2024 Semester 1 - Year 8 Unit Outline

Science

Teacher(s): Lucy Hayes, Emilee McFarlane, Matthew Seitz

Faculty: *Science* **Unit Duration:** Semester 1, 2024

The **Australian Curriculum Achievement Standards:** In the practice of science, the 3 strands of Science *understanding*, *Science as a human endeavour* and *Science inquiry* are closely integrated; the work of scientists reflects the nature and development of science, seeks to respond to and influence society's needs, and is built around scientific inquiry. Students' experiences of science at school mirror and connect to this multifaceted view of science.

Australian Curriculum Achievement Standard: In semester 1, students explain the role of specialised cell structures and organelles in cellular function and analyse the relationship between structure and function at organ and body system levels. They compare different forms of energy and represent transfer and transformation of energy in simple systems. Students analyse how different factors influence development of and lead to changes in scientific knowledge. They analyse the key considerations that inform scientific responses and how these responses impact society. They analyse the importance of science communication in shaping viewpoints, policies and regulations.

Students plan and conduct safe, reproducible investigations to test relationships and explore models. They describe potential ethical issues and intercultural considerations needed for specific field locations or use of secondary data. They select and use equipment to generate and record data with precision. They select and construct appropriate representations to organise and process data and information. They analyse data and information to describe patterns, trends and relationships and identify anomalies. They identify assumptions and sources of error in methods and analyse conclusions and claims with reference to conflicting evidence and unanswered questions. They construct evidence-based arguments to support conclusions and evaluate claims. They select and use language and text features appropriately for their purpose when communicating their ideas, findings and arguments to specific audiences.

Unit Description: In semester 1, students are introduced to cells as microscopic structures that explain macroscopic properties of living systems. They link form and function at a cellular level and explore the organisation of body systems in terms of flows of matter between interdependent organs. They begin to classify different forms of energy and describe the role of energy in causing change in systems, including the role of potential and kinetic energy. They make predictions and propose explanations, drawing on evidence to support their views while considering other points of view. Students explore how scientific knowledge of today has evolved through the work of scientists in collecting evidence and improve their understanding to generate solutions to past and current real-life problems.

Essential Learning Outcomes developed from the Achievement Standards of the Australian Curriculum:

1. ***V9.S.8.04*** - Compares different forms of energy and represents transfer and transformation of energy in simple systems.
2. ***V9.S.8.01*** - Explains the role of specialised cell structures and organelles in cellular function and analyses the relationship between structure and function at organ and body system levels.
3. ***V9.S.8.09*** **-** Plans and conducts safe, reproducible investigations to test relationships and explore models.
4. **V9.S.8.11** - Selects and uses equipment to generate and record data with precision *(Planning and Conducting)*
5. **V9.S.8.12** - Selects and constructs appropriate representations to organise and process data and information *(Analysing)*
6. **V9.S.8.15** - Constructs evidence-based arguments to support conclusions and evaluate claims *(Communication)*
7. **V9.S.8.16** - Selects and uses language and text features appropriately for their purpose when communicating their ideas, findings, and arguments to specific audiences *(Communication)*

Materials and Equipment Required: Students are expected to arrive at every class with a class book/folder to write notes for that subject, a writing instrument and a Chromebook or similar, appropriate electronic device. Students may also be required to provide the following additional materials and equipment: *Scientific Calculator*

Absences from Class: Students who miss classes due to absence or excursions must use Google Classroom and Stileapp to catch up missed work, unless otherwise negotiated with the teacher.

Use of IT in Class: A Google Classroom and Stileapp.com class has been set up for this class. Students will be required to log into these accounts regularly to access course material. Students must bring a charged chromebook (not a phone) to all lessons, however, the use of these devices in class will be at the discretion of the teacher.

Homework: All students will be given multiple opportunities to demonstrate a proficiency level of 3 or above across all Essential Learnings during class time. Students may use time at home to complete additional enrichment and extension activities that demonstrate a proficiency above level 3, or to catch up on missed or unfinished classwork.

Late Work: Extensions may be negotiated with individual teachers before the due date.

Plagiarism: Plagiarism is copying or using another's work and claiming it as your own. This includes copying, cutting and pasting text or using ideas directly from a text, the internet or some other source without appropriate referencing. If this happens, work may not be graded and students will be asked to discuss the assessment with the classroom teacher and Executive Teacher for that subject. Parents may be contacted as part of this process.

Assessment Portfolio: This contains evidence of work from the opportunities the students have been provided to demonstrate elements of the achievement standard.

Portfolio Assessment Tasks for this subject will include:	Week / Date Due	Essential Learning
1. Test – Energy Types and Changes	Week 5	1
2. Scientific Report – Balloon Cars	Week 6	1, 3, 4, 6, 7
3. Assessment – Energy topic Capstone	Week 9	1, 3, 4
4. Classwork – Energy	Ongoing	1, 3, 4, 5, 6, 7
5. Test – Cells, Tissues, Organs	Week 15	2, 6, 7
6. Practical Assessment – TBA	Week 18	2, 4, 5, 6, 7
7. Classwork – Body Systems	Ongoing	2, 3, 4, 5, 6, 7

A-E Reporting Grade Descriptors These are the grades and grade descriptors for reporting at the end of each Semester.

A	Demonstrating **excellent** achievement of what is expected (Consistently achieving a proficiency level of 4 or above in each of the Essential Learnings)
B	Demonstrating a **high** achievement of what is expected (Consistently achieving a proficiency level of between 3 and 4 in each of the Essential Learnings)
C	Demonstrating **satisfactory** achievement of what is expected (Achieving a proficiency level of 3 across the Essential Learnings)
D	Demonstrating **partial** achievement of what is expected (Achieving a proficiency of between 1 and 3 across the Essential Learnings)
E	Demonstrating **limited** achievement of what is expected (Achieving a proficiency of 1 or less in each of the Essential Learnings)
S	**Status** is awarded where unavoidable circumstances have prevented assessment. Must be negotiated with the Principal.

Grade Descriptors and the "C" grade

In ACT public schools the Australian Curriculum Achievement Standard is aligned with a 'C' grade. The 'C' grade indicates that your child has demonstrated a satisfactory level of knowledge, understanding and skill in relation to the Achievement Standard.

Appeals

A student must initiate an appeal for any grade with their subject teacher. If a student is dissatisfied with that initial process, they must pursue further appeal through the Faculty Executive Teacher for that subject.

Executive Teacher

Gary Rolfe 06/02/2024

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