

Australian Science Content Map

Education Perfect Science is an online learning resource with scaffolded Smart Lessons aligned to the Australian Curriculum. This table aligns the lessons provided by Education Perfect mapped to the Australian Curriculum.

Year 9 Australian Curriculum	
Science Understanding	
Biological sciences	Education Perfect Lessons
Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment (ACSSU175)	<p>Science Understanding</p> <p>Unicellular and Multicellular Organisms</p> <p>Homeostasis</p> <p>Control Systems</p> <p>The Nervous System</p> <p>The Neuron</p> <p>Nerve Pathways</p> <p>Sensory Receptors and the Eye</p> <p>The Endocrine System</p> <p>Endocrine System in Action</p> <p>Immune System</p> <p>First & Second Lines of Defence</p> <p>Third Line of Defence & Lymphatic System</p> <p>What are Diseases?</p> <p>What are Pathogens?</p> <p>Cancer</p> <p>Chicken Pox</p> <p>Malaria</p> <p>Degenerative Diseases</p> <p>Endocrine Diseases</p> <p>Pathogens</p> <p>Starfish Nervous System</p> <p>Science as a Human Endeavour</p> <p>Disease Treatment</p> <p>How are Diseases Spread?</p> <p>Science Investigations</p> <p>Eye Dissection</p> <p>Kidney Dissection</p> <p>Testing Reflexes</p>
Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)	<p>Science Understanding</p> <p>Introduction to Ecology</p> <p>The Biosphere and Biomes</p> <p>Species and Organisms</p> <p>Parts of an Ecosystem</p> <p>Abiotic Factors</p> <p>Biotic Factors and Competition</p> <p>Symbiosis</p>

	Adaptations Producers Consumers and Decomposers Food Chains and Food Webs Trophic Levels The Carbon Cycle Biodiversity Bushfires Drought Flooding The Greenhouse Effect The Nitrogen Cycle Science as a Human Endeavour Human Impacts Invasive Species Oil Spills Pesticides Predicting Population Changes Science Investigations Designing Experiments on Pollution Photosynthesis and Starch Researching the Carmichael Coal Mine Sampling a Leaf Litter Ecosystem
Chemical sciences	Education Perfect Lessons
<p>All matter is made of atoms that are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms (ACSSU177)</p>	Science Understanding Review: Matter The Structure of an Atom Atomic Symbols What are Isotopes? The Periodic Table What are Ions? Ionic Compounds Ions in Solution What is Radioactivity? Types of Radiation Half-Lives Naming Ionic Compounds Nuclear Bombs Nuclear Fission Nuclear Power Types of Radiation Writing Nuclear Equations Science as a Human Endeavour Effect of Radiation on Humans Models of the Atom Radioactivity in Industry Radioactivity in Medicine Science Investigations Build an Atom Skittle Half Lives

<p>Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed (ACSSU178)</p>	<p>Science Understanding Introduction to Chemical Reactions Reactants and Products Writing Chemical Equations 1 Writing Chemical Equations 2 Conservation of Mass Balancing Equations Science as a Human Endeavour A Day in the Life of an Industrial Chemist The Father of Modern Chemistry The Yeast of our Problems Waste Management Science Investigations Conservation of Mass Identifying Chemical Reactions Make Your Own Forge Marshmolecules</p>
<p>Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)</p>	<p>Science Understanding Acids Bases Indicators Acid-Metal Reactions Neutralisation Reactions Endothermic and Exothermic Reactions Combustion Reactions Oxidation Reactions Types of Chemical Reactions Science as a Human Endeavour Acid Rain: Reactions Around Us Combustion and the Environment Photosynthesis: Reactions Around Us Respiration: Reactions Around Us Science Investigations Acids and Metals</p>
<p>Earth and space sciences</p>	<p>Education Perfect Lessons</p>
<p>The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)</p>	<p>Science Understanding Igneous Rocks Metamorphic Rocks Sedimentary Rocks Compositional Layers of the Earth Wegener's Theory of Continental Drift Seafloor Spreading and Hess' Theory Plate Tectonics Divergent Plate Boundaries Convergent Plate Boundaries Transform Boundaries and Faults Formation of Volcanoes Types of Lava Volcanic Hazards Earthquakes</p>

	Measuring Earthquakes Seismic Hazards Earth's Magnetic Field Geological Time Science as a Human Endeavour Development of the Geological Timescale Evidence of the Earth's Structure Supercontinents Volcano Exploration Robots Science Investigations Build a Seismometer Science Comprehension Subduction Zones and Ophiolite Belts
Physical sciences	Education Perfect Lessons
<p>Energy transfer through different mediums can be explained using wave and particle models (ACSSU182)</p>	Science Understanding Heat Transfer Conduction Convection Radiation Conductors and Insulators Sound Sound Formation Pitch and Loudness Hearing and Sound Light as a Wave Colour Materials Reflection Refraction Total Internal Reflection Lenses Light: Summary Curved Mirrors Plane Mirrors and Reflection Snell's Law Electricity Electric Circuits Current Resistance Voltage Introduction to Ohm's Law Batteries Conductors and Insulators Circuits in Series Circuits in Parallel Circuits Comparison Calculations Using Ohm's Law Radio Waves Cell Phones Internet X-rays

	<p>Science as a Human Endeavour</p> <p>Bushfires</p> <p>Housing Insulation</p> <p>Australian Aboriginal Music</p> <p>Bionic Ears</p> <p>Turned Down for What: Workplace Noise</p> <p>Electromagnetic Radiation and Medicine</p> <p>I Spy With My Bionic Eye</p> <p>The History of Lenses</p> <p>You, Me and UV</p> <p>The Sixth Sense: Electroreception</p> <p>War of the Currents</p> <p>Radar</p> <p>Working in Physics</p> <p>Science Investigations</p> <p>Convection in Liquids</p> <p>Heat Conduction</p> <p>Insulators</p> <p>Radiation</p> <p>Musical Bottles</p> <p>Slinky Waves</p> <p>Speed of Sound</p> <p>Straw Instruments</p> <p>Build a Periscope</p> <p>Colourful Candy</p> <p>Law of Reflection</p> <p>Lenses</p> <p>Refraction</p> <p>Battery Voltages</p> <p>Building Circuits</p> <p>Ohm's Law</p> <p>Resistance</p> <p>Static Electricity</p> <p>Energy in Classrooms</p> <p>Optical Fibres</p> <p>Radio Wave Blockers</p> <p>Science Comprehension</p> <p>Ultrasound</p> <p>Development of Lightbulbs</p> <p>History of Radio Communication</p>
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Science as a Human Endeavour

Nature and development of science	Education Perfect Lessons
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<p>Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE157)</p>	<p>Biological sciences</p> <p>Predicting Population Changes</p> <p>Chemical sciences</p> <p>Models of the Atom</p> <p>The Father of Modern Chemistry</p> <p>Earth and space sciences</p> <p>Development of the Geological Timescale</p>
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	Evidence of the Earth's Structure Supercontinents Physical sciences The History of Lenses War of the Currents Working in Physics
<p>Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSHE158)</p>	Biological sciences Disease Treatment Chemical sciences Models of the Atom Radioactivity in Industry Radioactivity in Medicine The Father of Modern Chemistry Earth and space sciences Development of the Geological Timescale Evidence of the Earth's Structure Volcano Exploration Robots Physical sciences Australian Aboriginal Music The History of Lenses Electromagnetic Radiation and Medicine War of the Currents Radar
<p>Use and influence of science</p>	<p>Education Perfect Lessons</p>
<p>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 (ACSHE160)</p>	Biological sciences Disease Treatment Human Impacts Invasive Species Oil Spills Pesticides Predicting Population Changes Chemical sciences Acid Rain: Reactions Around Us A Day in the Life of an Industrial Chemist Combustion and the Environment Photosynthesis: Reactions Around Us Radioactivity in Medicine Respiration: Reactions Around Us The Yeast of our Problems Waste Management Earth and space sciences Volcano Exploration Robots Physical sciences Bushfires Bionic Ears Turned Down for What: Workplace Noise Electromagnetic Radiation and Medicine I Spy With My Bionic Eye You, Me and UV

	Radar Working in Physics
<p>Values and needs of contemporary society can influence the focus of scientific research (ACSHE228)</p>	<p>Biological sciences Disease Treatment How are Diseases Spread? Human Impacts</p> <p>Chemical sciences Acid Rain: Reactions Around Us A Day in the Life of an Industrial Chemist Combustion and the Environment Effect of Radiation on Humans Radioactivity in Industry The Yeast of our Problems Waste Management</p> <p>Earth and space sciences Volcano Exploration Robots</p> <p>Physical sciences Bushfires Housing Insulation Bionic Ears Turned Down for What: Workplace Noise I Spy With My Bionic Eye You, Me and UV The Sixth Sense: Electroreception Radar Working in Physics</p>
<p>Science Inquiry Skills</p>	
<p>Questioning and predicting</p>	<p>Education Perfect Lessons</p>
<p>Formulate questions or hypotheses that can be investigated scientifically (ACSIS164)</p>	<p>Science Investigations Designing Experiments on Pollution Acids and Metals Heat Conduction Insulators Radiation Slinky Waves Refraction Building Circuits Radio Wave Blockers</p> <p>Science Inquiry Skills Lessons Hypothesising and Predicting</p>
<p>Planning and conducting</p>	<p>Education Perfect Lessons</p>
<p>Plan, select and use appropriate investigation types, including fieldwork and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these</p>	<p>Science Investigations Eye Dissection Kidney Dissection Testing Reflexes</p>

<p>methods (ACSIS165)</p>	<p>Designing Experiments on Pollution Photosynthesis and Starch Sampling a Leaf Litter Ecosystem Build an Atom Skittle Half Lives Conservation of Mass Identifying Chemical Reactions Make Your Own Forge Marshmolecules Acids and Metals Build a Seismometer Convection in Liquids Heat Conduction Insulators Radiation Musical Bottles Slinky Waves Speed of Sound Straw Instruments Build a Periscope Colourful Candy Law of Reflection Lenses Refraction Battery Voltages Building Circuits Ohm's Law Resistance Static Electricity Energy in Classrooms Optical Fibres Radio Wave Blockers Science Inquiry Skills Lessons Control Variables and Control Groups Fair Tests Repeatability and Reliability Sample Size Validity Variables Safety Equipment</p>
<p>Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately (ACSIS166)</p>	<p>Science Investigations Designing Experiments on Pollution Sampling a Leaf Litter Ecosystem Build an Atom Conservation of Mass Convection in Liquids Heat Conduction Insulators Radiation Musical Bottles Speed of Sound Law of Reflection</p>

	Lenses Refraction Battery Voltages Ohm's Law Resistance Static Electricity Science Inquiry Skills Lessons Accuracy Bunsen Burner Equipment Types Separating Substances and Other Equipment Measuring Electricity Measuring in Science Magnification Parts and Function of a Microscope Types of Microscopes Using a Microscope Reading the Meniscus
Processing and analysing data and information	Education Perfect Lessons
<p>Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (AC SIS169)</p>	Science Investigations Designing Experiments on Pollution Skittle Half Lives Make Your Own Forge Heat Conduction Insulators Radiation Speed of Sound Colourful Candy Law of Reflection Refraction Battery Voltages Ohm's Law Resistance Radio Wave Blockers Science Inquiry Skills Lessons Algebra - Algebra in Science Algebra - Rearranging Equations Interpreting Data Tables Matching Tables to Graphs Organising Data into a Data Table from an Experiment Choosing Appropriate Units Units of Distance Units of Energy Units of Speed Units of Volume Scientific Notation Significant Figures Interpreting Scale

	Bar Graphs Line Graphs Scatter Graphs
Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (AC SIS170)	Science Investigations Designing Experiments on Pollution Researching the Carmichael Coal Mine Heat Conduction Insulators Building Circuits Radio Wave Blockers Science Inquiry Skills Lessons Food Webs Interpreting Diagrams Water Cycle
Evaluating	Education Perfect Lessons
Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (AC SIS171)	Science Investigations Eye Dissection Kidney Dissection Testing Reflexes Designing Experiments on Pollution Conservation of Mass Identifying Chemical Reactions Make Your Own Forge Marshmolecules Acids and Metals Build a Seismometer Convection in Liquids Heat Conduction Insulators Radiation Speed of Sound Law of Reflection Refraction Battery Voltages Building Circuits Ohm's Law Resistance Energy in Classrooms Science Inquiry Skills Lessons Evaluating in Science
Critically analyse the validity of information in primary and secondary sources and evaluate the approaches used to solve problems (AC SIS172)	Science Investigations Researching the Carmichael Coal Mine Energy in Classrooms
Communicating	Education Perfect Lessons
Communicate scientific ideas and information for a	Science Investigations

particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations ([AC SIS174](#))

[Designing Experiments on Pollution](#)
[Researching the Carmichael Coal Mine](#)
[Slinky Waves](#)
[Speed of Sound](#)
[Straw Instruments](#)
[Static Electricity](#)
[Energy in Classrooms](#)
[Optical Fibres](#)

Science Inquiry Skills Lessons

[Graphs in Science](#)
[Observations and Inferences](#)
[Scientific Method](#)