

Pearson Science WA 7: Sample teaching program

This sample teaching program maps the Western Australian Curriculum (implementation 2026) outcomes and content to *Pearson Science 7 Western Australia* and *Pearson Digital Hub: Science 7 (WA)* as well as all student and teacher resources. Although this sample program suggests a teaching order, it is expected that teachers will modify it to suit their local environment and student cohort.

Pearson Science Western Australia 7–10 delivers content in bite-sized, manageable chunks to enable clear learning progression and ease of assessment. Learning goals are established at the start, with each lesson addressing one learning intention and 1–3 success criteria.

Teacher planning and preparation: Full-year teacher planning and preparation resources can be accessed and downloaded from Pearson Digital Hub under ‘Teacher Resources’ at the start of each topic. These resources include this teaching program; practical work teaching notes, risk assessments, technician’s checklists and recipes; and answers to all student worksheets.

Fully worked solutions for all student book activities can be accessed from the *Pearson Science 7 Western Australia eBook* in teacher view.

Teaching guidance: Topic- and lesson-based teacher support is provided in the Teacher view of Pearson Digital Hub.

Topic-based guidance includes background information, expected student prior knowledge, key ideas from the curriculum, appropriate links to other Pearson Science topics and the common misconceptions and remediations related to the topic.

Lesson/activity guidance includes overviews and specific teaching notes for each activity, risk assessments where needed and solutions for any student online assessments.

Year 7 Suggested timing: approximately 38 teaching weeks

- 8 weeks: 1 Forces and simple machines
- 6 weeks: 2 Systems in space: The Earth, Sun and Moon
- 6 weeks: 3 Particle theory and properties of substances
- 6 weeks: 4 Mixtures and methods of separation
- 6 weeks: 5 Classification and biodiversity
- 6 weeks: 6 Matter and energy in ecosystems

Science inquiry toolkit

The science inquiry toolkit includes instructions and examples to support students with their mastery of scientific inquiry. The sections in the toolkit target specific skills and are referenced at potential point of need throughout the Student Book topics, most commonly in practical investigations and inquiry activities.

The content of the *Pearson Science 7 Western Australia* Toolkit is shown below.

1 Questioning and predicting 1.1 Investigable questions 1.2 Dependent, independent and controlled variables 1.3 Hypotheses and predictions 2 Planning and conducting 2.1 Writing a method for an experiment 2.2 Ethical behaviour and safety in science 2.3 Using units in science 2.4 Taking measurements in science 2.5 Mistakes and errors 3 Processing, modelling and analysing 3.1 Types of scientific data 3.2 Calculating the mean (average) of a set of data values 3.3 Designing a results table 3.4 Using line graphs and column graphs 3.5 Patterns and trends in data	4 Evaluating 4.1 Evaluating investigations 4.2 Referencing secondary data 4.3 Selecting and using secondary data 5 Communicating 5.1 Scientific writing 5.2 Scientific diagrams 5.3 Drawing scientific equipment 5.4 Graphic organisers 5.5 Writing a practical investigation report 5.6 Line graphs and column graphs 5.7 Creating a line graph using a spreadsheet 6.9 Evaluating reliability
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TOPIC 6: MATTER AND ENERGY IN ECOSYSTEMS

This topic is an exploration of ecosystems, including their sustainability, with a focus of the flow of matter and energy between populations, including specific types of feeding relationships.

SCIENCE UNDERSTANDING Content description:

Food chains and food webs can be used to represent energy flow in ecosystems and predict possible impacts of human activity (WA7SSUBS2)

Achievement standard:

Students use and develop models, such as food chains and food webs to represent energy flow in ecosystems and predict impacts of human activity.

Source: Government of Western Australia School Curriculum and Standards Authority (SCSA)



First Nations Australians' knowledge use deep ecological understanding to develop sustainable practices
(Cultural understandings and sustainable practices)

Human use of the environment, including agriculture, industry and urbanisation, can cause habitat damage or destruction
(Human impacts on ecosystems)

Food webs show the flow of energy in an ecosystem and can be used to predict the effect of population changes
(Food webs)

Food webs can be constructed for specific ecosystems using observations of feeding relationships
(Practical investigation: Food web in an Australian ecosystem)

Food chains demonstrate feeding relationships and energy flow within ecosystems including order of consumers and predator-prey relationships
(Food chains)

Biomass pyramids show the relationships between different trophic levels and can be used to compare different ecosystems
(Biomass pyramids)

There are several ecosystems in Australia that are at risk of reduced biodiversity (Inquiry activity: The Australian environment today)

Local ecosystems can be monitored using a range of techniques that cause minimal damage to the ecosystem (Practical investigation: Organisms and habitats in the school grounds)

Organisms need certain resources to survive in a range of habitats
(Survival needs)

Topic 6: Matter and energy in ecosystems

(* = downloadable)

<i>Pearson Science 7 Western Australia student book</i>	Western Australian Curriculum Content Descriptions	Learning intentions (LI) and success criteria (SC)	<i>Pearson Digital Hub: Science 7 Western Australia student resources</i>	<i>Pearson Digital Hub: Science 7 Western Australia teacher resources</i>
Prior knowledge (page TBC)	Content description for topic: Food chains and food webs can be used to represent energy flow in ecosystems and predict possible impacts of human activity (WA7SSUBS2)		Spark activity: No food Check your prior knowledge	Topic introduction: Matter and energy in ecosystems teaching notes Spark activity teaching notes Prior knowledge solutions
6.1 Survival needs (page TBC)		LI: To understand the requirements for survival of organisms and populations SC 1: I can describe the basic survival needs of plants and animals in Australia. SC 2: I can describe a range of habitats in the Australian environment. SC 3: I can explain the requirements for the maintenance of populations within an ecosystem.	Spark activity: What lives in your local area? *Worksheet: Different living spaces Check your understanding Lesson review	Survival needs teaching notes and fully worked solutions Different living spaces worksheet fully worked solutions Spark activity teaching notes and risk assessment
6.2 Inquiry activity: The Australian environment today (page TBC)	Science inquiry: Communicate ideas, findings and arguments (WA7SSIC1) Illustrate the benefits of collaboration across disciplines and cultures (WA7SSICA1)	LI: To be able to describe factors that threaten Australian ecosystems SC 1: I can describe specific threats to Australian ecosystems. SC 2: I can explain the dangers of	*Inquiry activity: The Australian environment today	Inquiry activity: The Australian environment today teaching notes and fully worked solutions

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	Illustrate how science has influenced the development of individual, community and workplace practices (WA7SSICA2)	loss of biodiversity in Australia. SC 3: I can describe how abiotic and biotic factors are affecting a local ecosystem		
6.3 Practical investigation: Organisms and habitats in the school grounds (page TBC)	Science inquiry: Select and use equipment to generate and record data (WA7SSIP2)	LI: To be able to conduct a safe, ethical survey of organisms in a local environment SC 1: I can carry out a sampling technique. SC 2: I can consider ways to reduce risk and damage to the environment when conducting fieldwork. SC 3: I can use evidence from primary data to predict observations.	*Practical investigation and SPARKlab: Organisms and habitats in the school grounds SkillBuilder: Recording results using sampling Ethical collection of data	Practical investigation and SPARKlab: Organisms and habitats in the school grounds teaching notes, risk assessment and fully worked solutions
6.4 Food chains (page TBC)		LI: To understand how food chains can demonstrate feeding relationships and energy flow within ecosystems SC 1: I can construct a food chain based on an Australian ecosystem. SC 2: I can identify producers and primary, secondary and tertiary consumers in a food chain. SC 3: I can describe specific feeding relationships, including predator-prey, in Australian terrestrial and	Spark activity: Feeding relationships in the garden *Worksheet: Food chains Check your understanding Lesson review	Food chains teaching notes and fully worked solutions Spark activity teaching notes Food chains worksheet fully worked solutions

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		aquatic ecosystems.		
6.5 Biomass pyramids (page TBC)		LI: To understand how biomass pyramids can be used to describe and compare different ecosystems SC 1: I can explain how ecological pyramids can be used to represent the flow of energy between populations in a food chain. SC 2: I can describe the flow of energy through a biomass pyramid. SC 3: I can measure and compare the flow of energy within biomass pyramids using provided data.	Spark activity: Just how many are there? Check your understanding Lesson review	Biomass pyramids teaching notes and fully worked solutions Spark activity teaching notes and risk assessment
6.6 Food webs (page TBC)		LI: To understand and predict interactions and energy flow in an ecosystem using a food web SC 1: I can create a food web from information about feeding relationships in an ecosystem. SC 2: I can explain the energy pathways in a food web, including identifying producers, different levels of consumers and apex predators. SC 3: I can use relationships from a food web, and the concept of	Spark activity: What have you eaten today? *Worksheets: Creating a food web Food webs	Food webs teaching notes and fully worked solutions Spark activity teaching notes Creating a food web and Food webs worksheets fully worked solutions

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		competition, to predict the effect of population changes within an ecosystem.		
6.7 Practical investigation: Food web in an Australian ecosystem (page TBC)	Science inquiry: Propose investigable questions and make predictions (WA7SSIQP1) Plan and conduct reproducible investigations (WA7SSIP1C1) Construct appropriate representations (WA7SSIPMA1) Analyse data and information and draw conclusions (WA7SSIPMA2) Reflect on scientific investigations (WA7SSIE1) Illustrate the benefits of collaboration across disciplines and cultures (WA7SSICA1) Illustrate how science has influenced the development of individual, community and workplace practices (WA7SSICA2)	LI: To be able to apply the concept of trophic levels to a food web in a local ecosystem SC 1: I can collaboratively plan to survey an ecosystem including selecting appropriate equipment. SC 2: I can propose at least one possible food web based on the organisms observed in the ecosystem. SC 3: I can predict, with reasoning, the effect of a change on populations within the ecosystem.	*Practical investigation: Food web in an Australian ecosystem	Practical investigation: Food web in an Australian ecosystem teaching notes, risk assessment and fully worked solutions
6.8 Human impacts on ecosystems (page TBC)	Science inquiry: Illustrate the benefits of collaboration across disciplines and cultures (WA7SSICA1)	LI: To understand how human activities can cause habitat damage or destruction	Spark activity: What's in my lunchbox? Check your understanding	Human impacts on ecosystems teaching notes and fully worked solutions Spark activity teaching

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	Illustrate how science has influenced the development of individual, community and workplace practices (WA7SSICA2)	SC 1: I can explain how intensive farming practices can affect ecosystems. SC 2: I can explain how First Nations Australians' traditional knowledge can inform sustainable harvesting practices. SC 3: I can describe how the impacts of climate change affect populations within ecosystems.	Lesson review	notes
6.9 Cultural understandings and sustainable practices (page TBC)	Science inquiry: Illustrate the benefits of collaboration across disciplines and cultures (WA7SSICA1) Illustrate how science has influenced the development of individual, community and workplace practices (WA7SSICA2)	LI: To understand how First Nations Australians use deep ecological understanding to develop sustainable practices SC 1: I can explain how First Nations Australians' deep ecological understanding can inform sustainable practices. SC 2: I can name various sustainable practices used by First Nations Australians. SC 3: I can explain how First Nations Australians' practices have influenced scientific knowledge about ecosystems.	Spark activity: Sustainable practices Check your understanding Lesson review	Cultural influence on sustainability teaching notes and fully worked solutions Spark activity teaching notes
Topic review (page TBC)			Topic review: Matter and energy in ecosystems	Topic review: Matter and energy in ecosystems

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			assessment questions	assessment solutions

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