Stile

Scope and Sequence

The Australian Curriculum, Version 8.4

Years 7–10 Science, 2024

A world-class science education for *every* student

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Stile is for schools that are **serious about science.**
Serious about challenging their students.
Serious about supporting their teachers.

2024 Edition, Version 2.0

Contents

All units in Stile address the general capabilities of the Australian Curriculum. We have used the following symbols to indicate this:

- Ethical understanding
- Literacy
- Critical and creative thinking
- Numeracy
- Personal and social capability
- Digital literacy
- Intercultural understanding

Acknowledgement of Country

As a science education company, Stile recognises and appreciates the immense knowledge and understandings of both science and education that are held within the Aboriginal and Torres Strait Islander communities.

Stile HQ is located on the traditional lands of the Boon Wurrung and Woiwurrung (Wurundjeri) peoples of the Kulin Nation. We acknowledge that sovereignty was never ceded and pay our respects to Elders past, present and future.

Learn more from Indigenous astronomer, Karlie Noon

Image credit: University of Newcastle

Watch this video!

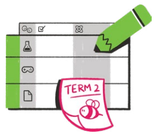
stileapp.com/go/karlie

Artist: Tasha McAlpine (née Victor)
Language group: Nyul Nyul / Nyikina

Everything in one place

Teacher resources	Student resources

Before class



Find out everything you need to know from the unit's **Teaching Plan** and **Lab Guide**.

In **Prepare Mode** for each lesson, you can:
- Read the detailed teaching notes
- Print a copy to refer to in class
- Customise resources for the needs of your students

Stile X phone app
- Front-load the unit's scientific terminology through flashcards and quizzes

During class

Within **Teach Mode** you can:
- Implement explicit teaching with learning goals and Key Questions
- Use videos, images and text to guide your instruction
- Facilitate discussion with live brainstorms and polls
- View student data instantly to inform your teaching

Stile Digital
- Engage in real-world phenomena through:
  - Labs
  - Projects
  - Lessons
  - Hands-on activities
  - Simulations
  - Engineering challenges
  - Open-ended investigations
  - Extension lessons

After class

To **Analyse** student work:
- View data in Analyse Mode to determine your next teaching steps
- See a bird's-eye view of student progress in the Markbook
- Release model answers to students
- Provide written feedback where it matters most

Stile X booklets
- Consolidate and revise material learned in class by:
  - Creating structured revision notes
  - Recording definitions in the glossary
  - Completing practice test questions

Stile X phone app
- 60-second summary videos recap key ideas from the Stile lesson

Scan here to view **The Stile Guide**, the essential guide to supercharging your teaching with Stile

A note from our Head of Education

Clare Feeney | Head of Education
and the whole Stile team

Stile is a complete, coherent curriculum for Australian science classrooms. Our resources are designed to help students be the best learners they can be while supporting teachers to maximise their impact through evidence-based teaching strategies.

This scope and sequence document offers a world-class starting point for designing your school's science curriculum. It can be used in its current format alongside our comprehensive teaching plans to provide the support that graduate teachers need, or it can be customised to best suit your unique context and provide the flexibility that experienced teachers demand.

If you have any questions or would like to chat more about our science program please reach out. We're a bunch of teachers and science nerds based in Melbourne, with team members across the country, and we love chatting with fellow educators about awesome science education.

Call us on 1300 918 292

Email us at community@stileeducation.com

Year 7

Suggested Scope & Sequence

All units have a Stile X booklet with videos, flashcards and quizzes available in the Stile X app. Find out more about Stile X at **stileapp.com/go/stilex**

An artist's impression of an astronaut on Mars
If humans are to colonise Mars, we'll need to learn how to keep water in the states we can use.

Year 7 | Science understanding

Download an editable spreadsheet version **here**.

Introduction to Science

What is science and how can it help us solve global problems?

Mixtures

Can we 3D-print new bones to replace broken ones?

ACSSU113

Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques

Resources

How has our use of resources changed over time?

ACSSU116

Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable

The Water Cycle

Would you ever drink your own urine?

ACSSU116

Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable

Food Chains and Food Webs

Why do cats have slit-shaped pupils?

ACSSU112

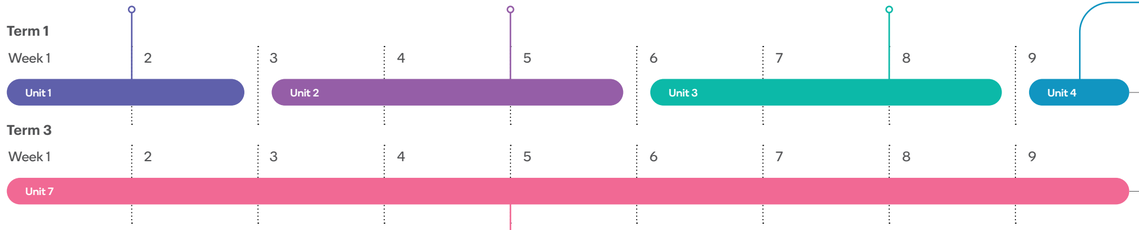
Interactions between organisms, including the effects of human activities can be represented by food chains and food webs

Classification and Biodiversity

Do we need to save the bees?

ACSSU111

Classification helps organise the diverse group of organisms



Forces

How have people used forces for thousands of years?

ACSSU117

Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object

Heat

How do you make the best pizza?

ACSSU155

Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems

Our Place in Space

Can we travel to the Sun?

ACSSU115

Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon

Year 7 | Science inquiry

		Introduction to Science	Mixtures	Resources	The Water Cycle	Food Chains and Food Webs	Classification and Biodiversity	Forces	Heat	Our Place in Space
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
ACSIS124	Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge	✓		✓	✓		✓	✓	✓	
ACSIS125	Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed	✓	✓	✓				✓	✓	
ACSIS126	Measure and control variables, select equipment appropriate to the task and collect data with accuracy	✓	✓		✓			✓	✓	✓
ACSIS129	Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate	✓	✓			✓		✓	✓	✓
ACSIS130	Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence	✓	✓			✓	✓	✓	✓	✓
ACSIS131	Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements	✓	✓		✓			✓	✓	✓
ACSIS132	Use scientific knowledge and findings from investigations to evaluate claims based on evidence	✓					✓	✓	✓	
ACSIS133	Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate	✓	✓	✓		✓	✓	✓		

Year 7 | Science as a human endeavour

		Introduction to Science	Mixtures	Resources	The Water Cycle	Food Chains and Food Webs	Classification and Biodiversity	Forces	Heat	Our Place in Space
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
ACSHE119	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available						✓	✓	✓	✓
ACSHE120	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations	✓	✓	✓	✓	✓		✓		
ACSHE121	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity.			✓			✓			✓
ACSHE223	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures			✓	✓			✓		✓

Year 8

Suggested Scope & Sequence

All units listed, except for Student Research Project, have a Stile X booklet with videos, flashcards and quizzes available in the Stile X app. Find out more about Stile X at **stileapp.com/go/stilex**

Unwrapping the secrets of chocolate
Cocoa beans are turned into delicious, melt-in-your-mouth chocolate by a sequence of physical and chemical changes.

Year 8 | Science understanding

Download an editable spreadsheet version **here**.

Optional — Units marked as optional are not required for curriculum coverage, however they are recommended by the Stile team.

Cells

Would you eat lab-grown meat?

ACSSU149

Cells are the basic units of living things; they have specialised structures and functions

Body Systems

What does it take to be a cold-blooded killer?

ACSSU150

Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce

Plants

How do predatory plants survive?

ACSSU150

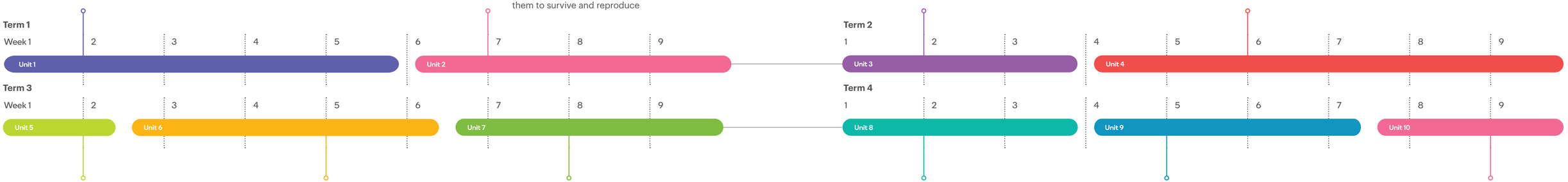
Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce

Energy

What can we learn from nature's energy engineers?

ACSSU155

Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems



Electrical Circuits

How can wearable electronics help us?

ACSSU182

Energy transfer through different mediums can be explained using wave and particle models

States of Matter

Why is liquid water so important for humans to live on Mars?

ACSSU151

Properties of the different states of matter can be explained in terms of the motion and arrangement of particles

Physical and Chemical Change

What does chemistry have to do with chocolate making?

ACSSU225

Chemical change involves substances reacting to form new substances

Elements and Compounds

Why is helium so rare?

ACSSU152

Differences between elements, compounds and mixtures can be described at a particle level

Active Earth (Part 1: The Rock Cycle)

How do we build future-ready cities?

ACSSU153

Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales

Student Research Project

Year 8 | Science inquiry

		Cells	Body Systems	Plants	Energy	Electrical Circuits	States of Matter	Physical and Chemical Change	Elements and Compounds	Active Earth (Part 1)	Student Research Project
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
ACSIS139	Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge			✓	✓	✓	✓	✓	✓	✓	✓
ACSIS140	Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed		✓	✓	✓	✓	✓	✓	✓	✓	✓
ACSIS141	Measure and control variables, select equipment appropriate to the task and collect data with accuracy				✓		✓	✓	✓	✓	✓
ACSIS144	Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate		✓		✓	✓	✓		✓	✓	✓
ACSIS145	Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence		✓		✓		✓	✓	✓	✓	✓
ACSIS146	Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements				✓		✓		✓	✓	✓
ACSIS234	Use scientific knowledge and findings from investigations to evaluate claims based on evidence	✓	✓					✓	✓		✓
ACSIS148	Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate	✓	✓			✓		✓	✓	✓	✓

Year 8 | Science as a human endeavour

		Cells	Body Systems	Plants	Energy	Electrical Circuits	States of Matter	Physical and Chemical Change	Elements and Compounds	Active Earth (Part 1)	Student Research Project
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
ACSHE134	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available	✓	✓		✓	✓	✓		✓	✓	
ACSHE226	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures	✓						✓		✓	
ACSHE135	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations	✓	✓		✓				✓	✓	
ACSHE136	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity	✓	✓	✓	✓		✓	✓	✓	✓	

Year 9

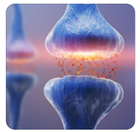
Suggested Scope & Sequence

All units listed, except for Student Research Project, have a Stile X booklet with videos, flashcards and quizzes available in the Stile X app. Find out more about Stile X at **stileapp.com/go/stilex**

The aurora borealis or northern lights
This beautiful phenomenon is caused by energetic particles from the Sun interacting with the atmosphere, which is one of Earth's four systems.

Year 9 | Science understanding

Download an editable spreadsheet version **here**.

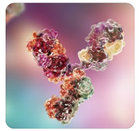


The Nervous System

How can your gut influence your mood?

ACSSU175

Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment



The Immune System

How can we protect communities from diseases?

ACSSU175

Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment

Ecosystems

How can we prevent plastic from harming marine life?

ACSSU176

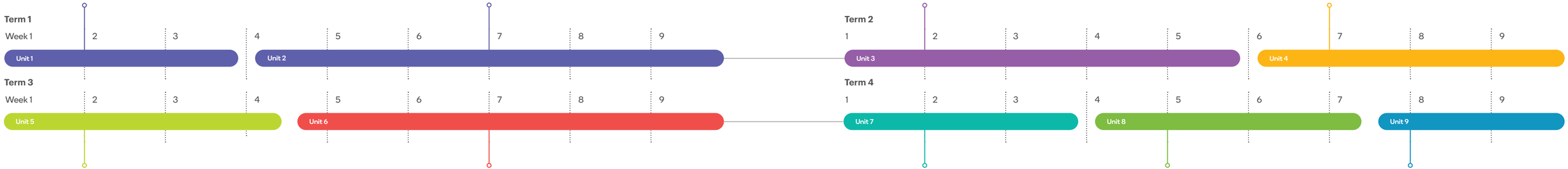
Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems

Atoms

How can the building blocks of atoms help us see further?

ACSSU177

All matter is made of atoms that are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms



Chemical Reactions

What happens when sodium explodes in water?

ACSSU178

Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed

Waves

How does someone on the other side of the world see and hear you?

ACSSU182

Energy transfer through different mediums can be explained using wave and particle models

Acids and Bases

Why are our oceans becoming more acidic?

ACSSU179

Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer

Reactions and Energy

Are bionic leaves better than the real thing?

ACSSU179

Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer

Active Earth (Part 2: Plate Tectonics)

How do we build future-ready cities?

ACSSU180

The theory of plate tectonics explains global patterns of geological activity and continental movement

Year 9 | Science inquiry

		The Nervous System	The Immune System	Ecosystems	Atoms	Chemical Reactions	Waves	Acids and Bases	Reactions and Energy	Active Earth (Part 2)
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
ACSIS164	Formulate questions or hypotheses that can be investigated scientifically	✓	✓	✓		✓	✓		✓	✓
ACSIS165	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods		✓	✓		✓			✓	
ACSIS166	Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately		✓	✓		✓		✓		
ACSIS169	Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies		✓	✓			✓	✓	✓	✓
ACSIS170	Use knowledge of scientific concepts to draw conclusions that are consistent with evidence	✓	✓	✓	✓	✓			✓	✓
ACSIS171	Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data	✓	✓	✓		✓				
ACSIS172	Critically analyse the validity of information in primary and secondary sources and evaluate the approaches used to solve problems	✓	✓	✓	✓		✓	✓	✓	✓
ACSIS174	Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations	✓	✓	✓	✓	✓		✓	✓	✓

Year 9 | Science as a human endeavour

		The Nervous System	The Immune System	Ecosystems	Atoms	Chemical Reactions	Waves	Acids and Bases	Reactions and Energy	Active Earth (Part 2)
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
ACSHE157	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community	✓	✓			✓				✓
ACSHE158	Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries	✓	✓	✓	✓		✓			✓
ACSHE160	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities	✓	✓	✓			✓	✓	✓	✓
ACSHE228	Values and needs of contemporary society can influence the focus of scientific research	✓	✓	✓			✓	✓	✓	✓

Year 10

Suggested Scope & Sequence

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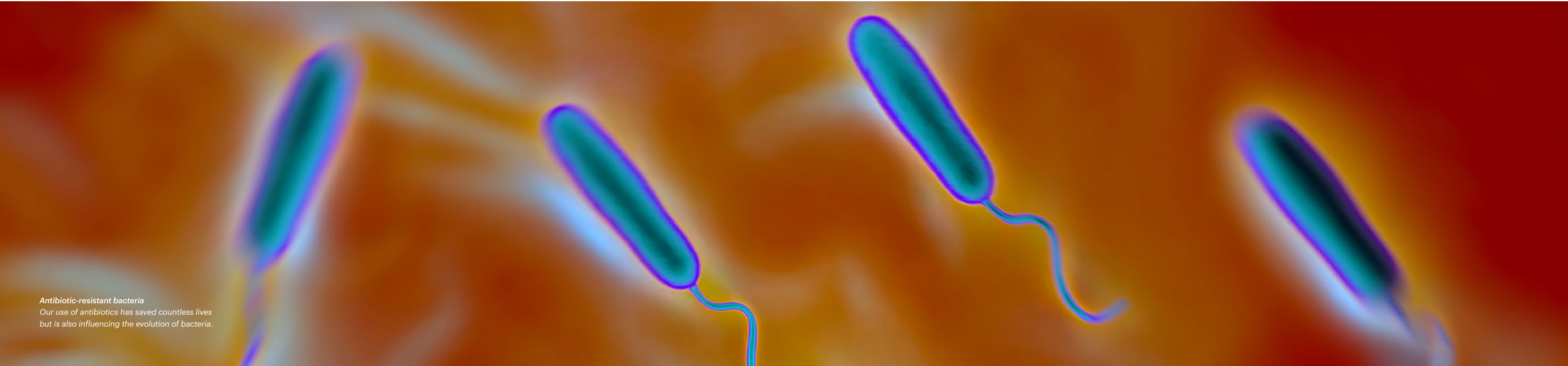


Antibiotic-resistant bacteria
Our use of antibiotics has saved countless lives but is also influencing the evolution of bacteria.

Year 10 | Science understanding

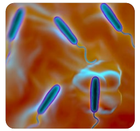
Download an editable spreadsheet version **here**.

Genetics

Can genes increase the risk of cancer?

ACSSU184

Transmission of heritable characteristics from one generation to the next involves DNA and genes

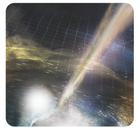


Evolution

Are we responsible for the rise of antibiotic-resistant superbugs?

ACSSU185

The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence



The Periodic Table

How do exploding stars create heavy metals?

ACSSU186

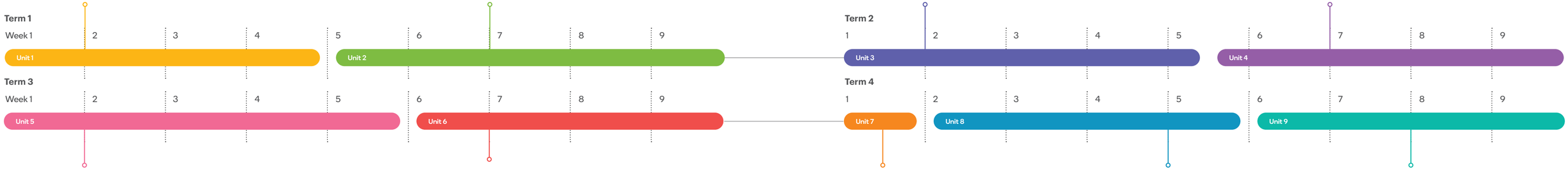
The atomic structure and properties of elements are used to organise them in the Periodic Table

Reaction Types

Are self-healing space suits science fiction or just science?

ACSSU187

Different types of chemical reactions are used to produce a range of products and can occur at different rates



Kinematics

Are self-driving cars the way of the future?

ACSSU229

The motion of objects can be described and predicted using the laws of physics

Newton's Laws of Motion

How can we apply Newton's Laws to car crash investigations?

ACSSU229

The motion of objects can be described and predicted using the laws of physics

Energy Conservation

Can we use ocean waves to produce electricity?

ACSSU190

Energy conservation in a system can be explained by describing energy transfers and transformations

The Universe

How do gravitational waves give us a new way of understanding the universe?

ACSSU188

The universe contains features including galaxies, stars and solar systems, and the Big Bang theory can be used to explain the origin of the universe

Earth Systems

How does our planet recycle?

ACSSU189

Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere

Year 10 | Science inquiry

		Genetics	Evolution	The Periodic Table	Reaction Types	Kinematics	Newton's Laws of Motion	Energy Conservation	The Universe	Earth Systems
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
ACSIS198	Formulate questions or hypotheses that can be investigated scientifically		✓				✓	✓		
ACSIS199	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods		✓			✓	✓		✓	✓
ACSIS200	Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately	✓	✓	✓	✓	✓	✓			✓
ACSIS203	Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies				✓	✓				✓
ACSIS204	Use knowledge of scientific concepts to draw conclusions that are consistent with evidence		✓	✓	✓	✓	✓	✓	✓	✓
ACSIS205	Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data					✓	✓			✓
ACSIS206	Critically analyse the validity of information in primary and secondary sources and evaluate the approaches used to solve problems				✓	✓	✓	✓		✓
ACSIS208	Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations	✓	✓	✓	✓	✓	✓	✓	✓	✓

Year 10 | Science as a human endeavour

		Genetics	Evolution	The Periodic Table	Reaction Types	Kinematics	Newton's Laws of Motion	Energy Conservation	The Universe	Earth Systems
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
ACSHE191	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community		✓	✓					✓	
ACSHE192	Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries	✓	✓			✓	✓		✓	
ACSHE194	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities	✓				✓	✓		✓	✓
ACSHE230	Values and needs of contemporary society can influence the focus of scientific research		✓		✓			✓	✓	✓

Supplementary units

These units can be used in addition to those within the scope and sequence to elaborate on the content descriptors listed.

Metals

How can metals help us fight cancer?

ACSSU187

Different types of chemical reactions are used to produce a range of products and can occur at different rates

Human Impacts on Ecosystems

Are corals going extinct...again?

ACSSU176

Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems

The Endocrine System

Will staring at your phone screen before bed affect your sleep?

ACSSU175

Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment

Radiation

Why is cosmic radiation so dangerous?

ACSSU177

All matter is made of atoms that are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms

Sound

In space no one can hear you scream – or can they?

ACSSU182

Energy transfer through different mediums can be explained using wave and particle models

The Survival of Species

How do reproductive strategies help a species stay alive?

ACSSU150

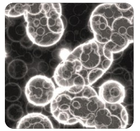
Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce

Classification

Why do zebras have stripes?

ACSSU111

Classification helps organise the diverse group of organisms



Reproduction

Which was the first species to have sex?

ACSSU150

Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce

Light

Can you turn your smartphone into a microscope?

ACSSU182

Energy transfer through different mediums can be explained using wave and particle models

Simple Machines

How do machines make life easier?

ACSSU117

Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object

Supporting resources

Use these units to support students' learning beyond the science understanding strand of the Australian Curriculum.

Skill builders
Lessons to boost your students' science inquiry skills

Women in STEM career profiles
Explore a range of careers in STEM

Science news lessons
Real-world science based on the news

Breaking news lessons
Short, literacy-focused lessons about news you need to know

Escape rooms
Engage your students in fun scientific puzzles

Teacher resources and templates
Useful resources to help you get the most out of Stile

stileeducation.com

Call us on 1300 918 292

Email us at community@stileeducation.com

Swing by the office to say hi!
Level 5, 128 Exhibition Street, Melbourne, Victoria

Stile HQ is located on the traditional lands of the Boon Wurrung and Woiwurrung (Wurundjeri) peoples of the Kulin Nation. We acknowledge that sovereignty was never ceded and pay our respects to Elders past, present and future.