



# Lesson Plans

## Year 7 Science

## Chapter 3 Food Webs

### 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 3 Food Webs

Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions (ACSSU112).

- ★ use food chains to show feeding relationships in a habitat.
- ★ construct and interpret food webs to show relationships between organisms in an environment.
- ★ classify organisms of an environment according to their position in a food chain.
- ★ recognise the role of microorganisms within food chains and food webs.
- ★ investigate the effect of human activity on local habitats, such as deforestation, agriculture or the introduction of new species.
- ★ explore how living things can cause changes to their environment and impact other living things, such as the effect of cane toads.
- ★ research specific examples of human activity, such as the use of fire by traditional Aboriginal people and the effects of palm oil harvesting in Sumatra and Borneo.

## 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 3 Food Webs (5 weeks)

Lesson	Method	Resources
1	<ul style="list-style-type: none"> <li><input type="checkbox"/> General (covering book, ruling pages, paste study guide etc.)</li> <li><input type="checkbox"/> Purpose of chapter</li> <li><input type="checkbox"/> Introduce/discuss Food Chains p42</li> <li><input type="checkbox"/> Exercise top p43</li> <li><input type="checkbox"/> Activity: Meal chain p43</li> <li><input type="checkbox"/> HW: Complete meal chain activity</li> </ul>	
2	<ul style="list-style-type: none"> <li><input type="checkbox"/> Repeat exercise top p43</li> <li><input type="checkbox"/> Activity: Organisms in decomposing matter p43</li> <li><input type="checkbox"/> HW: Exercise bottom p43</li> </ul>	Decomposing matter activity p43
3	<ul style="list-style-type: none"> <li><input type="checkbox"/> Repeat exercise top p43</li> <li><input type="checkbox"/> Introduce/discuss Photosynthesis p44</li> <li><input type="checkbox"/> Internet: Watch a few 'photosynthesis' videos.</li> <li><input type="checkbox"/> HW: Learn the equation for photosynthesis</li> </ul>	Internet
4	<ul style="list-style-type: none"> <li><input type="checkbox"/> Test photosynthesis equation/repeat as necessary Activity: Set up gases produced by plants bottom p45</li> <li><input type="checkbox"/> Discuss activity top p45</li> <li><input type="checkbox"/> HW: Describe 'stomata'</li> </ul>	Gases produced by plants activity bottom p45
5	<ul style="list-style-type: none"> <li><input type="checkbox"/> Test photosynthesis equation/repeat as necessary</li> <li><input type="checkbox"/> Discuss 'stomata'</li> <li><input type="checkbox"/> Observe/discuss previous 'plant gases' activity</li> <li><input type="checkbox"/> Activity: Gases produced by plants top p45</li> <li><input type="checkbox"/> Exercise p45</li> <li><input type="checkbox"/> HW: Complete exercise p45</li> </ul>	Gases produced by plants activity top p45
6	<ul style="list-style-type: none"> <li><input type="checkbox"/> Observe/discuss previous 'plant gases' activity bottom p45 and demonstrate test for oxygen</li> <li><input type="checkbox"/> Introduce/discuss Respiration p46</li> <li><input type="checkbox"/> Internet: Watch a few 'respiration' videos</li> <li><input type="checkbox"/> Exercise p47</li> <li><input type="checkbox"/> HW: Complete Exercise p47 and learn respiration equation</li> </ul>	Glowing splint Internet
7	<ul style="list-style-type: none"> <li><input type="checkbox"/> Test respiration equation/repeat as necessary</li> <li><input type="checkbox"/> Activity: Gases in respiration p47</li> <li><input type="checkbox"/> Internet: Greenhouse gases</li> <li><input type="checkbox"/> HW: Internet: Tests for carbon dioxide</li> </ul>	Gases in respiration activity p47 Internet
8	<ul style="list-style-type: none"> <li><input type="checkbox"/> Test Respiration &amp; Photosynthesis equations</li> <li><input type="checkbox"/> Introduce/discuss Flow of Matter p48</li> <li><input type="checkbox"/> Internet: Find a good 'Flow of Matter' diagram</li> <li><input type="checkbox"/> Draw a Flow of Matter diagram</li> <li><input type="checkbox"/> Internet: Watch videos on carbon cycle and nitrogen cycle</li> <li><input type="checkbox"/> Exercise p49</li> <li><input type="checkbox"/> HW: Complete exercise p49</li> </ul>	Internet

## Chapter 3 Food Webs (5 weeks)

Lesson	Method	Resources
9	<ul style="list-style-type: none"> <li><input type="checkbox"/> Test Respiration &amp; Photosynthesis equations</li> <li><input type="checkbox"/> Introduce/discuss Flow of Energy p50</li> <li><input type="checkbox"/> Internet: Optimum conditions for a compost bin</li> <li><input type="checkbox"/> Group brainstorm 'Design a compost bin' or 'Optimum conditions for bacteria and microorganisms'</li> <li><input type="checkbox"/> Exercise p51</li> <li><input type="checkbox"/> HW: Complete exercise p51</li> </ul>	Internet
10	<ul style="list-style-type: none"> <li><input type="checkbox"/> Brief revision of chapter: Quick summary followed by '10 questions'.</li> <li><input type="checkbox"/> Introduce/discuss Food Webs p52</li> <li><input type="checkbox"/> Exercise: top p53</li> <li><input type="checkbox"/> Internet: Complete above exercise</li> <li><input type="checkbox"/> Activity: Food web activity p53</li> <li><input type="checkbox"/> HW: Complete Exercise</li> </ul>	Compile '10 questions' revision Internet Food web activity p53
11	<ul style="list-style-type: none"> <li><input type="checkbox"/> Repeat brief revision of chapter followed by '10 questions'</li> <li><input type="checkbox"/> Activity: Freshwater pool game p54</li> <li><input type="checkbox"/> Activity: Food web p54</li> <li><input type="checkbox"/> HW: Complete activity as required</li> </ul>	
12	<ul style="list-style-type: none"> <li><input type="checkbox"/> Internet: Choice of 4 online activities p 54</li> <li><input type="checkbox"/> Word Bank: p55</li> <li><input type="checkbox"/> Learning power: p55</li> <li><input type="checkbox"/> Exercise: p55</li> <li><input type="checkbox"/> HW: Complete exercise</li> </ul>	
13	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introduce/discuss Australian habitats p56</li> <li><input type="checkbox"/> Activity: Habitat study preparation p57</li> </ul>	
14	<ul style="list-style-type: none"> <li><input type="checkbox"/> Activity: Habitat study p57</li> <li><input type="checkbox"/> HW: Complete activity as required</li> </ul>	Habitat study p57
15	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introduce/discuss Human activity p58</li> <li><input type="checkbox"/> Activity: p59</li> <li><input type="checkbox"/> Exercise: p59</li> <li><input type="checkbox"/> HW: Complete exercise</li> </ul>	
16	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introduce/discuss Invasive species p60, 61, 62</li> <li><input type="checkbox"/> Activity: p63</li> <li><input type="checkbox"/> Exercise: p63</li> <li><input type="checkbox"/> HW: Complete preparation of debate/persuasive speech as required</li> </ul>	Internet
17	Science inquiry <ul style="list-style-type: none"> <li><input type="checkbox"/> Group selection of a question from the bottom of pages 64 and 65</li> <li><input type="checkbox"/> Group conduction of an investigation to answer the question.</li> </ul>	
18	<ul style="list-style-type: none"> <li><input type="checkbox"/> Continuation of investigation</li> <li><input type="checkbox"/> Write report (samples on p21 and p25)</li> <li><input type="checkbox"/> HW: Complete report as required</li> </ul>	

### Chapter 3 Food Webs (5 weeks)

Lesson	Method	Resources
19	Chapter Review and Task <input type="checkbox"/> Exercises p66 <input type="checkbox"/> Begin work on 'A Task' p41 <input type="checkbox"/> HW: Complete exercises & work on task as required	
20	Chapter Review and Task <input type="checkbox"/> Exercises p67 <input type="checkbox"/> Continue work on 'A Task' p41 <input type="checkbox"/> HW: Complete exercises & work on task as required	
21	Chapter Review and Task <input type="checkbox"/> Exercises p68 <input type="checkbox"/> Continue work on 'A Task' p41 <input type="checkbox"/> HW: Complete exercises & work on task as required	
22	Chapter Review and Task <input type="checkbox"/> Exercises p70 <input type="checkbox"/> Continue work on 'A Task' p41 <input type="checkbox"/> HW: Complete exercises & work on task as required	
23	Chapter Review and Task <input type="checkbox"/> Competition Questions p71 <input type="checkbox"/> Continue work on 'A Task' p41 <input type="checkbox"/> HW: Complete exercises & work on task as required	
24	Chapter Review and Task <input type="checkbox"/> Harder Test Questions p72 <input type="checkbox"/> Complete work on 'A Task' p41 <input type="checkbox"/> HW: Complete exercises & task as required	
25	<input type="checkbox"/> End of Chapter / End of Unit Test	