The Solar System
God is a Powerful Creator Creation Day 4

Spiritual Awareness
God has placed the stars, planets and their moons in place. He upholds them by His power. He has created the gravitational systems that cause our times and seasons.

Supporting devotional resource
Themes for Christian Studies 3, (Powerful): God is great, strong and mighty

Our response to 'God is a Powerful Creator'
Because God is a Powerful Creator, I will…

- Appreciate God's ability to supernaturally create.
- Ask God to help me create new things, so that I can bless others.
- Trust in a mighty, supernatural God.
- Care for the universe He has created.
- Appreciate the greatness of God and recognize that He is in control of all He has made.
- Thank Him for His provision of light, heat and the gravitational system that holds our solar system together.
- Recognize that I am wonderfully made and thank Him for making me as I am.
- Recognize that God is Lord and King of the universe and has everything in control.
- Recognize that in order to be the person God wants me to be, I must make Jesus Lord and King of my own life.

Biblical references
Bible stories and passages
Genesis 1 - The Creation
Joshua 10 - The day the sun stood still.
Psalm 136:1-9 - Give thanks for His great creation.
Isaiah 40:25-26 - The greatness of the stars.
Matthew 27:45 – Evidence of a total eclipse on the day Jesus died

Memory verses
Psalm 74:16-17 - You established the sun and the moon; It was You who set all the boundaries of the earth; You made both summer and winter.
Psalm 104:19 - The moon marks off the seasons and the sun knows where to go down.
Psalm 102:25 - In the beginning you laid the foundations of the earth and the heavens are the work of your hands.
Psalm 8:3-4 - When I look at the sky which You have made, and the moon and stars which You set in their places – what is man that You could think of him and care for him?

Key Questions
What does the greatness of the universe show us about God?
How great is God's love?
Is the Earth a special planet?
What has God provided for us in the creation of the solar system?
What does such a great and mighty God think about me?

Outcomes
Students will
Knowledge
- Understand our place in space.
- Explain what a solar system is.
- Understand the difference between a stars and planets, moons, comets and meteors.
- Explain the cause of day and night, times and seasons. To understand the main characteristics of the sun and its importance to earth.
- Understand the phases of the moon and its effect upon tides.
- Explain the effect of the earth's tilt.
- Explain the main characteristics of the planets in our solar system.
- Explain the effects of an eclipse.
- Define galaxies, constellations and stars, and find examples in the night sky.

Skills
- Pose questions to investigate the position and movement of planets in our solar system.
- Plan appropriate investigation methods to answer questions
- Decide which variable should be changed and measured in fair tests and accurately observe.
- Measure and record data, using digital technologies as appropriate.
- Use equipment and materials safely.
- Construct and use a range of representations, including tables and graphs, to represent and describe observations.
- Compare data with predictions and use as evidence in developing explanations.
- Suggest improvements to the methods used to investigate a question.
- Communicate ideas, explanations and processes in a variety of ways.

Values
- appreciate all that God has made
- appreciate the vastness of the universe yet God's concern for individuals
- show responsible and co-operative behaviour while making observations out of doors

Activities
- Draw a diagram of our solar system and name the planets.
- Set up a model using a light globe and a ball to show the way in which the earth rotates on its axis, experiencing day and night.
- Use the model to show the earth's revolution around the sun.

- Make a 3D model of the solar system.
- Find our place on a rotating earth model.
- Make a shadow stick and chart the position of the sun during the day and explain why the sun rises and sets. Record results of observations in table form.
- Observe and record geographical position of sunrise and sunset.
- Record times of sunrise and sunset over a month. Graph results.
- Experiment with a mirror and an electric light bulb to show how the moon reflects the sun's light.
- Chart the phases of the moon.
- Graph the times of high and low tide over a month. Explain the relationship between tides and the moon's gravitational pull.
- Make a model which illustrates how an eclipse occurs.
- Describe the experiences of astronauts and their space voyages.
- Design and make a rocket.
- Recognize and name the phases of the moon. Keep an observation chart.
- Find out relative distances of planets from sun and show in diagram form.
- Make a star map and learn to recognize the main constellations.
- Make a report on the conditions of each planet in the solar system and explain why the Earth is perfectly suited to living things.
- Study Galileo's work with the telescope.

Assessment
1. Write down ten interesting questions about the solar system and give researched answers for four of them.

2. What have I learned from the study of the solar system…
   - about God?
   - about doing what God wants me to do?
   - about the Bible?

Link to Australian Curriculum
Science Year 5: Earth and Space Sciences – The Earth is part of a system of planets orbiting around a star.

Learning Connections
English: Research space exploration, moon missions, the role of astronauts, dangers faced and reports of God's protection, e.g. Apollo 11.
Health: Sun safety
History: History of the telescope
Thinking skills: See the *Creative Thinking Skills* section of this website – *"Solar System" (Middle/Upper Primary).*

Additional Beacon Media resources
1. 'Space' - See *Units of Study, Student workbooks*
2. Visual Language Unit*: Astronomy* – See Science and Social Studies student activities on the Beacon Media website.