



Whole School Science Plan 2016 - 2018

Purpose

To implement a consistent approach across the school to teaching science understandings and developing investigative skills

Exit outcomes

To ensure students are scientifically literate, have developed ideas about science that relates to their lives, conduct investigations in a systematic way and have an understanding of historical, cultural contributions to science as well as contemporary science issues.

Science Beliefs

Children learn best in science when:

- They are encouraged to explore before they attempt to explain
- Have a hands-on, mind-on approach
- Embed literacy and numeracy practices into engaging science contexts
- Embed Technologies Curriculum and CCP in their Scientific learning
- Engage in rich, open ended enquiry tasks
- Understand that Science is a School Wide priority

Priorities

1. Use WA Curriculum: Science content to plan, teach and assess science learning area
2. Use a sustainability context to plan and teach the Science as Human Endeavour (SHE) strand in AC Science
3. Integrate WA Curriculum: Technologies explicitly with Science
4. Teachers to use School Wide planning template
5. Equal emphasis placed on SIS, SUE and SHE
 - a. Us the CCP Sustainability context to plans and teacher SHE
6. Routine use of CATS and moderation, led by the Curriculum Coordinator
7. Admin to create Scope and Sequence across all strands of Science

Targets (from School Business Plan 2014-2016)

- *All staff to attend one TDS event each semester*
- All staff will assess and moderate student work samples in Science against the AC standards (Teaching and Learning)
- Enhance curriculum opportunities for students by fostering relationships that expose students to 'real world' events and activities. All staff participate in maintaining and fostering relationships to support the natural environment and sustainability (Relationships)
- All teachers to utilise Stephanie Alexander Kitchen Garden program facilities providing learning opportunities for all students (Resources)

Outcomes	Strategies	Data Collection	Professional Learning	Resources
Increase the capacity of staff to deliver effective teaching and learning in Science	<ul style="list-style-type: none"> • All teachers to implement Australian Curriculum Science through an inquiry approach that integrates all 3 science strands. This is achieved by science planning support and targeted PL through mentoring by curriculum leaders and provision of appropriate resources. • Context for each term is determined by AC Science Understanding sub-strand. All 4 sub-strands are taught over the year. Semester 1: Physical Science (T 1); Chemical Science (T2); Semester 2: Biological Science (T 3); Earth and Space Science (T4). The focus is on a semester approach where both sub strands ie Biological Science and Earth 	<ul style="list-style-type: none"> • Coolbinia scope and sequence for K-7 reflects the AC • TDS evaluation data (EL) • Student attitude to science surveys (EG) • Science Inquiry Skills – develop rubrics (RM & 	<ul style="list-style-type: none"> • Time dedicated at SDDs for science PLs. 4 times/year. • One per term after school staff meeting on moderation, resources, CATs, 	<ul style="list-style-type: none"> • Science resources for each strand in shared drive & TDS folder • Science section/lab and supporting equipment as part of the Kwobadarn • Add to PC resources accession thru library (EG).

	<p>and Space Science are integrated as much as possible throughout the semester.</p> <ul style="list-style-type: none"> • Opportunities to conduct science investigations Science Inquiry Skills strand (SIS) at a minimum of one per term. Support for teaching and assessing investigations provided by PLs. A range of age appropriate planning proformas and activities to develop process skills such as observing, planning, predicting, recording data and analysing results are provided in the shared drive. • All teachers use science as a context for a range of literacy practices. Teachers can collect evidence of the developing scientific literacy of students and critical and creative thinking (CCT) through concept maps. • All teachers provide engaging applications of science to motivate and improve students' attitude to science. This can include science related excursions, incursions, scientist guest speakers, school science activities such as worm shed. • Join Scitech Platinum membership (EG) • Provide PL that supports teachers to go beyond <i>Primary Connections</i>. • Provide PL that supports teachers to integrate with other LAs and embed the CCPs. • Provide exciting, challenging science incursions & excursions e.g. magical World of Science (show in T 2, 2014), Kanyana & HLWC visits (T 1) • Exposing teachers to science websites and providing a science display board. • Whole school science focus in Science Week (August 16-24, 2014) will be coordinated by Science Committee: Igloo making – each child brings block of ice. Guest speakers – Chemical Science (RM) 	EG)	etc.	<ul style="list-style-type: none"> • Teachers and the Library Officer to encourage students to borrow science books by showcasing interesting science books. • Provide Library displays on science each term that reflects sub-strand focus • Develop Literacy/Science boxes (EG) • Access: moodle.asta.edu.au • Utilize Scitech's DIY Kits
<p>Improve student performance in Science</p> <p>Monitor progress between years in Science</p>	<ul style="list-style-type: none"> • Collaborative teams develop common assessment tasks for their phase of learning for moderation purposes. • Collection of diagnostic and summative data on students' conceptual understanding through tools such as concept maps (Years 1-7) or alternatives as deemed appropriate by the collaborative team leader. • Teachers (Year 1-7) to use WA on-line exemplars or ACARA work samples for their own moderation and to participate in school moderation activities. • Teachers (K and PP) use some of the ACARA Foundation samples and collect their own work samples. Where appropriate, information from on-entry testing to inform early years moderation. • Teachers (Year 1-7) to use and develop SIS assessment rubrics for year level teach to monitor progress. • All teachers (K-7) to collect 4 student work samples of a range of ability to participate in moderation activity. Moderation activities to be coordinated by Science Committee. 	<ul style="list-style-type: none"> • Use concept map rubrics • Moderation activity term 2 • Teacher professional judgements (Term 2 and 4 reporting data SAIS) • ACER science testing • CREST • Science assessment for early years • Screening tool for start of Yr 2 based on AC (RM) 	<ul style="list-style-type: none"> • PL on using AC achievement standards to assess and moderate work • Moderation activity after school staff meeting • PL/display on resources for new SU topic at start of each term 	<ul style="list-style-type: none"> • SIS assessment rubric developed for each year • Develop concept map rubric for each year • Collate whole school data for performance of students in investigations (EG)
Challenge students in science	<ul style="list-style-type: none"> • All teachers plan for differentiation and to extend more able students in science • More able students encouraged to do open-ended investigations (Years 4-7) • Teachers identify students who have produced high quality in class investigations and encourage them to enter this work in science competitions • Increase teachers' awareness of age appropriate competitions and activities to encourage students to enter for extension and challenge • Encourage capable senior students to be assistants for Igloo Day during Science Week (16-24 August, 2014) Science Committee 	<ul style="list-style-type: none"> • Number of students who enter science competitions • Number of PEAC students enrolled in science courses 	PL after school & PD cafe for interested teachers on extension and enrichment activities that students can do within the class	<ul style="list-style-type: none"> • Resources in shared drive • Consumables for Science week activities & classroom science lessons
Integrate the Cross Curriculum Priorities into Science lessons	<ul style="list-style-type: none"> • All teachers embed the Cross Curriculum Priorities (CCP) for teaching (SHE) and Science Understanding strands. This may include incorporating aspects of Turtle Watch in class programs (EL). • Integrate areas of Kitchen Garden project into science curriculum eg growing, recycling, harvesting, indicator solns. 	<ul style="list-style-type: none"> • AuSSI-WA assessment rubric • Numbers of teachers and students participation in 	Parent and teacher volunteers coordinated by Elaine Lewis	<ul style="list-style-type: none"> • Cool School Adventurers • Include on shared drive resources such as Turtle watch; AuSSI-WA; Wastewise; Waterwise; Air

	<ul style="list-style-type: none"> • Coolbinia website to contain information for parents about links between science and sustainability programs (EL). • Continue class modelling and planning support embedding CCP and science. Integrate sustainability knowledge and understandings, attitudes and values, skills and behaviours across the curriculum including activities of the Cool School Adventurers. Embed Education for Sustainability (EfS) into the teaching of science. – link with National Action Plan for EfS, use of Eagle Eye model and Science Inquiry Skills strand (SIS). (EL) • Eco Footprint with the following year levels maintaining a particular focus on: <ul style="list-style-type: none"> Year 4 - Waste (e.g. 3Rs, worm farming) Year 5 - Water (e.g. water tanks) Year 6 - Air (e.g. walk-to-school) Year 7- Energy (e.g. solar panels) 	sustainability activities		Watch, Energy Smart; Travel Smart school resources (EL)
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