Spencer Park Primary School
Science Policy (2013)

The nominal time allocation developed by ACARA agreed to at our school (based on hours per year for a 40-week school year) for the teaching of Science is as follows:

	PP	Y1	Y2	Y3	Y4	Y5	Y6
hours per school year	40	40	40	40	40	40	40

SCIENCE ACROSS PRE PRIMARY TO YEAR 6

Although the curriculum is described year by year, the Australian Curriculum document provides advice across four year groupings (of which, two are relevant to Spencer Park Primary School) on the nature of learners and the relevant curriculum:

- Pre Primary – Year 2: typically, students from 5 to 8 years of age
- Years 3–6: typically, students from 8 to 12 years of age

Pre Primary – Year 2

Curriculum focus: awareness of self and the local world

Young children have an intrinsic curiosity about their immediate world. Asking questions leads to speculation and the testing of ideas. Exploratory, purposeful play is a central feature of their investigations.

In this stage of schooling students' explorations are precursors to more structured inquiry in later years. They use the senses to observe and gather information, describing, making comparisons, sorting and classifying to create an order that is meaningful. They observe and explore changes that vary in their rate and magnitude and begin to describe relationships in the world around them. Students' questions and ideas about the world become increasingly purposeful. They are encouraged to develop explanatory ideas and test them through further exploration.

Years 3–6

Curriculum focus: recognising questions that can be investigated scientifically and investigating them

During these years, students can develop ideas about science that relate to their lives, answer questions, and solve mysteries of particular interest to their age group. In this stage of schooling students tend to use a trial-and-error approach to their science investigations. As they progress, they begin to work in a more systematic way. The notion of a 'fair test' and the idea of variables are developed, as well as other forms of science inquiry. Understanding the importance of measurement in quantifying changes in systems is also fostered.

Through observation, students can detect similarities among objects, living things and events and these similarities can form patterns. By identifying these patterns, students develop explanations about the reasons for them. Students' understanding of the complex natural or built world can be enhanced by considering aspects of the world as systems, and how components, or parts, within systems relate to each other. From evidence derived from observation, explanations about phenomena can be developed and tested. With new evidence, explanations may be refined or changed.

By examining living structures, Earth, changes of solids to liquids and features of light, students begin to recognise patterns in the world. The observation of aspects of astronomy, living things, heat, light and electrical circuits helps students develop the concept of a system and its interacting components, and understand the relationships, including the notion of cause and effect, between variables.

Science across Pre Primary to Year 6 extracted from
http://www.australiancurriculum.edu.au/Science/Science-across-foundation-to-year-12
Australian Curriculum, Assessment and Reporting Authority

SPENCER PARK PRIMARY SCIENCE CURRICULUM

The school advocates the teaching of science through the Primary Connections curriculum resources for the four Science understandings of Biological, Chemical, Earth and Space and Physical sciences and to that end has purchased resources for each of the four understandings for each of the year levels pre-primary to year 6.

Primary Connections resources within the school comprises…

1. Teacher book, detailing lesson steps and curriculum links to the Australian curriculum through Science, English and Maths.
2. Resource kit, consisting of equipment and consumables required to teach the Primary Connections lessons
3. Book packs, consisting of single copies of recommended texts to support the teaching of concepts as detailed in the Primary Connections teacher book; these are intended to supplement class libraries or to provide points for discussion by class

These resources assist with…

- the specific scientific knowledge that underpins the content and concepts for the year level and Science understanding you are teaching
- a clear explanation and step-by-step guide of how to teach each Science topic effectively using specific scientific content, concepts and skills, including BLMs and recommended diagnostic, formative and summative assessments
- excellent links to teaching science through the Australian English and Maths Curriculum.
- a clear common language
- display ideas, class activities and excursion visits

Some aspects (unit descriptions, equipment lists, links to English and Maths and useful websites) of the Primary Connections curriculum are available online…

http://primaryconnections.org.au/curriculum-resources/

Additional resources are available in the Science resource room, including (but not limited to):

- posters and models
- microscopes – electronic and non-electronic – and magnifiers
- safety goggles
- test tubes and test tube stands and other miscellaneous Science equipment
- consumables (such as balloons, oil, batteries, etc)
- jars, boxes, bottles, containers

Our school's Science resources are in located in a separate Science room, for which you will need a specific key, available to you from the front office. Resources in the Science room are for all to use, but please be mindful that others may wish to use them too: please indicate on the whiteboard what it is that you have removed from the room and then return items in a timely manner.

Primary Connections resource kits work only for the year level and Science understanding to which they are designated and contents are NOT interchangeable; **all resources are to remain with the box** - please respect this. In an instance where, during your use, a resource breaks or needs replacing/topping up, please indicate this to the Science cost centre manager as soon as is practicable so that it can be replaced in a timely manner.

SCOPE AND SEQUENCE – ODD/EVEN YEAR PLANNER

This Scope and Sequence of the Australian Curriculum Science for single and composite year levels, has been aligned with Primary Connections. It is designed to provide support for teachers in managing the teaching of Science in multi-age teaching situations.

Odd and Even Year Rotation – While acknowledging some limitations in the rotation, in most cases and odd/even year rotation ensures that over the two-year cycle students engage in their full curriculum entitlement

Odd Years: Composite classes complete the ***Biological*** and ***Chemical sciences*** at the *lower year level* and the ***Earth & Space*** and ***Physical sciences*** are completed at the *higher year level*.

Even Years: Composite classes complete the ***Biological and Chemical sciences*** at the *higher year level* and the ***Earth & Space*** and ***Physical sciences*** are completed at the *lower year level*.

The Odd/Even Year Planner has been compiled by the cluster science facilitators 2011 –
Andrea Moss, Chris Miethke, Kimi Johns,
Department for Education and Child Development, Western Adelaide Region

AUSTRALIAN CURRICULUM
SCIENCE SCOPE AND SEQUENCE - COMPOSITE CLASSES

Australian Curriculum Scope and Sequence PP-6 - **ODD YEARS**				
	Biological sciences	**Chemical sciences**	**Earth & space sciences**	**Physical sciences**
Curriculum focus: Awareness of self and the local world				
PP	Staying Alive SU: Living things have basic needs, including food and water	What's It Made Of? SU: Objects are made of materials that have observable properties	Weather In My World SU: Daily and seasonal changes in our environment, including the weather affect everyday life	On The Move SU: The way objects move depends on a variety of factors, including their size and shape
PP/1	Staying Alive SU: Living things have basic needs, including food and water	What's It Made Of? SU: Objects are made of materials that have observable properties	Up, Down And All Around SU: Observable changes occur in the sky and landscape	Look! Listen! SU: Light and sound are produced by a range of sources and can be sensed
1	Schoolyard Safari SU: Living things have a variety of external features SU: Living things live in different places where their needs are met	Spot The Difference SU: Everyday materials can be physically changed in a variety of ways	Up, Down And All Around SU: Observable changes occur in the sky and landscape	Look! Listen! SU: Light and sound are produced by a range of sources and can be sensed
1/2	Schoolyard Safari SU: Living things have a variety of external features SU: Living things live in different places where their needs are met	Spot The Difference SU: Everyday materials can be physically changed in a variety of ways	Waterworks SU: Earth's resources, including water, are used in a variety of ways	Push Pull SU: A push or a pull affects how an object moves or changes shape
2	Watch It Grow! SU: Living things grow, change and have offspring similar to themselves	All Mixed Up SU: Different materials can be combine, including by mixing, for a particular purpose	Waterworks SU: Earth's resources, including water, are used in a variety of ways	Push Pull SU: A push or a pull affects how an object moves or changes shape
2/3	Watch It Grow! SU: Living things grow, change and have offspring similar to themselves	All Mixed Up SU: Different materials can be combined, including by mixing, for a particular purpose	Night And Day SU: Earth's rotation on its axis causes regular changes, including night and day	Heating Up SU: Heat can be produced in many ways and can move from one object to another
Curriculum focus: Recognising questions that can be answered scientifically and investigating them				
3	Feathers, Fur Or Leaves SU: Living things can be grouped on the basis of observable features and can be distinguished from non-living things	Melting Moments SU: A change of state between solid and liquid can be caused by adding or removing heat	Night And Day SU: Earth's rotation on its axis causes regular changes, including night and day	Heating Up SU: Heat can be produced in many ways and can move from one object to another
3/4	Feathers, Fur Or Leaves SU: Living things can be grouped on the basis of observable features and can be distinguished from non-living things	Melting Moments SU: A change of state between solid and liquid can be caused by adding or removing heat	Beneath Our Feet SU: Earth's surface changes over time as a result of natural processes and human activity	Smooth Moves SU: Forces can be exerted by one object on another through direct contact or from a distance
4	Plants In Action SU: Living things have life cycles Friends or Foes SU: Living things have life cycles SU: Living things, including plants and animals, depend on each other and the environment to survive	Material World Package It Better SU: Natural and processed materials have a range of physical properties; these properties can influence their use	Beneath Our Feet SU: Earth's surface changes over time as a result of natural processes and human activity	Smooth Moves SU: Forces can be exerted by one object on another through direct contact or from a distance
4/5	Plants In Action SU: Living things have life cycles Friends or Foes SU: Living things have life cycles SU: Living things, including plants and animals, depend on each other and the environment to survive	Material World Package It Better SU: Natural and processed materials have a range of physical properties; these properties can influence their use	Earth's Place In Space SU: The Earth is part of a system of planets orbiting around a star (the Sun)	Light shows SU: Light from a source forms shadows and can be absorbed, reflected and refracted
5	Desert Survivors SU: Living things have structural features and adaptations that help them to survive in their environment	What's The Matter? SU: Solids, liquids, and gases have different observable properties and behave in different ways	Earth's Place In Space SU: The Earth is part of a system of planets orbiting around a star (the Sun)	Light shows SU: Light from a source forms shadows and can be absorbed, reflected and refracted
5/6	Desert Survivors SU: Living things have structural features and adaptations that help them to survive in their environment	What's The Matter? SU: Solids, liquids, and gases have different observable properties and behave in different ways	Earthquake Explorers SU: Sudden geological changes or extreme weather conditions can affect the Earth's surface	It's Electrifying SU: Electrical circuits provide a means of transferring and transforming electricity Essential Energy SU: Energy from a variety of sources can be used to generate electricity
6	Marvellous Micro-Organisms SU: The growth and survival of living things are affected by the physical conditions of their environment	Change Detectives SU: Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting	Earthquake Explorers SU: Sudden geological changes or extreme weather conditions can affect the Earth's surface	It's Electrifying SU: Electrical circuits provide a means of transferring and transforming electricity Essential Energy SU: Energy from a variety of sources can be used to generate electricity

AUSTRALIAN CURRICULUM
SCIENCE SCOPE AND SEQUENCE - COMPOSITE CLASSES

Australian Curriculum Scope and Sequence PP-6 - **EVEN YEARS**				
	Biological sciences	**Chemical sciences**	**Earth & space sciences**	**Physical sciences**
Curriculum focus: Awareness of self and the local world				
PP	Staying Alive SU: Living things have basic needs, including food and water	What's It Made? SU: Objects are made of materials that have observable properties	Weather In My World SU: Daily and seasonal changes in our environment, including the weather affect everyday life	On The Move SU: The way objects move depends on a variety of factors, including their size and shape
PP/1	Schoolyard Safari SU: Living things have a variety of external features SU: Living things live in different places where their needs are met	Spot The Difference SU: Everyday materials can be physically changed in a variety of ways	Weather In My World SU: Daily and seasonal changes in our environment, including the weather affect everyday life	On The Move SU: The way objects move depends on a variety of factors, including their size and shape
1	Schoolyard Safari SU: Living things have a variety of external features SU: Living things live in different places where their needs are met	Spot The Difference SU: Everyday materials can be physically changed in a variety of ways	Up, Down And All Around SU: Observable changes occur in the sky and landscape	Look! Listen! SU: Light and sound are produced by a range of sources and can be sensed
1/2	Watch It Grow! SU: Living things grow, change and have offspring similar to themselves	All Mixed Up SU: Different materials can be combined, including by mixing, for a particular purpose	Up, Down And All Around SU: Observable changes occur in the sky and landscape	Look! Listen! SU: Light and sound are produced by a range of sources and can be sensed
2	Watch It Grow! SU: Living things grow, change and have offspring similar to themselves	All Mixed Up SU: Different materials can be combined, including by mixing, for a particular purpose	Waterworks SU: Earth's resources, including water, are used in a variety of ways	Push Pull SU: A push or a pull affects how an object moves or changes shape
2/3	Feathers, Fur Or Leaves SU: Living things can be grouped on the basis of observable features and can be distinguished from non-living things	Melting Moments SU:A change of state between solid and liquid can be caused by adding or removing heat	Waterworks SU: Earth's resources, including water, are used in a variety of ways	Push Pull SU: A push or a pull affects how an object moves or changes shape
Curriculum focus: Recognising questions that can be answered scientifically and investigating them				
3	Feathers, Fur Or Leaves SU: Living things can be grouped on the basis of observable features and can be distinguished from non-living things	Melting Moments SU:A change of state between solid and liquid can be caused by adding or removing heat	Night And Day SU: Earth's rotation on its axis causes regular changes, including night and day	Heating Up SU: Heat can be produced in many ways and can move from one object to another
3/4	Plants In Action SU: Living things have life cycles Friends or Foes SU: Living things have life cycles SU: Living things, including plants and animals, depend on each other and the environment to survive	Material World Package It Better SU: Natural and processed materials have a range of physical properties; these properties can influence their use	Night And Day SU: Earth's rotation on its axis causes regular changes, including night and day	Heating Up SU: Heat can be produced in many ways and can move from one object to another
4	Plants In Action SU: Living things have life cycles Friends or Foes SU: Living things have life cycles SU: Living things, including plants and animals, depend on each other and the environment to survive	Material World Package It Better SU: Natural and processed materials have a range of physical properties; these properties can influence their use	Beneath Our Feet SU: Earth's surface changes over time as a result of natural processes and human activity	Smooth Moves SU: Forces can be exerted by one object on another through direct contact or from a distance
4/5	Desert Survivors SU: Living things have structural features and adaptations that help them to survive in their environment	What's The Matter? SU: Solids, liquids, and gases have different observable properties and behave in different ways	Beneath Our Feet SU: Earth's surface changes over time as a result of natural processes and human activity	Smooth Moves SU: Forces can be exerted by one object on another through direct contact or from a distance
5	Desert Survivors SU: Living things have structural features and adaptations that help them to survive in their environment	What's The Matter? SU: Solids, liquids, and gases have different observable properties and behave in different ways	Earth's Place In Space SU: The Earth is part of a system of planets orbiting around a star (the Sun)	Light Shows SU: Light from a source forms shadows and can be absorbed, reflected and refracted
5/6	Marvellous Micro-Organisms SU: The growth and survival of living things are affected by the physical conditions of their environment	Change Detectives SU: Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting	Earth's Place In Space SU: The Earth is part of a system of planets orbiting around a star (the Sun)	Light Shows SU: Light from a source forms shadows and can be absorbed, reflected and refracted
6	Marvellous Micro-Organisms SU: The growth and survival of living things are affected by the physical conditions of their environment	Change Detectives SU: Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting	Earthquake Explorers SU: Sudden geological changes or extreme weather conditions can affect the Earth's surface	It's Electrifying SU: Electrical circuits provide a means of transferring and transforming electricity Essential Energy SU: Energy from a variety of sources can be used to generate electricity