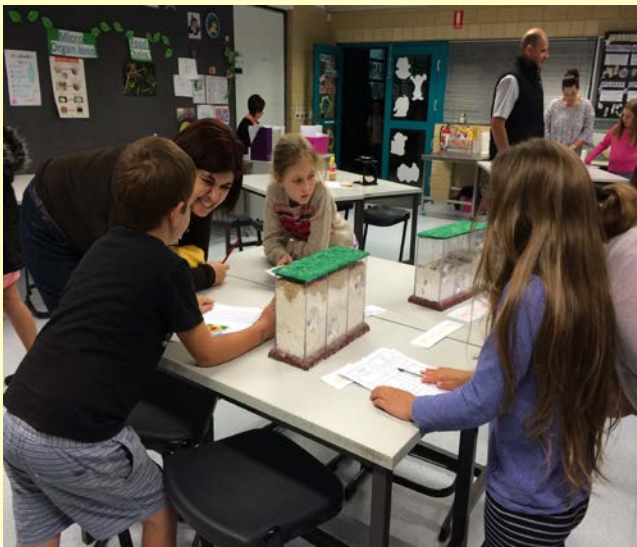


# 2015 Science @ CPS



## PLANNING

Teachers are expected to use the planning proformas on the intranet to plan their 4 programs per year.

Teachers should follow the Constructivist – 5E approach to planning.

Phase	Description	What students do	What Teachers do
<b>Engage</b> 1 Lesson	A lesson that engages students with an activity or question. It captures their interest, provides an opportunity for them to express what they know about the concept or skill	Share ideas through individual Explanations. Role play Draw diagrams Listen to other ideas Predict what they will learn about	Set context, Demonstrations Share big books, Ask open ended questions, Facilitate discussions Listen for misconceptions Ask questions to clarify student ideas Diagnostic assessment
<b>Explore</b> 3 lessons	Students carry out hands-on activities to explore the concept or skill. They describe it in their own words. It allows students to acquire a common set of experiences that they can use to help each other make sense of the new concept or skill.	Complete Open investigations Play Use all their senses Collect evidence through observation and measurement Test ideas	Ask open ended and clarifying questions Provide student with equipment and experiences Challenge their misconceptions Explicit teaching of Inquiry Skills
<b>Explain</b> 3 lessons	The teacher provides the concepts and terms used by the students to develop explanations for the phenomenon they have experienced. The significant aspect of this phase is that explanation follows experience.	Learn and use correct terminology. Small group discussions, generate explanations, Individual writings, drawing, posters, oral reports, formal written reports or PowerPoint presentation, cartoon strip, drama presentation, letter for representing science ideas and findings	Formative assessment is for development of investigation skills and conceptual understanding. Begin using narrowing questions Facilitate Complete investigations Place emphasis on the interpretation of results Ensure any misconceptions are corrected Explicit instruction should be used
<b>Elaborate</b> 2 lessons	This phase provides opportunities for students to apply what they have learned to new situations and so develop a deeper understanding of the concept or greater use of the skill. It is important for students to discuss and compare their ideas with each other during this phase.	Students plan investigations or design tasks to apply, clarify, extend and consolidate new conceptual understanding and skills. A communication product may be produced to re-represent ideas consolidating and extending science understanding and literacy practices	Summative assessment Allow for creativity in their investigations Provide opportunities for different representations eg diagrams, explanations, role plays, constructing and creative writing) Further readings, individual and group writing to introduce additional concepts and clarify meanings through writing.

<b>Evaluate</b> 1 lesson	The final phase provides an opportunity for students to review and reflect on their own learning and new understanding and skills. It is also when students provide evidence for changes to their understanding, beliefs and skills.	Reflect on changes to explanations generated in Engage phases Complete a test, demonstration of a skill	Discussions, open questions or writing and diagrammatic responses to open questions which may use same/similar questions to those used in Engage phase Summative assessment
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## **TEACHING**

Teachers are to strictly follow the Australian curriculum and ensure that all topics are covered giving the students the best opportunity to build on their learning year to year.

PP-Year 2 teachers are expected to teach 60 minutes of Science per week

Year 3 – 6 teachers are expected to teach 90 minutes of Science per week

Following the Teaching Schedule will aide this process.

### **Odd Years - 2015, 2017, 2019**

Term 1	Term 2	Term 3	Term 4
Physical Science and Inquiry	Biological Sciences	Earth and Space Sciences	Chemical Sciences and Inquiry
Primary Connections	Program of your own	Primary Connections	Program of your own

### **Even Years - 2016, 2018, 2020**

Term 1	Term 2	Term 3	Term 4
Chemical Sciences and Inquiry	Earth and Space Sciences	Biological Sciences	Physical Sciences and Inquiry Skills
Primary Connections	Program of your own	Primary Connections	Program of your own

### **Will be reported on**

The priority should be on the reportable strands and the time spent teaching this concept should reflect this. (For example if chemical sciences and inquiry skills are being reported on then with interruptions you may not finish the program til week 3 in term 2. You then may have to shorten the following program on Earth and Space Sciences)

Integration should be used as often as possible. There are opportunities for this. Please ask if you would like suggestions

If assistance is needed to structure your lessons view the observational grid for Science on the Intranet.

### **Multi Age Classes**

Teachers are to teach up. For example a 4/5 teacher should cover the year 5 concepts. Repetition of units will not be a problem if the Teaching Schedule is followed.

The year 4s would be assessed only on the Inquiry Achievement Standards.

## Assessment

Ensure opportunities are provided for students so they can achieve an A grade by using the SCASA judging standards. There are assessment suggestions in the 5e schedule and all are important in making sure no misconceptions remain and the concepts are well developed.

## Supportive Documents on the Intranet

It is expected that teachers plan, teach and assess according to the information provided in the following documents.

Scope and Sequence Documents

Planning proformas

Primary Connections can be found in digital form

SCASA Judging Standards and Curriculum Assessment Tasks

Investigation Planners

Science Lesson Observation Grid

## Resources

Primary Connections

All resources are now in the Library or they can be downloaded from Scootle

Year	Biological Sciences	Chemical Sciences	Earth and Space Sciences	Physical Sciences
Pre Primary (Foundation)	Staying Alive	What's it made of?	Weather in my world	On the move
1	Schoolyard Safari	Spot the difference	Up, down and all around	Look! Listen!
2	Watch it Grow	All mixed up	Water Works	Push Pull
3	Feathers Fur or Leaves	Melting Moments	Night and Day	Heating Up
4	Plants in Action	Material World	Beneath our feet	Smooth Moves
5	Desert Survivors	What's the Matter?	Earth's Place in Space	Light Shows
6	Marvellous Micro organisms	Change detectives	Earthquake Explorers	It's Electrifying Essential Energy

Resources in Storeroom

Consumables—please be aware they may vary from this list so please come and check to ensure they are available

before you need them.

Yeast	Citric Acid	Bicarbonate of Soda	Alka Seltzer Tablets
Food Colouring	Popcorn	Pasta	Coconut
Icing Mixture	Cornflour	Plain Flour	White Sugar
Filter Paper	Plastic Bottles	Cartons	Tea light Candles

Ziploc Bags	Alfoil	Glad wrap	Pegs
String	Pop sticks	Straws	Split pins
Pipe cleaners	Plastic Cups	Spoons	Paper plates
25 Watt Globes	Kitty litter	Bird Seed	Metal washers
measuring Cups	Medicine Cups	Measuring Jugs	Large bowls
Ice-cream lids	Chinese takeaway lids		small containers
glass jars	Vinegar	Cordial	Dishwashing Liquid
Vegetable Oil	Salt	Matches	Borax
6% Hydrogen peroxide		Cocoa Powder	Epsom Salts
Bottles	Cardboard tubes	blindfolds	Honey
Corks	Cotton reels	dowels	foam washers
marbles	balloons	Fibre glass measuring tape	sieves
various balls	pipettes	Eye droppers	rocket stoppers
film canisters / fizzy	rocket bodies	pump rocket	Buckets
digital timers	spray bottles		

### Resources—Continued

The following resources are kept in the Science Lab. Extra care of these resources is important as they are more costly to replace. Individuals can borrow for their team, however the individual will be responsible for maintaining, returning and replacing items when necessary.

Biological Sciences	Chemical Sciences	Earth and Space Sciences	Physical Sciences

<p>Box of various aquarium pumps and cleaning equipment</p> <p>Portable plastic tank</p> <p>X—rays</p> <p>Easi view visualiser</p> <p>Eye scope magnifier</p> <p>Fertiliser</p> <p>Box of various aquarium set up equipment</p> <p>6 nets for pond scooping</p> <p>2 large fish tanks</p> <p>1 small tank</p> <p>Frog Bog—teaching kit</p> <p>2 worm farms</p> <p>Garden Buddy take home bag</p> <p>2 See through compost tanks</p> <p>Seed raising soil</p> <p>Model skeleton</p> <p>Water Crystals</p> <p>Inside a Frog Model</p> <p>Skeleton Stamp (no ink) 1 box of</p> <p>Magnifying glasses</p> <p>7 large magnifying glasses</p> <p>10 very large magnifying glasses with stands</p> <p>10 Spray bottles</p> <p>10 microscopes</p> <p>A lot of Zoom Microscopes</p> <p>Slide Viewers Kit</p> <p>1 watering can</p> <p>Lone Pine care for kit</p> <p>1 magnifying glass kit (contains a variety of lenses)</p> <p>minibeast / lifecycle specimen kit</p> <p>2 Seedling mini greenhouse nursery</p> <p>seedling pots</p>	<p>Squares of material (lycra, fur, felt, cotton and Satin)</p> <p>Packing Beans</p> <p>Bubble Wrap</p> <p>Timers</p> <p>24 250ml glass beakers</p> <p>19 pairs of safety goggles</p> <p>4 oven mits</p> <p>12 100°C thermometers</p> <p>20 50°C thermometers</p> <p>4 electric hot plates</p> <p>2 test tube stands and 20 test tubes</p>	<p>12 Directional Compasses (mixed)</p> <p>Class set of directional compasses</p> <p>1 35x telescope</p> <p>Small telescope and Stand</p> <p>2 525 Telescopes</p> <p>2 partial sets of inflatable solar systems</p> <p>Sample rock kits</p> <p>10 inflatable globes</p> <p>Solar system floor mat</p> <p>1 full set of inflatable planets</p> <p>giant magnetic solar system</p> <p>solar system model</p> <p>glow in the dark solar system model</p> <p>12 small torches</p>	<p>Mixed box of Electrical Circuits Equipment</p> <p>6 Grey Torches (no batteries)</p> <p>11 Simple machines (eg a lever, pulley with teacher cards)</p> <p>Simple Machines Kit Grade 4 – 6</p> <p>5 Electricity Kits</p> <p>5 different Spring Balances</p> <p>Tuning fork</p> <p>5 Pulleys</p> <p>8 triangular prisms</p> <p>Box of various balls</p> <p>3 small parachutes</p> <p>DVD engineers Australia</p> <p>Battery tester and charger</p> <p>Genie Electrical Kit</p> <p>Random Box of circuit equipment</p> <p>Box of magents includes bar magnets, iron filings and wands</p> <p>Power of Science resource kit.</p> <p>2 small jars of iron filings</p> <p>1 delux magnet kit</p> <p>1 class set of timers</p> <p>2 tape measure kits</p>
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### Primary Connection Texts that have KITS

<p>Biological Sciences</p> <p><u>Staying Alive</u></p> <p>Collapsible bucket Cotton Balls</p> <p>Plastic Cups Red &amp; Blue Dots</p> <p>Eucalyptus Oil Masking Tape</p> <p>Pop sticks Post it</p>	<p>Chemical Sciences</p> <p><u>What's it made of?</u></p> <p>N/A</p>	<p>Earth and Space Sciences</p> <p><u>Weather in my world</u></p> <p>Wooden Pegs</p> <p>Coat hanger</p> <p>Masking Tape</p> <p>Post it Notes</p> <p>String</p> <p>Thermometer</p> <p>Digital Thermometer</p>	<p>Physical Sciences</p> <p><u>On the move</u></p> <p>N/A</p>
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Notes Stopwatch Vanilla Essence	Straws Whistle		Lab thermometer	
<u>Schoolyard Safari</u> N/A	<u>Spot the difference</u> N/A	<u>Up Down and All Around</u>	<u>Sounds Sensational</u> Balloons Coat Hangers Cups Whistle Blue and Green Dots Masking Tape Post it notes Straws String	
<u>Watch it Grow</u> N/A	<u>All Mixed Up</u>	<u>Water Works</u> Collapsible Bucket Container Plastic Cups Paper Cups Measuring Jug Food Colouring Skewers Spoons Syringe Toothpicks	<u>Push Pull</u> Resealable Bags Balloons Ping Pong Balls Tennis Balls Corks Plastic Cups Paper Cups Polystyrene Cups Elastic Bands Marbles Measuring Jug Clay String Paper clips Paper towels	
<u>Feathers Fur or Leaves</u> N/A	<u>Melting Moments</u> N/A	<u>Spinning in Space</u> 4 Tennis Balls Cellophane Chalk Magnetic Compass Clay Post it notes Tape measure Tissue Paper Torch with Batteries Trundle Wheel	<u>Heating Up</u>	
<u>Plants in Action</u> Resealable Bags Borlotti Beans Wooden Clothes pegs Cotton Balls Cress Seeds Plastic Cups Magnifier Paper Plates Patty Pans Spray Bottle Toothpicks Tweezers (10)	<u>Material World</u> Resealable Bags Wooden Clothes Pegs Round Containers Elastic Bands Eye Droppers Food Colouring Funnel Magnifier Measuring Cups Post it Notes Thermometer Digital Timer	<u>Beneath our feet</u> N/A	<u>Smooth Moves</u> Balloons Elastic Bands Disposable Gloves Inflatable Globe Marbles Paper Clips Post it Notes Ticker Tape	

<u>Desert Survivors</u>	<u>What's the Matter</u>	<u>Earth's Place in Space</u>	<u>Light Fantastic</u> Glue Stick    Masking Tape 10 Mirrors    Pop sticks Post it notes    Split pins Sticky tac    Straws Talcum Powder Torch with Batteries
<u>Marvellous</u> <u>Micro organisms</u> Resealable Bags    Balloons Funnel    Magnifier    Masking Tape    Measuring Cups Measuring Spoons    Paper towels Coloured Patty pans    Spray Bottle    Thermometer Digital Timer Yeast	<u>Change detectives</u> Balloons    Bicarb Soda Foil Trays    Funnels (10) Marbles    Masking Tape Measuring Cups    Litre Jug Measuring Spoons Paper Towels    Tartaric Acid Scented Extracts Stop watch Tea light candles	<u>Earthquake Explorers</u>  N/A	<u>It's Electrifying</u> Balloons    AA Batteries D Batteries    Battery Holders    Bulbs    Bulb Holders Wooden Clothes pegs Alfoil    Magnifier Masking Tape    Paper clips Post it notes    Split Pins Torches (10)    Wire Wire Stripper