‘The Planets of Our Solar System’- Year 5 lesson Overview

Unit Title	**Unit Duration**
The planets of our solar system	3 weeks

Unit Overview

This unit combines Science curriculum with Maths, English and ICT to teach and encourage students to explore the planets in our solar system. Students use a variety of activities, both practical and theory based to learn about general knowledge of the planets, their size and distance relative to other planets and the sun, their orbits, and the science used to explore them. The students are also encouraged to look into the knowledge of space developed by the Indigenous people of Australia.

Unit Outline

Week 1	**Week 2**	**Week 3**
‘Size, Order and Distance of Planets’ Students use clues to order the planets from closest to furthest from the sun, they then make a scaled 2D model of a planet in a group, then place that planet on a line the correct scaled distance from the Sun. All these details are shown in a table next the planet.	‘Our Planets’ After a brief discussion on planets to engage students. Students are placed into the same groups they were in last lesson when they make the 2D template for their planet. They are to research that planet and write a short oral presentation for the class about the planet. They are also to colour their planet in as realistically as possible.	‘The Orbit Dance’ Students explore a book about planets and their orbits. They copy a diagram of the planets orbit into their book. The planets created in the last activity are taken outside where the students use them to represent each planet as they take it in turns to follow chalk lines on pavement to simulate each planets ‘orbit’. Students then answer teachers questions about orbits.

Identify Curriculum

Science Understanding	**Science as a Human Endeavour**	**Science Inquiry Skills**	**General capabilities and cross-curriculum priorities**
Year 5 -Earth and space sciences **The Earth is part of a system of planets orbiting around a star (the sun)**	**Year 5-Nature and development of science** **Important contributions to the advancement of science have been made**	**Year 5 -Planning and conducting** **Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies**	**Numeracy** Using fractions, decimals, percentages, ratios and rates Using measurement

Elaborations 1. identifying the planets of the solar system and comparing how long they take to orbit the sun 2. modelling the relative size of and distance between Earth, other planets in the solar system and the sun	**by people from a range of cultures** **Elaborations** 1. describing how scientists from a range of cultures have improved our understanding of the solar system, such as Copernicus, Khayyám and Galileo 2. researching the different types of scientists who work in teams in space exploration, and Australia's involvement in space exploration 3. learning how Aboriginal and Torres Strait Islander Peoples used observation of the night sky to assist with navigation **Year 5- Nature and development of science** **Science involves testing predictions by gathering**	**as appropriate** **Elaborations** 1. using familiar units such as grams, seconds and meters and developing the use of standard multipliers such as kilometres and millimetres 2. recording data in tables and diagrams or electronically as digital images and spreadsheets **Year 5-Planning and conducting** **With guidance, plan appropriate investigation methods to answer questions or solve problems** **Elaborations** 1. experiencing a range of ways of investigating questions, including experimental testing, internet research, field observations and exploring simulations 2. discussing the advantages of certain types of investigation for answering certain types of questions **Year 5 -Planning and conducting** **Use equipment and materials safely, identifying potential risks** **Elaborations**	**ICT capability** This includes conducting research, analysing data, , controlling processes and devices, and supporting computation while working independently and in collaboration with others. **Critical and creative thinking** Posing questions, making predictions, speculating, solving problems through investigation, making evidence-based decisions, and analysing and evaluating evidence. Students develop understandings of concepts through active inquiry that involves planning and selecting appropriate information, and evaluating sources of information to formulate conclusions. **Personal and social capability** Developing skills in communication, initiative taking, goal setting, interacting with others and decision making, and the capacity to work independently and collaboratively. **Intercultural understanding** Students learn to appreciate the contribution that diverse cultural perspectives have made to the development, breadth and diversity of science knowledge and applications.

	data and using evidence to develop explanations of events and phenomena **<u>Elaborations</u>** Researching how scientists were able to develop ideas about the solar system through the gathering of evidence through space exploration **<u>Year 5-Use and influence of science</u>** Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives **<u>Elaborations</u>** Describing how technologies developed to aid space exploration have changed the way people live, work and communicate	1. explaining rules for safe processes and use of equipment **<u>Year 5 -Communicating</u>** **Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts** **<u>Elaborations</u>** 1. discussing how models represent scientific ideas and constructing physical models to demonstrate an aspect of scientific understanding 2. constructing multi-modal texts to communicate science ideas 3. using labelled diagrams, including cross-sectional representations, to communicate ideas	Aboriginal and Torres Strait Islander histories and cultures  Students will have opportunities to learn that Aboriginal and Torres Strait Islander Peoples have developed knowledge about the world through observation, using all the senses; through prediction and hypothesis; through testing (trial and error); and through making generalisations within specific contexts. These scientific methods have been practised and transmitted from one generation to the next. Students will develop an understanding that Aboriginal and Torres Strait Islander Peoples have particular ways of knowing the world and continue to be innovative in providing significant contributions to development in science. They will investigate examples of Aboriginal and Torres Strait Islander science and the ways traditional knowledge and western scientific knowledge can be complementary.
Achievement Standard			
They describe the key features of our solar system. They use equipment in ways that are safe and improve the accuracy of their observations. Students construct tables and graphs to organise data . They communicate their ideas, methods and findings using a range of text types.			
Resources			

Risk assessment
See separate lesson plans for individual risk assessments (all Activities are low-medium risk)
Summative Assessment Activity
Students are asked to write a fictional story about one of the planets and its interaction with the other planets, although it is a fictional story, it needs to use data and as many true facts about the planet and solar system as possible within the story. Stories are marked, not only for creativity, spelling and grammar, but for the use of true facts and data.