Lesson Plans

Year 7 Science Chapter 5 Classification

Some general points about the following lesson plans:

- ★ The lesson plans outline only one way of sequencing the learning material in this chapter of the textbook.
- ★ The content and sequence will obviously vary from class to class (The following guide is ambitious in many instances).
- ★ All activities and investigations in each chapter have been deliberately designed to support the National Curriculum content whilst keeping in mind the development and reinforcement of skills required in the study of science in Year 11/12.
- ★ The length of lessons vary from school to school and even within schools. The following guide is based on 35/40 min lessons because it was reasoned that adjustment to 60/75/90 mins lessons would be easier than reducing lesson plans.
- ★ Students may be challenged further by completing each chapter Task, Competition Questions, Challenges, and by finding and entering any of the many competitions, challenges, projects etc that may be found on the Internet. Such students may benefit by doing an Internet search early in the year and planning entries before they close.

Assessment

A Task
Practical Report
End of Unit Test

Content Description (5 weeks)

Chapter 5 Classification

There are differences within and between groups of organisms; classification helps organise this diversity (ACSSU111).

- ★ consider the reasons for classifying such as identification and communication.
- ★ group a variety of organisms on the basis of similarities and differences in particular features.
- ★ consider how biological classifications have changed over time.
- ★ classify using hierarchical systems such as kingdom, phylum, class, order, family, genus, species.
- ★ use scientific conventions for naming species.
- ★ use provided keys to identify organisms surveyed in a local habitat.

Content strands

The Australian Curriculum: Science has three interrelated strands: Science Understanding, Science as a Human Endeavour and Science Inquiry Skills.

Together, the three strands of the science curriculum 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
Science understanding is evident when a person selects and integrates appropriate science knowledge to explain and predict phenomena, and applies that knowledge to new situations. Science knowledge refers to facts, concepts, principles, laws, theories and models that have been established by scientists over time.

The **biological sciences** sub-strand is concerned with understanding living things. The key concepts developed within this sub-strand are that: a diverse range of living things have evolved on Earth over hundreds of millions of years; living things are interdependent and interact with each other and their environment; and the form and features of living things are related to the functions that their body systems perform. Through this sub-strand, students investigate living things, including animals, plants, and micro-organisms, and their interdependence and interactions within ecosystems. They explore their life cycles, body systems, structural adaptations and behaviours, how these features aid survival, and how their characteristics are inherited from one generation to the next. Students are introduced to the cell as the basic unit of life and the processes that are central to its function.

Science Inquiry Skills
Science inquiry involves identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysing and interpreting evidence; and communicating findings. This strand is concerned with evaluating claims, investigating ideas, solving problems, drawing valid conclusions and developing evidence-based arguments.

Science as a Human Endeavour
Through science, humans seek to improve their understanding and explanations of the natural world. Science involves the construction of explanations based on evidence and science knowledge can be changed as new evidence becomes available. Science influences society by posing, and responding to, social and ethical questions, and scientific research is itself influenced by the needs and priorities of society. This strand highlights the development of science as a unique way of knowing and doing, and the role of science in contemporary decision making and problem solving. It acknowledges that in making decisions about science practices and applications, ethical and social implications must be taken into account. This strand also recognises that science advances through the contributions of many different people from different cultures and that there are many rewarding science-based career paths.

Science across Foundation to Year 12

Years 7–10, typically students from 12 to 15 years of age, Curriculum focus: explaining phenomena involving science and its applications

During these years, students continue to develop their understanding of important science concepts across the major science disciplines. It is important to include contemporary contexts in which a richer understanding of science can be enhanced. Current science research and its human application motivates and engages students.

Within the outlined curriculum, students should undertake some open investigations that will help them refine their science inquiry skills. The quantitative aspects of students' inquiry skills are further developed to incorporate consideration of uncertainty in measurement. In teaching the outlined curriculum, it is important to provide time to build the more abstract science ideas that underpin understanding.

Chapter 5 Classification (5 weeks)

Lesson	Method	Resources
1	□ General (covering book, ruling pages, etc.) □ Purpose of chapter □ Introduce/discuss Why Classify p98 □ Activity: Classification of thingies p99 □ Exercise Q1-4 p98 □ HW: Complete exercise Q1-4 p98	Thingies activity p99
2	□ Discuss Why Classify p98 □ Activity: Classification of shoes p99 □ Exercise Q5-10 p98 □ HW: Complete exercise p98	Classification shoes p99
3	□ Introduce/discuss Taxonomy p100 □ Use mnemonic to learn the seven divisions p100 □ Word Bank and Concentration power p101 □ HW: Learn seven divisions	
4	□ Test seven divisions and repeat as necessary □ Activity: Fingerprints p101 □ Exercise p101 □ Internet: 'History of fingerprinting' □ HW: Complete exercise p101	Fingerprint activity p101 Internet
5	□ Test seven divisions and repeat as necessary □ Discuss Grouping organisms / keys □ Exercise p102 □ Internet: Ungulates p102 □ HW: Complete exercise p102 and collect magazines for activity p103	Internet
6	□ Introduce/discuss Animal classification p103 □ Exercise p103 □ Activity: Classify animals p103 □ HW: Complete Exercise and classification activity	Classification activity p103
7	□ Introduce/discuss Plant classification p104 □ Exercise p104 □ Internet: Classifying plants □ HW: Complete exercise p104 and collect magazines for activity p105	Internet
8	□ Discuss Plant classification p105 □ Exercise p105 □ Activity: Classify plants p105 □ Internet: Classification Webquest □ HW: Complete Exercise and classification activity	Classification activity p105 Internet

Chapter 5 Classification (5 weeks)

Lesson	Method	Resources
9	Introduce/discuss Kingdoms p107 Word Bank p107 Exercise p107 Internet: Web search p107 HW: Complete exercise p51	Internet
10	Discuss Kingdoms p108 Learn names/spelling of kingdoms and seven divisions Activity: 4 activities p109	Activities p109
11	Test 5 kingdoms and seven divisions and repeat as necessary Internet: p109 Exercise p109 HW: Complete exercise	
12	Introduce/discuss Phyla p110 Word Bank: p111 Learning Power - Word bank words Activity: Classification key p111 Exercise p111 HW: Complete exercise & collect 5 Chordata pictures	
13	Introduce/discuss Class p112 Activity: Classification activity p112 Activity: Classification p113 HW: Redo/improve chordata class key p112	
14	Activity: Habitat study p57 HW: Complete activity as required & collect photos of birds at home etc	
15	Activity: Identification of bird photos p114 Activity: Observe fish in acquarium p115 Activity: Fish dissection Exercise: p115 HW: Complete exercise	Acquarium activity p115 Fish dissection activity p115 Internet
16	Introduce/discuss Amphibia & Reptilia p116 & 117 Exercise p116 Exercise: 117 Prepare for activity top p119 by designing/making an insect trap HW: Complete exercises & make insect trap	Internet
17	Introduce/discuss Arthropoda p118 Activity: Insects p119 HW: Complete wallchart	Activity top p119 (white sheet)
18	Activity: Examine dead insects p119 Activity: Examine dead spiders p119 Internet: ‘Arthropod Virtual Zoo’ HW: Complete activities as required	Activities p119 (dead insects spiders)

Chapter 5 Classification (5 weeks)

Lesson	Method	Resources
19	□ Introduce/discuss Plant Kingdom/Phyla p120 □ Internet: Parts of a flower	Internet
20	□ Activity: Classify plants p121 □ Activity: Dicots and monocots p121 □ Exercise p121 □ HW: Complete exercise	
21	□ Introduce/discuss Using keys p122 □ Activity: Use a key p122 □ Activity: Use an Internet key - weeds p123 □ Internet: Identify animals in a virtual tide pool	Internet
22	Chapter Review and Task □ Exercises p124 and 125 □ Begin work on 'A Task' p97 □ HW: Complete exercises & work on task as required	
23	Chapter Review and Task □ Exercises p126 & p 128 □ Continue work on 'A Task' p97 □ HW: Complete exercises & work on task as required	
24	Chapter Review and Task □ Competition Questions p129 □ Harder Test questions p130 □ Continue work on 'A Task' p97 □ HW: Complete exercises & work on task as required	
25	□ End of Chapter / End of Unit Test	