

Fisk Street Primary School Curriculum

Science

Middle Primary

2013

The Fisk Street Primary School Curriculum: Science is taken from the Australian Curriculum and consists of key ideas and developmental learning outcomes across the Early Years (R-2), Primary Years (3-5) and Middle Years (6 -7) incorporating:

- Science understanding
- Science as a human endeavour
- Science inquiry skills

These strands are designed to provide students with understanding, knowledge and skills through which they can develop a scientific view of the world. Students are challenged to explore science, its concepts, nature and uses through clearly described inquiry processes.

Science understanding comprises four sub-strands:

- Biological sciences
- Chemical sciences
- Earth and space sciences
- Physical sciences

Science as a human endeavour is described in two-year bands with two sub-strands:

- Nature and development of science
- Use and influence of science

Science inquiry skills is also described in two-year bands with five sub-strands

- Questioning and predicting
- Planning and conducting
- Processing and analysing data and information
- Evaluating
- Communicating

There are six overarching ideas that represent key aspects of a scientific view of the world and bridge knowledge and understanding across the disciplines of science.

Patterns, order and organisation	Form and function	Stability and change	Scale and measurement	Matter and energy	Systems
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An achievement standard describes the quality of learning that would indicate the student is well placed to commence the learning required at the next level of achievement. The sequence of achievement standards across Foundation to Year 7 describes progress in the learning area. This sequence provides teachers with a framework of growth and development in the learning area.

Student work samples play a key role in communicating expectations described in the achievement standards. Each work sample includes the relevant assessment task, the student's response, and annotations identifying the quality of learning evident in the student's response in relation to relevant parts of the achievement standard. Together, the description of the achievement standard and the accompanying set of annotated work samples help teachers to make judgments about whether students have achieved the standard. Evidence of student achievement is supported by collection of completed works, observations, podcasts, anecdotal notes, journals and portfolios.

Middle Primary Years –Science

These are the indicators for reporting to parents. Teachers need to design assessment within their science units which allow for adequate sets of annotated work samples which help to know whether students have achieved the standard. For each of the tasks below teachers are to create an assessment task and outline how they intend to make the assessment at each level.

Assessment for reporting to parents in Term 2 and 4		
YEAR THREE	YEAR FOUR	YEAR FIVE
<p>By the end of Year 3 students:</p> <ul style="list-style-type: none"> Describe how to use science investigations to respond to questions Identify where people use science knowledge in their lives Collect and present data Answer questions Make predictions using own experiences Describe features common to living things Use own knowledge to suggest explanations for everyday observations 	<p>By the end of Year 4 students:</p> <ul style="list-style-type: none"> Pose questions about own world Predict possible outcomes from investigations Describe how science is used by self and others to ask questions and make predictions Record observations Measure and identify patterns in data Identify cause and effect relationships Describe situations where science understanding can influence actions, own and others Explain how objects and materials behave based on their properties Identify changes to the observable world Suggest explanations for the motion of objects Describe how interrelationships are essential for survival of living things Identify major changes in the life cycle of a plant or animal 	<p>By the end of Year 5 students:</p> <ul style="list-style-type: none"> Pose questions relating to investigations Predict what might happen when things are changed Assist in the planning of methods to test predictions Use equipment to improve accuracy of measurements and observations Describe patterns in results Report on findings Reflect on methods used Describe how developments in science have improved understandings of the world Describe how science has enabled people to make decisions based on scientific knowledge Describe the place of the Earth in space Identify cause and effect relationships in the natural world Describe physical differences between solids, liquids and gases

Weekly Overview – Term 1 – Biological Science

Week	Lesson	Resources	Assessment
1	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)	Minibeasts <ul style="list-style-type: none"> Minibeast hunt 	<p>Year 3:</p> <ul style="list-style-type: none"> Collect and present data Answer questions Make predictions using own experiences Describe features common to living things Use own knowledge to suggest explanations for everyday observations <p>Year 4:</p> <ul style="list-style-type: none"> Pose questions about own world Predict possible outcomes from investigations Record observations Identify cause and effect relationships Describe how interrelationships are essential for survival of living things Identify major changes in the life cycle of a plant or animal <p>Year 5:</p> <ul style="list-style-type: none"> Pose questions relating to investigations Predict what might happen when things are changed Describe patterns in results Report on findings Reflect on methods used Identify cause and effect relationships in the natural world
2	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)	Minibeasts <ul style="list-style-type: none"> Looking at minibeasts 	
3	Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)	Minibeasts <ul style="list-style-type: none"> Minibeast experiment 1 Minibeast experiment 2 	
4			
5	Living things have life cycles (ACSSU072)	Insects <ul style="list-style-type: none"> Life Cycle of an insect Life Cycles <ul style="list-style-type: none"> Life goes around and around 	
6	Living things have life cycles (ACSSU072)	Life Cycles <ul style="list-style-type: none"> Life cycle of a frog Plant life cycle survey 	
7	Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)	Animal Groups ad Food Chains <ul style="list-style-type: none"> Food Chain 1 Food Chain 2 	
8	Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)	Animal Groups ad Food Chains <ul style="list-style-type: none"> Herbivores, Carnivores, Omnivores 	
9	Living things have structural features and adaptations that help them to survive in their environment (ACSSU043) Science involves making predictions and describing patterns and relationships (ACSHE050) &(ACSHE061)	Adaptations <ul style="list-style-type: none"> Plant adaptations Animal adaptations 	
10	Revision		

Weekly Overview – Term 2 – Chemical Science

Week	Lesson	Resources	Assessment
1	Natural and processed materials have a range of physical properties; These properties can influence their use (ACSSU074)	Properties of Materials <ul style="list-style-type: none"> Materials in the classroom Sorting materials 	Year 3: <ul style="list-style-type: none"> Describe how to use science investigations to respond to questions Identify where people use science knowledge in their lives Collect and present data Answer questions Make predictions using own experiences Year 4: <ul style="list-style-type: none"> Describe how science is used by self and others to ask questions and make predictions Record observations Measure and identify patterns in data Explain how objects and materials behave based on their properties Identify changes to the observable world Year 5: <ul style="list-style-type: none"> Predict what might happen when things are changed Assist in the planning of methods to test predictions Use equipment to improve accuracy of measurements and observations Describe patterns in results Report on findings Reflect on methods used Describe how developments in science have improved understandings of the world Describe how science has enabled people to make decisions based on scientific knowledge Describe the place of the Earth in space Identify cause and effect relationships in the natural world Describe physical differences between solids, liquids and gases
2	Natural and processed materials have a range of physical properties; These properties can influence their use (ACSSU074)	Properties of Materials <ul style="list-style-type: none"> Why are materials used Grains and threads 	
3	A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)	Changing State <ul style="list-style-type: none"> Solids liquids gases Changes <ul style="list-style-type: none"> Reversible and irreversible changes 	
4	A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)	Changes <ul style="list-style-type: none"> Making changes Dissolving materials 	
5	NAPLAN		
6	Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)	Changing State <ul style="list-style-type: none"> Changing matter 	
7	Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)	Changing State <ul style="list-style-type: none"> It's just a gas 	
8	Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACISIS060) & (ACISIS071)	Dissolving and Separating <ul style="list-style-type: none"> Kitchen science 	
9	Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts (ACISIS093)	Dissolving and Separating <ul style="list-style-type: none"> Separating mixtures 	
10	Revision		

Weekly Overview – Term 3 – Earth & Space Science

Week	Lesson	Resources	Assessment
1	Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)	Earth sun and moon <ul style="list-style-type: none"> Sun earth and moon 	<p>Year 3:</p> <ul style="list-style-type: none"> Describe how to use science investigations to respond to questions Identify where people use science knowledge in their lives <p>Year 4:</p> <ul style="list-style-type: none"> Pose questions about own world Describe how science is used by self and others to ask questions and make predictions Describe situations where science understanding can influence actions, own and others Suggest explanations for the motion of objects <p>Year 5:</p> <ul style="list-style-type: none"> Pose questions relating to investigations Predict what might happen when things are changed Report on findings Reflect on methods used Describe how developments in science have improved understandings of the world Describe how science has enabled people to make decisions based on scientific knowledge Describe the place of the Earth in space
2	Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)	Earth sun and moon <ul style="list-style-type: none"> Sunrises and sunsets Seasons 	
3	Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)	Inside the earth <ul style="list-style-type: none"> What makes up the earth (Start the moon tracking sheet) 	
4	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)	Investigating Weather <ul style="list-style-type: none"> The Water cycle Weather chart 	
5	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)	Fossils <ul style="list-style-type: none"> Fossil experts Make your own fossil 	
6	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)	Inside the earth <ul style="list-style-type: none"> Inside the earth 	
7	The Earth is part of a system of planets orbiting around a star (the sun)(ACSSU078)	Earth sun and moon <ul style="list-style-type: none"> The moon 	
8	The Earth is part of a system of planets orbiting around a star (the sun)(ACSSU078)	Space <ul style="list-style-type: none"> The Solar System Planet facts 	
9	The Earth is part of a system of planets orbiting around a star (the sun)(ACSSU078)	Space <ul style="list-style-type: none"> Solar system model Stargazing (IWB) 	
10	Revision		

Weekly Overview – Term 4 – Physical Science

Week	Lesson	Resources	Assessment
1	Heat can be produced in many ways and can move from one object to another (ACSSU049)	Solar Energy <ul style="list-style-type: none"> • Sun facts • Energy in the home 	Year 3: <ul style="list-style-type: none"> • Describe how to use science investigations to respond to questions • Identify where people use science knowledge in their lives • Collect and present data • Answer questions • Make predictions using own experiences Year 4: <ul style="list-style-type: none"> • Pose questions about own world • Predict possible outcomes from investigations • Describe how science is used by self and others to ask questions and make predictions • Record observations • Suggest explanations for the motion of objects Year 5: <ul style="list-style-type: none"> • Pose questions relating to investigations • Predict what might happen when things are changed • Assist in the planning of methods to test predictions • Use equipment to improve accuracy of measurements and observations • Identify cause and effect relationships in the natural world
2	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)	Light and Animation <ul style="list-style-type: none"> • Reflection 	
3	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)	Light and Animation <ul style="list-style-type: none"> • Refraction 	
4	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)	Simple Machines <ul style="list-style-type: none"> • Levers • Lifting Loads 	
5	Assessments for reporting		
6	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)	Simple Machines <ul style="list-style-type: none"> • Household machines (A report) 	
7	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)	Light and Animation <ul style="list-style-type: none"> • Pinhole camera 	
8	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)	Light and Animation <ul style="list-style-type: none"> • Animation 	
9	Revision		
10	Pack up week		

Science Understanding

	YEAR THREE	YEAR FOUR	YEAR FIVE
TERM ONE	Topic: Living things/needs/features/growth/change/offspring		
Biological sciences	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)	Living things have life cycles (ACSSU072) Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)	Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)
TERM TWO	Topic: Materials - properties/change/combining/mixing		
Chemical sciences	A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)	Natural and processed materials have a range of physical properties; These properties can influence their use (ACSSU074)	Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)
TERM THREE	Topic: Change – seasons/environment/weather/sky/landscape/water		
Earth and space sciences	Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)	The Earth is part of a system of planets orbiting around a star (the sun) (ACSSU078)
TERM FOUR	Topic: Movement – size/shape/light/sound/push & pull/change/motion		
Physical sciences	Heat can be produced in many ways and can move from one object to another (ACSSU049)	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)

Science as a Human Endeavour

	YEAR THREE	YEAR FOUR	YEAR FIVE
Nature & development of science	Science involves making predictions and describing patterns and relationships (ACSHE050) &(ACSHE061)		Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHE081)
			Important contributions to the advancement of science have been made by people from a range of cultures (ACSHE082)
Use and influence of science	Science knowledge helps people to understand the effect of their actions (ACSHE051) &(ACSHE062)		Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE083)
			Scientific knowledge is used to inform personal and community decisions (ACSHE217)

Science Inquiry Skills

	YEAR THREE	YEAR FOUR	YEAR FIVE
Questioning and predicting	With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (AC SIS053) &(AC SIS064)		With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be (AC SIS231)
	Suggest ways to plan and conduct investigations to find answers to questions (AC SIS054) &(AC SIS065) Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate (AC SIS055) &(AC SIS066)		With guidance, select appropriate investigation methods to answer questions or solve problems (AC SIS086) Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate (AC SIS087) Use equipment and materials safely, identifying potential risks (AC SIS088)
Processing and analysing data and information	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (AC SIS057) &(AC SIS068) Compare results with predictions, suggesting possible reasons for findings (AC SIS215) &(AC SIS216)		Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (AC SIS090) Compare data with predictions and use as evidence in developing explanations (AC SIS218)
	Reflect on the investigation, including whether a test was fair or not (AC SIS058) &AC SIS069)		Suggest improvements to the methods used to investigate a question or solve a problem (AC SIS091)
Evaluating	Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (AC SIS060) &(AC SIS071)		Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts (AC SIS093)
Communicating			

