

“Origins of the Ancient World & Orderliness”

Year A, Term 1

SAMPLE EXTRACT ONLY

**(For access to Topics 4 to 8,
please purchase the study
guides)**



Homeward
Education Support

Grades
Prep-6

**SCIENCE &
TECHNOLOGY**

COURSE OVERVIEW

Instructions for Teacher or Parent:

Science & Technology Content: This science and technology course is designed to teach children about God's creation through the lens of science and technology from Origins and Ancient Civilizations up to our Postmodern Era. The science and technology courses include the latest scientific information, discussion, hands-on activities, and exploration. Each topic focusses on a Christian approach to science. The lessons satisfy Australian Curriculum content in Earth and Space Sciences, Biological & Health Sciences, Scientific Inquiry, and the interaction of systems within natural and designed environments.

Based on Historical Themes: The overall Homeward Curriculum follows a thematically integrated cycle of 12 units, each comprising 8 topics taken over one or two terms (3 to 6 months). The 12 units (from Creation & Ancient Civilisations to Post-modern Times) can be accomplished in Primary School (using the Prep to Year 6 Study Guides), and then cycled through in High School (using the Year 7 -10 and or Year 10 to 12 study Guides). The High School Guides are also aligned towards completion of nationally approved graduation awards (Certificate II & III in General Education & Certificate IV in Tertiary Preparation).

Family Friendly Multi-age Differentiated Activities: For most subjects there will be between 3 and 5 lessons per topic. The course is designed multi-age, so the whole family can be working on the same topic, while each child engages at their own level of maturity. Our multi-age design makes it easier for teachers and parents to make 'reasonable adjustments' for students of differentiated abilities. Teachers and parents choose the 'Thinking Questions' and 'Activities' that are most appropriate for the ability of their child/student.

The amount the students accomplish each week can be adjusted according to their ability and special needs in two ways:

- i) a slower to average student might accomplish 2 to 3 lessons per week, whereas a much more advanced highly performing student might accomplish up to 5 lessons per week including all the creative and hands-on activities;
- ii) adjustments can be made so that a Year 6 student who is struggling to keep up, could answer the 'Thinking Questions' and learning 'Activities' at the Year 4 level. An advanced Year 3 or 4 student could also complete the Year 5 & 6 questions and activities or there is sometimes an extra Optional Extension Activity at the end of a lesson.


As the course is multi-aged, it is suitable for small multi-age classrooms or for homeschool families, allowing all the children to engage with the same topic, where each child answers questions at their age or ability level.

Prior to starting each week, review the recommended resources.

Contents

Week	Description	Page
Topic 1	Our Created Universe	
Topic 2	Planets & the Solar System	
Topic 3	Geology: Rocks, Soil & Volcanoes	
Topic 4	The Water Cycle	
Topic 5	Plants	
Topic 6	Animals	
Topic 7	Weather, Seasons & Calendars	
Topic 8	We are Wondrously Made	
Topic 9	<p>Assessment: Section 9 includes an assessment task and rubrics for marking.</p> <p>If you are enrolled in a school or correspondence course, then they may require you to hand in your English Journal including the final project “Reflections on God’s Orderly Hand in History”.</p> <p>You could include photographs of any practical activities or creative projects.</p> <p>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.</p>	

LESSON PLANS

 **Bible Verse of the Week:** Genesis 1:1 – "In the beginning, God created the heavens and the earth."

Overview:

This week, children will learn about **God's creation of the universe**, the vastness of space, the laws of motion, and the importance of light.

Introduction Activity:

Parent says: "During this course, as you work on the science lessons each day, you will record your answers to questions and your thoughts about the topics, in your Science Journal.

We will be trying to keep your science journals neat and organised by using headings and subheadings to locate your work. Your Science Journal may be collected for assessment. For each school-term, you will need a separate exercise book to use as your Science Journal for that unit of the course.

So, let's get out the exercise book you will be using for your Science Journal. The first thing to do to keep it organised is to create your headings and sub-headings.

The Front Cover: On the front cover, you should record the subject title as "SCIENCE JOURNAL". Then write the name of the unit of study for this first term = "ORIGINS & ANCIENT CIVILISATIONS: (& ORDERLINESS)".

Weeks: To keep your work organised, so it is easy for your teacher to review, you should place a heading for each week of the term. For example – WEEK 1, or WEEK 2 etc.

Lessons: Then, you need to create a subheading for LESSON 1.

Under 'Lesson 1' you will then write your responses to questions and activities on the pages for that lesson. The next sub-heading on a new page will be LESSON 2, etc. You will have between 3 and 5 lessons in the week.

Then next week there will be a new heading for WEEK 2, followed by the lesson numbers in Week 2.

Lesson 1: God's Amazing Creation

Theme: God Brings Order Out of Chaos

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Understand the concept of order in creation through the biblical account of Genesis 1.
 - Identify features of the natural world (light, land, sky, animals, people) and describe patterns and observable properties.
 - Recognise that living things have external features that help them survive in their environment.
 - Begin to explore how humans are called to steward the earth in an orderly and purposeful way.
 - Represent creation events using models, drawings, or sequences.
 - Pose questions about the natural world and communicate their ideas clearly.
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A) Introduction

Parent/Teacher Says:

“Today we are going to learn about the most amazing story ever told – the story of how the world began. This isn’t a pretend story – it’s the true account from God’s Word about how everything came to be. As we listen, we’ll see how God made everything step-by-step in a special order.”

Vocabulary to Pre-teach:

- **Creation** – the act of making something from nothing.
- **Orderliness** – doing things in a careful, planned way.
- **Steward** – someone who takes care of something that belongs to someone else.
- **Light** – energy that lets us see things.
- **Sky/Heavens** – the space above the earth, where we see clouds, stars, the sun, and moon.
- **Habitat** – the place where a plant or animal lives.
- **Species** – a group of similar living things.
- **Observe** – to look closely and carefully.
- **Pattern** – something that repeats in an ordered way.

Instructions: Write these words on a board or paper and briefly explain them before reading the story.

B) Informational Story

Title: From Nothing to Everything – God’s Orderly Plan

As we read this story, I need you to listen very carefully, because at the end of the story, I will ask you to tell me everything you remember about the story. So, while we are reading, try to visualise each scene – if it helps you to concentrate, you might like to close your eyes and try to see what is happening in your mind. Here we go....

Before there was anything – before the sun warmed the earth, before birds soared in the sky, before even a single blade of grass swayed in the breeze – there was God.

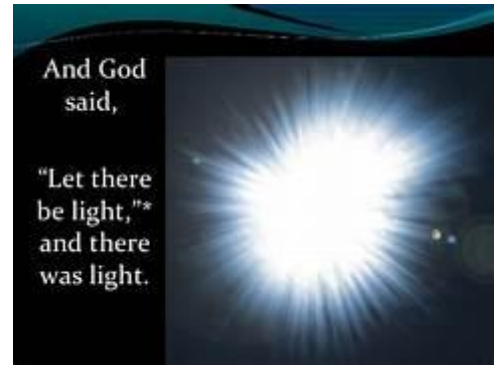
There were no sounds. No colours. No light. Only darkness, emptiness, and stillness. The Bible tells us, “In the beginning, God created the heavens and the earth” (Genesis 1:1). This means He created the entire universe – from nothing. That’s hard for us to imagine because we always need something to build with. But God didn’t. He didn’t need tools or materials or blueprints. He simply spoke, and things appeared. That’s how powerful He is.

And when God created, He didn’t just make things in a random or messy way. He brought **order** to what he was once creating. He created everything in a **sequence**, with **purpose**, and with **beauty**.

Let’s explore the days of creation – God’s amazing, orderly plan for the universe.

Day 1 – Light and Darkness

God’s first words were, “Let there be light.” And there was light! Before that, everything was dark. But when God spoke, light burst forth. It wasn’t sunlight yet – that would come later. This was a special light created by God Himself. Then God **separated** the light from the darkness. He called the light “Day” and the darkness “Night.” Just like that, time began. Morning and evening. A pattern. A rhythm. The first day came to a close.



Day 2 – Sky and Waters



Next, God said, “Let there be a space to separate the waters!” And He made the sky – a huge expanse that divided the waters above (like clouds and moisture in the air) from the waters below (like oceans, lakes, and rivers). God called the space “Heaven” or “sky.” This created a space for air, weather, and clouds. Now the earth had **layers** and **structure**. Everything had its place.

Day 3 – Land, Seas, and Plants

On the third day, God gathered the waters together so dry land could appear. He named the dry land “Earth,” and the gathered waters He called “Seas.” This was the first time people could have stood somewhere if they had existed yet.

But God wasn’t finished with Day Three. He also created all the plants! Green grass, fruit trees, tall forests, delicate flowers, creeping vines, vegetables – all growing and full of seeds. And He made each plant to **reproduce** according to its kind. Apple trees grew apples. Wheat seeds made more wheat. There was order, design, and purpose in every leaf and root. The earth was beginning to look like a home.



Day 4 – Sun, Moon, and Stars

On Day Four, God said, “Let there be lights in the sky to separate day from night.” This is when He made the **sun**, to give light during the day, and the **moon** and **stars** to shine at night. But they weren’t just decorations! God gave them purposes:

- To mark time
- To separate day and night

- To guide people and animals
The sun gives warmth and energy. The moon affects tides. The stars help travellers find their way. These lights became part of the great **system** God was creating. Every part connected. Every movement measured.

Day 5 – Birds and Fish



The next day, God turned His attention to the skies and seas. He said, “Let the waters be filled with living creatures, and let birds fly above the earth!”

So the oceans teemed with life – shimmering fish, dolphins, sea turtles, enormous whales, tiny plankton. God made sea creatures in every size and shape.

Then, He filled the skies with birds – soaring eagles, tiny hummingbirds, chirping robins, colourful parrots. Each creature was made to **live** in its specific **habitat** – water or air.

And God blessed them. He said, “Be fruitful and multiply!” He designed them to reproduce and fill the earth.

Day 6 – Land Animals and People

On the sixth day, God created all the land animals. Lions, cows, kangaroos, snakes, lizards, ants, elephants – each one perfectly suited to its environment. Some had fur, some had scales. Some walked, others crawled. All of them had a place in God’s world.

But God saved the best for last.



He said, “Let Us make man in Our image, according to Our likeness.” So God made the first man, Adam. From the dust of the earth, He formed

Adam’s body. Then, God breathed into him, and Adam became a living soul. Later, God created Eve, the first woman, from Adam’s side to be his companion.

Humans were different from animals. People were made in God’s **image**. That doesn’t mean we look like God physically – God is Spirit – but it means we can think, choose, create, love, and understand right from wrong. God gave people a job: to take care of the world. He told them to care for the plants, animals, and land – to be **stewards** of His creation.

God looked at everything He had made and said, “It is very good.”



Day 7 – Rest and Celebration

On the seventh day, God rested. Not because He was tired – He doesn’t get tired! – but because His work

was complete. He blessed this day and made it holy. It was a day to reflect, rejoice, and enjoy all He had made.

God gave us this pattern of work and rest for our benefit. Working is good, and resting is good too. Both are part of the **order** of life.

Patterns and Purposes in Creation

If we look carefully, we can see the pattern in God's creation:

- Days 1–3: God **formed** the spaces – light/dark, sky/sea, land/vegetation.
- Days 4–6: God **filled** those spaces – sun/moon/stars, birds/fish, animals/people.

Each pair fits together! What was formed was later filled. That's not random – that's design. That's **orderliness**.

And every part of creation connects with the others. Plants need sunlight. Animals need plants. People need air, water, and food. The sun and moon help with time and seasons. All things are designed to work **together**, not separately.

When we observe that everything is interconnected and works together, we are observing an 'ecosystem'.

An **ecosystem** is made up of all of the living and nonliving things in an area. This includes all of the plants, animals, and other living things that make up the communities of life in an area. An ecosystem also includes nonliving materials – for example, water, rocks, soil, and sand. A swamp, a creek valley, an ocean, an area of grasslands, and a forest are all examples of ecosystems.



An ecosystem usually contains many different kinds of life. A grassland, for example, is an ecosystem that contains more than just grass. It includes other plants, mammals, insects, earthworms, and many tiny living things in the soil.

When something in nature breaks out of order – like when animals go extinct or ecosystems are damaged – everything else feels it. But when things are in balance, they reflect the beauty and care God intended.

People as Stewards

Because people were made in God's image, we have a special role. We aren't just part of nature – we're caretakers. God gave Adam and Eve (and all of us!) the job of tending the garden, naming animals, and making wise choices. This means using creation well – without waste, greed, or harm.

Even today, we can still follow that calling:

- Caring for animals
- Recycling and reusing
- Planting trees and gardens
- Avoiding pollution
- Learning more about how nature works

When we do these things, we reflect God's image. We show respect for His work. We practise **orderliness** – just like our Creator.

What We Learn from God's Creation

God's creation isn't just a list of things He made. It's a picture of who He is.

- He is **powerful** – He made everything by speaking!
- He is **wise** – everything fits together in perfect balance.
- He is **good** – He made a beautiful, safe world for us to enjoy.
- He is **purposeful** – nothing was an accident or mistake.
- He is **orderly** – each day built upon the last, step by step.

Even today, scientists study nature to discover how things work. They see patterns in weather, animal behaviour, and how plants grow. These patterns help us predict, prepare, and understand. That's because God's world is full of order. It was designed that way from the very beginning.

Closing Thought

God took a dark, empty world and filled it with colour, life, sound, and beauty. He took chaos and brought order. And He made us – people – to live in it, care for it, and enjoy it.

So the next time you see a rainbow, smell a flower, or feel the sunshine on your face, remember: this didn't just happen. It was created – on purpose – by a God who loves order, beauty, and you.

C) Narration

Parent/Tutor Says:

“Now, I want you to tell me everything you remember from the story. Start from the beginning: What was there before anything was made? What did God make each day? What did God do last? Can you remember why the order of creation was important?”

Encourage the child to retell key concepts, using any drawings or sequence cards if needed.

D) Teaching Skills

Skill Focus: Observation, Pattern Recognition, Scientific Communication, Representing Information

Parent/Teacher Says:

“Let's learn how to be good observers like scientists. Scientists use their senses to observe things in nature: sights, sounds, smells, and textures. Then, they describe what they see using words or pictures. In today's story, God made things in an ordered pattern – day by day. We are going to learn how to notice and represent patterns too.”

Let's think about the ways people make and use **observations** and **questions** to learn about the natural world. If you were a scientist (a biologist or botanist) going into the forest to learn about nature, **what kinds of questions** would you want to find the answers for? What things would you like to find out? Tell me some questions.

Instructions for Parent/Teacher:

1. Model how to use a “creation chart” to track what was made each day (Day 1 to Day 7).
 2. Show how to draw or write what was created each day.
 3. Emphasise using clear order and labels (like a timeline or sequence map).
 4. Practice drawing, modelling, or using picture cards to show the sequence.
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E) Thinking Questions

Foundations to Year 2

1. What did God make first?
2. Why do you think God made light before other things?
3. What are some things that live in the sky? In the sea? On land?
4. How do you think God wants us to take care of His creation?

Years 3–4

1. What do you notice about the order God used in creation?
2. Why was each step important before the next could happen?
3. What is one pattern you noticed in the story?
4. What does it mean to be a steward of the earth?

Years 5–6

1. How does the creation account show the difference between humans and animals?
 2. What evidence can you observe in nature that shows things are not random but orderly?
 3. How does understanding creation help us understand science?
 4. What responsibilities do humans have to care for ecosystems today?
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F) Practical Activities

Foundations to Year 2

Option 1: Creation Timeline Strip – Create a long strip of paper with each day of creation represented by drawings or cut-out images. Add labels and arrows to show order.

Option 2: Creation Sound & Light Exploration – Use flashlights and sound-making objects to explore what it was like before light and sound. Discuss the changes when light entered the darkness.

Years 3 & 4

Option 1: Ecosystem Collage – Create a poster that shows different habitats (land, sea, sky) with plants and animals placed in their proper areas. Label each group.

Option 2: Observation Journal – Take a walk outside and record observations of patterns in nature (plant growth, cloud shapes, colours). Think of some questions you would like to research when you get back home (or in the classroom or library). Then draw or write findings.

Years 5 & 6

Option 1: Stewardship Poster Project – Design a poster that teaches others how to care for creation (e.g., water conservation, tree planting, animal habitats).

Option 2: Habitat & Adaptation Report – Choose one plant or animal and research how it is suited to its environment. As you read, think of questions you would like to find out more about. Present findings through a poster or oral presentation.

G) Optional Extension Research Activity

Task: Research one specific day of creation (e.g., Day 5 – birds and fish). Find out:

- How birds and fish are different in structure.
 - Where they live and how their features suit their habitat.
 - Why they are important in God’s world.
- Present your findings through a written report, model, or slideshow.
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H) Biblical Connection & Wrap-up

Parent/Tutor Says:

“Let’s remember Genesis 1:1 – ‘In the beginning, God created the heavens and the earth.’

This verse tells us that God is the Master Designer. Everything He made was carefully ordered. And because we are made in His image, we are also made to love order, beauty, and purpose. One way we show that is by observing, understanding, and caring for creation.”

Reflective Questions:

- How can you be more orderly like God this week?
 - What part of creation helps you see God’s power?
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Australian Curriculum (v9) Content Descriptions Addressed in this Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification
AC9SFU01	<i>Observe external features of plants and animals and describe ways they can be grouped based on these features.</i>	The lesson compares different plants and animals created on Days 3, 5 and 6 and encourages students to identify features and habitats.
AC9SIU01	<i>Identify the basic needs of plants and animals, including air, water, food or shelter, and describe how the places they live meet those needs.</i>	Discussion of created habitats (sea, sky, land) includes how creatures live where they are suited and cared for.
AC9SFH01	<i>Explore the ways people make and use observations and questions to learn about the natural world.</i>	Students are asked to observe nature, look closely, and draw/record in their Science Journals.
AC9SI101	<i>Pose questions to explore observed simple patterns and relationships and make predictions based on experiences.</i>	The narration and Thinking Questions sections ask students to notice and describe the order in creation.
AC9S2I06	<i>Write and create texts to communicate observations, findings and ideas, using everyday and scientific vocabulary.</i>	Students record their narration, drawings of creation days, or ecosystem diagrams in journals.

YEARS 3 – 4

Code	Full Description	Justification
AC9S3U01	<i>Compare characteristics of living and non-living things and examine the differences between the life cycles of plants and animals.</i>	Lesson contrasts non-living creation (light, land, water) with living creation (plants, animals, humans).
AC9S4U01	<i>Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.</i>	The story introduces ecosystems and how plants (producers) and animals depend on one another in connected systems.
AC9S3H02	<i>Consider how people use scientific explanations to meet a need or solve a problem.</i>	Students learn how stewardship and scientific observation help humans care for environments.

Code	Full Description	Justification
AC9S3I04	<i>Construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information, show simple relationships and identify patterns.</i>	The “Creation Sequence Chart” and “Ecosystem Mapping” activities directly fulfil this.
YEARS 5 – 6		
Code	Full Description	Justification
AC9S5U01	<i>Examine how particular structural features and behaviours of living things enable their survival in specific habitats.</i>	Students consider why animals and plants were designed for specific ecosystems (e.g., fish in water, birds in air).
AC9S6U01	<i>Investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditions.</i>	The stewardship discussion addresses how damage to environments harms ecosystems.
AC9S5H02	<i>Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions.</i>	The lesson applies scientific understanding to modern stewardship, sustainability and caring for creation.
AC9S5I04	<i>Construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationships.</i>	Years 5–6 students create more advanced representations—ecosystem diagram, food chain, or stewardship poster.

DESIGN & TECHNOLOGY (Multi-Age)

Code	Full Description	Justification
AC9TDE2K01 (Y1–2)	<i>Identify how familiar products, services and environments are designed and produced by people to meet personal or local community needs and sustainability.</i>	“Stewardship” section teaches how humans intentionally sustain environments.
AC9TDE4P02 (Y3–4)	<i>Generate and communicate design ideas using technical terms and graphical representation techniques, including using digital tools.</i>	The Ecosystem collage and diagram tasks require clear graphical organisation.
AC9TDE6P03 (Y5–6)	<i>Select and use suitable materials, components, tools and equipment to safely make designed solutions.</i>	Upper students create posters, reports or habitat designs using planned materials and layout.

Lesson 2: The Vast Universe

Theme: God Brings Order to the Universe

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Understand that the universe operates in an orderly, predictable way according to patterns of movement.
 - Recognise that the Earth is part of a solar system with observable movements of the sun, moon, and stars.
 - Observe and describe celestial patterns (e.g. day/night, moon phases).
 - Use models or representations to explore spatial relationships in the universe.
 - Reflect on how human planning and order reflect God's character.
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A) Introduction

Parent/Teacher Says:

“Today's lesson is about the universe – space, stars, planets, and the amazing order that God placed in the sky. We'll learn how God didn't create a jumbled, spinning mess but a perfectly timed and ordered system. We'll discover what the Bible says and how science helps us observe that order.”

Vocabulary to Pre-teach:

- **Universe** – all space, planets, stars, and galaxies
 - **Orbit** – the path one object takes as it moves around another
 - **Galaxy** – a huge collection of stars, dust, and gas
 - **Solar system** – our sun and the planets that revolve around it
 - **Axis** – an invisible line that a planet spins around
 - **Rotation** – the spinning of Earth on its axis (causes day/night)
 - **Revolution** – one full orbit of Earth around the sun (takes one year)
 - **Observation** – something you notice or see carefully
 - **Pattern** – something that repeats or follows a rule
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B) Informational Story

Title: *The Universe with a Plan*

As we read this story, I need you to listen very carefully, because at the end of the story, I will ask you to tell me everything you remember about the story. So, while we are reading, try to visualise each scene – if it helps you to concentrate, you might like to close your eyes and try to see what is happening in your mind. Here we go....

The night sky stretched out above Ellie and Jonah as they sat with their dad on a blanket in the backyard. The stars sparkled across the darkness like diamonds sprinkled on a deep blue canvas. The evening was calm, and not a single cloud covered the view.

“Look how many stars there are!” Jonah whispered. “It's like a million!”

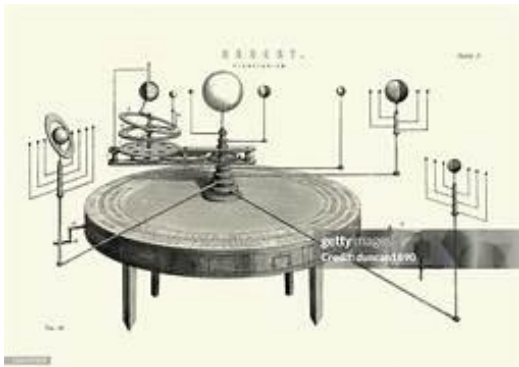
“There are actually way more than that,” Dad said, pointing upward. “There are billions – and even more than we can count. But guess what? Psalm 147:4 tells us that God knows exactly how many stars there are – and He even calls each one by name.”

“Wait,” Ellie said, her eyes wide. “He named them all?”

“That’s right,” said Dad. “Each one. He didn’t just toss the stars into space like a bucket of glitter. He placed each one carefully, exactly where He wanted it to be. The whole universe was made with a plan.”

Jonah leaned back on his elbows, thinking. “So... space isn’t just a big mess?”

“Not at all,” said Dad. “When God made the universe, He made it with **order**. Every planet, every star, every galaxy is part of His design. The Earth moves in a perfect path around the sun. The moon orbits the Earth. Everything fits together like the gears in a clock – ticking just right, at the exact speed needed for life.”



Ellie sat up straighter. “Is that why we have night and day at the right times?”

“Exactly,” said Dad. “The Earth spins on its axis, so different parts face the sun at different times – giving us day and night. Then, as the Earth travels in a path around the sun, we get seasons. In summer, we’re tilted toward the sun. In winter, we’re tilted away. It’s all planned.”

Jonah frowned. “But if the universe is that big... aren’t we just tiny and unimportant?”

Dad smiled and put his arms around both children. “That’s what makes it so amazing. Even though space is huge, and the Earth is like a tiny dot compared to the size of the universe, God still knows **you**. He knows your name, your thoughts, your heart. He made the stars – but He made you in His image. You are special because God chose to create you.”

Ellie looked up again. “Wow. God really is organized.”

“He is,” said Dad. “And He wants us to be, too. When we plan well, take care of our things, keep our homes tidy, or even manage our time, we are following His example. God doesn’t love chaos – He loves order.”

As they lay back on the blanket, the stars seemed to shine even brighter.



The Universe God Made

Let’s explore more about the universe God created.

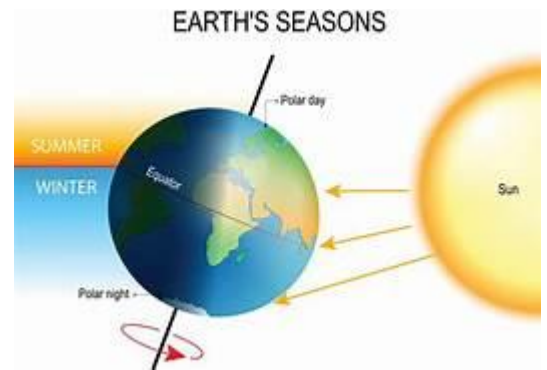
In the beginning, there was nothing – no time, no light, no space. Then God created everything. He didn't create it all at once in confusion. He began with light and space, then formed the Earth, stars, moon, sun, and planets in a beautiful sequence.

God created **laws** that the universe follows. For example, He created the law of **gravity**, which keeps planets in orbit and our feet on the ground. He designed **light** to travel in straight lines so we could see. He planned the **tilt** of the Earth's axis so we could enjoy different seasons.

The sun gives us warmth and energy. It helps plants grow, keeps animals alive, and gives us vitamin D. The moon controls the ocean's tides, helping clean the shores and guide sea creatures. The stars help us tell direction and time, and their brightness shows us beauty even in the dark.

Everything in the universe is moving. The Earth spins once every 24 hours, giving us day and night. It takes one year to orbit the sun – 365 days! The moon goes around the Earth every 29 days, giving us the different phases we see in the sky.

Yet all this movement doesn't create chaos. Instead, it creates **patterns**. Regular, dependable, beautiful patterns.



Patterns in the Sky

Have you noticed that the sun always rises in the east and sets in the west? That's not random – it's because of the Earth's rotation. This spinning also makes shadows move, birds know when to fly home, and people know when to sleep and wake.

The moon has phases – the part of the moon that we see changes shape across the month. First, we see a tiny crescent, then a half moon, then a full circle. Then it gets smaller again. That's because of how sunlight shines on it as it moves around Earth. We call this pattern the **lunar cycle**.

And stars? Some of them form **constellations**, like Orion or the Southern Cross. These patterns in the stars have helped sailors and farmers for thousands of years.

And all of this – every galaxy, planet, and orbit – is part of a vast design.

A Giant Clock

Scientists often describe the universe as a **giant clock**. Imagine all the planets as gears that spin and turn in perfect rhythm. Each part depends on the others. If one gear spun too fast or too slow, everything would fall apart.

But the universe doesn't fall apart. It stays in motion with breathtaking accuracy.

- The Earth is the perfect distance from the sun – not too hot, not too cold.
- The moon is just the right size to keep Earth's tilt steady.
- The stars shine light years away, but their patterns stay predictable.



This didn't happen by accident. It happened because God is a Master Designer. He loves **order**, not confusion.

We Are Part of That Order

Did you know that you're also part of God's order?

You're not just a random person in a big world. You were created on purpose. The Bible says you were "fearfully and wonderfully made." Your heart beats in a rhythm. Your body has systems that work together. You have thoughts, emotions, and creativity.

God made you in His image – so you can choose to live with **order** in your life, just like He does.

- You can clean your room because God values beauty and care.
- You can plan your day because God is not random.
- You can study science and learn patterns because God made the universe understandable.

Even when things in the world feel confusing, God is not confused. He still holds everything together.

Looking Through a Telescope

One night, Jonah and Ellie went to a local observatory where a giant telescope was set up. They took turns looking through the lens.

"I can see Jupiter!" Ellie shouted.

Jonah saw Saturn and its rings. "This is amazing!"

The astronomer nearby explained how each planet orbits the sun, how their distance from the sun affects their temperature, and how their gravity helps keep the solar system balanced.

"But who keeps it all in place?" Jonah asked.



The astronomer smiled. "That's a good question. Science explains **how** the universe works. But faith helps us understand **who** made it and **why**."

That night, Ellie wrote in her journal:

"God made the stars, but He also made me. The same way He keeps planets from crashing, He helps me stay steady. I want to follow His way and be someone who brings order, not chaos."

Conclusion

The universe is massive, complex, and beautiful. But above all, it is **ordered**.



Every part – from the spinning Earth to the smallest moon – is part of a plan. And every time we look at the stars or watch a sunrise, we are seeing a glimpse of God’s thoughtful design.

You are not lost in the vastness. You are known. Named. Loved.

God didn’t just place the stars with care. He placed **you** in this time and place – on purpose.

Let’s choose to live in that purpose, to walk in His order, and to reflect His beauty in how we live, work, plan, and care.

C) Narration

Parent/Tutor Says:

“Can you retell the story in your own words? What were Ellie and Jonah wondering? What did their dad say about the stars, planets, and the universe? What did this story teach you about God’s design?”

Let the student share freely, then prompt with follow-up questions if needed to include ideas about structure, movement, and purpose.

D) Teaching Skills

Skill Focus: Observing and describing patterns in the sky, using models to explain space phenomena, recognising structure and function.

Parent/Teacher Says:

“Let’s learn how scientists and students like you observe the sky. The sky changes in patterns – night and day, seasons, the moon’s phases. Scientists look for those patterns to understand how things move. Today we’ll use models and diagrams to explore some of those movements.

If you were an astronomer with a powerful telescope, **what kinds of questions** would you want to find the answers for? What things would you like to find out? Tell me some questions.”

Instructions:

1. Use a torch (sun), ball (earth), and marble (moon) to demonstrate:
 - Earth’s rotation = day/night
 - Earth’s revolution = seasons/year
 - Moon’s orbit = changes in moon shape (phases)
2. Show how planets stay in orbit through gravity and motion.
3. Draw or label a solar system diagram with the sun at the centre and planets in orbit.



E) Thinking Questions

Foundations to Year 2

1. Who made the stars and planets?
2. What happens when the Earth turns?
3. What do we call the big space we live in?
4. How does day and night show God's order?
5. How can you be organised today like God is?

Years 3–4

1. How does the sun help us measure time?
2. What do you know about Earth's movement around the sun?
3. How do we see God's patterns in the sky?
4. Why is it helpful that the sun rises and sets in a pattern?
5. How does planning or cleaning show orderliness?

Years 5–6

1. What is the relationship between Earth's rotation and day/night?
 2. How does Earth's orbit relate to the seasons?
 3. Why is it important that God's universe follows patterns?
 4. How can science help us see the order God made?
 5. What is one habit in your life you could organise better to reflect God's order?
-

F) Practical Activities

Foundations to Year 2

Option 1 – Paper Plate Day/Night Wheel

- Draw and cut out a paper plate with a rotating circle showing night on one half, day on the other. Label sun and stars. Rotate it to show day/night cycle.

Option 2 – Create a Star Map

- On dark paper, draw dots to represent stars, use white pencil or stickers. Optional: form a simple constellation. Discuss how God placed them with purpose.

Years 3–4

Option 1 – Moon Phases Craft

- Use Oreo biscuits or paper cut-outs to represent phases of the moon. Sequence them in correct order and label each phase.

Option 2 – Orbit Model

- Using balls or string, make a simple model of the sun, Earth, and moon. Show how they orbit and rotate. Label each part.

Years 5–6

Option 1 – Time and Seasons Poster

- Create a poster explaining how Earth's tilt and orbit create seasons. Include a diagram and explanation.

Option 2 – Write a Space Report

- Choose one planet or star and research how it shows God's order (e.g., predictable orbit, unique design). Present in a creative format (poster, presentation, story).

G) Optional Extension Research Activity

Task:

Research a constellation like Orion or the Southern Cross. Find out:

- What stars are in it
- When and where we can see it
- If ancient people used it for travel or farming

Reflect on how even ancient people noticed God's order in the sky.

H) Biblical Connection & Wrap-Up

Psalms 147:4 – “He determines the number of the stars and calls them each by name.”

Parent/Teacher Says:

“This verse shows how powerful and personal God is. He knows every single star. He made the patterns of the sky – and He made you. That means your life also has meaning and purpose. When you follow His way of order, you reflect His image.”

Discuss:

- What's one way you've seen God's order in the sky or seasons?
- What's one area of your life that needs more order?

Finish with prayer:

“Dear God, thank You for creating the universe with such beauty and order. Help us to see Your wisdom in the stars and the sky. Teach us to live with order in our hearts, homes, and choices. Amen.”

CONTENT DESCRIPTIONS BY YEAR LEVEL BAND

FOUNDATION – YEAR 2

Code	Full Description	Justification
AC9S2U01	Recognise Earth is a planet in the solar system and identify patterns in the changing position of the sun, moon, planets and stars in the sky.	The story and model activities teach that Earth is part of a solar system and that day/night and moon phases follow a predictable pattern.
AC9SFH01	Explore the ways people make and use observations and questions to learn about the natural world.	Students observe sky patterns (sunrise/sunset, moon changes) and discuss what they notice.
AC9S2I04	Sort and order data and information and represent patterns, including with provided tables and visual or physical models.	Day/night wheels and basic orbit models require students to organise and show patterns physically.
AC9TDE2P01	Generate and communicate design ideas through describing, drawing or modelling, including using digital tools.	Students produce simple models showing Earth rotating or orbiting, or draw solar system layouts.

YEARS 3 – 4

Code	Full Description	Justification
AC9S3H01	Examine how people use data to develop scientific explanations.	Lesson discussion explains how studying star and planet movement helps people explain day/night and seasons.

Code	Full Description	Justification
AC9S3I04	Construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information.	Students construct more detailed solar system diagrams and/or moon phase sequences.
AC9S4U02	Identify sources of water and describe key processes in the water cycle, including movement of water through the sky, landscape and ocean. (<i>Introduced, not assessed</i>)	The lesson links sky patterns and seasons, which is foundational knowledge leading into weather and water cycle study, but does not teach the whole water cycle yet.
AC9TDE4P02	Generate and communicate design ideas and decisions using technical terms and graphical representation techniques.	Years 3–4 model orbits using labelled diagrams with correct spatial arrangement and vocabulary (orbit, axis, rotation).

YEARS 5 – 6

Code	Full Description	Justification
AC9S6U02	Describe the movement of Earth and other planets relative to the sun and model how Earth's tilt, rotation and revolution relate to observable day and night and seasons.	This is the central learning outcome of the lesson. Students directly model tilt, rotation, revolution using torch/ball demonstrations.
AC9S5H02	Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions.	The reflection section connects sky patterns to navigation, farming seasons, and calendar use.
AC9S5I04	Construct and use appropriate representations, including graphs and visual or physical models, to organise and process data and describe patterns.	Years 5–6 produce more formal diagrams (e.g., annotated Earth–Sun–Moon system showing angle and position).
AC9TDE6P03	Select and use suitable materials, components, tools and equipment to safely make designed solutions.	Upper students create more sophisticated models that require careful selection and safe use of materials (polystyrene balls, rods, compasses, etc.).

Lesson 3: The Laws of Motion in Space

Theme: God's Order in How Things Move

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Describe Newton's three Laws of Motion in age-appropriate terms.
 - Understand that movement in space follows consistent, observable rules.
 - Explore how gravity and force influence the motion of planets and objects.
 - Use models and demonstrations to represent motion, force, and orbits.
 - Recognise that God created physical laws that bring order to the universe.
-

A) Introduction

Parent/Teacher Says:

"Today we're going to explore something amazing: how things move! Whether it's a rocket, a swing, or a falling apple, things don't just move randomly – they move in order, because God designed invisible rules called the Laws of Motion. We'll learn how Isaac Newton helped explain those rules, and how they show God's order in creation."

Vocabulary to Pre-teach:

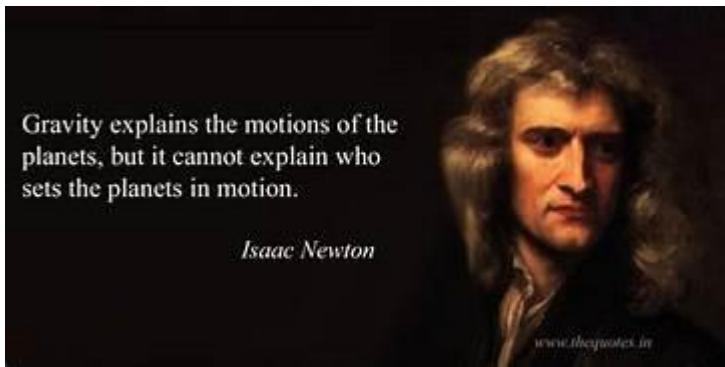
- **Motion** – movement
 - **Force** – a push or pull that makes something move
 - **Gravity** – the force that pulls things toward each other (like Earth pulling us down)
 - **Orbit** – the path something takes as it moves around another object
 - **Inertia** – the tendency of something to keep doing what it's already doing (staying still or moving)
 - **Acceleration** – a change in how fast something is moving
 - **Reaction** – what happens in response to an action
-

B) Informational Story

Title: *The Rules that Keep Planets Moving*

As we read this story, I need you to listen very carefully, because at the end of the story, I will ask you to tell me everything you remember about the story. So while we are reading, try to visualise each scene – if it helps you to concentrate, you might like to close your eyes and try to see what is happening in your mind. Here we go....

Have you ever thrown a ball across a field? Watched a swing move back and forth at the park? Or seen a rocket launch on TV with a huge burst of fire and smoke? All of those things move – and none of them move randomly. They move because they are following invisible rules. These are rules that God placed into creation when He made the universe.



Long ago, a man named **Isaac Newton** wanted to understand more about how things move. He watched falling apples and moving carts. He asked questions and made observations. After years of study, he described three rules – called **Newton's Laws of Motion** – that explain how things move in a world full of forces like gravity, friction, and push or pull.

But here's something important: Newton didn't create those laws – **God did**. Newton simply discovered what God had already designed. These laws don't just help us understand playgrounds and sports. They help us understand how stars, moons, and planets move through space.

Let's explore these three laws and see how they show God's order.

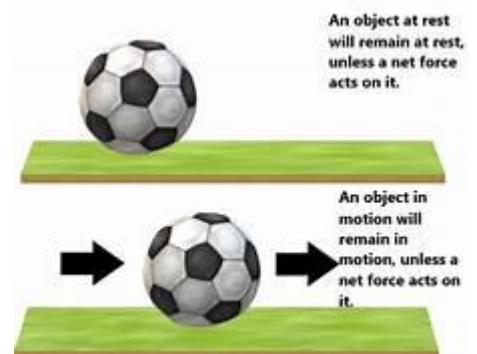
Law 1: Things Don't Move Unless Something Makes Them Move

This is called the **Law of Inertia**. Imagine a ball sitting in the grass. It won't roll unless someone kicks it. In the same way, if something is moving, it won't stop unless something slows it down – like friction or a wall.

In space, this rule becomes really clear. If a rock is floating in the middle of space, with no air or gravity nearby, it will just keep drifting in a straight line forever – unless something bumps into it or pulls it. There's nothing out there to slow it down!

Think about the Earth. It's spinning and moving through space, and nothing is stopping it. Why? Because God designed it that way. He gave the Earth a spin and set it on a perfect path around the sun. It's moving at just the right speed – not too fast to fly away, and not too slow to fall into the sun.

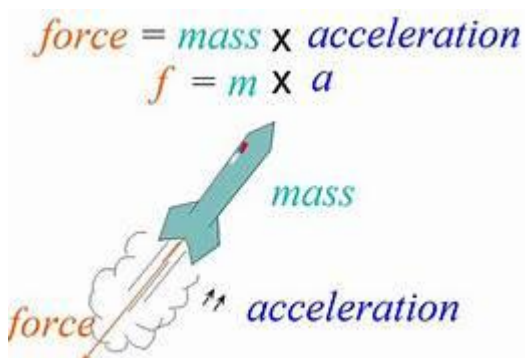
That's inertia. That's God's order in action.



Law 2: The Harder You Push, the Faster It Goes

This law says that the **force** you apply changes how an object moves. If you push gently, something moves slowly. If you push hard, it moves fast.

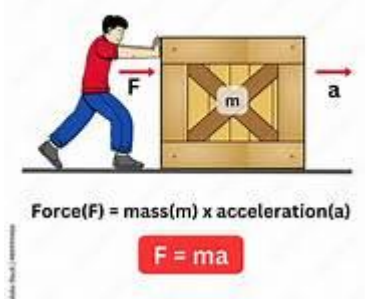
The fancy version of this law says: **Force equals mass times acceleration** ($F = m \times a$). That means the bigger the object, the more force it takes to move it.



Let's say you're trying to roll a basketball and a bowling ball. If you use the same push, the basketball rolls easily – but the bowling ball barely moves. Why? Because it has more mass. You'd have to push it harder to get it going.

In space, this helps us understand how **rockets** work. If a rocket engine creates a little force, the rocket moves slowly. But when it

NEWTON'S SECOND LAW



creates a huge force (tons of fire and pressure), the rocket accelerates rapidly and escapes Earth's gravity!

Engineers use this law to design space missions. They calculate exactly how much fuel and force is needed to launch a rocket, guide it through space, or land it safely on the moon or Mars. Without God's predictable law, space travel would be impossible.

Law 3: For Every Action, There Is an Equal and Opposite Reaction

3rd Law: For every action there is an equal and opposite reaction.

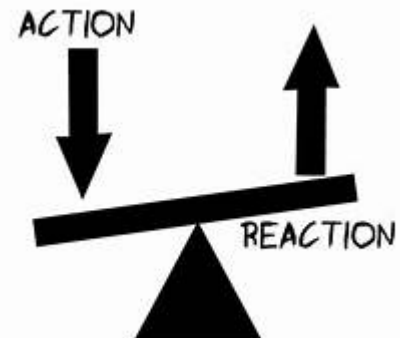


This law explains a lot of things you've probably seen. Have you ever let go of a blown-up balloon without tying it? It zips across the room, right? That's because the air rushing out the back pushes the balloon in the opposite direction.

The same thing happens with a rocket. The fire blasts downward, and the rocket goes upward. The action (fire pushing down) causes the reaction (rocket lifting up). They're equal in strength but go in opposite directions.

God uses this law to keep the solar system balanced. When one object pushes or pulls another – like the moon pulling Earth's oceans – it creates tides and waves. Every motion has a response. Nothing happens without affecting something else. That's not chaos – it's balance.

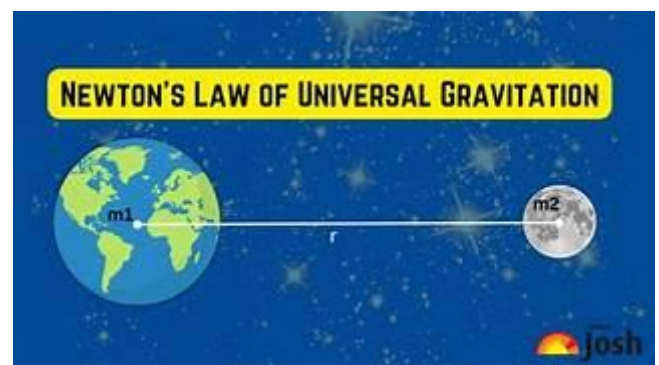
Imagine a world where a rocket sometimes went up and sometimes sideways, or where jumping off a swing sent you flying randomly. That would be scary! But thanks to God's orderly laws, everything works the same way every time.



Order in the Solar System

The Earth orbits the sun at just the right speed. The moon orbits Earth without crashing. Saturn's rings swirl in balance. All of this happens because of Newton's laws working with **gravity**, **mass**, and **motion**.

And gravity? That's another invisible force that God created. It's the reason we don't float off the ground. It's the force that pulls the moon toward Earth, keeping it in orbit. Gravity works with Newton's laws to keep the planets moving in neat paths – called **orbits** – just like God planned.



If the Earth were spinning too slowly, it would fall into the sun. If it spun too fast, it would fly away. But God set the balance perfectly.

That's not just clever – it's awe-inspiring.

God's Invisible Rules

Isaac Newton once said, “Gravity explains the motions of the planets, but it cannot explain who sets the planets in motion.” Newton believed that science and faith go together. He believed in God as the One who not only made the rules – but keeps them working.



Colossians 1:17 says, “He is before all things, and in Him all things hold together.” That’s talking about Jesus. He didn’t just make the universe and walk away. He is still **holding it together** – every orbit, every atom, every law of motion.

That’s why we can trust the universe to keep working. That’s why we can build rockets, ride bikes, and swing on swings – because God made a world with **order**, not randomness.

Imagine if the rules changed every day! You might throw a ball and watch it float. Or step forward and go flying backward. That would be frightening and confusing. But instead, the universe is **predictable**, because God is **faithful**.

Everyday Examples of Motion

These laws don’t just apply in space. They work on Earth every day.

- When you kick a ball, it rolls because of inertia and force.
- When you pedal a bike harder, you go faster – that’s acceleration.
- When you jump on a trampoline, the surface pushes you up as you push down. That’s action and reaction.

Even walking is a result of these laws! You push your foot backward, and your body moves forward.

So, the next time you’re walking, jumping, or riding, remember – you are following God’s design.

A God of Order, Not Chaos

God didn’t create a messy world. He didn’t fill the sky with randomly spinning things. He didn’t leave the planets to figure it out on their own.

He created the sun to give light and warmth. He made the Earth to spin just right. He gave us gravity, motion, and the tools to understand it.

And then, He gave us minds to explore it.

Every time you learn about science, you’re discovering more about the amazing order that God placed into the universe.

Every time you notice a pattern or predict what will happen next, you're thinking like a steward – someone made in God's image to care for His world.

Even when you do something simple like tidy your room, organise your schedule, or follow instructions – you're reflecting the orderliness of your Creator.



Conclusion

The universe moves with purpose. Planets orbit. Stars shine. Rockets lift. Apples fall. And all of it follows invisible rules that come from a God who never changes.

Isaac Newton helped describe those rules. But God wrote them. He is the source of all order.

So, when we learn science, we're not just learning facts. We're learning how God holds everything together with wisdom, beauty, and balance.

And that includes you.

Just like the planets have a place and path, so do you. God made you for a reason, and when you live with order in your heart, habits, and thinking – you are living the way God designed you to.

C) Narration

Parent/Teacher Says:

“Can you tell me what you remember from the story? Start by explaining one of Newton's laws. Can you give an example of how it works in space or in everyday life? What does this story tell you about how God brings order to the world?”

Encourage children to explain each of Newton's three laws in their own words, with examples from the story or personal experience.

D) Teaching Skills

Skill Focus: Understanding how force, gravity, and mass affect movement; using models to represent real-world systems; describing patterns and outcomes of physical interactions.

Parent/Teacher Says:

“Scientists like Newton didn't make up the rules of motion. They discovered them by observing how things work. Today, we'll use models and experiments to see how these laws explain God's design for movement.”

Instructions:

1. Review the three laws using real-world examples:
 - Law 1: A toy car stays still until pushed.
 - Law 2: A harder push makes it go faster.

- Law 3: When you push a wall, you feel it push back.
 - 2. Create a chart with headings: *Law*, *Explanation*, *Example*. Fill it in together.
 - 3. Model orbit and gravity with simple props (see Activity F).
-

E) Thinking Questions

Foundations to Year 2

1. What makes a toy car start moving?
2. What happens if you push it softly? What about hard?
3. Why does the rocket go up when fire blasts down?
4. How does God keep everything moving in space?
5. Can you think of something in your house that shows order?

Years 3–4

1. What is Newton's first law, and what does it mean?
2. Why do planets stay in orbit?
3. What might happen if gravity stopped working?
4. Why do we call God's laws "invisible rules"?
5. How can organising your schoolwork or chores be like living in God's order?

Years 5–6

1. How do Newton's laws help engineers plan space travel?
 2. What does Colossians 1:17 mean about Jesus holding things together?
 3. Why is predictability in science important?
 4. How does Newton's second law explain the difference between a golf ball and a bowling ball being pushed?
 5. How can studying these laws help you worship God better?
-

F) Practical Activities

Foundations to Year 2

Option 1 – Push and Watch

- Use toy cars or balls. Gently push, then strongly push, and observe the differences.
- Record with words or drawings.

Option 2 – Balloon Rocket

- Blow up a balloon and release it without tying. Watch how it flies in the opposite direction.
- Relate to Newton's third law.

Years 3–4

Option 1 – Marble Inertia Test

- Roll a marble on a table. What happens when it hits something?
- Try rolling heavier or lighter objects. Record and compare.

Option 2 – Gravity Spinner

- Tie a string to a small ball and spin it in a circle. Let go and observe direction.
- Discuss orbit, gravity, and force.

Years 5–6

Option 1 – Newton’s Laws Comic Strip

- Create a short illustrated comic explaining each law with a real-life example (e.g. rocket launch, seatbelt, trampoline).
- Include captions and arrows to show action and reaction.

Option 2 – Design a Mini Rocket Launcher

- Use a straw, balloon, and tape to design a launcher. Launch the balloon rocket along string.
- Test and measure how far it travels depending on balloon size.

G) Optional Extension Research Activity

Task:

Choose one of Newton’s three Laws of Motion and find examples of how it is used in space missions. Research:

- How engineers use this law in building rockets.
 - Why predictable laws help astronauts.
- Present your findings as a poster or oral presentation.

H) Biblical Connection & Wrap-up

Colossians 1:17 – “He is before all things, and in Him all things hold together.”

Parent/Teacher Says:

“This verse reminds us that everything we learn about motion, movement, and physics isn’t just science – it’s a window into God’s perfect plan. He designed every rule, every force, and every orbit. And He didn’t just make the world and walk away. He’s still holding it all together.”

Discuss:

- How does science help us see God’s order?
- What’s one part of your life where you can practise more order this week?

Close in prayer:

“Dear God, thank You for creating the laws that hold everything together. Help us to see Your wisdom in motion, and to live in a way that reflects Your order and peace. Amen.”

Australian Curriculum (v9) Content Descriptions Used in this Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification (What happens in the lesson that matches it)
AC9SFU02	Describe how objects move and how factors including their size, shape or material influence their movement.	Students observe that objects move differently when pushed or released (toy cars, balls, etc.). This is the introductory understanding behind Newton's First and Second Laws.
AC9SIU03	Describe pushes and pulls in terms of strength and direction and predict the effect of these forces on objects' motion and shape.	Balloon rockets, rolling marbles, and pushing objects demonstrate that stronger pushes cause faster movement and direction changes.
AC9SFH01	Explore the ways people make and use observations and questions to learn about the natural world.	Students observe cause-and-effect and discuss “What happens when...?” during demonstrations.
AC9SI101	Pose questions to explore observed simple patterns and relationships and make predictions based on experiences.	Students predict which push will move an object further / faster before testing.

YEARS 3 – 4

Code	Full Description	Justification
AC9S4U03	Identify how forces can be exerted by one object on another and investigate the effect of frictional, gravitational and magnetic forces on the motion of objects.	Newton's First and Second Laws are demonstrated through pushes, collisions, gravity, and motion examples. The balloon rocket also prompts discussion of forces interacting.
AC9S3H01	Examine how people use data to develop scientific explanations.	The lesson describes Newton observing motion and forming explanations based on repeated patterns (apple falls, objects slow or continue).
AC9S3I04	Construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information.	Students build and use physical models (balloon rockets, rolling marbles, orbit rope models) to explain forces and motion.
AC9TDE4P02	Generate and communicate design ideas and decisions using technical terms and graphical representation techniques.	Students conceptually design or illustrate cause-and-effect diagrams (push → motion; weight → inertia).

YEARS 5 – 6

Code	Full Description	Justification
AC9S5H01	Examine why advances in science are often the result of collaboration or build on the work of others.	The lesson presents Newton as someone who described laws God built into creation — showing scientific discovery builds on previous ideas of gravity and motion.
AC9S5I04	Construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and describe patterns, trends and relationships.	Years 5–6 students record observations comparing force strength to motion outcome, or illustrate Newton's laws through structured diagrams (e.g., "Action → Reaction").
AC9TDE6P03	Select and use suitable materials, components, tools, equipment and techniques to safely make designed solutions.	Older students construct more refined balloon rockets or motion demonstrations requiring deliberate material choices and safe tool handling.

Lesson 4: Light and Darkness

Theme: Light Brings Order

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Understand how light enables life, timekeeping, and order in the world.
 - Explore the observable properties of light, including reflection and refraction.
 - Use simple tools and materials to observe how light behaves.
 - Recognise that God created light to bring structure and purpose.
 - Reflect on how biblical “light” connects to truth, peace, and order.
-

A) Introduction

Parent/Teacher Says:

“Today we’re learning about something we see every day – light. We’re going to find out how light works, why it’s important, and how God used light to bring order to the world from the very beginning.”

Vocabulary to Pre-teach:

- **Light** – energy we can see, helps us see other things
- **Reflect** – to bounce off a surface, like a mirror
- **Refract** – to bend when moving through water or glass
- **Darkness** – the absence of light
- **Order** – structure and pattern, the opposite of chaos
- **Shadow** – a dark shape made when something blocks light

Instructions: Discuss these terms using real-world examples. Demonstrate reflection with a mirror or metal spoon; demonstrate refraction with a pencil in a glass of water.

B) Informational Story

Title: *From Darkness to Light*

As we read this story, I need you to listen very carefully, because at the end of the story, I will ask you to tell me everything you remember about the story. So, while we are reading, try to visualise each scene – if it helps you to concentrate, you might like to close your eyes and try to see what is happening in your mind. Here we go....

Before the world began, there was no sun, no moon, no people, no plants – nothing at all. There wasn’t even time. Just stillness. Darkness. Complete and total emptiness.

This wasn’t like night-time when the lights are off and the stars are out. This was a kind of darkness no one had ever seen or felt – a world without shape, form, or sound. There were no shadows because there was no light to block. It was what the Bible calls “formless and void.”

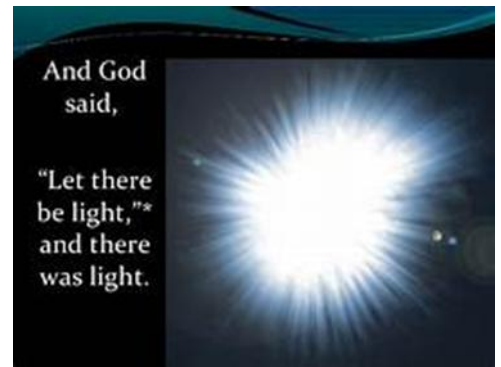
But then something happened that changed everything.

God spoke.

“Let there be light,” He said.

And just like that – **there was light.**

It didn’t take time. It didn’t take building tools. It took God’s word. In an instant, brilliant light shone into the darkness. It wasn’t sunlight yet – that came later. This was pure, perfect light from God Himself. It broke through the chaos and filled the emptiness with warmth, energy, and clarity.



And with that light, something else began: **order.**

God **separated** the light from the darkness. He didn’t let them stay mixed up or confused. He gave each one a place. The light was for daytime, and the darkness for night. That simple act created the very first rhythm – **morning and evening, one full day.**

From that point on, time had begun.

God Continues the Pattern



As God continued creating the world, He didn’t do it in a random jumble. He added things in a thoughtful, purposeful order. On the first day, He gave light. On the fourth day, He made **the sun** to shine during the day, and **the moon and stars** to light the night. But they weren’t merely beautiful – they were also useful.

God gave the sun, moon, and stars a **job**. They helped people know when it was day or night, what season it was, when to plant, and when to harvest. They gave a rhythm to life.

The sun warms the earth and helps plants grow. The moon guides the oceans with its pull on the tides. The stars help travellers find their way. And all of them move in patterns that can be predicted and trusted.

None of that is accidental. All of it shows God’s **orderly design.**

Light Behaves in Amazing Ways

Did you know that light follows rules? It doesn’t wiggle and wander randomly. It moves in straight lines. That’s why shadows have clear shapes. It **reflects** off shiny surfaces like mirrors, bouncing away in a new direction. It also **refracts** – which means it bends when it passes through something like water or glass.

When you look at a straw in a glass of water, it looks bent. That’s because light bends as it moves from air into water. It’s following the laws God made for it.



Sometimes, if light shines through water droplets or a prism, it separates into colours – red, orange, yellow, green, blue, indigo, and violet. We call that a **rainbow**. Even that happens because light moves in a predictable, beautiful way.

Light Is Life

Without light, plants couldn't grow. Light gives them the energy to make their own food in a process called **photosynthesis**. Animals wouldn't know when to hunt or sleep. People wouldn't be able to work, cook, read, or build. Without light, there would be no colour, no shadows, no warmth.

Imagine waking up to total darkness – every single day. No sunrise. No shape or form. No way to know where you are or what's ahead.

Light gives us more than vision. It gives us the ability to live.

But light isn't only about science.

God Is Light

The Bible says, "God is light, and in Him there is no darkness at all" (1 John 1:5). That doesn't just mean God glows. It means He is **truth**, **goodness**, and **purity**. Where God is, there is no confusion. No lies. No fear. No shadows of evil.

When God said "Let there be light," He was doing more than lighting up the sky. He was bringing truth and meaning to a world that had no shape. He was making a place where people could live, work, and enjoy His creation.

Later in the Bible, Jesus says, "I am the Light of the World" (John 8:12). What does that mean?

It means that just like a torch helps us find our way in the dark, Jesus helps us know what's true and right in a world that sometimes feels confusing, sad, or scary.

He doesn't leave us stumbling around trying to figure things out. He shines clearly. He shows us the path. His Word – the Bible – is like a lamp to our feet and a light for our path (Psalm 119:105).



Light and Order Go Together

When light came into the world, it didn't just make things visible. It made them **understandable**. Light began the daily rhythm of work and rest, planting and harvesting, waking and sleeping.

That's why people all around the world use light to tell time – sunrises, sunsets, clocks, calendars. And that's why we use light to see clearly. Darkness hides things. Light reveals them.

Even our homes follow this pattern. We turn lights on when we need to focus or work. We dim them when it's time to rest. We use light to organise our days.

When you switch on a light in a messy room, it's easier to see what needs to be tidied. In the same way, when you bring truth and peace into a confusing situation, you are bringing **order** – just like God did at creation.

Being Like God

Because we are made in God's image, we can be people who bring light into the world too.

- When you clean your room, you bring order where there was mess.
- When you speak kindly to someone who's upset, you bring peace where there was hurt.
- When you tell the truth, you shine light where there was confusion.
- When you follow a routine or schedule, you bring structure that helps your day run smoothly.

Every time you act in a way that makes things clearer, calmer, or more beautiful – you are acting like your Creator.

You are shining your light.

Jesus told His followers, “You are the light of the world... Let your light shine before others” (Matthew 5:14–16). That means our words, choices, and actions should help others see what is good and right. Not to make ourselves look great – but to point people to the One who made the light in the first place.



From Chaos to Clarity

In the beginning, everything was formless and dark. But God didn't leave it that way. He spoke, and light appeared. Then He continued shaping the world day by day – sky, sea, land, plants, animals, people – until everything was just right.

God brought **order** from **chaos**.

And He's still doing it today.

In our hearts, in our homes, in our world – God wants to shine His light, bring peace where there is confusion, bring understanding where there is fear, and bring beauty where there is mess.

And He invites us to do the same.

When you turn on a light in a dark room, everything changes. In the same way, when you live with truth, peace, kindness, and discipline, you change the world around you – little by little, like a lamp glowing in the night.

Conclusion

Light isn't just useful. It's powerful. It reveals, separates, guides, and supports life. It has order and direction. And it comes from a God who is full of wisdom and purpose.

From the very beginning, God showed that light is the starting point of all good things. Without it, we're lost. But with it, we see clearly – and live rightly.

So, the next time you step outside into the sunlight, flick on a lamp, or see a rainbow, remember:

God made light.
God brings light.
And He has called you to shine, too.

C) Narration

Parent/Teacher Says:

“Now it's your turn! Can you tell me what you remember from the story? What did God make first? Why is light important? How does it help bring order to the world?”

Encourage the student to include:

- God's command “Let there be light”
 - Light separating day from night
 - How light helps plants, animals, and people
 - How light represents Jesus bringing truth
-

D) Teaching Skills

Skill Focus: Understanding observable properties of light – reflection, refraction, straight-line travel – and communicating ideas through observation.

Parent/Teacher Says:

“Let's learn how light behaves. Scientists study light to understand how it moves and changes. Today we'll observe two ways light behaves: reflection and refraction. Reflection is when light bounces off shiny surfaces. Refraction is when light bends as it moves through water or glass.”

Instructions:

1. Set up a flashlight and mirror. Let the student observe the beam bounce.
 2. Shine the light through a glass of water. Observe bending.
 3. Encourage students to describe and draw what they see.
 4. Ask: What does this tell us about light following rules?
-

E) Thinking Questions

Foundations to Year 2

1. What did God say on the first day?
2. Why did God make light?
3. What does light help us do?
4. How does God use light to bring order to the world?
5. Can you think of one way to bring order to your room or home this week?

Years 3–4

1. What does it mean that light separates day from night?
2. What happens in the world when there's no light?
3. Why do you think Jesus is called the Light of the World?
4. How does light help keep the Earth in balance?
5. What's something in your life that needs more order – and how can you help bring it?

Years 5–6

1. How does the way light travels (reflects, bends, shines) show God's intelligent design?
 2. What does the Bible mean when it says "God is light"?
 3. Why is orderliness important in how we work, learn, and treat others?
 4. How can we shine like light in a world that often feels confusing or dark?
 5. What would it look like to bring more light (truth, peace, or order) into a messy or chaotic situation?
-

F) Practical Activities

Foundations to Year 2

Option 1 – Shadow Play

- Use a flashlight and toys to create shadows. Move the light closer/further. Discuss: What changes?

Option 2 – Day/Night Sort

- Cut and paste images of daytime and nighttime activities. Sort them to match light and dark.

Years 3–4

Option 1 – Rainbow Refraction

- Shine light through a glass of water onto paper. Observe how light bends. Optional: use a prism.

Option 2 – Light Maze Challenge

- Use a mirror to direct a flashlight beam through a "maze" (walls made of blocks or boxes). Draw a diagram.

Years 5–6

Option 1 – Light Reflection Experiment

- Use protractors and mirrors to measure angles of incidence and reflection. Record your data.

Option 2 – Light in the Bible Poster

- Make a poster or digital presentation of verses about light (e.g. Genesis 1:3, John 8:12, Matthew 5:14–16). Explain how light and truth go together.
-

G) Optional Extension Research Activity

Task:

Research the speed of light. Compare how fast it travels through air, water, and glass. Use diagrams or a chart to explain your findings. Explain: Why is it important that light travels in straight lines and follows predictable rules?

H) Biblical Connection & Wrap-up

Genesis 1:3 – “God said, ‘Let there be light,’ and there was light.”

Parent/Teacher Says:

“This verse shows us that God brought light into darkness – not just physical light, but the start of structure and meaning. Jesus also said He is the Light of the World. That means when we follow Him, we walk in truth, not confusion.”

Discuss:

- Why do you think God made light first?
- What would it be like to live in a world with no light?
- What’s one way you can shine God’s light this week?

Pray together:

“Dear God, thank You for giving us light. Thank You for showing us how it brings warmth, truth, and life. Help us to live like You – bringing peace, clarity, and order to the world around us. Amen.”

Australian Curriculum (v9) Content Descriptions Used in this Lesson

Light and Darkness

Focus: Light enables life and order; light travels in straight lines; shadows form when light is blocked; reflection and refraction explored through simple demonstrations; connection between physical light and biblical “light” as truth and clarity.

FOUNDATION – YEAR 2

Code	Full Description	Justification (What happens in the lesson that aligns directly)
AC9SFU02	Describe how objects move and how factors including their size, shape or material influence their movement.	When students move objects into light beams (e.g., torch + object), they observe how shape affects shadow size and outline. The lesson includes physical movement and object size/shape comparison.
AC9SFU03	Recognise that objects can be composed of different materials and describe the observable properties of those materials.	Students observe how different materials interact with light (transparent, translucent, opaque).
AC9SFH01	Explore the ways people make and use observations and questions to learn about the natural world.	Students are encouraged to notice what happens when light is blocked, reflected, or passes through water/glass.
AC9S2I03 / AC9S2I06	Make and record observations; write and create texts to communicate ideas using everyday and scientific vocabulary.	Students record shadow shapes, draw diagrams of torch/object/light source, or narrate their observations.

YEARS 3 – 4

Note: In AC9, light is not formally introduced as a physical science concept until Year 5.

So for this band, alignment focuses on observation, inquiry, representation, and explanation building, not content knowledge claims.

Code	Full Description	Justification
AC9S3H01	Examine how people use data to develop scientific explanations.	Students discuss how repeated patterns in shadow length, reflection, and light direction help scientists understand the behaviour of light.
AC9S3I04	Construct and use representations, including visual or physical models, to organise data and information and show simple relationships.	Students construct shadow diagrams, ray direction sketches, or “light source → object → shadow” models.
AC9TDE4P02	Generate and communicate design ideas and decisions using technical terms and graphical representation techniques.	Students label models or diagrams using terms like light source, surface, shadow edge, reflection.

YEARS 5 – 6

Code	Full Description	Justification
AC9S5U03	Identify sources of light, recognise that light travels in a straight path and describe how shadows are formed and light can be reflected and refracted.	This is the core scientific content of the lesson — demonstrated through: torch + object for shadow formation, mirrors for reflection, and pencil-in-water refraction demonstration.
AC9S5I04	Construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and describe patterns, trends and relationships.	Upper students diagram ray direction, angle of reflection, and light path changes when passing through water.
AC9S5H02	Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions.	The stewardship & biblical connection sections explain that understanding light helps humans measure time, plant seasons, navigate, and build technologies like lenses and lamps.
AC9TDE6P03	Select and use suitable materials, components, tools and equipment to safely make designed solutions.	Years 5–6 students may build shadow screens, mirror setups, or refraction demonstration models, requiring safe selection and handling of materials.

Bonus Optional Lesson:

Today could be used for Field Trips or a Homeschool Co-op Group; or if you are at home then you might try this fun wrap-up of the week.

Creation & the Universe – Fun Quiz

Theme: Orderliness & God's Design

Grade Range: 1–6

Covers Lessons 1–4

You can:

- Read questions aloud and have students answer verbally
 - Turn this into a quiz game with points
 - Use it as a group/family review activity
-

Lesson 1: God's Amazing Creation

1. What was the world like before God started creating?
 2. What did God make on Day One?
 3. Name **two things** God created that helped bring order to the world.
 4. Why did God rest on the seventh day?
 5. What does it mean that God created everything “in order,” not randomly?
-

Lesson 2: The Vast Universe

6. What does Psalm 147:4 say God does with the stars?
 7. What is a galaxy? What's the name of our galaxy?
 8. True or False: The universe is a big mess with no pattern or order.
 9. Why is it amazing that God knows your name even though the universe is so big?
 10. How does the structure of stars and planets show God's orderliness?
-

Lesson 3: The Laws of Motion in Space

11. What are **Newton's 3 Laws of Motion**? (Explain simply!)
 12. How do rockets and planets show that God made the universe to move in order?
 13. What happens if you push a ball in space?
 14. True or False: Things move randomly in space with no rules.
 15. What does Colossians 1:17 say Jesus does for all of creation?
-

Lesson 4: Light and Darkness

16. What did God say on Day One?
17. Why is light important for bringing order to the world?

18. What happens to light when it hits a mirror?
 19. What does the Bible mean when it says, “God is light”?
 20. How can we bring light and order to the world around us?
-

Bonus Round: Memory Match!

Match the Bible verses to the correct lesson:

- | A. Genesis 1:1 | 1. Lesson on Light and Darkness
- | B. Colossians 1:17 | 2. Lesson on Motion in Space
- | C. Psalm 147:4 | 3. Lesson on the Vast Universe
- | D. Genesis 1:3 | 4. Lesson on Amazing Creation

Answer Key:

A – 4, B – 2, C – 3, D – 1

Optional Scoring & Rewards

- 1 point per correct answer
- Bonus points for narration, memory verses, or thoughtful reflections
- Prize ideas: star stickers, a space snack, drawing time, or choosing tomorrow’s Bible verse

Bible Verse of the Week: Psalm 19:1 – "The heavens declare the glory of God."

Overview:

This week, children will learn about **the sun, the planets, the moon, and why Earth is uniquely designed for life.**

Lesson 5: The Sun – God’s Light in Space

Theme: God Creates Light and Order

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Understand the structure and function of the sun and its role in sustaining life on Earth.
- Recognise the sun’s importance in marking time (day, night, seasons).
- Describe how shadows form and change throughout the day.
- Use a model to explore how Earth’s rotation causes shadow movement.
- Reflect on the spiritual symbolism of light as representing God’s order and truth.

A) Introduction

Parent/Teacher Says:

“Today we are going to learn about the sun – the amazing light God placed in the sky to give us warmth, energy, and order. We’ll find out what the sun is made of, how it helps life on Earth, and how it reflects God’s character as the One who brings light and structure.”

Vocabulary to Pre-teach:

Instructions for Parent or Teacher: Introduce the vocabulary before the story using visual aids, diagrams, or simple gestures (e.g., spin a globe to show rotation).

- **Sun** – a star that gives light and heat to Earth
- **Core** – the centre of the sun, where energy is made
- **Photosphere** – the visible part of the sun
- **Corona** – the outer layer of the sun’s atmosphere
- **Shadow** – the dark area made when light is blocked
- **Rotation** – the spinning of Earth, causing day and night

B) Informational Story

Title: *The Sun That Lights Our Days*

As we read this story, I need you to listen very carefully, because at the end of the story, I will ask you to tell me everything you remember about the story. So, while we are reading, try to visualise each scene – if it helps you to concentrate, you might like to close your eyes and try to see what is happening in your mind. Here we go....

Long ago, before humans had electricity, clocks, or calendars, they looked up at the sky to understand time. They didn't have streetlights or smartphones – but they had something more powerful and reliable: the sun.

The sun rises every morning and sets every evening. Without needing batteries or switches, it gives light to the world. Its rising tells people when to wake up. Its setting tells them when to rest. For thousands of years, people have watched the sun to plant their crops, measure seasons, and plan their lives.

But where did the sun come from? Who made it, and why?

The Bible tells us that on the **fourth day of creation**, God made the sun. Genesis 1:16 says, “*God made the two great lights – the greater light to govern the day and the lesser light to govern the night. He also made the stars.*”

That “greater light” is the sun. But God didn't just toss a fireball into space. He specifically designed it with order and purpose.

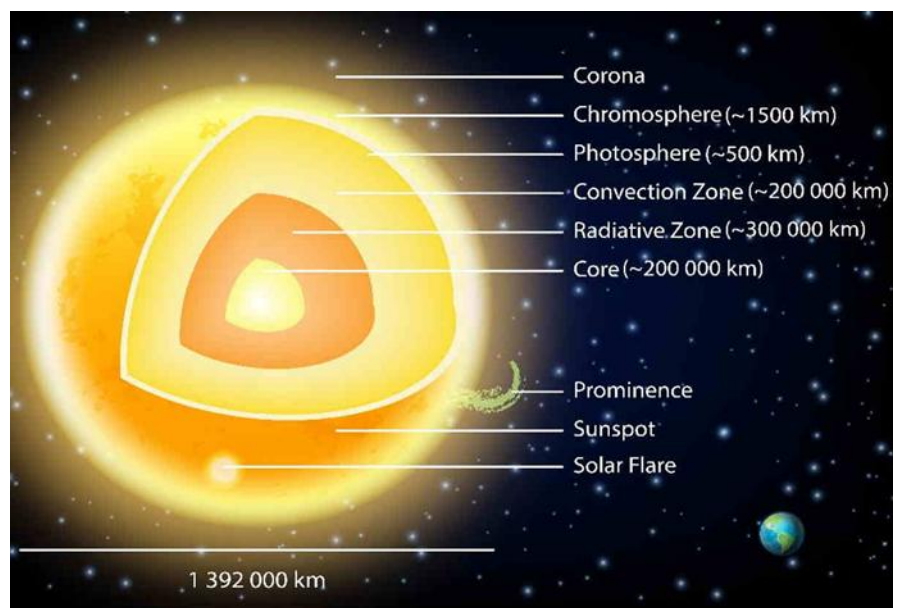
Let's look at some amazing facts about the sun.

The Sun's Structure

The sun might look like a glowing ball in the sky, but it's a massive, burning star made of gas – mostly hydrogen and helium. It's **so large** that **1 million Earths** could fit inside it! And even though it's about **150 million kilometres** away from Earth, its heat and light reach us every single day.

The sun has several layers – like a giant onion, but far more powerful.

- **Core:** This is the sun's centre. It's where energy is made through nuclear fusion. Atoms are squeezed together under enormous pressure to create light and heat.
- **Radiative Zone:** The energy from the core passes slowly through this thick layer.
- **Convective Zone:** In this outer part, hot gases rise and cooler gases fall, moving energy toward the surface.
- **Photosphere:** This is the part we can see from Earth. It looks like a glowing orange or yellow ball and is where sunlight comes from.



- **Chromosphere and Corona:** These are the outermost layers. During a solar eclipse, you might see the corona as a glowing white halo around the dark moon.

Isn't that incredible? God made the sun full of detail and structure – He didn't create it randomly. Every layer has a purpose, just like every part of a house keeps it strong and safe.

The Sun and Life on Earth

The sun is **the main source of energy** for life on Earth. Plants need sunlight for photosynthesis. That's how they make food. Animals eat the plants. People eat the plants and the animals. So, without sunlight, there would be no food.

But that's not all the sun does.

- It **keeps the Earth warm**. Without the sun, Earth would be a frozen planet.
- It **drives weather** patterns. The sun heats the oceans and air, causing wind and rain.
- It **gives light**, so we can see, work, travel, and enjoy life during the day.

The sun also **helps mark time**. The Earth spins on its axis as it orbits the sun. That's why we have **day and night**. One full spin = one day. When we're facing the sun, it's day. When we're turned away, it's night.

The Earth also takes about **365 days** to orbit the sun. That's how we get a **year**. And as the Earth tilts during this orbit, we get **seasons** – summer, autumn, winter, and spring.

Can you imagine trying to live without that pattern? What if day and night were unpredictable? What if you didn't know when to plant food, or when animals would migrate, or when winter would come? God gave us the sun not just to warm the Earth, but to bring rhythm and order to our days and years.

Shadows and Movement

Have you ever watched your shadow change during the day? In the morning, your shadow is long and stretches behind you. At noon, it's short and right under your feet. In the evening, it stretches out again, but in the opposite direction.

This happens because the Earth is **turning** – rotating on its axis – while the sun stays in place. It's a little like spinning around with a flashlight. The light stays steady, but your body moves, changing where the light falls and where the shadows go.

People long ago noticed this and even used shadows to tell time! They made sundials – special clocks that use shadows instead of numbers and hands. The shadow's position tells you what time it is.

Isn't that an amazing way to tell time? No batteries. No ticking. Just the light God made, shining on the Earth, creating shadows that follow a pattern.



God's Order in Creation

From the very beginning, the Bible shows us that God brings **light out of darkness** and **order out of chaos**.

Genesis 1:2–3 says, *“The earth was without form, and void; and darkness was on the face of the deep... Then God said, ‘Let there be light,’ and there was light.”*

The very first thing God did in creation was bring light. That tells us something very important about His nature. God is not a God of confusion. He brings clarity, purpose, and peace.

That same pattern continues when He created the sun, moon, and stars. He made them for **signs and seasons, days and years** (Genesis 1:14). They help us live in harmony with the world around us.

Every morning, when the sun rises, it's like a message from God: *“I'm still here. My world still works. My order still stands.”*

Even Jesus is called the **Light of the World** (John 8:12). Just like the sun lights up the day and shows us where to go, Jesus lights up our lives and shows us how to live. He helps us see the truth, know right from wrong, and walk in God's ways.

Living in the Light

God wants us to live in light – not just physical sunlight, but the kind of light that brings truth and goodness.

1 John 1:5 says, *“God is light; in Him there is no darkness at all.”*

That means God never lies. He never changes. He doesn't hide things or trick people. He brings everything into the open and helps us walk in wisdom and love.

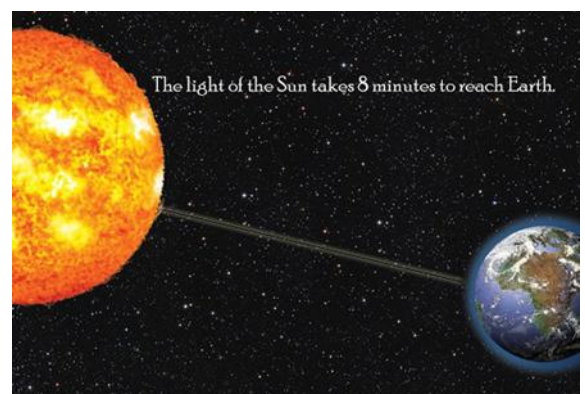
And just like the sun reflects God's power and order, we're called to reflect His light in how we live.

- When we **wake up on time**, we're following a pattern that God built into the world.
- When we **study and learn**, we're using our minds to understand His creation.
- When we **help others and bring peace**, we're shining light into dark places.

Even something simple like **organising your room** or **planning your day** can be a way to reflect God's orderliness. When you live with structure and purpose, you're copying your Creator!

Did You Know? (Sun Facts for Curious Learners)

- The sun is about **4.6 billion years old** (according to current scientific models). From a biblical worldview, its age may be understood differently – but we know it was created on **Day 4** of creation week.
- The sun's surface temperature is around **5,500°C**, and its core is over **15 million°C**!
- Light from the sun takes about **8 minutes** to reach Earth.
- Sunlight is actually a mix of **all colours** – that's why rainbows show the light broken into red, orange, yellow, green, blue, indigo, and violet.



- The sun's gravity holds the solar system together. Without it, the planets would drift into space.
-

Final Thoughts

When we look at the sun, we should be amazed – not just by its power and beauty, but by the wisdom of the One who made it. God didn't have to give us a world that runs like a clock. He could have made a world of confusion and darkness.

But He didn't.

He gave us a sun that rises and sets, a world that spins and orbits, and days that flow one after another in perfect rhythm.

And He gave us His Son – Jesus – so we can live in His spiritual light and never walk in darkness again.

So next time you feel the sun on your face, or see your shadow on the ground, or watch a sunrise, remember: **God made it on purpose – to bring light, life, and order into His world.**

And we're invited to live in that light, every day.



C) Narration

Parent/Teacher Says:

“Now it's your turn! Can you tell me what you remember from the story? What is the sun made of? Why did God make it? What does the sun do for us every day?”

Encourage the child to explain:

- The sun's structure
 - Its role in providing heat, light, and time
 - Why the sun is a sign of God's order
-

D) Teaching Skills

Skill Focus: Understanding light sources, shadow formation, and observable patterns related to the Earth's rotation.

Parent/Teacher Says:

“Let's learn how the sun creates shadows and helps us tell time. When light shines on something, it can't go through solid objects. That's why shadows form. As the Earth rotates, the angle of sunlight changes, and so do our shadows.”

Instructions:

1. Demonstrate with a flashlight and object on a table.
2. Move the light source slowly to mimic the sun's movement across the sky.
3. Ask: “When is the shadow long? When is it short?”

4. Use this to explain how we know it's morning, noon, or afternoon.
-

E) Thinking Questions

Foundations to Year 2

1. What is the biggest light in the sky during the day?
2. What does the sun help plants and people do?
3. What happens when the sun rises and sets?
4. Who made the sun?
5. How does the sun help make things feel neat and in order?

Years 3–4

1. What are the three layers of the sun called?
2. How does the sun help bring order to our day?
3. What would Earth be like without the sun?
4. Why do you think God made the sun instead of just using lamps?
5. How can we be more orderly in our lives, like how God made the sun to work in a pattern?

Years 5–6

1. How does the sun's design show that God values precision and order?
 2. What does the sun teach us about God's power and creativity?
 3. Why is it important that the sun rises and sets in a regular pattern?
 4. How can we reflect God's orderliness in our schedule, work, or environment?
 5. How does light bring physical and spiritual order into our lives?
-

F) Practical Activities

Foundations to Year 2

Option 1 – Shadow Drawing

- Take an object outside in the morning. Trace its shadow on paper or pavement with chalk. Check again in the afternoon – how has the shadow moved?

Option 2 – Sun Art

- Use yellow/orange paper to make a sun collage. Cut and paste rays. Add a smiley face. Write “God made the sun to give us light!”

Years 3–4

Option 1 – Sun Model

- Build a simple sun model with labelled parts: core, photosphere, corona. Use tissue, card, string.

Option 2 – Shadow Time Chart

- Mark and measure the length of a stick's shadow three times in one day. Graph the changes.

Years 5–6

Option 1 – Poster: The Sun's Role in Earth's Systems

- Create a research poster showing the sun's role in photosynthesis, timekeeping, temperature, and life cycles.

Option 2 – Design a Daylight Tracker

- Create a “sunrise/sunset” tracker over one week. Compare daylight hours and discuss seasonal change.

G) Optional Extension Research Activity

Task:

Research how ancient civilisations used the sun to tell time or plan farming seasons. Examples: sundials in Egypt, solar temples of the Incas. Present your findings in a short written or visual presentation.

H) Biblical Connection & Wrap-up

Genesis 1:16 – “God made the two great lights – the greater light to govern the day and the lesser light to govern the night.”

Parent/Teacher Says:

“This verse reminds us that God made the sun to ‘govern the day.’ That means He gave it a job. The sun brings structure to the world – day and night, warmth, life, and time.”

Discuss:

- What are ways light helps bring order?
- How does God want us to live – confused and messy, or with purpose and peace?
- What’s one way you can bring more order into your day this week?

Close in prayer:

“Thank You, God, for the sun. Thank You for its warmth, its light, and the order it brings to the world. Help us to shine like the sun – to live with purpose, to reflect Your truth, and to bring peace and light into every part of our day. Amen.”

Australian Curriculum (v9) Content Descriptions Used in this Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification
AC9S1U02	Recognise that light and sound are produced by objects and can be sensed.	Students observe that the sun is a natural light source and recognise that light allows us to see.
AC9S2U02	Identify sources of light and describe how light helps us to see.	The lesson identifies the sun as our main source of light and explains how sunlight makes vision possible.
AC9SFI01	Pose questions and make predictions based on experiences and observations.	Students are encouraged to ask questions and discuss observations about what happens when sunlight is blocked (shadows).
AC9TDE2P01	Generate and communicate design ideas through describing, drawing or modelling, including using digital tools.	Younger students draw or model the sun, Earth, and shadows when recording or communicating understanding of light and day/night.

YEARS 3–4

Code	Full Description	Justification
AC9S4U02	Identify sources of water and describe key processes in the water cycle, including evaporation and condensation.	The lesson explains how sunlight provides heat that drives evaporation and contributes to the water cycle.
AC9S4U03	Identify how forces can be exerted by one object on another and investigate the effect of frictional, gravitational and magnetic forces on the motion of objects.	The lesson refers to the sun’s gravitational pull that keeps planets in orbit, introducing gravitational force.
AC9S4I01	Pose questions to explore observed patterns and relationships and make predictions based on observations.	Students examine patterns such as day/night cycles and seasonal changes, discussing why these patterns repeat.
AC9TDE4P02	Generate and communicate design ideas and decisions using appropriate attributions, technical terms and graphical representation techniques, including using digital tools.	Students draw or label diagrams of the sun and Earth to show day/night and seasonal patterns, communicating scientific ideas visually.

Code	Full Description	Justification
AC9TDE4P03	Select and use materials, components, tools, equipment and techniques to safely make designed solutions.	If students create a shadow-tracking chart or simple sundial (as suggested in optional activities), they are selecting and using simple materials purposefully and safely.

YEARS 5–6

Code	Full Description	Justification
AC9S5U03	Identify sources of light, recognise that light travels in a straight path and describe how shadows are formed and how light can be reflected and refracted.	The lesson explicitly explains shadow formation and encourages observation of how sunlight travels in straight lines.
AC9S6U02	Describe the movement of Earth and other planets relative to the sun and model how Earth's tilt, rotation and revolution relate to day/night and seasons.	The lesson teaches that Earth rotates to create day/night and revolves around the sun to form seasonal cycles.
AC9S5I04	Construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and describe patterns and relationships.	Students may chart changing shadow lengths or draw Earth–sun diagrams, demonstrating pattern recognition.
AC9TDE6P02	Generate, iterate and communicate design ideas, decisions and processes using technical terms and graphical representation techniques, including using digital tools.	Older students may refine diagrams or models of Earth–sun relationships using labelled, ordered visual representations.
AC9TDE6P03	Select and use suitable materials, components, tools, equipment and techniques to safely make designed solutions.	If students construct a simple physical model (e.g., Earth–sun–moon system), they must choose and handle materials safely and purposefully.

Lesson 6: The Planets in the Solar System

Theme: God Designed the Planets with Purpose and Order

Character Trait: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Identify and describe the key features of planets in the solar system.
- Understand the concept of orbits and how they demonstrate order.
- Recognise how God's design of space reflects His orderly nature.
- Construct a model to represent planetary arrangement and scale.

Curriculum Content Descriptions:

- **Science – AC9S3U01:** compare characteristics of living and non-living things and examine the characteristics of Earth, other planets and stars.
 - **Science – AC9S4U02:** investigate how Earth's surface changes over time and identify the effects of human and natural processes.
 - **Design & Technology – AC9TDE2K01:** explore how familiar ... environments are designed ... for specific purposes.
 - **Design & Technology – AC9TDE4K01:** investigate how forces and the properties of materials affect the behaviour of designed solutions.
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A) Introduction

Vocabulary to Introduce:

- **Solar System** – The sun and all the planets that orbit it.
- **Orbit** – The path a planet follows around the sun.
- **Gravity** – An invisible force that pulls objects together.
- **Gas Giant** – A large planet made mostly of gases (like Jupiter and Saturn).
- **Terrestrial Planet** – A rocky planet (like Earth and Mars).

Parent/Tutor Says:

“Today we’re going to take a trip through the solar system – not in a spaceship, but through a story that helps us understand how God created the planets and placed them in perfect order. Let’s listen and think about how this shows us God’s wisdom and design.”

B) Informational Story: “God’s Planet Parade”

As we read this story, I need you to listen very carefully, because at the end of the story, I will ask you to tell me everything you remember about the story. So, while we are reading, try to visualise each scene – if it helps you to concentrate, you might like to close your eyes and try to see what is happening in your mind. Here we go....

Imagine you’re climbing into a rocket ship, buckling up, and preparing to leave Earth. The countdown begins: “3... 2... 1... LIFTOFF!” Your seat rumbles. Outside the window, clouds swirl and the blue sky turns dark as you blast into space. Earth is getting smaller behind you, and ahead is something wonderful – the solar system, a parade of planets, each one different, and each one placed by God on purpose.

As you float weightlessly in your ship, you look out and see the sun behind you. It's huge and glowing, a fiery ball of light and heat. Everything in our solar system orbits the sun. That means every planet travels in a path around it, kind of like how horses move in a circle on a merry-go-round. But this isn't a game – this is precision, design, and purpose. The Bible says in Job 26:7, “He spreads out the northern skies over empty space; He suspends the earth over nothing.” Isn't that amazing? Earth floats in space, held up by no strings at all – just God's design and laws like gravity.



As you begin your journey through the solar system, the first planet you pass is **Mercury**. It's small, rocky, and zooms around the sun faster than any other planet. Its surface looks a bit like the moon's – covered in craters. It has no air, and it gets really hot during the day but freezing at night. Why? Because Mercury doesn't have an atmosphere to trap heat. It reminds us that even though it's small, God gave it a place and a job.

Next comes **Venus**, the second planet from the sun. It's about the same size as Earth but covered in thick clouds of gas. Those clouds trap the sun's heat, making Venus the hottest planet. It's like a giant oven! Its surface could melt metal. Some call it Earth's “twin” in size, but it's not a friendly place to visit. God made it that way to show variety – and to protect Earth's specialness.




Now you arrive at your home planet – **Earth**. It's the only planet with just the right mix of things needed for life: air to breathe, water to drink, land to live on, and perfect temperatures. Earth is exactly the right distance from the sun. If it were closer, we'd burn. If it were farther, we'd freeze. Earth is not too big or too small. God made it “just right,” like a well-planned home. Isaiah 45:18 says, “God formed the earth... He did not create it to be empty, but formed it to be inhabited.” What a wonderful truth!

After Earth, you zoom past **Mars**, the red planet. It's covered in red dust, giving it its famous colour. Mars has the tallest volcano in the solar system and a huge canyon. Long ago, it may have had water, but now it's dry and cold. Some scientists dream about people living there one day. But for now, Mars reminds us of God's creativity and variety.



Jupiter Facts

Planet Type	Gas giant
Distance from Sun	778 million km
Diameter	143 km
Mean Density	1.326 g/cm ³
Day Length	9 hours 56 minutes
Year Length	~11.86 Earth years
Temperature	88 K (-185 °C)
Rings	Yes (faint)
Moons	97 (as of 2025)



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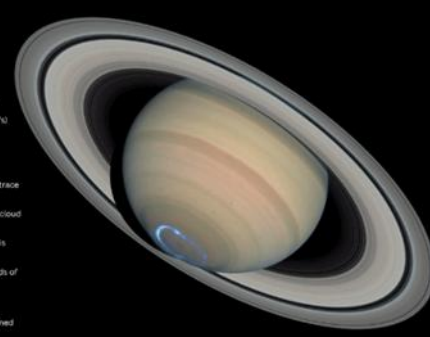
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Now your rocket flies past something enormous – **Jupiter**. It's so big that more than 1,300 Earths could fit inside it! Jupiter isn't solid like Earth – it's made mostly of gas. Swirling across its surface is the Great Red Spot, a giant storm that's been raging for hundreds of years. Jupiter also has at least 79 moons, and some of them are almost as big as planets. Isn't it fascinating how God made one planet so huge and stormy, while Earth is calm and just right for life?

Then comes **Saturn**, with its beautiful rings. These rings aren't solid – they're made of ice and rock chunks, floating in perfect paths. Saturn is another gas giant, and it spins so fast that it bulges at the sides. Scientists still don't fully understand why the rings are so perfectly shaped, but we know: God made them with care. Psalm 19:1 says, "The heavens declare the glory of God." When we look at Saturn's rings, we're seeing God's beauty and power.

Saturn Facts

Planet Type	Gas giant
Position from Sun	6th
Average Distance from Sun	1.429 billion km (9.58 AU)
Orbital Period (Year)	29.45 Earth years
Rotation Period (Day)	~10.7 hours
Diameter (Equatorial)	120,536 km (74,868 mi)
Mass	5.683 × 10 ²⁶ kg (~95 Earths)
Density	0.687 g/cm ³ (less than water)
Gravity	10.44 m/s ² (about 1.07× Earth's)
Escape Velocity	35.5 km/s
Axial Tilt	26.7°
Atmosphere Composition	~96% hydrogen, ~3% helium, trace gases
Surface Temperature	~130 °C (234 °F) at cloud tops
Number of Moons	At least 145 confirmed (Titan is largest)
Ring System	7 main rings (A to G), thousands of ringlets
Strongest Wind Speed	~1,800 km/h (1,100 mph)
Magnetic Field	~500× Earth's, axis nearly aligned with rotation
Auroras	Yes – ultraviolet, seen at poles
Major Missions	Pioneer 11, Voyager 1 & 2, Cassini-Huygens
Potential for Life	Unlikely on Saturn, but possible on moons like Enceladus and Titan



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How Did Uranus Get Its Name?

The planet Uranus is named for the Greek god of the sky, Ouranos. Uranus is the Latin word for the name.



Sir William Herschel discovered the planet and wanted to name it **Georgium Sidus** (George's Star).

Johann Elert Bode suggested the name **Uranus**.

The Roman name for the planet would have been **Caelus**.

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Next is **Uranus**, a pale blue-green planet that's very cold and spins on its side! Unlike the other planets that spin upright, Uranus is tipped over almost 98 degrees. Some scientists wonder if it was hit by something long ago – but no one really knows. What we do know is that God made it to spin that way, showing that His design can be surprising but still orderly.

Last in line is **Neptune**, the most distant planet in our solar system. It's deep blue and full of storms. Winds on Neptune are the fastest in the solar system – up to 2,000 kilometres per hour! That's faster than a speeding jet. Even though it's far from the sun, Neptune still orbits like the rest. It reminds us that even the farthest places in space are known and controlled by God.



You might be wondering: What happened to **Pluto**? It used to be called the ninth planet, but scientists now call it a "dwarf planet" because it's much smaller than the others and doesn't meet all the rules for being a full planet. But even Pluto, tiny and icy, follows a path set by God. Nothing in the universe is forgotten.

As your rocket turns around and heads back toward Earth, you look again at the whole solar system. Every planet orbits at the right speed. They don't crash into each other. They stay in their places. That's because God gave them rules – like **gravity** (the force that pulls things together) and **inertia** (which keeps them moving in a line unless something changes it). The whole solar system moves like a dance – slow, beautiful, and full of purpose.

Imagine what would happen if the planets stopped obeying those rules! Earth might crash into the sun or freeze far away. Life would end. But that doesn't happen – because God is a God of order.

Just like the planets, we were made to follow God's ways – not to spin wildly or crash into confusion. God gave us routines: day and night, weeks and seasons, work and rest. And He wants our lives to reflect that same kind of peace and structure.

When we tidy our rooms, make a schedule, treat others kindly, and obey rules, we're showing that we belong to a God who made the universe in perfect order. We're not accidents, and neither are the planets. Just as people purposefully design products and services, and then make things to use – so too God made everything with purpose – and you were also made for a purpose.

C) Narration

Parent/Tutor Says:

“Now it's your turn! Can you tell me what you remember about the story? Which planets did we visit? What makes each one special? How do they show God's order?”

Encourage children to use their own words.

- Younger students might simply name a few planets and say “God made them.”
 - Middle students can describe features of each.
 - Older students should include the concepts of orbits, gravity, and precision.
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D) Thinking Questions

i) Foundation–Year 2 (Ages 5–7)

1. What is the name of the planet we live on?
2. Can you name two other planets in the solar system?
3. Who made the planets?
4. Do the planets bump into each other or move in order?
5. How can you be more orderly at home or in your schoolwork?

ii) Years 3–4 (Ages 8–10)

1. What does it mean that God “suspended the earth over nothing”?
2. Why is Earth the only planet with life?
3. Why do you think the planets don't crash into each other?
4. What does the solar system teach us about God's wisdom and power?
5. What's one area in your life that could use more order? How can you fix it?

iii) Years 5–6 (Ages 11–12)

1. What are orbits, and why are they important in the solar system?
2. How does the structure of the solar system reflect God's character?
3. What's the danger of living without order or structure?
4. What would you say to someone who believes the universe happened by accident?
5. What's one practical way you can reflect God's orderliness this week – in your room, your time, or your relationships?

E) Learning Activities

Foundation–Year 2:

1. **Planet Colouring Sheet:** Colour planets and label their names. Use glitter or stickers to show how God made each one beautiful.
2. **Orbit Walk Game:** Place printed planet cards in a circle and walk around them like orbits, saying each planet's name.

Years 3–4:

1. **Planet Fact Flipbook:** Create a mini booklet with one page per planet. Include a fun fact and a drawing.
2. **Gravity Demonstration:** Drop different objects and see how gravity pulls them down at the same speed. Discuss how gravity holds planets in orbit.

Years 5–6:

1. **Solar System Model:** Use string, balls, and measurement tools to create a more accurate-to-scale solar system.
2. **Planetary Debate:** Prepare a short speech arguing which planet (besides Earth) is the most interesting. Share your reasons with your family or group.

For All Ages (Shared Activity):

Create a Model Solar System (Craft/Construction Task)

Materials Needed:

- Clay or foam balls (for planets)
- String, yarn, or pipe cleaners (optional)
- Paint or markers
- A printout or space to arrange the planets in order

Instructions:

1. Make a sun out of yellow/orange clay or paper.
2. Create each planet using different sizes and colours.
3. Arrange them in order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
4. (Optional) Hang them using string to show orbits, or place them on a table with labels.
5. Say aloud what makes each planet unique and how God placed it on purpose.

Parent/Tutor Says: “God made the planets like a perfect parade. They move in order, not chaos. Let’s follow His example and bring order and beauty into what we do, too!”

F) Optional Extension Activity

Science Journal Prompt:

Write a short paragraph or draw a comic showing the planets obeying God’s rules for orbits – like a parade moving in perfect order. Include a Bible verse.

G) Biblical Connection & Wrap-Up

Job 26:7 – “He spreads out the northern skies over empty space; He suspends the earth over nothing.”

Parent/Tutor Says:

“This verse reminds us that the universe doesn’t need strings to hold it together. God keeps it going by His power. That shows how wise and powerful He is – but also how much He loves order. He wants our lives to be peaceful, not messy. When we follow His ways – doing things with purpose, planning well, and being careful – we reflect His order.”

Discuss:

- What does it mean to “suspend the earth over nothing”?
- How does that make you trust God more?
- What can you do today to bring more order into your day – just like God did in space?

Australian Curriculum (v9) Content Descriptions Used in this Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification (What in the Lesson Matches This)
AC9S2U01	Recognise Earth is a planet in the solar system and identify patterns in the changing position of the sun, moon, planets and stars in the sky.	The lesson introduces the planets by name, teaches that Earth is one of the planets, and identifies each planet’s place in the solar system.
AC9S1I01 / AC9S2I01	Pose questions to explore observed simple patterns and relationships and make predictions based on experiences.	During narration and planet discussions, children are encouraged to observe patterns (e.g., planets move in order, do not crash) and ask simple questions.
AC9TDE2P01	Generate and communicate design ideas through describing, drawing or modelling.	The shared/model-making task (simple solar system model / orbit walk) requires children to represent and communicate the arrangement of planets.

YEARS 3–4

Code	Full Description	Justification
AC9S3U02	Compare the observable properties of soils, rocks and minerals and investigate why they are important Earth resources.	When comparing rocky vs. gas planets, students observe planet composition differences (rocky inner planets vs. gas giants). This is aligned conceptually (not assessed formally).
AC9S3I04	Construct and use representations, including tables, simple column graphs, and visual or physical models, to organise data and identify patterns.	The planet flipbook, orbit diagrams, and identifying planet differences all involve constructing visual representations.
AC9TDE4P02	Generate and communicate design ideas and decisions using graphical representation techniques.	Students create labelled drawings and flipbook pages describing planet features in a systematic visual way.
AC9TDE4P03	Select and use materials, components, tools, equipment and techniques to safely make designed solutions.	The gravity demonstration and planet flipbook/model tasks require choosing materials and constructing with safe handling.

YEARS 5–6

Code	Full Description	Justification
AC9S6U02	Describe the movement of Earth and other planets relative to the sun and model how Earth’s tilt, rotation and revolution relate to cyclic observable phenomena.	The lesson explicitly teaches orbits, movement around the sun, and the orderly structure of the solar system.
AC9S5I04	Construct and use appropriate representations, including visual or physical models, to organise and describe patterns and relationships.	Students are asked to design scaled models of the solar system and compare relative sizes and distances where possible.
AC9S5H02	Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions.	The lesson connects solar system order to navigation, scheduling, calendars, and human decision-making informed by astronomy.
AC9TDE6P02	Generate, iterate and communicate design ideas and decisions using technical terms and graphical representation techniques.	In constructing more precise solar system models, students must communicate scale and labelling using correct terminology (orbit, rotation, axis, gas giant, etc.).
AC9TDE6P03	Select and use suitable materials, components, tools, equipment and techniques to safely make designed solutions.	Students may create a more advanced three-dimensional solar system model requiring measuring, spacing, and safe material handling.

Lesson 7: The Moon and Its Phases

Theme: God's Order in Time and Light

Character Trait: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Identify and describe the different phases of the moon and explain why they occur.
- Understand that the moon reflects sunlight and follows an orbit around Earth.
- Recognise that lunar phases follow a regular pattern that helps measure time.
- Reflect on God's creation of the moon as a source of light, rhythm, and order in the night sky.
- Construct models or visual representations of moon phases using materials.
- Appreciate and apply the concept of orderliness in natural systems and personal habits.

A) Introduction

Parent/Tutor Says:

"Today we are going to learn about the moon – the beautiful light we see in the night sky. But did you know the moon doesn't shine on its own? And did you know it changes shape across the month? These changes happen in an orderly pattern, and they help us understand how God designed the world to move in rhythms and time."

Read through and discuss these words before reading the story aloud.

Introduce and define the following key vocabulary before reading the story:

- **Orbit** – the path one object takes around another in space
- **Reflect** – to bounce light off a surface
- **Phases of the moon** – the different shapes of the moon we see from Earth as it moves around us
- **Waxing** – when the moon looks like it's getting bigger
- **Waning** – when the moon looks like it's getting smaller
- **New Moon** – when the moon is not visible from Earth
- **Full Moon** – when the entire moon is lit and visible
- **Gibbous Moon** - The adjective ***gibbous*** has its origins in the Latin noun *gibbus*, meaning "hump." It was adopted into Middle English to describe rounded, [convex](#) things. While it has been used to describe the rounded body parts of humans and animals (such as the back of a camel) and to describe the shape of certain flowers (such as snapdragons), the term is most often used to describe the moon: a gibbous moon is one that is between half full and full.

B) Informational Story

Parent/Tutor Says:

"Now I'm going to read you a story filled with knowledge about the moon. Please listen very carefully and imagine the scenes in your mind. When I finish reading, I'll ask you to tell me everything you remember."

Story: "The Moon That Changes but Stays the Same"

Every night, the moon hangs high in the sky, a glowing companion to Earth. Whether it's bright and full or just a sliver of light, it captures the attention of people all around



the world. For thousands of years, the moon has lit up the night, guided travellers, helped farmers, and marked the passing of time. It has been a steady part of life on Earth, silently reminding us that God has placed all things in order – even the sky.



But how does the moon shine? Is it like the sun, making its own light? No, the moon doesn't shine by itself. It reflects the light of the sun, much like a mirror reflects a flashlight beam in the dark. The moon's rocky surface catches sunlight and bounces it back to us, giving us moonlight.

As the moon travels around the Earth, the amount of light we see from it changes in a pattern called phases. This movement takes about 29 and a half days to complete. Each phase has a name, and the pattern never changes – it always goes in the same order, again and again.

Let's travel through the phases of the moon, one by one.

The first phase is called the **New Moon**. During this phase, the moon is between the Earth and the sun. The sun shines on the side of the moon that faces away from us, so from Earth, we see no light at all. It looks like the moon has disappeared, but it's still there – just hidden in shadow.

Next comes the **Waxing Crescent Moon**. "Waxing" means growing. A small curve of light begins to appear on the right side of the moon. It's just a sliver, but each night, that crescent grows bigger.

After that, we reach the **First Quarter Moon**. This is when half of the moon is visible. We call it a "quarter" moon because it's one quarter of the way through its orbit around Earth.

The moon keeps growing until it becomes the **Waxing Gibbous Moon**. "Gibbous" means more than half but not full. The moon looks like a rounded shape, with just a bit still in shadow.

Finally, we reach the **Full Moon**. The whole face of the moon is shining brightly! The Earth is between the sun and the moon now, so sunlight covers the whole side of the moon that we can see.



But the story isn't over. Now the light begins to shrink. We call this **Waning**, which means getting smaller.

First comes the **Waning Gibbous Moon** – still bright, but starting to lose some light on the right side.

Then the **Last Quarter Moon** appears. Again, we see half the moon, but this time it's the left side that's lit.

After that, the moon becomes a **Waning Crescent Moon**, a tiny sliver of light that gets smaller each night.

And then we're back to the **New Moon** again! The cycle starts over.

This whole pattern takes about a month – specifically, 29.5 days. This rhythm is so reliable that many ancient cultures used it to build their calendars. Even today, some people still use the moon to mark the months and special celebrations.

So why does the moon follow this pattern so perfectly? It's because of God's amazing design. He made the moon to orbit the Earth in a regular path, held in place by gravity. Gravity is the invisible force that pulls things toward each other – like the moon toward the Earth, and the Earth toward the sun.

God didn't create a random universe. He created one filled with order, rhythm, and purpose.

The moon's orderly path does more than just change its shape in the sky – it also helps to move Earth's oceans. That's right – the moon causes tides!

Tides are the gentle rising and falling of ocean water. When the moon's gravity pulls on Earth's oceans, it causes water levels to rise in some places and fall in others. This cycle of rising and falling happens every day, and it helps keep the oceans healthy. Fish, seaweed, birds, and many other animals depend on the tides to survive.



This, too, is part of God's order. The moon doesn't just make the night beautiful; it plays a big part in how life works on Earth. Isn't that amazing?

Farmers have noticed that some plants grow differently depending on the phase of the moon. While not every idea about moon gardening is scientific, we know that the moon's light and gravitational pull are connected to natural rhythms. Some animals – like turtles – use the moonlight to know when to lay their eggs. Birds migrate using the moon. Even coral reefs release eggs at night in sync with the full moon!

These rhythms are not random. They are part of God's carefully timed world, showing us that He cares deeply about both big and little details.

And what about people? Long ago, before we had electricity, people used the moon to plan when to walk at night or plant their crops. Festivals and holidays often followed the lunar calendar. Even now, people feel a sense of wonder when they see a full moon rise over the horizon.

Let's not forget the spiritual lesson of the moon. The Bible says in Psalm 136:9, "The moon and stars to govern the night, His love endures forever." That means the moon was given a task – to bring light and order to the darkness.

We can learn from the moon. Just as the moon reflects the light of the sun, we are meant to reflect the light of God. When we walk closely with Him, we don't shine from our own strength – but His love shines through us. And just like the moon follows its path faithfully, we are called to live with order and purpose.

Even when life feels dark or confusing, the moon reminds us that God's order still holds the universe together. The moon always returns to its phase. The tides always rise and fall. And God is always faithful.

So, the next time you see the moon in the sky, stop and look. Which phase is it in? What direction is it waxing or waning? What part is lit and what part is dark?

Then remember: God is a God of order. And just like the moon, you have a purpose in His great design.

One evening, a family gathered in their backyard for a "moon night." They brought a flashlight, a ball, and a notebook. The dad held the flashlight (like the sun), and the children took turns holding the ball (like the moon) and moving in a circle around him, showing how the moon reflects light differently depending on its position. They laughed when the "New Moon" meant they couldn't see any light on the ball – and cheered when they saw the full-face light up like a Full Moon.

Mum pointed to the sky. “Look, tonight it’s a waxing gibbous! That means it will be full in a few nights. Let’s write that in our moon journal.”

They marked the phase and drew a little picture in their notebooks. Over the next month, they kept checking the moon every night, sketching its shape and writing down the date. As they did this, they started noticing patterns. The Full Moon always came after a Waxing Gibbous. The Last Quarter always came about a week after the Full Moon.

Each evening ended with a quiet moment. The family would sit on the grass and read a Bible verse – sometimes Psalm 136:9, sometimes Genesis 1:16 (“He made the moon to govern the night”). They would pray, thanking God for the rhythms of life – the days, the seasons, the patterns of the moon.

One night, the youngest child asked, “If the moon always does its job, can I always do my job?”

Dad smiled. “Yes. God made the moon with a job – and He gave you one too. To live with order, love, and trust in Him.”

From then on, the moon was more than just a light in the sky. It became a reminder to live in the light of God’s order and love.

So, whether you’re looking through a telescope, drawing the phases in your notebook, or simply gazing up at night, remember this: God made the moon to reflect the sun’s light and govern the night. And you are made to reflect His light and bring His order and love to your part of the world.

C) Narration

Parent/Tutor Says:

“Now it’s your turn! I’d love to hear what you remember from the story. Can you tell me what the moon does each month? What are the different phases? How does the moon reflect light? What does this teach us about God?”

Instructions:

- Ask the student to describe the sequence of moon phases aloud.
 - Younger students can name and point to pictures of the phases.
 - Older students can explain the science behind each phase using drawings or diagrams.
 - Optionally, draw the phases together on a whiteboard or notebook.
-

D) Teaching Skills

Parent/Tutor Says:

"Now let’s learn some science skills so we can explore the moon phases and how to model them."

Skill 1: Modelling Phases with a Ball and Light

- Hold a small white ball or sphere (moon).
- Shine a flashlight (sun) on it.
- Move the ball around your head (Earth) to simulate the moon’s orbit.
- Observe how only parts of the ball are lit at different angles.

Skill 2: Drawing and Sequencing

- Teach the student how to draw each moon phase and place them in order around a circle to represent the lunar cycle.
- Show how the pattern is symmetrical (it grows, then shrinks).

Skill 3: Observation Recording

- Show how to record observations of the moon (sketch + label + date).
 - Create a simple moon journal.
-

E) Thinking Questions

Ask these reflective and comprehension questions after the teaching section.

i) Foundations to Year 2

1. What shape is the moon tonight?
2. Who made the moon and told it what to do?
3. Can you remember one way the moon helps the Earth?
4. How does the moon follow God's plan?
5. What's one way you can be orderly like the moon?

ii) Years 3 & 4

1. What causes the moon to have different shapes?
2. What is the difference between waxing and waning?
3. How is gravity important in space?
4. How do the moon's phases help people plan time and events?
5. What does it mean that the moon reflects light? How can you reflect God's love?

iii) Years 5 & 6

1. Why does the moon follow a predictable path?
 2. How does the moon influence life on Earth through tides or patterns?
 3. What would happen if the moon didn't follow an orderly cycle?
 4. How does the concept of 'reflection' help you understand your purpose as a Christian?
 5. How could you build more structure into your daily habits to reflect God's order?
-

F) Practical Activities

Offer two activity choices per age group. Encourage children to choose one or both.

Foundations to Year 2

1. **Oreo Moon Phases**
 - Use cream-filled biscuits to model New, Crescent, Half, and Full Moon.
 - Arrange them on a plate in correct order.
2. **Moon Phases Wheel**
 - Create a rotating paper wheel that shows the phases of the moon.
 - Colour and label each phase.

Years 3 & 4

1. Moon Journal

- Observe and draw the moon each night for 7 days. Label its phase.

2. Moon Orbit Model

- Use a tennis ball (moon), torch (sun), and globe (Earth) to act out the lunar cycle.

Years 5 & 6

1. Investigating Tides

- Research and record how the moon affects tides. Use online tide charts or local maps.
- Present your findings with drawings or a written paragraph.

2. Design a Lunar Calendar

- Create a 29-day calendar showing the phases.
 - Add space for recording moonrise times and visible changes.
-

G) Optional Extension Research Activity

Years 3–6

Research how ancient cultures used the moon for timekeeping.

- How did Indigenous Australians use the moon to track time and seasons?
 - What festivals or planting events are based on the moon in different cultures?
 - Create a short report or poster with your findings.
-

H) Biblical Connection & Wrap-up

Parent/Tutor Says:

"Let's read this verse together."

Psalms 136:9 – 'The moon and stars to govern the night, His love endures forever.'

"God made the moon for a purpose. He gave it a job to do – just like He gives each of us a purpose. The moon helps bring order to the night and even helps guide the oceans. It reflects light. It follows a pattern. And even when we can't see it, it's still obeying God's plan.

That's how we should live, too – with purpose, peace, and obedience. We don't shine on our own, but when we stay close to Jesus, His light shines through us. Let's try to be orderly in our homes, our habits, and our hearts – just like the moon follows its pattern in the sky."

Close in prayer:

"Dear Lord, thank You for the moon. Thank You for making everything with order and beauty. Help us to live with Your light shining through us. Teach us to follow Your ways, just like the moon follows its path. In Jesus' name, Amen."

Australian Curriculum (v9) Content Descriptions Used in This Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification (What actually happened in the lesson)
AC9S2U01	Recognise Earth is a planet in the solar system and identify patterns in the changing position of the sun, moon, planets and stars in the sky.	Students learn that the Moon moves around Earth in a repeating cycle and that its appearance changes in a predictable pattern.
AC9S1U02	Describe daily and seasonal changes in the environment and explore how these changes affect everyday life.	Students observe how the Moon changes shape over days and understand that this is part of a repeating natural pattern.
AC9S2I03	Make and record observations, including informal measurements, using digital tools as appropriate.	Students observe Moon phases using a physical model (torch + ball) and record what they see.
AC9TDE2P01	Generate and communicate design ideas through describing, drawing or modelling, including using digital tools.	Students draw or build simple Moon phase models to show their understanding.

YEARS 3 – 4

Code	Full Description	Justification
AC9S3H01	Examine how people use data to develop scientific explanations.	The lesson explains how observing repeated changes in the Moon helped early people understand the Moon cycle.
AC9S3I04	Construct and use representations, including visual or physical models, to organise data and show simple relationships and patterns.	Students create Moon phase charts or orbit demonstrations , making the relationship between Moon position and visible phase clear.
AC9TDE4P02	Generate and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques.	Students use labelled diagrams and correctly sequence phases such as crescent, half, gibbous, full.
AC9TDE4P03	Select and use materials, components, tools, equipment and techniques to safely make designed solutions.	Students create a Moon orbit model using simple craft materials, handled safely and purposefully.

YEARS 5 – 6

Code	Full Description	Justification
AC9S6U02	Describe the movement of Earth and other planets relative to the sun and model how Earth's rotation and revolution relate to cyclic observable phenomena.	Students model the Moon orbiting Earth and link this motion to the repeating cycle of Moon phases.
AC9S5U03	Identify sources of light, recognise that light travels in a straight path, and describe how shadows are formed and how light can be reflected and refracted.	The lesson explicitly teaches that the Moon does not produce its own light but reflects sunlight , and phases result from the angle of light and shadow.
AC9S5I04	Construct and use appropriate representations, including visual or physical models, to describe patterns and relationships.	Students create more advanced models or diagrams showing waxing (increasing light) and waning (decreasing light).
AC9TDE6P02	Generate, iterate and communicate design ideas and decisions using technical terms and graphical representation techniques.	Older students create accurately labelled Moon cycle diagrams using correct scientific terminology.
AC9TDE6P03	Select and use suitable materials, components, tools, equipment and techniques to safely make designed solutions.	More detailed Moon–Earth–Sun models require deliberate selection of materials and safe construction techniques.

Lesson 8: The Earth – Our Special Home

Theme: God Created Earth with Perfect Order

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Understand and describe how Earth's systems support life through patterns and interdependence.
 - Recognise how Earth's position and movement in space bring day, night, and seasons.
 - Identify ways the Earth is uniquely designed for life, compared with other planets.
 - Describe how natural and built environments are ordered by design and purpose.
 - Reflect on God's orderly creation and our responsibility to care for it.
-

A) Introduction – Vocabulary and Opening

Parent/Tutor Says:

“Today we’re going to learn about Earth – our home – and how it is wonderfully made with order and balance. God created Earth with everything we need: air, water, sunlight, seasons, and more. Let’s look at some words that will help us understand this better.”

Key Vocabulary (define for students):

- **Atmosphere** – the layer of gases surrounding Earth that we breathe.
 - **Orbit** – the path Earth travels around the Sun.
 - **Rotation** – the spinning of the Earth, giving us day and night.
 - **Gravity** – the force that holds everything on Earth and in orbit.
 - **Biosphere** – all the living things on Earth and where they live.
 - **Sustainable** – something that can keep going without running out or being harmed.
 - **Interdependence** – when different systems or creatures rely on each other to survive.
-

B) Informational Story

Parent/Tutor Says:

“Now I’m going to read you a long and wonderful story filled with things to learn. Please listen very carefully and think about the story as I’m reading it, because I’m only going to read it once. After the story, I want you to tell me everything you can remember. Ready?”

Story: “*Earth: The Planet Made for Life*”

Earth: The Planet Made for Life

Imagine walking through a lush green forest at sunrise. The golden light filters through tall trees, casting long shadows on the mossy ground. You hear birds singing in the treetops, insects buzzing gently, and the rustle of leaves under the feet of small animals. As you walk, you notice a stream flowing over smooth

stones, bringing clean, fresh water to the plants and animals that live nearby. The air smells of pine and earth. You take a deep breath. Isn't it wonderful that this planet – Earth – is just right for life?

Earth is not just a ball of rock floating in space. It is a complex, living system made with perfect design. When God made the world, He didn't do it randomly. Isaiah 45:18 says, "For this is what the Lord says – He who created the heavens, He is God; He who fashioned and made the Earth, He founded it; He did not create it to be empty, but formed it to be inhabited." That means God made Earth on purpose – for people and living things to live in.

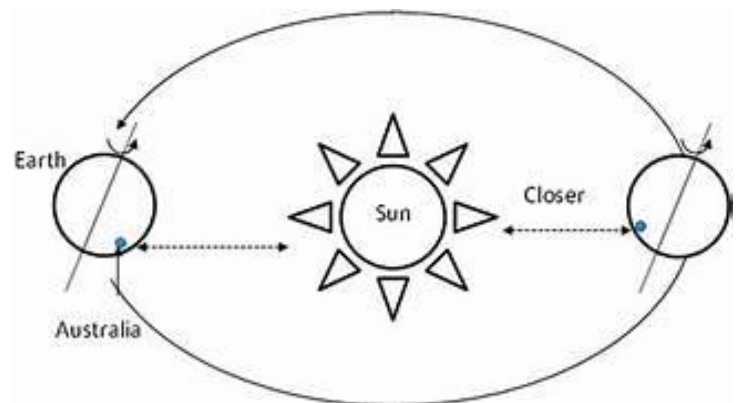
Let's explore how God's design makes Earth different from every other planet we know.

First, there's the **atmosphere** – the invisible blanket of gases around our planet. It gives us air to breathe – oxygen for people and animals, carbon dioxide for plants. It also keeps us warm by trapping just enough of the sun's heat. If Earth didn't have an atmosphere, the days would be too hot and the nights too cold for anything to survive. Some other planets have poisonous gases or no atmosphere at all. Earth's atmosphere is perfectly balanced.

Next, let's look at the **distance from the sun**. If Earth were even a little closer to the sun, it would be too hot, like Venus, and all water would be turned into steam. If it were farther away, like Mars, it would be too cold, and any water would be turned into ice. But Earth is in what scientists call the "Goldilocks zone" – not too hot, not too cold, but just right. This perfect position means we get liquid water on Earth, which is essential for life.

Water is everywhere on our planet. Oceans cover more than 70% of Earth's surface. Water evaporates, forms clouds, falls as rain or snow, and fills rivers and lakes. This is called the **water cycle**, and it's another system God designed with perfect order. It keeps everything alive – from the tiniest plants to the largest whales.

Then there's the **tilt of Earth's axis**. Earth is tilted at just the right angle – about 23.5 degrees. This tilt is what gives us **seasons**. When one part of the Earth is tilted toward the sun, it's summer there. When it's tilted away, it's winter. Without this tilt, we wouldn't have the variety of seasons that help different plants grow and provide rhythms of rest and harvest.



God also made the Earth to **rotate** on its axis once every 24 hours. That gives us **day and night**. Imagine if there were no night – plants wouldn't rest, and people wouldn't sleep. The Earth also **orbits** the sun once every 365¼ days, which gives us a full year. These movements create the pattern of time we live by: morning, noon, evening, night; spring, summer, autumn, winter.

Another part of God's design is **gravity** – the invisible force that holds everything in place. Gravity keeps our feet on the ground, holds the oceans in their basins, and keeps the moon orbiting Earth and the Earth orbiting the sun. If gravity were even a little bit weaker or stronger, life on Earth would not work the way it does.

Now let's zoom in. Earth's **landforms** are beautifully arranged. There are high mountains, low valleys, vast plains, winding rivers, and deep oceans. Each kind of land supports different kinds of life. Some animals live in the rainforest, others in the desert, others in the mountains. The soil is designed to hold roots and provide nutrients for plants. Under the ground, there are layers of rock, minerals, and water – each part has a purpose in God's design.

God also made **ecosystems**. An ecosystem is all the living things and the non-living things in their environment, interacting together.



In a forest ecosystem, for example, trees provide shelter for birds and food for insects. Animals spread seeds and fertilize the soil. Microorganisms break down fallen leaves and turn them into nutrients. Everything is connected and works together. That’s God’s order in action.

Even more amazing, Earth has systems for **recycling**. The **carbon cycle**, the **nitrogen cycle**, and the **water cycle** all help keep the environment clean and balanced. Trees take in carbon dioxide and give out oxygen. Bacteria in the soil help break down waste and return nutrients to the earth. Nothing is wasted.

And then there’s **life**. God filled the Earth with living things – from tiny bacteria to giant elephants, from colourful fish in coral reefs to birds that soar in the sky. He gave them what they need to live: food, water, shelter, and the ability to reproduce. Humans are different from animals because we’re made in God’s image. He gave us minds to think, hearts to love, and the responsibility to care for creation.

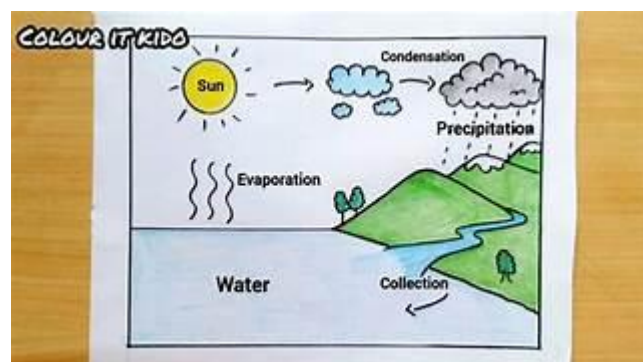


Genesis 1:28 says, “God blessed them and said to them, ‘Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground.’” That means God gave humans a special job – to take care of His world with wisdom and kindness.

We can do that by keeping our environment clean, protecting animals and plants, and using resources wisely. We can plant trees, reduce waste, recycle, and learn about the world so we can make good choices. When we do this, we are joining in God’s work of keeping the world in order.

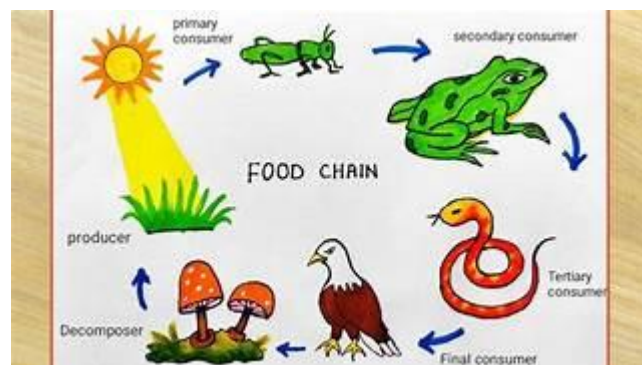
Let’s take a closer look at how some of Earth’s natural systems work together with precision.

Take the **water cycle** for example. It starts when the sun heats up water in lakes, rivers, and oceans. This water evaporates – turns into a gas – and rises into the sky. When it cools, it forms clouds. Eventually, the water falls back to Earth as rain or snow. That water soaks into the soil, flows into rivers, and returns to the ocean. This



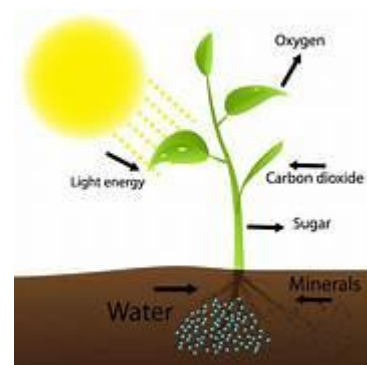
cycle keeps going every day without anyone needing to push a button or turn a switch. It's God's automatic watering system, and it helps grow food, nourish trees, and keep animals and people alive.

Another amazing system is the **food chain**. In a simple food chain, the sun gives energy to plants. Animals eat the plants. Other animals eat those animals. When animals or plants die, bacteria and insects break them down and return their nutrients to the soil. Then, plants use those nutrients to grow again. It's a perfect circle! Each part plays its role, and nothing is wasted. This kind of system didn't just happen. It shows the wisdom and care of the One who made it.



And what about the **air** we breathe? It's not just any mixture of gases – it's a special blend: mostly nitrogen, with just enough oxygen, plus a tiny bit of carbon dioxide and other gases. If there were too much oxygen, fires would start too easily. If there were too little, we couldn't breathe. Plants take in carbon dioxide and give out oxygen, while animals and people do the opposite. It's like a giant breath shared by all living things. This balance is another sign of perfect design.

Now think about **energy from the sun**. The sun gives light and heat to the Earth. Plants use sunlight in a process called **photosynthesis** to make their food. That food gives energy to animals and people. Without sunlight, there would be no energy, no plants, no food – and no life. The sun rises and sets every day with perfect timing, thanks to the Earth's rotation. Day and night give us time to work and rest, to grow and heal.



Have you ever looked at a **compost pile**? It might seem like a mess at first – full of banana peels, grass clippings, and dry leaves. But with time, air, and tiny organisms, it turns into dark, rich soil full of nutrients. God designed even decay to have a purpose. This teaches us something special: that order can come even out of things that look messy – when God is in charge.



Even in human design, we reflect the order of our Creator. When engineers design machines or architects build houses, they follow plans. They use measurement, timing, balance, and purpose. Why? Because we are made in the image of a God who creates with order and intention.

Earth is also incredibly protective. The **magnetic field** around the Earth shields us from harmful solar rays. The atmosphere burns up most meteors before they can hit the ground. The **ozone layer** blocks dangerous ultraviolet rays. These features are like a giant invisible shield, designed to keep life safe.

Let's not forget about **Earth's biodiversity** – the variety of life. There are millions of species of animals, plants, fungi, and bacteria, each doing a job in its environment. Some creatures clean up dead things. Some spread seeds. Some dig the soil to make it richer. It's like a giant orchestra, where every instrument plays its part at the right time.

Psalm 24:1 says, "The Earth is the Lord's, and everything in it, the world, and all who live in it." That means we are caretakers, not owners. We must respect creation, not waste it. When we recycle, clean up, plant trees, or learn about how nature works, we are doing God's work.

So next time you take a walk or look at a globe, remember: Earth is no accident. It is God's gift – a place of beauty, order, and life. And you have an important part to play in keeping it that way.

C) Narration

Parent/Tutor Says:

“Now it's your turn! Can you tell me what you remember about the story? What makes Earth special? How did God make it with order and purpose?”

Encourage responses such as:

- Earth has air to breathe and water to drink
 - Seasons and night/day come from orbit and rotation
 - God made everything with balance and interdependence
-

D) Teaching Skills

Parent/Tutor Says:

“Before we do our questions and activities, let's learn some scientific and design thinking skills.”

Teach:

1. **Observation Skills** – How to notice patterns in weather, daylight, and nature (e.g. day/night, seasons, plant growth).
2. **Comparing Conditions** – Discuss what life would be like on Mars or the Moon (no water, air, or atmosphere).
3. **Systems Thinking** – Introduce the concept of systems working together: water cycle, food chain, seasons.
4. **Design Thinking** – Talk about sustainable ways we can help care for the Earth (e.g. recycling, conserving water).

Optional Visual Demonstrations:

- Use a globe and torch to demonstrate day/night
 - Show a model of the solar system for Earth's orbit
-

E) Thinking Questions

i) Foundation to Year 2

1. What do we need to live on Earth?
2. Who made the Earth?
3. What happens when the sun goes down?
4. What's one thing you love about nature?
5. How can you help keep things in order at home or outside?

ii) Years 3 & 4

1. What does “interdependence” mean? Can you give an example from nature?

2. What would happen if Earth were tilted more or less?
3. Why do we have different seasons?
4. What does gravity do for us?
5. How can you help look after God's world?

iii) Years 5 & 6

1. What patterns in nature help us understand time and seasons?
 2. Why is Earth the only planet (so far) where life can survive?
 3. What are some ways the Earth is sustainable by God's design?
 4. How can human choices disrupt the balance God created?
 5. What systems work together to keep Earth healthy?
-

F) Practical Activities

Foundation to Year 2 (choose one):

1. **Build a Mini Earth** – Use blue and green playdough to make Earth and talk about land, air, and water.
2. **Nature Walk** – Go outside and find things that God made for life (air, plants, clouds). Draw or collect a few to show.

Years 3 & 4 (choose one):

1. **Orbit and Tilt Model** – Use a ball (Earth), stick (axis), and torch (Sun) to show rotation and orbit.
2. **Poster Project** – Make a “Why Earth is Perfect” poster with pictures and labels about air, water, distance from the sun, etc.

Years 5 & 6 (choose one):


1. **Systems Mapping** – Draw a diagram showing at least 3 systems (e.g. water cycle, seasons, food chain) and how they work together.
 2. **Sustainability Design** – Create a plan for a sustainable garden, compost bin, or recycling system at home or school.
-

G) Optional Extension Research Activity

Choose one:

- Research a biome (desert, rainforest, ocean) and explain how plants and animals survive there.
 - Compare Earth with another planet (e.g. Mars, Venus). Why can we live on Earth but not there?
 - Interview a gardener or scientist about what makes Earth healthy and alive.
-

H) Biblical Connection & Wrap-up

 *Isaiah 45:18* – “For this is what the Lord says – He who created the heavens, He is God; He who fashioned and made the earth, He founded it.”

Parent/Tutor Says:

“God didn’t just throw things into space. He designed and built Earth like a wise Creator. Everything has its place, and everything works together. That’s what orderliness means. God made a good home for us – and wants us to take care of it.”

Ask:

- What is one thing you will do this week to care for God’s Earth?
- How can we reflect His order in our home, classroom, and hearts?

Australian Curriculum (v9) Content Descriptions Addressed in this Lesson

Foundation–Year 2

Code	Full Description	Justification
AC9S1U02	describe daily and seasonal changes in the environment and explore how these changes affect everyday life	Lesson vocabulary and questions focus on day, night and seasons; students discuss “Why do we have different seasons?” and link patterns to everyday life.
AC9S2U01	recognise Earth is a planet in the solar system and identify patterns in the changing position of the sun, moon, planets and stars in the sky	Objectives and quiz emphasise Earth as our home within the solar system; vocabulary includes <i>orbit</i> and <i>rotation</i> ; students compare Earth with other planets.
AC9S1I03	make and record observations, including informal measurements, using digital tools as appropriate	F–2 activity “Nature Walk” asks students to find and record things in the environment that support life (air, plants, clouds).
AC9TDE2P01	generate and communicate design ideas through describing, drawing or modelling, including using digital tools	F–2 activity “Build a Mini Earth” requires modelling and communicating ideas about land, air and water.
AC9TDE2P02	use materials, components, tools, equipment and techniques to safely make designed solutions	Same “Mini Earth” activity involves selecting simple materials and constructing a model.

Years 3–4

Code	Full Description	Justification
AC9S3I04	construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information, show simple relationships and identify patterns	Students build an Orbit and Tilt Model to represent Earth’s rotation/orbit; poster task organises information about Earth’s suitability for life.
AC9S4I03	follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital tools as appropriate	The Orbit/Tilt model activity requires following steps to set up and observe rotation/orbit effects (age-appropriate procedures).
AC9S3H02	consider how people use scientific explanations to meet a need or solve a problem	The “Why Earth is Perfect” poster and related discussion apply scientific reasons (air, water, distance from sun) to the problem of habitability/caring for environments.
AC9TDE4P03	select and use materials, components, tools, equipment and techniques to safely make designed solutions	Making the Orbit/Tilt physical model uses materials and tools safely to produce a working representation.
AC9TDE4P01	explore needs or opportunities for designing, and test materials, components, tools, equipment and processes needed to create designed solutions	Planning the poster/model tasks involves selecting suitable materials and testing layout/processes.

Note: Year 3–4 **Earth & Space** understanding in v9 emphasises soils/rocks (Y3) and the water cycle (Y4), which are not the focus of Lesson 8; therefore I’ve aligned Years 3–4 mainly to **Inquiry** and **D&T** skills that the lesson explicitly uses.

Code	Full Description	Justification
AC9S6U02	describe the movement of Earth and other planets relative to the sun and model how Earth's tilt, rotation on its axis and revolution around the sun relate to cyclic observable phenomena, including variable day and night length	Lesson questions and tasks connect Earth's tilt/rotation/orbit with seasons and day/night; older students discuss patterns that explain time and seasons.
AC9S5I04	construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationships	"Systems Mapping" task requires diagramming interacting systems (e.g., seasons, water cycle, food chains).
AC9S5H02	investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions	"Sustainability Design" asks learners to apply science to practical responses (e.g., garden/compost/recycling plan).
AC9TDE6K01	explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environments	Sustainability design planning explicitly weighs needs and sustainability considerations.
AC9TDE6P03	select and use suitable materials, components, tools, equipment and techniques to safely make designed solutions	Students plan and (as feasible) build elements of their sustainability solution (e.g., compost setup).
AC9TDE6P05	develop project plans that include consideration of resources to individually and collaboratively make designed solutions	The sustainability brief requires planning steps/resources to implement the solution at home/school.

Bonus Optional Round-up:

Today could be used for Field Trips or a Homeschool Co-op Group; or if you are at home then you might try this fun wrap-up of the week.

Planets & the Solar System – Fun Quiz

Theme: God's Order in Creation

Grade Range: 1–6

Covers Lessons 5–8

Use this as a quiz game, review activity, or oral test. You can keep score, time each answer, or just use it as a fun recap!

Lesson 5: The Sun – God's Light in Space

1. What is the biggest light in the sky during the day?
2. What does the sun help plants do?
3. What are the three layers of the sun?
4. Does the sun shine because of a light bulb inside it? (Yes or No)
5. How does the sun help bring **order** to our day?

Lesson 6: The Planets in the Solar System

6. What is the name of the planet we live on?
7. Which planet has rings made of ice and rock?
8. Name three other planets in our solar system.
9. What keeps the planets from crashing into each other?
10. How do the planets show God's **orderliness**?

Lesson 7: The Moon and Its Phases

11. What does the moon reflect?
12. Name the four main phases of the moon.
13. Why does the moon look different each week?
14. What happens during a "new moon"?
15. What does the regular pattern of the moon teach us about God?

Lesson 8: The Earth – Our Special Home

16. Why is Earth the only planet where we can live?
17. What does Earth have that other planets don't (name 2 things)?
18. What would happen if Earth were a little closer to the sun?
19. What does Isaiah 45:18 say about how God made the Earth?
20. How can we show God's orderliness in how we care for our planet?

★ Bonus Round: Bible Match

Match the Bible verse to the correct lesson:

A. Genesis 1:16		1. The Moon and Its Phases
B. Psalm 136:9		2. The Sun – God’s Light
C. Isaiah 45:18		3. The Earth – Our Home
D. Job 26:7		4. The Planets in Order

Answer Key:

A – 2

B – 1

C – 3


D – 4

Optional Reward Ideas:

- 1 point per correct answer
- 2 bonus points for naming all 8 planets in order
- Prize: planet sticker, star bookmark, a fun space snack, or picking the next Bible story

TOPIC 3

GEOLOGY (ROCKS, SOIL & VOLCANOES)

 **Bible Verse of the Week:** Matthew 7:24 – "A wise man built his house on the rock."

Overview:

This week, children will learn **about the layers of the Earth, types of rocks, soil, and natural events like volcanoes and earthquakes.**

Lesson 9: Earth's Layers – God's Design for Our Planet

Theme: God Brings Order from the Inside Out

Character Focus: Orderliness

Learning Objectives

By the end of this lesson, students will be able to:

- Identify and describe the Earth's four main internal layers and their composition and purpose.
 - Understand the concept of structure and order in Earth's geology and how this supports life.
 - Construct a visual model of Earth's layers using various materials.
 - Reflect on how God's design of the Earth reflects His orderly character.
 - Practise scientific inquiry and model-making skills.
-

A) Introduction

Parent/Tutor Says:

"Today we're going to learn what's underneath our feet – not just soil and rocks, but the amazing layers that God placed inside the Earth when He created it. Did you know the Earth has four different layers, and each one does something important? Just like an orderly home has a foundation, walls, and a roof, the Earth has an orderly design too."

Vocabulary to Explain First:

- **Crust** – the outer layer of the Earth that we live on.
- **Mantle** – the thick, hot layer under the crust made of slow-moving rock.
- **Outer Core** – a layer of liquid metal that moves and creates Earth's magnetic field.
- **Inner Core** – the very centre of the Earth; a solid ball of metal.
- **Magnetic Field** – an invisible shield that protects Earth from harmful rays from space.
- **Geology** – the study of the Earth's physical structure and substances.

B) Informational Story – “The Earth’s Secret Layers”

Imagine you're digging in the garden. You scoop some soil into a bucket. It's crumbly and brown. You go deeper – maybe a patch of clay appears, then stones. But have you ever stopped to wonder: how deep can we go? What's beneath the ground beneath our feet?

The answer is: a lot! The Earth isn't just a solid ball of rock. It's made up of **layers**, each with its own material, temperature, and job. Like a perfectly baked cake – or a cleverly built machine – God created the Earth with careful, beautiful **order** from the inside out.

A World Designed with Layers

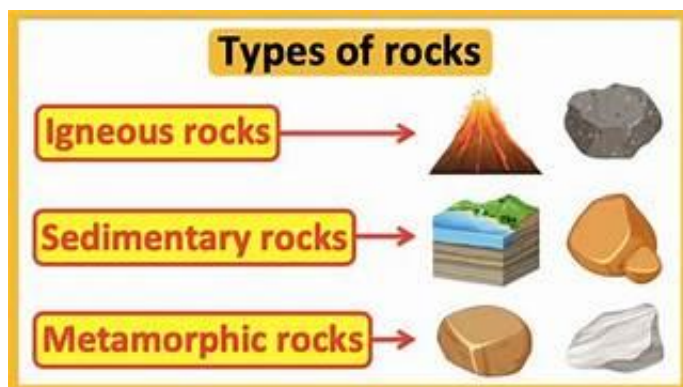
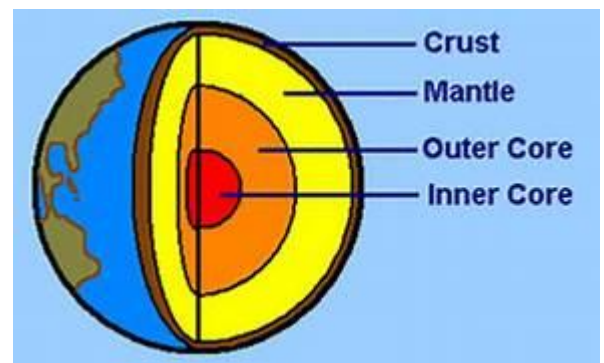
The Bible says in **Isaiah 45:12**, “I made the earth and created mankind upon it.” God didn't just slap together a random planet. He crafted it with **intention**, layer by layer. Why? Because each layer has a role to play. And together, they make Earth the perfect place for life.

Let's go on a journey to the centre of the Earth.

We'll start where we live – on the outermost layer – called the **crust**.

The Crust – Earth's Living Blanket

The **crust** is where all living things exist. It includes the continents, oceans, soil, rocks, and mountains. But did you know the crust is only about **5 to 70 kilometres thick**? That's like the skin on an apple – so thin compared to the whole planet!



The crust is made of many types of **rocks** – igneous, sedimentary, and metamorphic – and is broken into **tectonic plates**. These plates float slowly on the layer beneath and sometimes bump into each other, causing **earthquakes** or forming mountains.

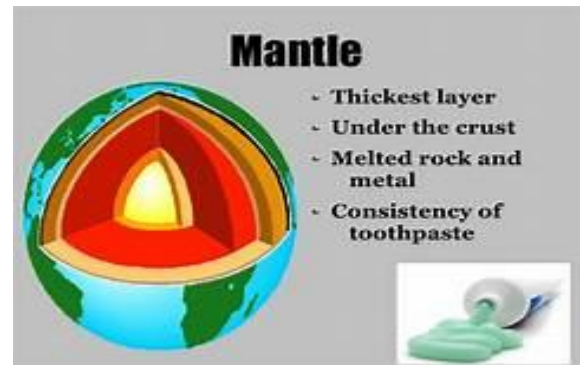
God made the crust to hold forests, lakes, animals, and people. It holds the soil we plant seeds in, the water we drink, and the land we build homes on. The crust is the **stage** for life – and it's also our **responsibility** to care for it.

The Mantle – Earth’s Moving Middle

Beneath the crust is the **mantle**. This is the thickest layer – making up about **84% of Earth’s volume**. The mantle is **solid rock**, but it’s not like the crust. It’s so hot that it **flows slowly**, like very thick syrup. Scientists call this **plasticity** – a state between solid and liquid.

The mantle is made of **silicate minerals** rich in iron and magnesium. It moves very slowly. This movement is important. It **pushes** the crust above, causing **continental drift** and **volcanic activity**.

God didn’t just create the outside of the Earth to be beautiful. He designed the inside to be **active**, like a gentle engine that helps shape mountains, valleys, and even new land. The mantle is a reminder that God’s world is **alive with motion** and not just sitting still.



The Outer Core – A Liquid Shield

Now we go deeper – to the **outer core**, about **2,900 kilometres** beneath the surface. Here, things get very interesting.

The outer core is made mostly of **molten iron and nickel** – that means metal that’s so hot it has melted into liquid! The temperature here can reach up to **5,500°C**. That’s as hot as the surface of the sun.

And here’s the amazing part: as the liquid metal in the outer core moves, it creates **Earth’s magnetic field**. This invisible shield protects our planet from the **solar wind** – dangerous charged particles that come from the sun. Without the magnetic field, life on Earth would be in serious trouble.

God gave the outer core this job. It doesn’t look pretty – it’s not full of flowers or forests. But it’s **vital**. Just like every part of the body has a role, every layer of the Earth has a purpose.

The Inner Core – Earth’s Fiery Heart

Finally, we reach the very centre: the **inner core**. It’s a **solid ball of iron and nickel**, even though it’s hotter than the outer core – maybe up to **6,000°C**!

Why doesn’t it melt? Because the pressure is so intense – thousands of kilometres of rock press down on it. The atoms are squeezed tightly together, keeping it solid.

The inner core is about **1,200 kilometres across** – roughly the size of the moon. It helps balance Earth’s rotation and may even play a role in the magnetic field’s behaviour.

The inner core is like the **anchor** of the Earth. Even though we can’t see it or touch it, it helps keep the whole planet functioning smoothly.

God's Order in Earth's Design

Now let's look at the big picture. The Earth has:

- A **crust** for living and growing.
- A **mantle** that moves and recycles rock.
- An **outer core** that protects us from space danger.
- An **inner core** that anchors it all.

It's like a four-layered machine – each part in the right place, doing the right job. Scientists spend their whole lives studying this system – and still don't know everything.

But we do know this: the Earth was not a cosmic accident. It was **ordered, designed, and balanced** by a wise and loving Creator. Each layer reveals God's attention to **detail, purpose, and function**.

Digging Deeper – The Tools of Science

You might be wondering: How do we know all this? No one has ever drilled to the centre of the Earth!

That's true. But scientists use clues from **earthquakes** (called **seismic waves**) to study the inside of the Earth. These waves behave differently when they move through solids or liquids. Like listening to a knock on a wall to find a hollow space, geologists "listen" to the Earth to discover what's inside.

They also study **volcanoes, rock layers, and mineral samples**. Over time, all these observations have helped create a model of the Earth's layers.

When we build models or draw diagrams, we're copying the idea of God's **design**. And when we study the Earth, we're exploring the mind of its Maker.

A Family Hike and a Discovery

Let's imagine a story now. The Smith family is out hiking through a rocky gorge. The sun is shining, and the kids are excited. They've brought a magnifying glass, some snacks, and their science notebooks.

As they walk along a path, they spot layers of coloured rock on the cliffside – orange, red, brown, grey.

"Dad," says Anna, "are those Earth's layers?"

"Good question," says Dad. "Those are layers in the **crust**, formed by rock types laid down over time."

"So, the crust has its own layers too?" asks Max, her younger brother.

"Yes!" says Mum. "And underneath those layers are the mantle, the core, and more."

They sit down for lunch on a boulder. Anna opens her notebook and starts sketching a model of the Earth.

"What would happen," she wonders, "if God forgot to make the inner core?"



Her dad smiles. “We’d be in big trouble! But God doesn’t forget things. He’s a builder who finishes what He starts.”

They pray together, thanking God for making the Earth so carefully. Anna writes in her journal:

“Today I learned that God didn’t just make the mountains and rivers. He made what’s inside the Earth too. And it all works together like a big puzzle.”

What the Earth Teaches Us

The Earth’s layers teach us many things:

- **God loves order**, not chaos.
- **Every part has a role**, even the hidden ones.
- **Design and purpose** go all the way to the core.

And just like the Earth has structure inside, we can build our own lives with structure too. We can learn routines, care for creation, and live in ways that reflect God’s wisdom.

So next time you dig in the dirt, climb a hill, or see a volcano in a book – remember: there’s more under your feet than you think.

God’s orderliness goes all the way to the centre.

C) Narration

Parent/Tutor Says:

“Now it’s your turn! Can you tell me what you remember from the story? What are the names of the Earth’s layers? What are they made of? Why did God design them this way?”

Prompt gently as needed:

- “Which layer do we walk on?”
 - “Which layer helps protect us from space rays?”
 - “Why do you think the Earth has an inner core?”
-

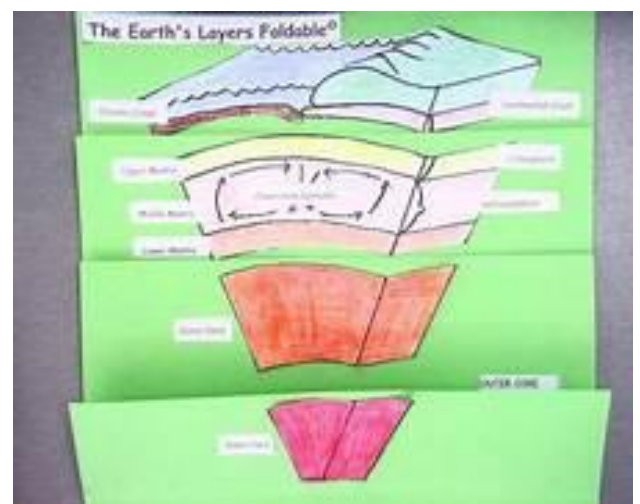
D) Teaching Skills

Parent/Tutor Explains:

“To understand Earth’s layers, scientists build **models**. A model shows what something looks like when we can’t see it directly. Since we can’t dig to the centre of the Earth, we make models to help us imagine and explain it.”

Show a diagram or cross-section image of Earth’s layers. Teach the idea of **visual models** and how different materials can be used to represent the different layers.

For older students, introduce the idea of **investigating how structures affect function**. Ask:



- “What would happen if the mantle didn’t move slowly?”
 - “Why is it important that the outer core moves to make a magnetic field?”
-

E) Thinking Questions

Foundations to Year 2:

1. What is the name of the layer we live on?
2. Which part of the Earth is the hottest?
3. Why do you think God made the Earth with different layers?
4. What do you think would happen if the Earth had no core?

Years 3 & 4:

1. What are the four main layers of the Earth in order?
2. What materials make up each layer?
3. Why is the mantle important for the crust above it?
4. How does the outer core help keep life safe on Earth?
5. What does this ordered design teach us about God?

Years 5 & 6:

1. Why is the inner core solid even though it’s so hot?
 2. What does the magnetic field do for Earth and why does it matter?
 3. How might Earth’s layered structure relate to designing strong buildings or machines?
 4. How does studying the Earth’s layers grow our appreciation for scientific design?
 5. How can you be more orderly in the way you care for God’s creation?
-

F) Practical Activities

Foundations to Year 2:

Activity Option 1: Make a layered playdough model of the Earth using four colours. Cut in half to see the layers.

Activity Option 2: Use coloured paper to build a flap-book showing crust, mantle, outer core, inner core with labels.

Years 3 & 4:

Activity Option 1: Use coloured paper to build a flap-book showing crust, mantle, outer core, inner core with labels and short descriptions.

Activity Option 2: Use a printed diagram to colour and label Earth’s layers and write a short paragraph explaining each part.

Activity Option 3: Build a 3D Earth cross-section using papier-mâché, balloons, or foam layers. Paint and label.

Years 5 & 6:

Activity Option 1: Design and present a visual model showing how the movement of the mantle causes tectonic plates to shift. Use clay or cardboard layers.

Activity Option 2: Write a report comparing Earth’s layer structure to engineered systems (like a building or machine), explaining how structure supports function.

G) Optional Extension Research Activity

Students (Years 3–6) can choose one of the following:

- Research and report on **how volcanoes give clues about Earth’s mantle and core.**
 - Create a short digital presentation or poster on **how scientists use seismic waves to understand Earth’s internal structure.**
 - Compare Earth’s layers to the internal structure of another planet (e.g., Mars or Jupiter).
-

H) Biblical Connection & Wrap-Up

Read Aloud Isaiah 45:12: “I made the earth and created mankind upon it.”

Parent/Tutor Says:

“God made the Earth with perfect order – from the inside out. Each layer supports life and shows us God’s amazing wisdom. The same God who made the Earth made you – carefully and with purpose. We can reflect His orderliness in how we learn, clean, build, and live.”

Reflection Questions:

- How can we reflect God’s order in our daily lives?
 - What does the Earth’s structure show us about God’s power and care?
-

Australian Curriculum (v9) Content Descriptions Addressed in this Lesson

FOUNDATIONS – YEAR 2

Code	Full Description	Justification
AC9SFH01	Explore the ways people make and use observations and questions to learn about the natural world.	Students observe images/models of Earth’s interior and talk about what they notice and wonder.
AC9SI103	Make and record observations, including informal measurements, using tools and digital media where appropriate.	Students observe the Earth layer model and may draw, label, or describe what they see in words or pictures.
AC9TDE2P01	Generate and communicate design ideas through drawing or modelling.	Students build a simple Earth model (e.g., coloured dough layers) showing crust, mantle, and core.
AC9TDE2P02	Use materials, components, tools and techniques to safely make designed solutions.	The model-making activity requires safe handling of materials and following steps.

YEARS 3 – 4

Code	Full Description	Justification
AC9S3I04	Construct and use visual or physical models to identify patterns, relationships and features.	Students construct a cross-section model showing distinct Earth layers and their relative order.
AC9S4I01	Pose questions and make predictions and observations when investigating natural features.	Students discuss why layers differ, what each layer does, and record observations from the demonstration/model.
AC9TDE4P02	Generate and communicate design ideas and decisions using appropriate visual representation techniques.	Students communicate understanding through labelled diagrams, cross-sections, or posters.
AC9TDE4P03	Select and use materials, components, tools and equipment to safely make designed solutions.	Students choose materials (e.g., paper, clay, plasticine) and construct the Earth layer model, using tools safely.

YEARS 5 – 6

Code	Full Description	Justification
AC9S5I04	Construct and use visual or physical models to describe patterns and relationships.	Students create more accurate or scaled representations of Earth’s interior structure.
AC9S5H02	Investigate how scientific knowledge is used by individuals and communities to inform decisions.	Lesson discussion connects geological knowledge to building safety, mining awareness, and earth science study.
AC9TDE6K01	Explain how sustainability and human needs influence design of environments and systems.	Students reflect on how understanding Earth’s structure influences resource use (metals, minerals, geothermal energy) and stewardship.
AC9TDE6P03	Select and use suitable materials, tools, equipment and techniques to safely make designed solutions.	Older students plan and build a layered cross-section model with attention to accuracy, safety, and clean construction techniques.

Lesson 10: Types of Rocks and Minerals

Theme: God's Order in Building Blocks of the Earth

Character Trait: Orderliness

Learning Objectives

By the end of this lesson, students will:

- Identify and describe the three main types of rocks: igneous, sedimentary, and metamorphic.
 - Understand how different rocks are formed and how they relate to the rock cycle.
 - Explore the physical properties and uses of natural materials like minerals.
 - Develop observation and classification skills in geology.
 - Reflect on God's orderly design in the Earth's structure and relate it to character growth.
-

A) Introduction

Parent/Tutor Says:

"Today we're going to learn about the different types of rocks and how God created them with purpose and order. Rocks may seem simple, but they are part of a larger system God designed to support life on Earth. Let's start with some key words so we can understand our story better."

Key Vocabulary:

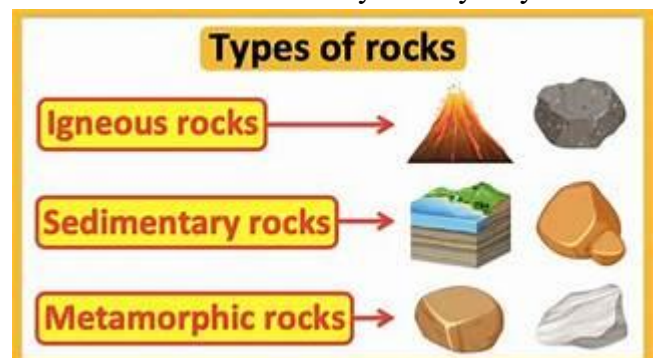
- **Igneous rock:** Rock formed from cooled magma or lava.
 - **Sedimentary rock:** Rock formed from layers of sediments.
 - **Metamorphic rock:** Rock that has changed form due to heat and pressure.
 - **Minerals:** Natural substances that make up rocks.
 - **Rock cycle:** The process of rock formation and transformation over time.
-

B) Informational Story: "The Secret Life of Rocks"

Have you ever noticed how different rocks are from each other? Some are rough, some are shiny, and some look like they've been squished into layers. These rocks aren't just lying around for no reason – they are part of something much bigger: God's amazing design for the Earth.

Let's start at the beginning. Genesis tells us that God created the Earth, and everything in it. In 1 Samuel 2:2, the Bible says, "There is no rock like our God." Rocks remind us of God's strength and reliability. And when we look at the science behind rocks, we can see that He also made them in a very orderly way.

There are three main types of rocks: igneous, sedimentary, and metamorphic. Each one forms differently, but they're all part of a continuous cycle – the rock cycle. This is the way rocks are broken down, changed, and remade over time.



Igneous Rocks These are the “born in fire” rocks. Igneous rocks form when hot, melted rock from inside the Earth (called magma or lava) cools down and hardens. If the magma cools underground, it forms rocks like granite. If it erupts from a volcano and cools quickly above ground, it forms rocks like basalt or pumice.

You might be surprised to learn that the land under our feet is often made of igneous rocks! They are strong, durable, and beautiful. Some have large crystals inside them, which form when they cool slowly underground.



Sedimentary Rocks These are the “storytelling” rocks. Sedimentary rocks are formed from layers of small pieces – called sediments. These pieces can be sand, mud, shells, or even bits of other rocks. Water, wind, and ice move these sediments around until they settle in layers. Over a long time, the layers get pressed together and harden into rock.

You can often see the layers in these rocks, like stripes in a pancake stack. Fossils are usually found in sedimentary rocks because the gentle layering preserves plants and animals.

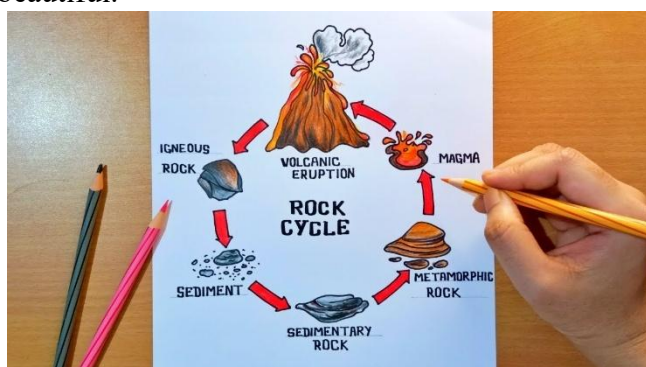
Examples of sedimentary rocks include sandstone, shale, and limestone. These rocks are used to build things, make cement, and tell us the history of life on Earth.

Metamorphic Rocks These are the “changed” rocks. Metamorphic rocks form when existing rocks are changed by heat and pressure deep underground. The word “metamorphosis” means change – and that’s exactly what happens.

For example, limestone can turn into marble, and shale can become slate. These rocks are often very hard and beautiful. Marble is used in statues and buildings. Slate is used for roofs and tiles.



When we look at metamorphic rocks, we remember that even when things are under pressure or change, God is still at work – making something strong and beautiful.



The Rock Cycle These three types of rocks don’t stay the same forever. Through heat, pressure, weathering, and erosion, rocks can change type. Igneous rocks can become sedimentary. Sedimentary rocks can become metamorphic. Metamorphic rocks can melt into magma and become igneous again. It’s a never-ending, orderly cycle.

Just like our lives go through seasons of change, the Earth’s rocks are always being reshaped and renewed. God made a world where everything has a process and a place.

What Are Minerals? Minerals are the tiny building blocks of rocks. A rock is made of one or more minerals. You can think of it like a cookie – cookies are made from ingredients like sugar and flour. Rocks are made of minerals like quartz, mica, and feldspar.

Each mineral has its own properties. Some are shiny, some are rough, some are very hard. Scientists can test minerals to identify them – by checking hardness, streak (the colour of powder it leaves behind), and how it breaks.

Some minerals are used in jewellery, like diamonds and rubies. Others are used in tools, glass, and even the screen on your computer. God gave us minerals not just for beauty, but also for purpose.

Rocks in Everyday Life We build with them, decorate with them, and even study them to understand Earth's past. Bricks, roads, pavements, countertops – all come from rocks and minerals.

God didn't make random things – He made useful, beautiful, and strong materials. He filled the Earth with everything we need to live and learn.

And what do rocks teach us about God?

- God is our Rock – strong, unchanging, and reliable.
- He works through pressure and time to make things better.
- He made a world full of order, not confusion.

So next time you pick up a rock or see a mountain, remember: it's not just a lump of stone. It's part of God's great plan – designed with care, formed through time, and built to last.

C) Narration

Parent/Tutor Says:

“Can you tell me what you remember from the story? What are the three types of rocks? How are they formed? What do rocks teach us about God's order and strength?”

Encourage students to explain the rock types and the process of transformation between them. Guide them with prompts if needed.

D) Teaching Skills

Parent/Tutor Says:

“Now let's learn a science skill: how to observe and classify rocks. When scientists study rocks, they look at colour, hardness, layers, grain, and what the rock is made of. This helps us identify if a rock is igneous, sedimentary, or metamorphic. If you were a rock-scientist (geologist) trying to understand rocks, what questions would you like to find the answers for? What would you like to know or find out through observation and experiments?”

Activity:

- Give students a few rock samples or pictures.
 - Help them create a simple chart with categories like: Colour | Texture | Layers | Shiny? | Rock Type.
-

E) Thinking Questions

i) Foundations to Year 2

1. What kind of rock comes from volcanoes?
2. What does God teach us through strong rocks?
3. Who made all the rocks and minerals?
4. Which rock type looks like layers?
5. What makes something orderly?

ii) Years 3 & 4

1. How does each type of rock form?
2. What is a mineral, and how is it different from a rock?
3. Why do you think God used different ways to make rocks?
4. How does the rock cycle show change over time?
5. What do rocks teach us about God's character?

iii) Years 5 & 6

1. What physical processes cause rocks to change type?
 2. How does sediment become stone in sedimentary rock?
 3. Describe the journey of a rock from magma to metamorphic.
 4. How are minerals used in everyday life?
 5. In what way is God like a rock?
-

F) Practical Activities

Foundations to Year 2

1. **Rock Painting** – Paint a rock to represent one of the types.
2. **Rock Sorting** – Use texture, colour, or size to sort rocks into groups.

Years 3 & 4

1. **Sugar Cube Sedimentary Rock** – Press sugar cubes into layers with water and observe how they hold shape.
2. **Rock Cycle Wheel** – Make a paper wheel showing rock types and transitions.

Years 5 & 6

1. **Rock Lab Investigation** – Examine real rock samples, record observations, classify types.
 2. **Create a Rock Cycle Comic** – Use narrative and images to show a rock's journey through the cycle.
-

G) Optional Extension Research Activity

- Research one famous rock landmark (e.g., Uluru, Giant's Causeway).
 - What kind of rock is it made of? How was it formed?
 - How does it show God's creativity and order?
-

H) Biblical Connection & Wrap-up

Verse: 1 Samuel 2:2 – “There is no rock like our God.”

Parent/Tutor Says:

“Rocks help us understand that God is strong, steady, and full of order. He didn’t just make the Earth from the outside – He made it perfectly from the inside out, with layers and cycles and systems. Let’s thank Him for His wisdom in creation and ask Him to help us build strong lives based on His truth.”

Prayer: “Dear God, thank You for being our Rock. Help us to see Your order in creation and to live in an orderly way that pleases You. Amen.”

Australian Curriculum (v9) Content Descriptions Addressed in This Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification
AC9SFU03	Recognise that objects can be composed of different materials and describe the observable properties of these materials.	Students examine and describe rocks using observable features (colour, texture, size, appearance).
AC9SFH01	Explore the ways people make and use observations and questions to learn about the natural world.	Students look closely at rocks, ask questions, and talk about similarities and differences.
AC9SI103	Make and record observations, including informal measurements, using tools as appropriate.	Students record what they see by drawing, listing or verbally describing rock features.
AC9TDE2P01	Generate and communicate design ideas through drawing or modelling.	Students create simple visual representations, such as a rock sorting chart or labelled drawing.
AC9TDE2P02	Use materials, components, tools and techniques to safely make designed solutions.	Students handle real rocks and basic tools safely (e.g., magnifier, tray, plastic containers).

YEARS 3 – 4

Code	Full Description	Justification
AC9S3U02	Compare the observable properties of soils, rocks and minerals and investigate why they are important Earth resources.	Students identify and compare properties of different rocks and learn that minerals are used for practical purposes.
AC9S3I04	Construct and use visual or physical models to organise data and identify patterns.	Students sort and classify rocks using tables, grouping charts or labelled diagrams.
AC9S4H01	Examine how people use data to develop scientific explanations.	Students learn how scientists classify rocks based on repeated observable patterns (grain, hardness, layers).
AC9TDE4P02	Generate and communicate design ideas and decisions using graphical representation techniques.	Students create a classification poster or diagram clearly communicating groupings.
AC9TDE4P03	Select and use materials, components, tools and equipment to safely make designed solutions.	Students handle rocks, magnifiers and sorting materials safely when constructing the comparison chart or display.

YEARS 5 – 6

Code	Full Description	Justification
AC9S6U03	Investigate physical processes, such as weathering and erosion, that change Earth’s surface over time.	Students learn how rocks change through heat, pressure and weathering when discussing igneous, sedimentary and metamorphic rock formation.
AC9S5I04	Construct and use visual or physical models to describe patterns and relationships.	Students create rock cycle diagrams showing transformation between rock types.

Code	Full Description	Justification
AC9S5H02	Investigate how scientific knowledge is used by individuals and communities to inform decisions.	Students learn how rock knowledge informs building, land use, and responsible resource use.
AC9TDE6K01	Explain how sustainability and human needs influence design of environments and systems.	Discussion touches on how mining and resource use must be balanced with environmental care.
AC9TDE6P03	Select and use suitable materials, tools and techniques to safely make designed solutions.	Students may build a 3-part rock cycle model, requiring appropriate material selection and safe construction steps.

Lesson 11: Soil and Its Importance

Theme: God Brings Life from the Ground Up

Character Trait: Orderliness

Learning Objectives

By the end of this lesson, students will:

- Understand what soil is made of and why it is essential for life.
 - Identify and describe the layers of soil and their functions.
 - Explore how soil supports life through structure and nutrient cycling.
 - Reflect on the biblical truth that God created people from the dust of the ground.
 - Practice observing, investigating, and constructing soil models.
-

A) Introduction

Parent/Tutor Says:

"Today we're going to learn about something we walk on every day – soil! It might look like ordinary dirt, but soil is one of God's most amazing inventions. It supports all plant life, filters water, and even helps us grow food. God created the Earth with perfect order – even in the ground beneath our feet."

Key Vocabulary:

- **Soil:** A mix of broken rock, decayed plants and animals, water, and air.
 - **Topsoil:** The top layer of soil, rich in nutrients.
 - **Subsoil:** The layer beneath topsoil, less rich in organic material.
 - **Bedrock:** Hard rock beneath the soil layers.
 - **Decompose:** To break down into simpler parts.
 - **Nutrient:** A substance that provides nourishment for growth.
 - **Percolate:** To pass through a porous substance or small holes.
 - **Organic matter:** Material from living things that has broken down.
-

B) Informational Story: "The Ground Beneath Our Feet"

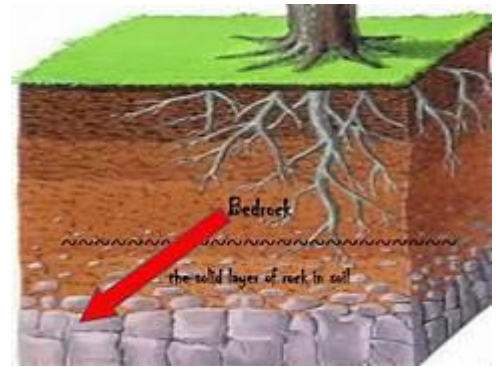
We walk on it every day. We dig in it, grow plants in it, and sometimes even get it on our clothes. What is it? Soil!

Soil might look like plain brown dirt, but it's a rich, complex world under our feet. It's a mixture of tiny pieces of rock, decayed plants and animals, water, air, and living organisms. Soil is alive – and without it, life on Earth couldn't exist.

Let's begin with where soil comes from. Soil forms when rocks slowly break down through a process called weathering. Wind, rain, ice, and temperature changes cause large rocks to crack, chip, and crumble into tiny grains. This is just the beginning. As time passes, dead plants and animals add nutrients to the mix. Worms, beetles, fungi, and bacteria help break this material down further, turning it into what we call humus – rich, dark organic matter.

Over many years, this blend of mineral particles and organic matter becomes soil. But not all soil is the same. Soil comes in layers, each with its own role in supporting life:

1. **Topsoil:** This dark, soft layer is full of nutrients and living things like worms and microbes. It's where seeds sprout and roots take hold. It's also the most fragile layer – easily lost if not cared for.
2. **Subsoil:** Below the topsoil, this layer is lighter in colour and has fewer nutrients. It stores water and minerals that plant roots may reach.
3. **Parent Material:** A mix of broken-down rock pieces and minerals.
4. **Bedrock:** A solid layer of rock deep underground that slowly weathers to form the layers above.



Soil is God's design for life to flourish. God didn't just make random dirt. He created a system where each part has purpose. Soil holds plant roots in place, stores water, and provides nutrients. It even acts like a sponge, soaking up rainfall and filtering it so it can return clean to rivers, lakes, or underground reservoirs.

Without healthy soil, our world would look very different. No soil would mean no crops, no grasslands, no forests, and very few animals. Humans rely on soil for food, clothing (like cotton), and shelter (like clay bricks). Even today, scientists are still discovering how tiny soil creatures impact plant growth, fight disease, and keep the Earth in balance.

And what does the Bible say? In Genesis 2:7, we read, "Then the Lord God formed man from the dust of the ground." God chose to create us from soil – linking human life forever with the earth beneath us. It's a humbling and beautiful reminder.

Just as soil can look messy and broken but still support amazing life, God brings order and purpose out of the messy places in our lives. He turns dust into design, brokenness into beauty.

C) Narration

Parent/Tutor Says:

"Can you tell me what you remember from the story? What is soil made of? Why is it important? What did the Bible say about God making people from the ground?"

Let your child retell the story in their own words. Prompt if needed: "What are the layers of soil?" "How does soil help plants?"

D) Teaching Skills

Parent/Tutor Says:

"Before we explore activities and answer questions, let's learn two important skills: observing soil closely, and recording changes we see."

- Teach students how to observe soil texture, colour, and contents (sand, silt, clay, organic matter).
- Introduce the use of magnifying glasses to look at tiny parts of soil.
- Teach how to pour water gently over soil and watch how quickly it soaks in (percolation test).
- Practice recording data with words, drawings, or charts.

Older students can also:

- Compare soils from two locations and create a comparison chart.
 - Predict how different soil types might affect plant growth.
-

E) Thinking Questions

i) Foundations to Year 2

1. What is soil made from?
2. Why do plants need soil?
3. Who made soil?
4. What do worms and bugs do in the soil?
5. How can you help keep things clean and orderly like soil helps the Earth?

ii) Years 3 & 4

1. What are the layers of soil called?
2. How does soil bring order to the ground?
3. Why is topsoil the best layer for plants?
4. What does it mean that God made people from the dust?
5. How can you be like soil – helping life grow around you?

iii) Years 5 & 6

1. How is soil made over time?
 2. What role does order play in how soil supports life?
 3. How does the Bible connect soil with people and life?
 4. How does the design of soil show God's wisdom and planning?
 5. What's one area of your life where you could "plant better habits" and grow more order?
-

F) Practical Activities

Foundations to Year 2

1. **Soil Sensory Bin** – Sort leaves, sand, soil, and small rocks by feel and color. Talk about what's in each.
2. **Soil Bug Hunt** – Search a patch of ground for worms, ants, beetles. Draw or name what you find.

Years 3 & 4

1. **Soil in a Jar** – Layer soil, sand, gravel, and organic material in a clear jar. Add water. Watch it settle.
2. **Soil Sort Chart** – Look at soil samples from different places. Draw or write what's in each.

Years 5 & 6

1. **Soil Percolation Test** – Compare how fast water drains through different soil types (sand, clay, topsoil).
2. **Design a Soil Infographic** – Use drawings or a digital tool to explain layers, uses, and biblical meaning.

G) Optional Extension Research Activity

- Research the role of decomposers (fungi, worms, bacteria) in the soil cycle.
 - Investigate how soil erosion happens and what humans can do to prevent it. To ‘investigate’ something (like a scientist does), you would need to
 - firstly ‘observe’ soil (gardens, forest, bushland, different landscapes); then ‘think of a question’ – something you want to find out.
 - Then read more about the topic and do more observations.
 - Now think of a possible answer to your question (a ‘hypothesis’).
 - Then design an experiment to test your ‘hypothesis’.
 - Conduct your experiment while measuring and recording what you see happening.
 - Then determine “was my hypothesis (my possible explanation) correct?”
 - If not, then think about another possible explanation that you could test, and do an experiment or observation and record your results/information (ie., data).
 - Watch a short documentary or visit a garden or farm.
-

H) Biblical Connection & Wrap-up

Verse: Genesis 2:7 – “Then the Lord God formed man from the dust of the ground.”

Parent/Tutor Says:

“This verse shows us something beautiful – God used the dust of the ground to form the very first person. It reminds us that we come from the Earth, and God gave us both life and purpose.”

Discuss:

- What does it mean to be made from the dust?
- How does that help us stay humble?
- What are some ways we can care for the soil God gave us?

Prayer: “God, thank You for making the ground that gives us life. Help us care for it and remember that You bring good things from even the smallest, dustiest places. Amen.”

Australian Curriculum (v9) Content Descriptions Addressed in This Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification
AC9SFU03	Recognise that objects can be made of different materials and describe the observable properties of those materials.	Students observe soil samples and describe texture, colour, and composition (e.g., grains, small pieces of organic matter).
AC9SFH01	Explore how people use observations and questions to learn about the natural world.	Students explore soil with curiosity, noticing what soil looks/feels like and wondering what is in it.
AC9SI103	Make and record observations using informal measurements or images.	Students draw, sort, or describe soil samples in their journals.
AC9TDE2P01	Generate and communicate design ideas through drawing or modelling.	Students draw “What soil is made of” diagrams or model a simple soil layer display.
AC9TDE2P02	Use materials and techniques to safely make designed solutions.	Students safely handle soil and basic tools (scoops, containers, magnifiers).

YEARS 3 – 4

Code	Full Description	Justification
AC9S3U02	Compare the observable properties of soils, rocks and minerals and investigate why they are important Earth resources.	Students directly examine soil components and discuss why plants — and therefore people — rely on soil.
AC9S3I04	Construct and use visual or physical representations to organise information and identify patterns.	Students may create a soil composition diagram, layer jar, or comparison chart (sand vs clay vs loam).
AC9S4H01	Examine how people use data to develop scientific explanations.	Students learn how farmers and gardeners use soil knowledge to choose where and how to plant.
AC9TDE4P02	Generate and communicate design ideas with graphical representation techniques.	Students communicate findings in the form of labelled charts or illustrated soil layers.
AC9TDE4P03	Select and use materials and tools to safely make designed solutions.	Students handle soil samples, jars, scoops, and sorting trays safely and appropriately.

YEARS 5 – 6

Code	Full Description	Justification
AC9S6U03	Investigate physical processes, such as weathering and erosion, that change Earth's surface over time.	The lesson includes soil formation from rock weathering and the importance of protecting soil from erosion.
AC9S5I04	Construct and use visual or physical models to describe patterns and relationships.	Students create soil layer diagrams, or model how soil holds or drains water, describing functional differences.
AC9S5H02	Investigate how scientific knowledge is used to make decisions.	Students discuss why caring for soil is essential for farming, food production, and sustainability.
AC9TDE6K01	Explain how people consider sustainability when designing environments and systems.	Students consider how soil is protected, restored, or conserved in gardens and farming systems.
AC9TDE6P03	Select and use materials, tools, and techniques to safely make designed solutions.	Students carry out structured soil testing or build soil conservation demonstration models safely.

Lesson 12: Volcanoes and Earthquakes

Theme: God's Power and Order in Natural Events

Character Trait: Orderliness

Learning Objectives

By the end of this lesson, students will:

- Understand how earthquakes and volcanoes are caused by movement in the Earth's crust.
 - Describe the structure of the Earth and how its layers interact.
 - Identify how God's power and order are shown in the natural processes of the Earth.
 - Develop scientific observation and explanation skills using models and experiments.
 - Reflect on God's control and presence even in powerful natural events.
-

A) Introduction

Parent/Tutor Says:

"Have you ever felt the ground shake or seen video of lava bursting from a volcano? These events are powerful reminders of how amazing and active God's creation is. Today we'll learn what causes these events, how they help the Earth, and how even these powerful forces follow the order God created."

Key Vocabulary:

- **Tectonic plates:** Huge sections of Earth's crust that move slowly.
 - **Magma:** Melted rock beneath the Earth's surface.
 - **Lava:** Magma that has reached the surface.
 - **Crust:** The Earth's outer layer.
 - **Mantle:** The layer beneath the crust where magma forms.
 - **Volcano:** An opening in the Earth's surface that allows lava, ash, and gases to escape.
 - **Earthquake:** The shaking of the ground due to movement of tectonic plates.
 - **Fault line:** A crack where plates meet and earthquakes may happen.
-

B) Informational Story: "When the Earth Rumbles"

One afternoon, Daniel was building a tower with wooden blocks when the ground gave a sudden shake. His blocks tumbled down. "Whoa!" he cried. "Was that an earthquake?"

His mum smiled gently. "Yes, just a little one. But even a little shake reminds us how powerful God made the Earth."

Daniel had always been curious about the world, and now his curiosity had been shaken wide open. "Why does the Earth move?" he asked.

His mum pulled out a globe and a diagram. "Our planet isn't just a big solid ball. It's like a giant layered cake. The outside layer is called the crust. It's made of huge slabs called tectonic plates, and they move slowly – about as fast as your fingernails grow."

“But if they move so slowly,” Daniel asked, “why do they make earthquakes?”

“Great question,” said Mum. “The plates sometimes push against each other, or slide past. They get stuck, and pressure builds. When the pressure gets too strong – SNAP! The plates suddenly move, and that movement causes the ground to shake. That’s an earthquake.”

Daniel looked wide-eyed. “So, the Earth is alive?”

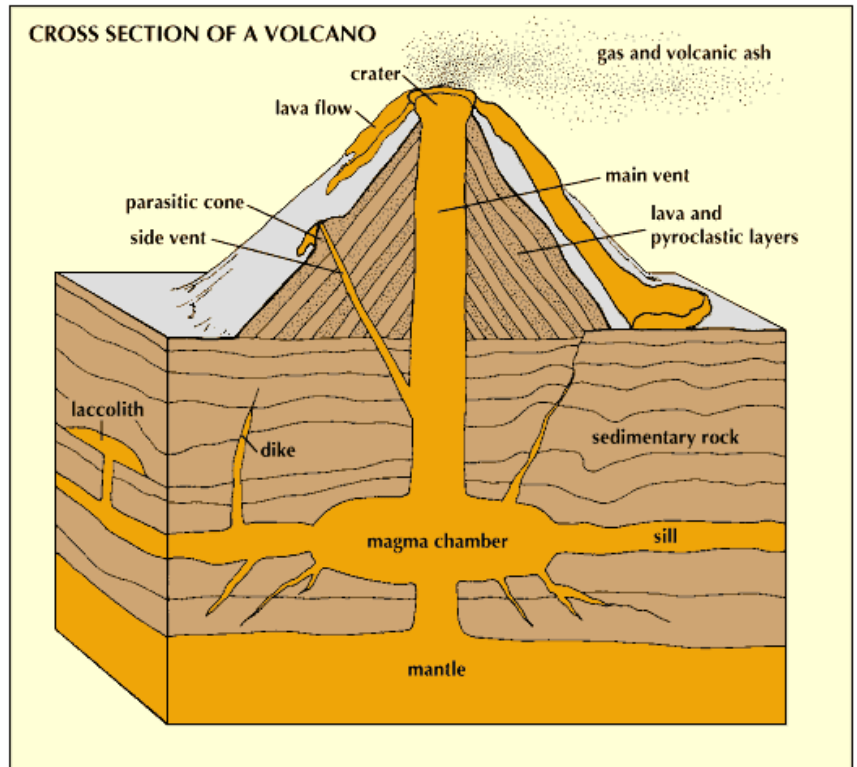
“In a way, yes,” said Mum. “It doesn’t breathe like people, but it changes and moves. That’s part of God’s order. He made a world that isn’t frozen in place, but active and renewing.”

Later that week, they studied volcanoes.

Mum showed Daniel a video of lava flowing from a volcano. “Volcanoes form when magma from the mantle builds up under the crust. When there’s too much pressure, it finds a way out – through a volcano!”

Daniel watched the glowing lava pour down the mountain. “Isn’t that dangerous?”

“Sometimes, yes. Volcanoes are part of how the Earth grows and changes. The lava cools into new rock. Some islands, like Hawaii, were formed completely from volcanoes. Even though they seem wild, they follow rules and patterns that God set in motion.”



Daniel remembered a Bible verse they had read: *Psalm 104:32* “He looks at the earth, and it trembles.”

He thought about how powerful God must be. “So even earthquakes and volcanoes obey God?”

Mum nodded. “Exactly. He knows every layer, every shake, every burst of lava. He isn’t surprised by these things. He created the world to change, but also to stay in balance. That’s real orderliness.”

Daniel smiled. “I guess even if things shake, I can trust that God is in control.”

Mum hugged him. “Yes, and when you build your life on God’s Word, it’s like building on solid rock.”

C) Narration

Parent/Tutor Says:

“Now it’s your turn! Can you tell me what you remember from the story? What causes earthquakes and volcanoes? Why do they happen? How do they show us God’s order?”

Encourage your child to explain tectonic plates, magma, eruptions, and how God uses these powerful events in orderly ways.

D) Teaching Skills

Parent/Tutor Says:

“Let’s practise a few science skills today: building models, making predictions, and recording observations.”

- Teach how to use diagrams to show Earth’s layers.
 - Show a simple plate tectonics demonstration with crackers on peanut butter to mimic plates moving.
 - Model safe observation and cause-effect recording using a volcano experiment.
 - For older students: use charts to compare types of volcanoes or earthquake intensity scales.
-

E) Thinking Questions

i) Foundations to Year 2

1. What comes out of a volcano?
2. What makes the ground shake?
3. Who made the Earth and all its parts?
4. Are volcanoes and earthquakes part of God’s plan?
5. How can you stay calm and orderly when things feel wild?

ii) Years 3 & 4

1. What are tectonic plates?
2. Why do volcanoes erupt?
3. How do earthquakes happen?
4. What does it mean that God is in control, even when the Earth shakes?
5. How can we follow God's example of order when things feel uncertain?

iii) Years 5 & 6

1. How does plate movement show that Earth is active and alive?
 2. Why do volcanoes and earthquakes reveal both God’s power and His order?
 3. What’s something in your life that feels like it’s “shaking” – and how can you trust God in it?
 4. What does Psalm 104:32 teach us about God's control over nature?
 5. How can we reflect God's orderliness, even in unpredictable situations?
-

F) Practical Activities

Foundations to Year 2

1. **Paper Plate Earthquake** – Stack blocks or small boxes and shake a tray gently. Watch what happens.
2. **Paint a Volcano** – Create a colourful volcano picture and label magma, lava, and ash.

Years 3 & 4

1. **Cracker Plate Tectonics** – Use two crackers on peanut butter to model plate movement (collide, slide, pull apart).

2. **Simple Model Volcano** – Build a volcano with playdough. Pour in baking soda and vinegar to make it erupt.

Years 5 & 6

1. **Seismograph Craft** – Build a basic seismograph using a hanging marker over paper on a tray. Shake the tray.
2. **Map of Earthquake Zones** – Use an atlas or online map to locate real earthquake and volcano zones.

G) Optional Extension Research Activity

- Research famous volcanoes (like Mount Vesuvius or Mauna Loa).
- Watch a documentary or time-lapse of a volcanic eruption.
- Interview a geologist (or read a book) about earthquakes.

H) Biblical Connection & Wrap-up

Verse: Psalm 104:32 – “He looks at the earth, and it trembles.”

Parent/Tutor Says:

“This verse reminds us that even the most powerful forces on Earth are under God's rule. He created the Earth with balance, power, and purpose. We don't have to be afraid because nothing is outside His care.”

Discuss:

- What helps you remember God is in control when life feels shaky?
- What's one way you can stay calm and trust Him during surprises or changes?

Prayer: “Lord, thank You for the world You created with power and beauty. Help us trust You when life feels uncertain. Help us build our lives on You, our solid rock. Amen.”

Australian Curriculum (v9) Content Descriptions Addressed in This Lesson

FOUNDATION – YEAR 2

Code	Full Description	Justification
AC9SFU03	Recognise that objects can be composed of different materials and describe observable properties of those materials.	Students observe rocks formed from eruptions (lava rock, pumice) and describe texture and hardness.
AC9SFH01	Explore the ways people make and use observations and questions to learn about the natural world.	Students discuss what they see in volcano images, videos, or teacher demonstration, and ask simple questions.
AC9SI103	Make and record observations using informal measurements and tools as appropriate.	Students draw or describe what happens when a volcano erupts, based on observation.
AC9TDE2P01	Generate and communicate design ideas through drawing or modelling.	Students may create a simple volcano model (drawn or shaped) to show lava flow.
AC9TDE2P02	Use materials and techniques to safely make designed solutions.	Students use safe materials to construct a simple demonstration model (e.g., paper cone volcano).

YEARS 3 – 4

Code	Full Description	Justification
AC9S3U02	Compare observable properties of rocks and examine why they are important Earth resources.	The lesson explains how heat and pressure change rock and create new rock types during eruptions.
AC9S4U02	Describe how natural processes and human activity can cause changes to Earth's surface.	Earthquakes and volcanoes are explicitly presented as natural processes that reshape land.
AC9S3I04	Construct and use visual or physical models to show patterns and relationships.	Students create volcano models or labeled diagrams showing magma–lava–crust relationships.
AC9TDE4P02	Generate and communicate design ideas using graphical representation techniques.	Students draw diagrams or labelled cross-sections of volcano structure.
AC9TDE4P03	Select and use materials and equipment to safely make designed solutions.	Students safely handle materials during a volcano demonstration (vinegar/bicarb or model clay).

YEARS 5 – 6

Code	Full Description	Justification
AC9S6U03	Investigate physical processes, such as weathering, erosion, and plate movement, that change Earth's surface over time.	The lesson directly teaches plate movement, eruptions, and earthquake-caused landform changes.
AC9S5H02	Investigate how scientific knowledge informs decisions.	Students discuss how communities prepare for volcanic and earthquake risk.
AC9S5I04	Construct and use visual or physical models to describe patterns and relationships.	Students create tectonic plate models, rock cycle additions, or seismic wave diagrams.
AC9TDE6K01	Explain how sustainability and human needs influence design of environments and systems.	When discussing settlement near volcanoes and earthquake zones, students consider risk, agriculture benefits, and safety.
AC9TDE6P03	Select and use suitable materials, tools, equipment and techniques to safely make designed solutions.	Students handle materials for a more detailed model — layered cross-section volcano or tectonic plate demonstration.

Bonus Optional Lesson:

Today could be used for Field Trips or a Homeschool Co-op Group; or if you are at home then you might try this fun wrap-up of the week.

Geology Fun Quiz – God’s Order in the Earth

Covers Lessons 9–12 | Grades 1–6

Theme: God brings order from the inside out!

You can do this quiz aloud as a review game, assign it in writing, or turn it into a family competition.

Lesson 9: Earth’s Layers

1. What are the four main layers of the Earth, starting from the outside?
 2. Which layer do we live on?
 3. What is the hottest layer deep in the centre of the Earth?
 4. What does the mantle do?
 5. How does the Earth’s layered structure show God’s order?
-

Lesson 10: Types of Rocks and Minerals

6. What are the three main types of rocks?
 7. Which type forms from lava or magma?
 8. What kind of rock forms in layers, like pressed-together dirt?
 9. What do we call the tiny parts that make up rocks?
 10. What does it mean that “There is no rock like our God”?
-

Lesson 11: Soil and Its Importance

11. What is soil made of?
 12. Name two things soil helps do.
 13. What is the best top layer of soil called?
 14. Why is soil important for plants and people?
 15. What does Genesis 2:7 say about the dust of the ground?
-

Lesson 12: Volcanoes and Earthquakes

16. What comes out of a volcano?
 17. What causes earthquakes to happen?
 18. What are tectonic plates?
 19. True or False: Earthquakes and volcanoes are random accidents.
 20. What does Psalm 104:32 say about God and the trembling Earth?
-

★ Bonus Round: Match the Bible Verses!

Match the verse to the correct lesson:

A. Isaiah 45:12	1. Types of Rocks and Minerals
B. Genesis 2:7	2. Volcanoes and Earthquakes
C. 1 Samuel 2:2	3. Earth's Layers
D. Psalm 104:32	4. Soil and Its Importance

Answer Key:

A – 3

B – 4

C – 1

D – 2

Optional Scoring & Rewards

- 1 point per correct answer
- 2 bonus points for matching Bible verses
- Reward ideas: earth-tone snacks, a nature walk, a rock-painting craft, or a "Junior Geologist" certificate

SAMPLE EXTRACT ONLY

**(For access to Topics 4 to 8,
please purchase the study guides)**

ASSESSMENT TASKS FOR AUSTRALIAN CURRICULUM ACHIEVEMENT STANDARDS

Foundation – Year 2 Assessment Task

Title: *Creation & Patterns Poster – Caring for God’s World*

Purpose

To show understanding of living things, habitats, observable patterns, and personal responsibility for caring for creation.

Step-by-Step Instructions

Prepare Materials:

- Large sheet of paper or poster board
- Coloured pencils, markers, or crayons
- Glue and scissors (optional for cut-outs)

Step 1: Draw the Pattern of Creation or Natural Order

- Draw **seven sections** for the days of creation OR show **natural patterns** like day/night and seasons.
- Label each section clearly (e.g., “Day 1 – Light and Darkness”).

Step 2: Add Living Things and Habitats

- Draw at least **three living things** (e.g., fish, bird, tree).
- Show where they live (water, sky, land).
- Write one sentence for each: “A fish lives in water.”

Step 3: Show Observable Features

- Add details like feathers, fins, leaves.
- Group similar things together (e.g., birds in the sky).

Step 4: Write About Caring for Creation (HPE Link)

- Write **one sentence** about how you can care for creation (e.g., “I can water plants.”).

Step 5: Share Your Work

- Explain your poster to a parent/tutor:
 - What patterns did you show?
 - How do your drawings show order?
 - How will you care for creation?
-

Foundation – Year 2 Rubric

Criteria	Outstanding (5)	High (4)	Sound (3)	Basic (2)	Limited (1)
Classification & Habitats	Accurately groups multiple plants and animals with clear habitat links	Groups most correctly with minor errors	Groups some correctly; basic habitat mention	Limited grouping; unclear habitat links	Minimal attempt; incorrect or missing
Pattern Representation	Shows clear, ordered patterns (creation days, day/night) with labels	Mostly clear patterns; minor omissions	Basic sequence shown; lacks detail	Sequence unclear or incomplete	No pattern shown
Communication	Uses everyday and scientific vocabulary confidently	Uses some scientific terms correctly	Mostly everyday language; few scientific words	Limited vocabulary; unclear meaning	No relevant vocabulary
Care for Creation Statement (HPE)	Gives thoughtful, practical idea for caring for creation	Gives relevant idea; minor detail missing	Simple idea; lacks explanation	Vague or unrelated idea	No idea given

Years 3–4 Assessment Task

Title: *Ecosystem & Motion Interactive Display*

Purpose

To demonstrate understanding of ecosystems, food chains, forces, and personal responsibility for safety and wellbeing.

Step-by-Step Instructions

Prepare Materials:

- Shoebox or cardboard base
- Paper, glue, scissors
- Small objects or drawings for plants and animals
- Optional: string or arrows for food chain

Step 1: Choose an Ecosystem

- Pick one: forest, ocean, desert, or grassland.
- Write its name at the top of your display.

Step 2: Build the Ecosystem Model

- Place **producers** (plants) at the bottom.
- Add **consumers** (animals) and **decomposers** (worms, fungi).
- Label each clearly.

Step 3: Add a Food Chain Diagram

- Use arrows to show “who eats what.”
- Example: Sun → Plant → Rabbit → Fox.

Step 4: Demonstrate a Force (Science Link)

- Use a small object (toy car or marble).
- Show what happens when you push it gently vs. hard.
- Record what you see in a short note: “Hard push = faster.”

Step 5: Explain Safety & Order (HPE Link)

- Write **one sentence** about how being careful with forces keeps people safe (e.g., “I use gentle pushes so things don’t break.”).

Step 6: Present Your Display

Tell your parent/tutor:

- What is your ecosystem?
 - How do plants and animals depend on each other?
 - What did you learn about forces and safety?
-

Years 3–4 Rubric

Criteria	Outstanding (5)	High (4)	Sound (3)	Basic (2)	Limited (1)
Ecosystem Understanding	Explains roles of producers, consumers, decomposers with accurate food chain	Explains most roles correctly; minor errors	Basic food chain shown; limited explanation	Food chain incomplete or unclear	No food chain or explanation
Force Demonstration	Demonstrates force effect clearly with accurate explanation	Demonstrates force; explanation mostly correct	Demonstrates force; minimal explanation	Attempted demonstration; unclear result	No demonstration
Model/Diagram Quality	Highly organised, labelled, and visually clear	Mostly organised; minor omissions	Basic organisation; some labels missing	Poor organisation; unclear labels	No model or diagram
Scientific Explanation & HPE Link	Connects science to order and personal responsibility for safety	Connects science to order; limited HPE link	Mentions order; vague HPE link	Minimal connection; unclear	No connection made

Years 5–6 Assessment Task

Title: *Order in the Universe Research Project*

Purpose

To show understanding of Earth and space systems, light properties, sustainability, and personal responsibility for health and wellbeing.

Step-by-Step Instructions

Choose a Topic:

- Solar System
- Water Cycle
- Earth's Layers
- Light and Shadows

Step 2: Research and Gather Facts

- Use books or trusted websites.
- Write down **at least 5 key facts** about your topic.

Step 3: Create a Detailed Poster or Slideshow

- Include **diagrams** (e.g., orbit model, water cycle chart).
- Label parts clearly (e.g., Sun, Earth, Moon).

Step 4: Add a Practical Demonstration

Example:

- Show how light reflects using a mirror.
- Model Earth's orbit with a ball and torch.
- Record what happens in a short paragraph.

Step 5: Explain the Order and Why It Matters

Write **200–300 words** explaining:

- How your system shows order.
- Why this order is important for life.

Step 6: Add a Sustainability Action (HPE Link)

- Write **one practical action** you can take (e.g., “I will save water by turning off taps.”).

Step 7: Present Your Work

- Share your poster/slideshow with a parent/tutor.
- Explain your diagrams, experiment, and sustainability idea.

Years 5–6 Rubric

Criteria	Outstanding (5)	High (4)	Sound (3)	Basic (2)	Limited (1)
Scientific Accuracy	Detailed, accurate description of chosen system (solar system, water cycle, etc.)	Mostly accurate; minor errors	Basic description; lacks depth	Limited or unclear description	Incorrect or missing
Representation & Model	Diagrams/models are precise, labelled, and well-presented	Diagrams/models mostly clear; minor omissions	Basic representation; lacks detail	Poorly organised or incomplete	No representation
Investigation & Reflection (HPE)	Insightful explanation of order and sustainability action	Clear explanation; sustainability link present	Basic explanation; vague sustainability link	Minimal explanation; unclear link	No explanation or link
Communication	Uses scientific language fluently and appropriately	Uses some scientific terms correctly	Mostly everyday language; few scientific words	Limited vocabulary; unclear meaning	No relevant vocabulary
