the pit together. The scent was incredible. The eggs were firm but soft, the corn was sweet and smoky, and the apples were warm and gooey inside.

“Smells like sweet pudding,” said Tom, his mouth watering.

Before packing up the next day, they ended with some fun sweets – **marshmallows on skewers** and **bananas cooked in their skins**. They sliced the bananas lengthwise, filled them with chocolate buttons, wrapped them in foil, and placed them near the coals.

When unwrapped, the banana was soft and the chocolate melted – a bush dessert to remember.

As they cleaned up, Uncle Ben reminded them, “Always leave the bush better than you found it. Fires out, rubbish packed up, and respect the land.”

That evening, Tom wrote in his little notebook:

“Camp cooking is creative, fun, and delicious – especially when you work together and use your brain. No kitchen? No problem!”

He also made a list of everything they’d cooked:

- Toast on a stick
- Billy tea
- Foil-wrapped damper
- Foil packet stew
- Hot rock eggs and apples
- Banana-choc dessert
- Marshmallows on a stick

He sketched a diagram of the hot rock pit, labelled the billy, and even wrote his own damper recipe. Tom had come into the weekend unsure, but he left as a confident bush cook.

“I didn’t just learn how to cook,” he said to Mum when he got home. “I learned how to *think* like a cook.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back to me? What kinds of food did Tom and his cousins make? What different cooking methods did they try, and what tools and tricks helped them cook without a stove?”

Encourage step-by-step retelling using sequence words like *first, then, next, after that, finally*.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did they cook in foil?
- What did they use instead of a stove?
- Would you like to try cooking damper?

For Years 3–4:

- Why is cooking over coals better than over flames?
- What kinds of materials helped them cook their food?
- What do you think was the most resourceful part of their cooking?

For Years 5–6:

- Explain the different heat-transfer methods used (direct, indirect, insulation).
 - Why is it important to understand fuel, heat, and tools when cooking off-grid?
 - How does this story show the value of working together and creative thinking?
-

E) Activity: Plan or Try a No-Stove Meal

Option A: Cook Something Simple Outdoors (with supervision)

F–2:

- Toast marshmallows or bread over a backyard fire (with an adult).
- Make foil packets with some meat and veges, then cook in the oven (or in a fire).

Y3–4:

- Wrap banana halves with chocolate or damper in foil and place in hot ashes or the oven to simulate bush cooking.
- Observe how heat cooks through wrapping.

Y5–6:

- Design a **bush meal plan**:
 - Main: foil packet (e.g. meat and veg)
 - Side: damper or boiled rice
 - Dessert: baked apple or marshmallows
 - Write instructions for each step and explain what materials and heat source are needed.
-

Option B: “Bush Kitchen Tools” Poster

All Levels:

- Draw or label bush cooking tools:
 - Billy
 - Fire tongs
 - Foil
 - Green stick
 - Hot rocks
 - Title the poster: “**How to Cook Without a Stove**”
-

F) Biblical Connection

Tutor/Parent Says:

“In John 21:12, after His resurrection, Jesus made breakfast on the beach for His disciples – fish cooked over a fire and bread.

Even the Son of God used simple cooking tools and natural heat. Being *resourceful* like that helps us live simply, work together, and appreciate the good things God provides.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw that you don’t need a kitchen to make a good meal – you need heat, tools, a little know-how, and teamwork. Pioneer families and campers used what they had to prepare food safely and kindly. That’s the heart of *resourcefulness* – being creative and grateful with whatever you’ve got.”

Lesson 7.3 – Making a Survival Cooking Plan

Unit Theme: Energy

Character Trait Focus: *Resourcefulness – planning and preparing meals when supplies are limited*

Curriculum Links: AC9TDE4P01, AC9TDE6P02

A) Introduction

Tutor/Parent Says:

"In our last lesson, we learned how pioneers and campers cooked meals without a kitchen using coals, fire, foil, and even hot rocks. But what happens if you're out in the bush for days? You have to *plan ahead*, make every bit of food count, and be *resourceful* about how to cook and use what's around you.

Today's lesson is about creating a **survival cooking plan** – just like pioneers, explorers, and bush campers would have done. You'll get to imagine that you're living off the land or camping for three days and plan meals that are simple, healthy, and don't need a stove!"

B) Informational Story: “Meg’s Three-Day Camp Menu”

Parent/Tutor says before reading:

“Here’s a story about a girl named Meg who goes on a school bush trip and is put in charge of food planning. Listen carefully to how she organises her meals, avoids waste, and makes sure everyone has warm, healthy food without a kitchen.”

Meg’s Three-Day Camp Menu

Meg was excited – but also a little nervous. Her class was going on a three-day bush camping trip, and this time, she had a big job to do. All the children had different jobs to do, but Mr Kelly, their teacher, had chosen Meg as **Head of Food Planning**.

“You’ll need to plan six meals and snacks,” he said. “There’s no fridge, no microwave, and no shops nearby. Just a campfire, a billy, and some foil.”

Meg opened her notebook and gulped. “No problem,” she said aloud, though she wasn’t quite sure yet how to manage it.

That afternoon, she stood in her kitchen at home, surveying the pantry shelves. Cans, boxes, jars... what would last in a backpack for three days? What would taste good, be safe to eat, and easy to cook without a stove?

She began making a list.

First, dry ingredients that wouldn’t spoil:

- Flour, salt, and oil – for making damper or simple flatbread
- Oats and honey – for breakfast

- Powdered milk – to mix with hot water for porridge or drinks

Then came long-life foods:

- Tinned beans, corn, and fruit
- Apples and carrots – firm fruits and vegetables that stay fresh
- Long-life cheese – the kind that doesn't melt in a backpack
- Hard-boiled eggs – pre-cooked at home and stored carefully

She added some extras for flavour and snacks:

- Dried apricots
- Crackers
- Instant noodles
- Hot chocolate mix
- Tinned jam
- Tea bags and salt packets

Lastly, she wrote out her basic cooking tools:

- A foldable camp spoon and cup
- Foil sheets
- A small sharp knife
- A sturdy stick and some twine

Now it was time for the fun part – planning the **menu**.

Day 1

Lunch: Crackers with cheese and carrot sticks

Dinner: Foil-packet stew made from tinned beans, corn, and chopped carrots – cooked in coals

Dessert: Banana baked in foil, with a drizzle of honey

Day 2

Breakfast: Oats made with hot water, milk powder, and a handful of dried apricots

Lunch: Damper on a stick, roasted over the fire, served with tinned jam

Dinner: Instant noodles boiled in the billy, topped with a hard-boiled egg

Evening treat: Hot chocolate with damper toast

Day 3

Breakfast: Leftover oats and fruit

Lunch: Crackers, carrot sticks, and baked beans warmed in the billy

Meg also drew up a **task chart** for her classmates so everyone would help out:

- *Fire duty:* Jake and Amira

- *Meal prep:* Meg and Lily
- *Cleanup:* Mason and Kai
- *Water collector:* Ava

She even thought ahead about **waste**: foil could be reused, vegetable scraps could be buried away from camp, and empty tins could be squashed and packed in a rubbish bag.

When they arrived at the campsite the following week, Meg set to work with confidence. The teacher lit the campfire safely in a stone ring, and Meg showed her group how to hold bread on sticks, wrap foil properly, and boil water in the billycan without tipping it over.

The meals turned out better than she'd imagined. The foil-pocket stew was a hit – warm, filling, and surprisingly tasty. The damper puffed up beautifully, and the noodles were quick and comforting after a long bushwalk.

"I didn't think I'd love eating without a fridge," said Amira, "but this is delicious!"

"Best hot chocolate ever," added Mason as he licked his cup clean on the second night.

Even Mr Kelly smiled. "You're the most resourceful camper I've seen in years."

That evening, as the stars sparkled overhead and the fire crackled beside them, Meg took out her journal and wrote:

"Food doesn't have to be fancy. It just needs to be planned well, cooked with care, and shared with friends."

On the final morning, as they warmed leftover porridge and packed up their camp, Mr Kelly called the class together.

"Before we go," he said, "I want to thank our bush kitchen team – especially Meg. She showed us that you don't need a kitchen to eat well. Just a little thinking ahead and a lot of heart."

Meg beamed.

That night at home, she shared her story with her family over dinner.

"No kitchen for three days?" said Dad, impressed. "And you still ate like a queen?"

Meg nodded. "Planning is powerful."

C) Narration Prompt

Tutor/Parent Says:

"Can you tell the story back to me in your own words? What did Meg plan for each day? What kinds of food did she bring? How did she cook them without a stove? Try to remember the tools she used and the ways she avoided waste."

Encourage the student to use sequence words and cooking terms (like billy, foil packet, damper, and stew).

D) Reflective Thinking Questions

For Foundation to Year 2:

- What kind of food did Meg bring to camp?
- What did she cook in foil?
- Why did she need to plan her food?

For Years 3–4:

- What made Meg's food choices good for camping?
- What tools and ideas helped her cook without a stove?
- Why was it important that nothing needed a fridge?

For Years 5–6:

- What makes a good survival meal? (nutrition, storage, cookability)
- How did Meg show planning, creativity, and teamwork?
- If you had to stay three days in the bush, what would *you* bring?

E) Activity: Create Your Own 3-Day Survival Cooking Plan

F–2:

- Draw three meals you could eat in the bush (e.g. toast on a stick, soup in a pot, fruit slices).
- Label what it is and how you'd cook it.

Y3–4:

- Create a one-page meal plan with three breakfasts, lunches, and dinners.
- Include foods that don't need a fridge and can be cooked with a campfire or billy.
- Add pictures or simple recipes.

Y5–6:

- Create a full **3-Day Bush Cooking Plan**:
 - Each meal with ingredients, cooking method, and tools needed
 - List what you would bring (equipment and supplies)
 - Add a short paragraph explaining why each food is a smart choice

F) Biblical Connection

Tutor/Parent Says:

“In Proverbs 21:20, it says: ‘The wise store up choice food and olive oil, but fools gulp theirs down.’

Planning and preparing are wise. Meg didn’t just hope for food – she thought, chose carefully, and shared what she had. When we plan ahead and use what we have with *resourcefulness*, we’re acting wisely and showing care for others too.”

G) Wrap-Up

Tutor/Parent Says:

“Today we learned how a survival cooking plan helps you stay safe, fed, and happy even without a stove or fridge. Being *resourceful* means thinking ahead, using the right tools, and cooking smart – not just fancy. Whether it’s a campfire or a kitchen, planning well is part of good living.”

TOPIC 8

ELECTRICITY & MAGNETISM

Lesson 8.1 – Exploring Electricity in the Bush: Batteries, Wires, and Movement

Unit Theme: Electricity & Magnetism

Character Trait Focus: *Resourcefulness – using simple parts to make things move and work*

Curriculum Links: AC9S4U04, AC9TDE4P01

A) Introduction

Tutor/Parent Says:

"Today's lesson is about **electricity** – but not the kind that comes from power lines.

Even though (in the modern era) it wasn't until 1879 that Thomas Edison invented the first long lasting carbon filament lightbulb, ancient Greek scientists knew of magnetism, and an ancient artefact (from the period of AD250 – 650) is called the **Baghdad Battery**. It consisted of a ceramic pot, a tube of copper, and a rod of iron fixed together with bitumen, and having traces of acid – it was possibly used for electroplating fine silver & gold. Modern scientists had been experimenting with magnetism and electricity from around the year 1600. The first battery in the modern era was invented in 1793, the first electric motor in 1821, and the first long-distance morse-code telegraph was conducted in 1843. So, although not widely used, the principles of electricity were beginning to be practiced in the mid 1800s.

In the bush or on a pioneer farm, people often had to make their own electricity using **batteries, wires**, and clever **simple circuits**. Some created lights, buzzers, fans, or tools using just a few basic parts. Being *resourceful* means learning how to make things work – even when you don't have a wall plug!"

B) Informational Story: “Nate and the Battery-Powered Bell”

Parent/Tutor says before reading:

“Listen carefully to this story about a boy named Nate who solves a real problem on his farm by building something powered by a battery. Pay attention to what he uses and how he gets it working.”

Nate and the Battery-Powered Bell

Nate lived with his family on a sheep farm, many kilometres away from town. Their home was powered by solar panels during the day, but at night, the lights were dim, and anything that needed electricity had to run on batteries. They didn't have mains power like people in the city.

One evening, just after the sun had gone down and the dinner fire was crackling low, Nate's mum went out to check on a sick lamb in the side paddock. It was cold and getting dark fast.

Not long after, she called out from the shed.

"Ben! I need a hand!" she shouted toward the house.

But no one heard her. The wind was up, and the kitchen door was closed. By the time Dad realised she was gone for a long time, she was already back – frustrated and cold.

"We need a way to signal each other," Mum said. "Something simple. A bell. A buzzer. Anything!"

Dad shrugged. "Not unless we run a wire all the way out to the paddock," he joked.

But Nate's eyes lit up. "Wait a second... what if we *did*?"

That night, he sat at the kitchen table with his **invention box** – a big old biscuit tin where he kept parts from broken toys, gadgets, and old torches. He rummaged through the contents: AA batteries, copper wire, an old toy bell, a paperclip, a switch from a broken remote, and plenty of electrical tape.

He got to work.



First, he laid everything out and tested the bell. He connected one end of the copper wire to the battery and the other to the bell. Then he attached the switch to complete the circuit. When he pressed the switch – **ding!** The bell gave a sharp, clear ring.

"It works!" Nate grinned.

He checked the connections again, making sure he understood the flow of electricity. "Battery to wire... wire to bell... bell back to battery, but through the switch."

That night, he drew a quick **circuit diagram** to help him remember:

Battery → Wire → Bell → Switch → Battery

But one challenge remained: **distance**. His little invention worked across the table – but how would it work from the shed?

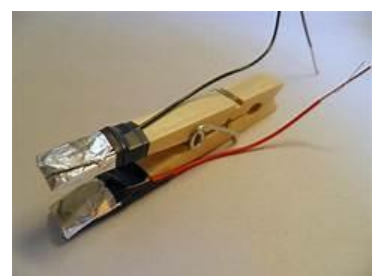
The next morning, Nate went outside with his Dad. "Do we have any old fencing wire?"

"In the shed," Dad said. "But it's rusty."

"That's okay. I think I can make it work."

They spent the morning stringing the fencing wire from the house to the shed. Nate used nails and loops of rubber to keep the wire from touching metal fenceposts directly. He wrapped the joins in electrical tape and tested each section for conductivity using a small torch bulb.

In the shed, he built a simple **homemade switch** using a wooden board, a springy clothespin, aluminium foil and sticky-tape. When pressed, the ends of the peg touched – completing the circuit.



Then came the moment of truth.

Nate went into the house and watched. Dad stood out in the shed and gave a thumbs-up.

Click.
DING!

The bell rang from across the paddock!

Nate cheered and raced outside.

“It worked!” he shouted.

Dad laughed. “That’s amazing, mate. You built your own intercom – with scraps.”



Mum tried it later that night. She went to the shed, pressed the button, and Nate – who was helping peel potatoes – heard the bell loud and clear in the kitchen.

From then on, the **battery-powered bell** became their bush communication system. But Nate wasn’t finished yet.

“What if I added a light?” he thought.

He opened the box again and found a small torch bulb and another length of copper wire. He added a **second circuit** beside the first, with its own switch. When Mum pressed it from the shed, a little bulb flicked on above the sink.

Now, they had both **light and sound** signals – each with a different purpose. One meant “come help,” and the other meant “bring something.”

Over the next week, Nate added labels, improved the wiring with plastic straws to insulate it, and made a weatherproof cover for the shed-side switch using an old takeaway container. He drew a new diagram and wrote a list of all the parts he used:

- 2 AA batteries
- 4 metres of fencing wire
- 1 small bell
- 1 torch bulb
- Clothes-peg switch
- Wooden board
- Rubber insulation
- Aluminium foil (Silver or copper foil works even better)
- Electrical tape
- Old biscuit tin for storage

That Friday, Dad took photos and printed them for Nate’s science folder.

“You know,” said Mum, “people used to build things like this all the time on farms. You’ve just used modern scraps to solve an old problem. That’s called *resourcefulness*.”

“And a bit of genius,” Dad added with a wink.

Nate smiled and wrote in his notebook that night:

“Today I learned that electricity doesn’t have to come from a plug. If you have a battery, some wire, and a good idea – you can build something really useful.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back to me in your own words? What problem did Nate solve? What parts did he use? What was the first thing he built – and what did he add later to make it even better?”

Encourage your child to name the parts: battery, wire, bell, switch, torch bulb, etc.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did Nate build?
- What made the bell ring?
- Would you like to build something with batteries?

For Years 3–4:

- What parts made Nate’s bell circuit work?
- How did Nate solve the problem of distance?
- What does this story show about being creative and practical?

For Years 5–6:

- Describe the electrical circuit Nate built. What role did the battery, wire, and switch play?
 - What safety steps would be important when building with electricity?
 - How could you improve or add to Nate’s design?
-

E) Activity: Make a Simple Circuit or “Electricity in the Bush” Poster

Option A: Build a Simple Circuit (Supervised)

F–2:

- Use a battery holder, LED or small light bulb, wires, and tape to make a working light.
- Help children connect the circuit and observe what happens when they add a switch (like a clothes-peg wrapped in foil).

Y3–4:

- Build a working circuit with a battery, wire, light, and optional buzzer or fan.
- Add a switch using foil or a paperclip. Try adding more components in series or parallel.

Y5–6:

- Design and build a mini “bush circuit” (e.g., a bell or light activated by a switch from another room).
- Draw a circuit diagram and explain how electricity flows through it.

Option B: Poster – “How I Would Use Electricity in the Bush”

All Levels:

- Make a poster showing a simple invention you could power using batteries.
- Include: a labelled drawing, list of parts (e.g., battery, wires, bulb), and a sentence about what it would do.

F) Biblical Connection

Tutor/Parent Says:

“James 1:17 says: ‘Every good and perfect gift is from above, coming down from the Father of lights.’

Electricity is a gift of God’s creation – it powers light, heat, sound, and more. When we use it wisely and creatively – like Nate did – we honour God’s gift and show *resourcefulness* in using what we’ve been given.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw that even without plugs and cords, we can still use electricity in clever ways. A battery, some wire, and a little bit of knowledge can make lights, bells, or signals. That’s what *resourcefulness* looks like – understanding how God’s world works and using it to bless others.”

EXTRA READING:

The perseverance of Thomas Edison.

[From Vision Word for Today – October 26, 2025]

‘A righteous man may fall seven times and rise again.’ Proverbs 24:16 NKJV

Thomas Edison conducted thousands of experiments with various kinds of materials in his search for a filament he could use in carbon incandescent lamps. As each fibre failed, he would throw it out the window until, eventually, his pile of failures stretched all the way up to the second story of his house.

Then about thirteen months after his first failure, he succeeded in finding a filament that could stand the stress of electric current. And here is how it happened: He nonchalantly picked up a tad of lampblack, mixed it with tar, rolled it into a delicate thread, and wondered, ‘Why not try a carbonised filter?’ He worked for five hours straight to craft a fibre, but it broke into two pieces before he detached the mold. He used up two spools of cotton thread before developing a perfect strand, only to damage it when he attempted to put it inside the glass tube. He stayed awake for two days and nights before he succeeded in slipping one of the carbonised threads into a vacuum-sealed bulb. Then, turning on the current, he observed the glow of electric light that we now take for granted.

A failure doesn’t need to suggest the end; it can mean you’re one step closer to the triumph you desire. If something you have attempted has failed, try again. Consider a new perspective. Allow time for an idea to sit and simmer. Take notes. Never give up the goals and dreams you believe in. God is with you through the detours and delays (see Hebrews 13:5–6). When you make determination your friend, patience your servant, and God your partner – you will succeed!

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Lesson 8.2 – Exploring Magnets: Attraction, Repulsion, and Practical Use

Unit Theme: Electricity & Magnetism

Character Trait Focus: *Resourcefulness – using invisible forces in helpful ways*

Curriculum Links: AC9S2U04, AC9S4U04

A) Introduction

Tutor/Parent Says:

"Today we're learning about **magnets** – incredible tools that can pull or push without touching!"

Magnets are part of everyday life: they're in fridges, machines, compasses, motors, and even electricity-generating tools. Pioneers and early inventors found simple ways to use **magnetic forces** to hold things, sort metal, and create movement. When we understand magnetism, we can be *resourceful* in using it to solve problems and make new things!"

B) Informational Story: “Sophie and the Missing Nails”

Parent/Tutor says before reading:

“Here’s a story about a girl named Sophie who finds a clever way to solve a problem using magnets. Listen for what the problem was and how she used magnetism to fix it.”

Sophie and the Missing Nails

Sophie lived on a small family farm with her parents, her little brother Max, and her Grandpa. They had chickens, goats, and a big vegetable garden – but today’s project was something new.

“We’re building a chicken coop extension!” said Dad one morning. “We’ll need extra room for the chicks that just hatched.”

Sophie’s job was to help hold the timber steady while Dad hammered nails through the planks. They worked in the sunshine, laughing as they balanced the wobbly beams and lined everything up straight.

But halfway through the job, something went wrong.

“Where did I put the tin of nails?” asked Dad, glancing around.

Sophie looked too. “It was right next to the toolbox!”

The tin was gone – and so were all the spare nails.

They searched through the tall grass. Sophie peered under the planks. Dad moved aside the wheelbarrow. “It must’ve tipped over,” he said. “The nails must’ve spilled.”

“But they’re so small and shiny,” Sophie said. “We’ll never see them all in the grass!”

She squatted down and started crawling across the dirt, looking for tiny glints of metal – but it was hard.

Suddenly, Sophie’s eyes lit up. “Wait here!” she shouted, and sprinted to the shed.

She came back holding something shaped like a horseshoe. “Remember this? Grandpa gave it to me last Christmas – it’s a **magnet!**”

Dad raised his eyebrows. “Well, it might just work.”

Sophie carefully dragged the magnet through the grass near where they’d been working. **Clink!** A nail jumped up and stuck to it.

“It works!” she cried.

She kept going, running the magnet slowly and steadily back and forth. Every now and then – **clink!** – another nail was found.

“Brilliant,” said Dad. “Let’s both have a go.”

Together, they recovered more than a dozen nails. Sophie noticed that the magnet didn’t pick up every object in the grass. A plastic bottle cap stayed put. A foil lolly wrapper didn’t budge. But rusty screws and nails? Straight onto the magnet.

Later that afternoon, while Max napped, Sophie sat beside Grandpa in the workshop. She told him all about the lost nails.

“Did you know magnets can also **sort** things?” Grandpa said. “In my old job, we used magnets to separate iron and steel scraps from sawdust on the workshop floor. They made our clean-up much faster.”

Sophie looked at the cluttered tray of bolts, screws, and washers on the bench. “Can I try?”

She waved the magnet over the tray. Clink – clink – clink! Some pieces stuck, others didn’t.

“These ones must be steel or iron,” she said, “but the brass ones and the plastic bits stay behind.”

“Exactly,” said Grandpa. “Some metals – like **iron, steel, and nickel** – are magnetic. Others – like **aluminium, brass, and copper** – are not.”

Sophie’s eyes sparkled. “I wonder what else I can use a magnet for.”

She tied a string around the horseshoe magnet and lowered it into the narrow drain near the shed. When she pulled it up, two old washers and a rusty screw clung to the bottom.

“This is like treasure hunting – but with science!”

That evening, Sophie read her book about magnetism by the fire. “Magnets have an invisible force,” she said aloud. “They can pull or push without even touching.”



She ran to her room and found two bar magnets she had in a toy kit. She placed them on the table and slowly moved them toward each other. One side pulled the other closer – **attraction**. She turned one around, and now they pushed away from each other – **repulsion**.

“Opposites attract, like north and south poles,” she said. “Same poles repel.”

The next morning, Sophie decided to **build something**. Max had been sad about missing out on the magnet fun, so she created a magnetic fishing game. She drew little fish on cardboard, added paperclips to their mouths, and made a fishing rod using a stick, string, and a small magnet on the end.

Max loved it. “I caught a big one!” he shouted.

After lunch, Sophie showed Dad a diagram she’d drawn. It explained how magnets could attract metal, sort materials, and even push or pull depending on how they’re turned. She labelled it with words like **pole**, **force**, **repel**, and **attract**.

“That’s an excellent explanation,” said Dad. “Who would’ve thought a few missing nails would lead to all this discovery?”

Sophie smiled. “It’s like magnets pull ideas toward me, too.”

Grandpa chuckled from the porch. “That’s what happens when you notice small things, ask questions, and try something new. That’s called being **resourceful**.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back in your own words? What problem did Sophie have? What tool did she use? What else did she try with magnets? What did she learn about how magnets attract, repel, or sort?”

Encourage terms like: *magnet, metal, attract, repel, magnetic, invisible force, and pole*.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What helped Sophie find the nails?
- What things did the magnet stick to?
- Did all things *not* stick to the magnet?

For Years 3–4:

- How did Sophie show resourcefulness by using the magnet?
- What kinds of materials do magnets attract?
- What does it mean when magnets attract or repel?

For Years 5–6:

- Explain the invisible force behind magnetism. What causes materials to be attracted?

- How can magnets be used in real-life tools and machines?
 - How does this story show that being curious and observant can lead to smart solutions?
-

E) Activity: Magnet Exploration & Recording Sheet

Option A: Magnetic Scavenger Hunt

F–2:

- Use a magnet to explore the house or garden.
- Make two piles: “Sticks to Magnet” and “Does Not Stick.”
- Draw or write what you found in each pile.

Y3–4:

- Create a chart with these headings:
 - **Object,**
 - **Material,**
 - **Magnetic? (Yes/No)**
- Record at least 10 items. Try coins, paper clips, spoons, foil, etc.

Y5–6:

- Research and test different metals. Predict which are magnetic (iron, steel) and which are not (aluminium, brass, copper).
 - Optional: Build a **mini magnetic game** or tool (e.g. sorting tray, paperclip maze, or fishing game).
-

Optional Build: “Make a Magnetic Tool”

All Levels:

- Create a tool using a magnet on a string or stick (like Sophie’s metal retriever).
 - Use it to search under the couch or in the garage for metal objects.
-

F) Biblical Connection

Tutor/Parent Says:

“Job 12:7–10 says, ‘Ask the animals, and they will teach you... or speak to the earth, and it will instruct you.’”

God’s creation is full of hidden forces and patterns – like magnetism. When we observe and use them wisely, we are exploring the order and beauty He built into the world. Sophie’s curiosity and clever thinking show us how *resourcefulness* can turn problems into discoveries.”

G) Wrap-Up

Tutor/Parent Says:

“Today we saw that magnets are powerful tools – even though you can’t see their force. They help us pick up, sort, and build. Sophie didn’t need anything fancy – just a magnet and a curious mind. When we notice and use what’s around us, we become *resourceful* too.”

Lesson 8.3 – Making a Useful Tool Using Electricity or Magnetism

Unit Theme: Electricity & Magnetism

Character Trait Focus: *Resourcefulness – building helpful tools with simple energy principles*

Curriculum Links: AC9TDE4P01, AC9TDE6P02

A) Introduction

Tutor/Parent Says:

"In our last two lessons, we explored how **electricity** and **magnetism** can power bells, lights, tools, and even magnets that lift metal.

Today, you're going to take that learning one step further. You'll design and make your own **useful tool** using **either electricity or magnetism** – just like a pioneer inventor or a bush handyman. You don't need a lab – just a brain, a plan, and a few clever parts. That's *resourcefulness*!"

B) Informational Story: “Jesse’s Farm Helper Invention”

Parent/Tutor says before reading:

“Listen to this story about Jesse, who lives on a bush block and builds a helpful tool from magnets and batteries to solve a real-life problem. Notice how he comes up with the idea, gathers materials, and makes something useful.”

Jesse’s Farm Helper Invention

Jesse lived on a small bush block with his mum, dad, and younger brother Leo. Life on the block was always busy – there were fences to mend, animals to feed, wood to chop, and a never-ending list of tools to put away. Jesse loved helping out. He had a little workbench in the shed where he kept bits and pieces of wire, batteries, switches, magnets, and toy parts he'd saved from the recycling bin.

One Saturday morning, Mum called out from the shed, sounding annoyed. “Leo dropped the box of nails again – under the bench!”

Jesse ran over and peeked under the wooden workbench. The space was too narrow to reach and far too dark to see properly. Nails were scattered everywhere, hiding in dust and cobwebs.

“We’ll never get them all out by hand,” said Mum.

Jesse paused, thinking. Then a lightbulb lit up in his mind.

He raced over to his little tool shelf and grabbed a horseshoe magnet. He tied it to the end of a long stick using string and sticky tape. Crawling on the ground, he carefully slid it into the space beneath the bench. **Clink!** One nail jumped onto the magnet. Then



another. He moved it back and forth like a metal detector until he had retrieved nearly all of them.

“That’s clever!” said Mum. “A magnet on a stick – bush engineering!”

But Jesse wasn’t finished.

Back at his bench, he said, “I think I’ll make it even better.”

He looked through his parts bin and found:

- A battery-powered torch that didn’t work anymore
- A steel nail
- Some copper wire
- Two small magnets
- A tiny buzzer from an old toy car
- An LED bulb
- A switch
- Electrical tape

“I want to build something that helps find metal, lights up in dark places, and maybe even buzzes when it’s working.”

He began by wrapping the copper wire tightly around the steel nail, turning it into a coil. Then he connected the ends of the wire to a AA battery using tape and a switch. When he closed the switch, **bam!** – the nail became an **electromagnet**. He tested it with paperclips, and sure enough, they leapt toward it when the power flowed.



“Nice,” Jesse grinned.

Then he added the buzzer into the circuit. Now, when the circuit was complete, the magnet activated **and** the buzzer buzzed.

He glued the whole setup – battery, magnet coil, switch, and buzzer – onto a wooden stick and labelled it with permanent marker:

“The Farm Helper – Magnet Finder & Signal Stick”

But he wasn’t done yet.

“There’s one more thing,” Jesse said. He added the LED bulb so the device could light up when turned on, helping him see into dark corners. Now his invention had **light**, **sound**, and a **magnetic tool** all powered by a simple circuit.

The next morning, he showed it to Dad.

“I made this to help find dropped metal things – even in the dark. It buzzes and lights up too.”

Dad was impressed. He crouched under the trailer, where some screws had gone missing.

Jesse switched on the Farm Helper and slid it underneath. **Buzz!** A rusty washer stuck to the tip.

“This is brilliant,” said Dad. “You’ve built a proper tool. All from scrap!”

That afternoon, Jesse used it again to help Leo find a lost washer near the hay bales. Then he rewired the LED so it only lit up when metal was detected, making it a kind of metal sensor.

He even drew a **circuit diagram** and a labelled sketch of the finished tool for his science journal:

- Battery
- Coil (electromagnet)
- Buzzer
- LED
- Switch
- Metal detector head (magnet)

Then Jesse wrote a note at the bottom:

“Tools don’t have to be fancy. If you understand energy and know how to connect parts, you can build things that really help. This is my Farm Helper – powered by science and a little bit of imagination.”

Over the next few weeks, Jesse improved the design with a plastic handle and a mini storage pocket for spare batteries. The Farm Helper became part of the family’s regular shed gear. If someone lost something under the ute or in the hay, someone always called, “Get Jesse’s invention!”

One evening, Mum said, “You didn’t just build a gadget. You saw a problem, thought through a solution, and used what you had. That’s real resourcefulness.”

Jesse smiled and wrote in his notebook:

“Invention isn’t just building things. It’s solving problems with what you’ve got.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story in your own words? What was the problem Jesse solved? What did he use to build his invention? What made it work, and how did he make it even better? Use words like battery, magnet, buzzer, wire, and light.”

D) Reflective Thinking Questions

For Foundation to Year 2:

- What tool did Jesse make?
- What did his magnet help him find?
- Would you like to build something with magnets or batteries?

For Years 3–4:

- What materials did Jesse use to make his Farm Helper?
- How did his invention show problem-solving and resourcefulness?
- What would you invent to help on a farm?

For Years 5–6:

- How does an electromagnet work? Why did Jesse add a buzzer and light to the circuit?
 - What design steps did Jesse follow to make his tool useful and practical?
 - How do inventions like this reflect creativity and care for others?
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E) Activity: Design and Build a Useful Tool Using Electricity or Magnetism

Parent/Tutor Instructions:

“Today you’ll be inventing your own helpful tool – powered by a battery or magnet – to solve a problem or make a task easier. Use what you’ve learned about circuits, switches, magnets, and movement.”

Materials You Might Use:

- Batteries (AA, AAA, or coin cell)
 - Wires (or foil strips)
 - Magnets
 - Small buzzer, LED light, torch globe
 - Tape, cardboard, sticks, string, containers
 - Paperclips, nails, washers
 - Recycled toy parts
-

F–2:

Task: Build a simple magnetic tool (e.g. magnet on a stick) or a light-up cardboard lantern with adult help.

- Decorate it and name your invention!

Y3–4:

Task: Design and build a small working device that lights up or picks up metal.

- Draw a labelled picture of your invention.
- Write a short paragraph: “What my invention does and why it’s helpful.”

Y5–6:

Task: Invent and build a **working tool** using electricity or magnetism.

- It could: light up, buzz, move, or lift objects.
 - Draw a labelled circuit diagram and write a builder’s report:
 - What’s the problem?
 - What does your invention do?
 - What parts did you use and why?
-

F) Biblical Connection

Tutor/Parent Says:

“Exodus 31:3 says, ‘I have filled him with the Spirit of God, with wisdom, understanding, knowledge, and all kinds of skills.’

God gives people the creativity and skill to invent things that help others. Jesse didn’t just build a gadget – he solved a real problem with the gifts God gave him. That’s what *resourcefulness* looks like in action.”

G) Wrap-Up

Tutor/Parent Says:

“Today we put everything we learned about energy and magnetism into practice. You thought like a real inventor – looking at a problem, thinking through a design, and using the tools and knowledge you had. That’s what pioneers did. That’s what *resourceful* learners still do today.”

TOPIC 9	CULMINATING PROJECT OR ASSESSMENT

Final Review and Challenge: The Great Resourcefulness Build-Off!

Unit Theme: Electricity & Magnetism

Character Trait Focus: *Resourcefulness – combining what you've learned to solve problems creatively*

Curriculum Links: AC9S4U03, AC9TDE6P02

A) Introduction

Tutor/Parent Says:

"Over the past eight weeks, you've explored amazing topics in science and technology – from pioneer inventions and Aboriginal tools to survival skills, bush cooking, energy, electricity, and magnetism.

Today's lesson is a **final challenge**. It's called *The Great Resourcefulness Build-Off!* You'll look back at everything you've learned, choose one problem or task, and design a solution using the materials and ideas we've explored. It's your turn to be the inventor, the scientist, the survival expert, and the helper – just like the pioneers and Aboriginal peoples who came before us."

B) Review Story: "The Build-Off at Pioneer Camp"

Parent/Tutor says before reading:

"This story is about a group of students who attend a bush learning camp and get a surprise final challenge. Listen for how they combine their knowledge and work as a team to invent something truly helpful."

The Build-Off at Pioneer Camp

Pioneer Camp was unlike any other school trip. Instead of cabins with heaters and phones, the students slept in canvas tents, cooked on open fires, and built tools using whatever they could find. Over the past term, they had explored bush survival skills, Aboriginal tools, simple machines, solar cooking, pioneer science, and even how to use electricity and magnetism without wall plugs or fancy equipment.

On the final day, Miss Ruth, their energetic camp leader, gathered everyone around the campfire circle.

“Today,” she said with a grin, “you face the Great Resourcefulness Build-Off.”

The students sat up straighter.

“Your task,” she explained, “is to invent something **useful** using what you’ve learned and what you can find in the bush shed. It must solve a real problem, use a natural force or principle – like heat, light, magnetism, or electricity – and be something pioneers or bush people might actually use.”

Excited chatter filled the air.

“What counts as a real problem?” asked Jack.

“Something that makes life easier, safer, cleaner, warmer, cooler, or smarter,” said Miss Ruth. “Work in small groups, choose your challenge, and show what you’ve learned.”

The students raced to the **bush shed**, where a jumble of supplies waited: fencing wire, copper coils, magnets, torch bulbs, batteries, paperclips, foil, old tools, planks, cardboard, string, jars, nails, tarps, pegs, cans, and even some leftover damper mix.

Each group huddled together, planning their builds.

Group 1 – The Water Savers

Tia’s group remembered a lesson from earlier weeks – how important clean water is for survival.

“What if it stops raining, and the tank’s empty?” asked Tia.

They built a **solar still** using a bowl, a cup, plastic wrap, a rock, and some water-soaked leaves. As the sun warmed the air inside the bowl, condensation formed and dripped into the cup.

“It’s like turning sunlight into water,” said Eli.

Group 2 – The Night Watchers

Arjun’s team had a different idea.

“What if we need to check on the goats at night?”

They built a **bush lantern** using a battery, foil, a cardboard box, and a torch bulb wired into a switch made from paperclips.

“It’s simple,” Arjun said, “but it lights the way – and you can hang it in the trees.”

Group 3 – The Fire-Free Cooks

Jess’s group remembered how hard it had been to cook when the wind was too strong for a fire.

“Let’s try to make **stick-baked damper**.”

They shaped thick sticks into a tripod, wrapped dough around smaller green twigs, and held them over a bed of hot stones. The bread cooked slowly but evenly.

“No pan, no mess,” Jess said. “Just heat and patience.”

Group 4 – The Metal Finders

Mila’s group tackled a common shed problem.

“Dad always loses screws in the grass,” she said.

They made a **magnet-on-a-string tool** with a looped handle for retrieving lost nails and washers. They even added a torch bulb to light the search area.

“Now you can find things *and* see them,” said Mila.

Group 5 – The Bush Communicators

Liam’s team decided to try building something more advanced – a **communication bell**.

Using fencing wire, an old bicycle bell, a clothes peg, foil, and a battery, they built a circuit with a switch. When someone pressed the switch, it closed the loop and made the bell ring at the shelter.

“It’s a bush telegraph,” said Liam proudly.

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That afternoon, all five groups gathered at the fire circle to **present their builds**.

Each team shared:

- What **problem** they chose to solve
- What **materials** they used
- What parts worked well – and what didn’t
- What they’d **improve** next time

Miss Ruth listened carefully and asked thoughtful questions. “How did you decide which parts to use? Did you test different ideas before settling on this one? How could this help someone on a real farm or in the bush?”

The students answered with enthusiasm. Some had tested more than one version. Others added features as they worked.

“This is the heart of **resourcefulness**,” said Miss Ruth, holding up a small medal stamped with the camp’s motto: *Creative, Caring, Capable*.

“You thought ahead. You used what was available. You remembered what you learned. And you created something to help others.”

She handed out **badges** to each camper. They read:

Pioneer Scientist – Creative, Caring, Capable

That night, as the sun set and the damper baked in coals, one of the students whispered by the fire, “We didn’t just learn science. We learned how to use it.”

C) Narration Prompt

Tutor/Parent Says:

“Can you tell the story back to me? What kinds of inventions did the student groups create? What problems were they trying to solve? What were some of the materials and science ideas they used? Can you name at least two or three of the inventions and explain how they worked?”

Encourage sequencing words and science terms like: solar still, magnet, circuit, heat, energy.

D) Reflective Thinking Questions

For Foundation to Year 2:

- What did the groups make?
- What would you like to build to help someone?
- Why is it good to use your brain to solve problems?

For Years 3–4:

- How did the students in the story show teamwork and resourcefulness?
- What tools or ideas from the last 8 weeks did they use?
- What kind of invention would you make in a build-off?

For Years 5–6:

- What does this challenge show about applying science to real-life situations?
 - How do creativity and caring go together in practical science?
 - What part of this course has taught you the most about being resourceful?
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E) Final Challenge Activity: The Great Resourcefulness Build-Off!

Parent/Tutor Instructions:

“Choose one challenge or problem to solve – something that involves survival, energy, or helping others – and invent a solution using materials you already have. This can be real or a detailed model or plan.”

Step-by-Step for All Age Levels:

1. Choose a Challenge:

- Find water or cook without a stove
- Make light or sound without power
- Keep dry or warm in the bush
- Retrieve lost metal items
- Build a simple invention that helps someone

2. Plan It Out:

- What's the goal?
- What materials will you use?
- What kind of energy or force (heat, light, magnetism, electricity) will you use?

3. Build or Draw It:

- Use real objects if safe and practical
- Or draw a labelled diagram of your invention

4. Explain It:

- What problem does it solve?
 - How does it work?
 - What would you do differently next time?
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F-2:

- Build or draw your invention
- Label 2–3 parts
- Tell a parent or sibling what it does

Y3-4:

- Build a working model OR draw it in detail
- Write 3–5 sentences explaining what it does and how you made it

Y5-6:

- Build or design an advanced tool using one type of energy
 - Include a diagram and a one-paragraph “engineer’s report” explaining your process and results
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F) Biblical Connection

Tutor/Parent Says:

“Proverbs 8:12 says, ‘I, wisdom, dwell together with prudence; I possess knowledge and discretion.’

This whole term, you’ve practised wisdom – thinking ahead, solving problems, and using what God has placed in creation to help and care for others. That’s true *resourcefulness*, and it brings honour to the God who made both the world and your clever mind.”

G) Wrap-Up: Course Reflection and Celebration

Tutor/Parent Says:

“Well done! You’ve completed an amazing course on **innovative Science, Technology, and Remedies** used by Aboriginal peoples and early pioneers.

Let’s look back at what you’ve learned:

- Week 1: Pioneer resourcefulness
- Week 2: Simple machines
- Week 3: Aboriginal tools and medicine
- Week 4: Homestead life and inventions
- Week 5: Healing and cleanliness
- Week 6: Survival in the bush
- Week 7: Energy and cooking
- Week 8: Electricity, magnetism, and invention

You’ve built, designed, created, solved, observed, experimented, and reflected. And through it all, you’ve practised the trait of *resourcefulness* – finding wise and helpful ways to use what God has given.”
