



**CURRAMBINE**  
**PRIMARY SCHOOL**

TOGETHER TOWARDS TOMORROW

# Science

# 2022

# **Science in 2022**

## **Planning Documents**

New plans should be created on the Planning Templates found on Connect and the Intranet under S for Science Whole School Plan. They have been changed due to feedback from staff and are a more concise document. As units and plans are developed and/or updated, the new science Scope and Sequence and Operational Plan should be reflected in these planning tools. Please make yourself familiar with these documents.

## **STEM**

In Primary Schools the emphasis should be on providing examples of how real world problems can be solved using Science, Technology, Engineering and Maths.

At Currambine PS we need to continue to give our students opportunities to create, problem solve, design, evaluate, communicate, test ideas and collaborate. This will ensure we are preparing our students for a STEM future.

This could occur in the Explore or Elaborate Phase of our Programs. The CPS Science scope and Sequence has an intentional focus on the explicit teaching of Inquiry Skills (SCKI model: Skill development, Content knowledge, Inquiry application (controlled inquiry) which will allow students to demonstrate their Scientific knowledge and skills through a teacher led inquiry process throughout their primary school journey.

In 2022, we will start to follow the CPS Inquiry Model, based on the e5, which guides our scientific process and planning.

## **Warm Ups**

Teachers are to continue developing their warm ups and add key slides to the whole school warm up PowerPoint after they teach each unit. All warm ups PP – 6 should cover key concepts and vocabulary, key inquiry skills such as posing questions and general knowledge. Warm up slides should be short and concise.

## **Science Competition**

Each year level will decide on the task that the year level will complete in Term 3.

This allows you to integrate the question into the Biological Science Strand you will be covering.

The following are non-negotiable provisions you need to consider when planning your task in order to maintain its purpose.

- 1) The task must be completed at school.
- 2) The task must be the same for every class in your year level.
- 3) A Currambine PS Investigation Planner must be used.
- 4) A moderation discussion must occur during PLC time in order to choose a winner.
- 5) Winners' names need to be sent to the nominated Science Curriculum Leader (TBA) by Week 9 of Term 3.
- 6) The task should be planned for when you write your Term 3 Program.

## PLANNING

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

Teachers should follow the e5 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 <b>Diagnostic assessment</b>
<b>Explore</b> 2 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
<b>Explain</b> 2 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	<b>Formative assessment</b> 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 <b>Explicit instruction should be used</b>
<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	<b>Summative assessment</b> Allow for creativity in their investigations Provide opportunities for different representations e.g. 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 <b>Summative assessment</b>

## **TEACHING**

Teachers are to follow the Western Australian Curriculum and CPS Scope and Sequence to 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

### **Teaching Schedule**

#### **Even Years – 2022, 2024, 2026**

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	PLC program	Primary Connections	PLC program

#### **Odd Years – 2023, 2025, 2027**

Term 1	Term 2	Term 3	Term 4
Physical Science and Inquiry	Biological Sciences	Earth and Space Sciences	Chemical Sciences and Inquiry
Primary Connections	PLC program	Primary Connections	PLC program

Integration should be used as often as possible. There are opportunities for this. Reading can be done as a rotation during guided reading routines; Design tasks can be implemented as an Elaborate task, graphing skills taught in Maths.

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

### **Multi Age Classes**

Each Strand of Understanding should have 2 programs created. One should have been put together by the year level and the other should be the Primary Connections unit. Following the teaching schedule will ensure students do not have to repeat activities. There are some new Primary Connections Units that could be useful in supporting this model. Please ensure that you conduct conversations at your PLC's to discuss which programs are being used in Multi Age classes.

### **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 and Connect**

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

Scope and Sequence Documents  
CPS Inquiry Model  
Planning proformas

Primary Connections can be found in digital form  
 SCSA Judging Standards and A-E Checklists  
 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
Kitty litter	Bird Seed	Metal washers	spray bottles
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			

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

## Primary Connection Texts that have KITS

Biological Sciences	Chemical Sciences	Earth and Space Sciences	Physical Sciences
<u>Staying Alive</u> Collapsible bucket    Cotton Balls Plastic Cups    Red & Blue Dots Eucalyptus Oil    Masking Tape Pop sticks    Post it Notes Stopwatch    Straws Vanilla Essence    Whistle	<u>What's it made of?</u>  N/A	<u>Weather in my world</u> Wooden Pegs Coat hanger Masking Tape Post it Notes String Thermometer Digital Thermometer Lab thermometer	<u>On the move</u>  N/A
<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 String    Clay 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>



<p><u>Plants in Action</u></p> <p>Resealable Bags Borlotti Beans  Wooden Clothes pegs  Cotton Balls Cress  Seeds  Plastic Cups  Magnifier  Paper Plates Patty  Pans  Spray Bottle  Toothpicks  Tweezers (10)</p>	<p><u>Material World</u></p> <p>Resealable Bags  Wooden Clothes Pegs  Round Containers  Elastic Bands Eye Droppers  Food Colouring  Funnel  Magnifier Measuring Cups  Post it Notes  Thermometer  Digital Timer</p>	<p><u>Beneath our feet</u></p> <p>N/A</p>	<p><u>Smooth Moves</u></p> <p>Balloons  Elastic Bands  Disposable Gloves  Inflatable Globe  Marbles  Paper Clips  Post it Notes  Ticker Tape</p>
<p><u>Desert Survivors</u></p>	<p><u>What's the Matter</u></p>	<p><u>Earth's Place in Space</u></p>	<p><u>Light Fantastic</u></p> <p>Glue Stick Masking Tape  10 Mirrors Pop sticks  Post it notes Split pins  Sticky tac Straws  Talcum Powder  Torch with Batteries</p>
<p><u>Marvellous Micro organisms</u></p> <p>Resealable Bags  Balloons  Funnel Magnifier Masking Tape  Measuring Cups  Measuring Spoons Paper towels  Coloured Patty pans  Spray Bottle  Thermometer Digital Timer  Yeast</p>	<p><u>Change detectives</u></p> <p>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</p>	<p><u>Earthquake Explorers</u></p> <p>N/A</p>	<p><u>It's Electrifying</u></p> <p>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</p>