

# Science Content Map

[International](#)

[Cambridge](#)

[UK Curriculum](#)

[Common Core](#)

[IB](#)

[Australian Curriculum](#)

[New Zealand Curriculum](#)

[NSW](#)

[QLD](#)

[VIC](#)

[ACT](#)

[TAS](#)

[NT](#)

[SA](#)

[WA](#)



# International

## Junior Biology

- Cells and Microscopy (45 lessons)
  - Cells
  - Microscopes
  - Cell Division
  - Levels of Organisation
- Ecosystems
  - Basic (31 lessons)
    - Adaptations
    - Living Things and Their Environments
  - Intermediate (26 lessons)
    - Classification
    - Interactions in Ecosystems
  - Advanced (45 lessons)
    - Components of Ecosystems
    - Changes in Ecosystems
    - Conservation
- Evolution (31 lessons)
- Genetics (37 lessons)
- Living Systems
  - Intermediate (59 lessons)
  - Advanced (61 lessons)

## Junior Chemistry

- States of Matter
  - Basic (8 lessons)
  - Intermediate (6 lessons)
- Changing States
  - Basic (9 lessons)
  - Intermediate (10 lessons)
- Physical and Chemical Changes
  - Basic (8 lessons)
  - Intermediate (10 lessons)
- Mixtures (18 lessons)
- Elements and Compounds (7 lessons)
- Atomic Structure
  - Intermediate (4 lessons)
  - Advanced (2 lessons)
- Chemical Reactions
  - Intermediate (4 lessons)
  - Advanced (5 lessons)

- Types of Chemical Reactions
  - Intermediate (13 lessons)
  - Advanced (7 lessons)
- Isotopes and Radiation
  - Intermediate (12 lessons)
  - Advanced (1 lesson)
- The Periodic Table
  - Intermediate (4 lessons)
  - Advanced (7 lessons)
- Chemistry in Society
  - Basic (1 lesson)
  - Intermediate (4 lessons)
  - Advanced (5 lessons)

#### Junior Earth and Space

- Earth's Resources (42 lessons)
- Earth's Structure (59 lessons)
- Global Events
  - Basic (19 lessons)
  - Intermediate (36 lessons)
- Space
  - Basic (10 lessons)
  - Intermediate (32 lessons)
  - Advanced (31 lessons)

#### Junior Physics

- Communication with Waves (11 lessons)
- Electricity
  - Basic (10 lessons)
  - Intermediate (20 lessons)
- Energy
  - Basic (42 lessons)
  - Intermediate (24 lessons)
- Forces
  - Basic (33 lessons)
  - Intermediate (41 lessons)
- Heat
  - Basic (2 lessons)
  - Intermediate (14 lessons)
- Light
  - Basic (13 lessons)
  - Intermediate (23 lessons)
- Magnets (13 lessons)
- Sound (16 lessons)

## Senior Biology

- Cells and Multicellular Organisms
  - Cells as the Basis of Life (31 lessons)
    - Types of cells
    - Cell membranes
    - Enzymes
    - Energy and metabolism
  - Multicellular organisms (27 lessons)
    - Differentiation and specialisation
    - Nutrient, gas and waste transport
    - Plant systems
- Maintaining the Internal Environment
  - Homeostasis (16 lessons)
  - Infectious Diseases (38 lessons)
    - Diseases and infection
    - Immune response
    - Disease spread and transmission
- Heredity and Evolution
  - DNA, Genes and the Continuity of Life (26 lessons)
    - DNA Structure and replication
    - Gene expression
    - Inheritance
  - Continuity of Life on Earth (12 lessons)
    - Evolution
    - Natural selection
- Ecosystems and the Environment
  - Describing Biodiversity (16 lessons)
    - Biodiversity
    - Classification
  - Ecosystem Dynamics (12 lessons)
    - Changes in ecosystems
    - Population ecology

## Senior Chemistry

- Atoms, Elements and Compounds
  - Properties and Structure of Atoms (31 lessons)
    - Atomic structure
    - Periodic table and trends
    - Isotopes
    - Introduction to bonding
  - Properties and Structure of Materials (16 lessons)
    - Compounds and mixtures

- Bonding and properties
- Molecular Interactions
  - Intermolecular Forces and Gases (21 lessons)
  - Chemical Equilibrium Systems (15 lessons)
    - Equilibrium systems
    - Acids, bases and pH
- Chemical Reactions
  - Chemical Reactions (42 lessons)
    - Endothermic and exothermic reactions
    - Fuels
    - Moles and conservation of mass
  - Rates of Chemical Reactions (10 lessons)
- Acids and Redox Reactions
  - Aqueous Solutions and Acidity (22 lessons)
    - Solutions and molarity
    - Identifying ions in solution
    - pH and acid reactions
  - Oxidation and Reduction (12 lessons)
- Organic Chemistry (49 lessons)
  - Properties and Structure of Organic Materials

## Senior Physics

- Force and Motion
  - Linear Motion and Force (55 lessons)
  - Gravity and Motion (28 lessons)
    - Projectile motion
    - Circular motion
    - Inclined planes
    - Gravitational force
- Revolutions in Modern Physics
  - Special Relativity (11 lessons)
  - Quantum Theory (6 lessons)
  - The Standard Model (7 lessons)
- Thermal Physics
  - Heating Processes (21 lessons)
    - Kinetic particle model
    - Temperature and specific heat capacity
    - Phase changes
  - Ionising Radiation & Nuclear Reactions (22 lessons)
- Properties of Waves
  - Wave Properties (8 lessons)
  - Sound (4 lessons)
  - Light (13 lessons)
  - The Ray Model for Curved Optics (3 lessons)

- Electrical Quantities
  - Electrical Circuits (32 lessons)
  - Electromagnetism (26 lessons)

# Cambridge

## Cambridge Year 7 Science

- Biology
  - Cells and Organisms (33 lessons)
    - Living and Non-living?
    - Microorganisms and Disease
    - Types of Cells
    - Levels of Organisation
  - Humans as Organisms (23 lessons)
    - Organs and organ systems
  - Living Things and Their Environment (33 lessons)
    - Adaptations
    - Food Chains
    - Human Impact on the Environment
    - Energy Sources
  - Plants (1 lesson)
  - Variation and Classification (5 lessons)
- Chemistry
  - Material changes (3 lessons)
  - Material Properties (6 lessons)
  - States of Matter (13 lessons)
  - The Earth (16 lessons)
- Physics
  - Energy (9 lessons)
  - Forces and Motion (17 lessons)
  - The Earth and Beyond (6 lessons)
- Scientific Enquiry
  - Consider Evidence and Approach (3 lessons)
  - Ideas and Evidence (2 lessons)
  - Obtain and Present Ideas (9 lessons)
  - Plan Investigative Work (14 lessons)

## Cambridge Year 8 Science

- Biology
  - Humans as Organisms (35 lessons)
    - Organs and organ systems
    - Effects of drug and drug use
  - Plants (5 lessons)
- Chemistry
  - Material Changes (4 lessons)
    - Chemical Reactions
  - Material Properties (10 lessons)

- Atoms, elements and compounds
  - States of Matter (8 lessons)
- Physics
  - Forces and Motion (13 lessons)
  - Light (15 lessons)
  - Magnetism (12 lessons)
  - Sound (8 lessons)
- Scientific Enquiry
  - Consider Evidence and Approach (9 lessons)
  - Ideas and Evidence (4 lessons)
  - Obtain and Present Ideas (13 lessons)
  - Plan Investigative Work (5 lessons)

### Cambridge Year 9 Science

- Biology
  - Living Things and Their Environment (21 lessons)
    - Ecosystems
    - Energy in ecosystems
    - Changes in ecosystems
  - Plants (5 lessons)
  - Variation and Classification (41 lessons)
    - Dichotomous Keys
    - Genetics and Inheritance
    - Evolution
- Chemistry
  - Material Changes (8 lessons)
    - Types of reactions
  - Material Properties (14 lessons)
    - Atomic Structure
    - The Periodic Table
- Physics
  - Electricity (18 lessons)
  - Energy (20 lessons)
    - Renewable and non-renewable resources
    - Heat transfer
  - Forces and Motion (3 lessons)
- Scientific Enquiry
  - Consider Evidence and Approach (5 lessons)
  - Ideas and Evidence (4 lessons)
  - Obtain and Present Ideas (6 lessons)
  - Plan Investigative Work (8 lessons)

### Cambridge Key Stage 4 Biology

- Characteristics and Classification of Living Organisms (14 lessons)





- Organisation of the Organism (14 lessons)
- Movement in and out of Cells (7 lessons)
- Biological Molecules (2 lessons)
- Enzymes (4 lessons)
- Plant Nutrition (2 lessons)
- Human Nutrition (13 lessons)
- Transport in Plants (3 lessons)
- Transport in Animals (4 lessons)
- Diseases and Immunity (34 lessons)
- Gas Exchange in Humans (3 lessons)
- Respiration (5 lessons)
- Excretion in Humans (5 lessons)
- Coordination and Response (14 lessons)
- Drugs (4 lessons)
- Reproduction (16 lessons)
- Inheritance (21 lessons)
- Variation and Selection (16 lessons)
- Organisms and Their Environment (12 lessons)
- Biotechnology and Genetic Engineering (4 lessons)
- Human Influences on Ecosystems (15 lessons)

#### Cambridge Key Stage 4 Chemistry

- The Particulate Nature of Matter (13 lessons)
- Experimental Techniques (12 lessons)
- Atoms, Elements and Compounds (22 lessons)
- Stoichiometry (10 lessons)
- Electricity and Chemistry (2 lessons)
- Chemical Energetics (8 lessons)
- Chemical Reactions (23 lessons)
- Acids, Bases and Salts (8 lessons)
- The Periodic Table (8 lessons)
- Properties of Metals (2 lessons)
- Air and Water (2 lessons)
- Carbonates (1 lesson)
- Organic Chemistry (29 lessons)

#### Cambridge Key Stage 4 Physics

- General Physics (28 lessons)
  - Motion
  - Mass, weight and density
  - Forces
  - Energy, Work and Power
- Thermal Physics (14 lessons)

- Kinetic Molecular Model of Matter
- Thermal Properties and Processes
- Properties of Waves, Including Light and Sound (25 lessons)
  - Properties of Waves
  - Light
  - Electromagnetic Spectrum
  - Sound
- Electricity and Magnetism (51 lessons)
- Atomic Physics (10 lessons)
  - Nuclear Atom
  - Radioactivity

#### Cambridge Key Stage 4 Co-ordinated Science

- Characteristics of Living Organisms (3 lessons)
- Cells (14 lessons)
- Biological Molecules (2 lessons)
- Enzymes (4 lessons)
- Plant Nutrition (3 lessons)
- Animal Nutrition (10 lessons)
- Transport (7 lessons)
- Gas Exchange and Respiration (10 lessons)
- Coordination and Response (20 lessons)
- Reproduction (13 lessons)
- Inheritance (27 lessons)
- Variation and Selection (16 lessons)
- Organisms and Their Environment (5 lessons)
- Human Influences on Ecosystems (7 lessons)
  
- The Particulate Nature of Matter (17 lessons)
- Experimental Techniques (12 lessons)
- Atoms, Elements and Compounds (9 lessons)
- Stoichiometry (9 lessons)
- Electricity and Chemistry (3 lessons)
- Energy Changes in Chemical Reactions (4 lessons)
- Chemical Reactions (9 lessons)
- Acids, Bases and Salts (8 lessons)
- The Periodic Table (8 lessons)
- Properties of Metals (2 lessons)
- Air and Water (2 lessons)
- Carbonates (1 lesson)
- Organic Chemistry (29 lessons)
  
- Motion (16 lessons)
- Work, Energy and Power (16 lessons)

- Thermal Physics (12 lessons)
- Properties of Waves, Including Light and Sound (21 lessons)
- Electricity and Magnetism (21 lessons)
- Electric Circuits (7 lessons)
- Electromagnetic Effects (24 lessons)
- Atomic Physics (10 lessons)

#### Cambridge Key Stage 4 Combined Science

- Characteristics of Living Organisms (3 lessons)
  - Cells (16 lessons)
  - Biological Molecules (2 lessons)
  - Enzymes (4 lessons)
  - Plant Nutrition (3 lessons)
  - Animal Nutrition (10 lessons)
  - Transport (7 lessons)
  - Gas Exchange and Respiration (10 lessons)
  - Coordination and Response (4 lessons)
  - Reproduction (13 lessons)
  - Organisms and Their Environment (4 lessons)
  - Human Influences on Ecosystems (7 lessons)
- 
- The Particulate Nature of Matter (17 lessons)
  - Experimental Techniques (12 lessons)
  - Atoms, Elements and Compounds (9 lessons)
  - Stoichiometry (9 lessons)
  - Electricity and Chemistry (3 lessons)
  - Energy Changes in Chemical Reactions (4 lessons)
  - Chemical Reactions (9 lessons)
  - Acids, Bases and Salts (7 lessons)
  - The Periodic Table (8 lessons)
  - Properties of Metals (2 lessons)
  - Air and Water (2 lessons)
  - Organic Chemistry (6 lessons)
- 
- Motion (16 lessons)
  - Work, Energy and Power (16 lessons)
  - Thermal Physics (11 lessons)
  - Properties of Waves, Including Light and Sound (21 lessons)
  - Electrical Charge (13 lessons)
  - Electric Circuits (7 lessons)

# UK Curriculum

## Key Stage 3: Junior Biology

- Cells and Microscopy (45 lessons)
  - Cells
  - Microscopes
  - Cell Division
  - Levels of Organisation
- Ecosystems
  - Basic (31 lessons)
    - Adaptations
    - Living Things and Their Environments
  - Intermediate (26 lessons)
    - Classification
    - Interactions in Ecosystems
  - Advanced (45 lessons)
    - Components of Ecosystems
    - Changes in Ecosystems
    - Conservation
- Evolution (31 lessons)
- Genetics (37 lessons)
- Living Systems
  - Intermediate (59 lessons)
  - Advanced (61 lessons)

## Key Stage 3: Junior Chemistry

- States of Matter
  - Basic (8 lessons)
  - Intermediate (6 lessons)
- Changing States
  - Basic (9 lessons)
  - Intermediate (10 lessons)
- Physical and Chemical Changes
  - Basic (8 lessons)
  - Intermediate (10 lessons)
- Mixtures (18 lessons)
- Elements and Compounds (7 lessons)
- Atomic Structure
  - Intermediate (4 lessons)
  - Advanced (2 lessons)
- Chemical Reactions
  - Intermediate (4 lessons)
  - Advanced (5 lessons)

- Types of Chemical Reactions
  - Intermediate (13 lessons)
  - Advanced (7 lessons)
- Isotopes and Radiation
  - Intermediate (12 lessons)
  - Advanced (1 lesson)
- The Periodic Table
  - Intermediate (4 lessons)
  - Advanced (7 lessons)
- Chemistry in Society
  - Basic (1 lesson)
  - Intermediate (4 lessons)
  - Advanced (5 lessons)

#### Key Stage 3: Junior Earth and Space

- Earth's Resources (42 lessons)
- Earth's Structure (59 lessons)
- Global Events
  - Basic (19 lessons)
  - Intermediate (36 lessons)
- Space
  - Basic (10 lessons)
  - Intermediate (32 lessons)
  - Advanced (31 lessons)

#### Key Stage 3: Junior Physics

- Communication with Waves (11 lessons)
- Electricity
  - Basic (10 lessons)
  - Intermediate (20 lessons)
- Energy
  - Basic (42 lessons)
  - Intermediate (24 lessons)
- Forces
  - Basic (33 lessons)
  - Intermediate (41 lessons)
- Heat
  - Basic (2 lessons)
  - Intermediate (14 lessons)
- Light
  - Basic (13 lessons)
  - Intermediate (23 lessons)
- Magnets (13 lessons)
- Sound (16 lessons)

## Senior Biology

- Cells and Multicellular Organisms
  - Cells as the Basis of Life (31 lessons)
    - Types of cells
    - Cell membranes
    - Enzymes
    - Energy and metabolism
  - Multicellular organisms (27 lessons)
    - Differentiation and specialisation
    - Nutrient, gas and waste transport
    - Plant systems
- Maintaining the Internal Environment
  - Homeostasis (16 lessons)
  - Infectious Diseases (38 lessons)
    - Diseases and infection
    - Immune response
    - Disease spread and transmission
- Heredity and Evolution
  - DNA, Genes and the Continuity of Life (26 lessons)
    - DNA Structure and replication
    - Gene expression
    - Inheritance
  - Continuity of Life on Earth (12 lessons)
    - Evolution
    - Natural selection
- Ecosystems and the Environment
  - Describing Biodiversity (16 lessons)
    - Biodiversity
    - Classification
  - Ecosystem Dynamics (12 lessons)
    - Changes in ecosystems
    - Population ecology

## Senior Chemistry

- Atoms, Elements and Compounds
  - Properties and Structure of Atoms (30 lessons)
    - Atomic structure
    - Periodic table and trends
    - Isotopes
    - Introduction to bonding
  - Properties and Structure of Materials (16 lessons)
    - Compounds and mixtures

- Bonding and properties
- Molecular Interactions
  - Intermolecular Forces and Gases (21 lessons)
  - Chemical Equilibrium Systems (15 lessons)
    - Equilibrium systems
    - Acids, bases and pH
- Chemical Reactions
  - Chemical Reactions (42 lessons)
    - Endothermic and exothermic reactions
    - Fuels
    - Moles and conservation of mass
  - Rates of Chemical Reactions (10 lessons)
- Acids and Redox Reactions
  - Aqueous Solutions and Acidity (22 lessons)
    - Solutions and molarity
    - Identifying ions in solution
    - pH and acid reactions
  - Oxidation and Reduction (12 lessons)
- Organic Chemistry (49 lessons)
  - Properties and Structure of Organic Materials

## Senior Physics

- Force and Motion
  - Linear Motion and Force (55 lessons)
  - Gravity and Motion (28 lessons)
    - Projectile motion
    - Circular motion
    - Inclined planes
    - Gravitational force
- Revolutions in Modern Physics
  - Special Relativity (11 lessons)
  - Quantum Theory (6 lessons)
  - The Standard Model (7 lessons)
- Thermal Physics
  - Heating Processes (21 lessons)
    - Kinetic particle model
    - Temperature and specific heat capacity
    - Phase changes
  - Ionising Radiation & Nuclear Reactions (22 lessons)
- Properties of Waves
  - Wave Properties (8 lessons)
  - Sound (4 lessons)
  - Light (13 lessons)
  - The Ray Model for Curved Optics (3 lessons)

- Electrical Quantities
  - Electrical Circuits (32 lessons)
  - Electromagnetism (26 lessons)



# Common Core

## Middle School Earth and Space Sciences

- Space systems
  - Lunar Phases, Eclipses and Seasons (11 lessons)
  - Gravity and Motion (7 lessons)
  - Scale of the Solar System (5 lessons)
- History of Earth
  - Geological Time Scale (8 lessons)
  - Geological Processes (9 lessons)
  - Evidence for Past Plate Motion (6 lessons)
- Earth's Systems
  - Modelling the Cycling of Earth's Materials (10 lessons)
  - The Water Cycle (5 lessons)
  - Renewable and Non-renewable Resources (15 lessons)
- Weather and Climate
  - Weather (1 lesson)
  - Climate (4 lessons)
  - Changing Climate (7 lessons)
- Human Impacts
  - Natural Hazards (21 lessons)
  - Measuring Human Impact (5 lessons)
  - Human Population (10 lessons)
  - Reducing the Impact of Human Activity (2 lessons)

## Middle School Life Sciences

- Structure, Function and Information Processing
  - Living Things are Made of Cells (4 lessons)
  - Function of a Cell (7 lessons)
  - The Body as a System (26 lessons)
  - Sensory Organs (8 lessons)
- Matter and Energy in Organisms and Ecosystems
  - Photosynthesis (5 lessons)
  - Chemical Reactions in Food (4 lessons)
  - Resource Availability (5 lessons)
  - Cycling of Matter in Ecosystems (8 lessons)
  - Changes in Ecosystems (7 lessons)
- Interdependent Relationships in Ecosystems
  - Relationships Between Organisms (2 lessons)
  - Biodiversity (4 lessons)
- Growth, Development, and Reproduction of Organisms
  - Adaptations of Organisms (15 lessons)
  - Environmental and Genetic Influence on Growth (4 lessons)

- Genes, Proteins and Mutations (21 lessons)
- Sexual and Asexual Reproduction (4 lessons)
- Inheritance and Technology (8 lessons)
- Natural Selection and Adaptations
  - Fossil Record (4 lessons)
  - Evolutionary Relationships Between Organisms (3 lessons)
  - Genetic Variation Increasing Chance of Survival (7 lessons)

#### Middle School Physical Sciences

- Structure and Properties of Materials
  - Composition of Atoms and Molecules (6 lessons)
  - Natural Resources and Synthetic Materials (10 lessons)
  - States of Matter (18 lessons)
- Chemical Reactions
  - Identifying Chemical Reactions (12 lessons)
  - Conservation of Mass (4 lessons)
  - Designing an Experiment (11 lessons)
- Forces and Interactions
  - Colliding Objects (2 lessons)
  - Motion and Forces (7 lessons)
  - Electric and Magnetic Forces (11 lessons)
  - Gravitational Force and Mass (4 lessons)
  - Non-Contact Forces (4 lessons)
- Energy
  - Kinetic Energy (2 lessons)
  - Potential Energy (5 lessons)
  - Thermal Energy Transfer (5 lessons)
  - Measuring Energy Transfer (2 lessons)
  - Energy Transformations (3 lessons)
- Waves and Electromagnetic Radiation
  - Simple Models for Waves (4 lessons)
  - Interaction of Waves with Materials (6 lessons)
  - Communicating with Waves (11 lessons)

#### High School Earth and Space Sciences

- Space Systems
  - The Sun and Nuclear Fusion (2 lessons)
  - The Big Bang Theory (4 lessons)
  - Life Cycle of Stars (2 lessons)
  - Orbiting Objects (4 lessons)
- History of Earth
  - Plate Tectonics (5 lessons)
  - Age of the Earth (4 lessons)
  - Continental and Ocean-Floor Features (8 lessons)

- Earth's Systems
  - Changes to Earth's Systems (6 lessons)
  - Earth's Internal Structure (4 lessons)
  - Properties of Water (6 lessons)
  - Earth's Spheres (3 lessons)
- Weather and Climate (10 lessons)
- Human Sustainability
  - Natural Resource Availability (16 lessons)
  - Mining and Mineral Resources (4 lessons)

#### High School Life Sciences

- Structure and Function
  - DNA and Protein Expression (8 lessons)
  - Multicellular Organisms (28 lessons)
  - Responding to Stimuli (12 lessons)
- Matter and Energy in Organisms and Ecosystems
  - Photosynthesis (6 lessons)
  - Carbon-Based Molecules (3 lessons)
  - Cellular Respiration (4 lessons)
  - Cycling of Matter and Energy (9 lessons)
  - Spheres (7 lessons)
- Interdependent Relationships in Ecosystems
  - Interdependent Relationships (7 lessons)
  - Biodiversity and Populations (12 lessons)
  - Adaptations (1 lessons)
- Inheritance and Variation of Traits
  - Cellular Division (3 lessons)
  - Meiosis and Sexual Reproduction (6 lessons)
  - Variation and Distribution of Expressed Traits (5 lessons)
- Natural Selection and Evolution
  - Evidence for Evolution (8 lessons)
  - The Process of Evolution (6 lessons)
  - Genetic Drift (2 lessons)
  - Natural Selection (6 lessons)
  - Changes in the Environment (4 lessons)

#### High School Physical Sciences

- Structure and Properties of Matter
  - The Periodic Table (7 lessons)
  - Structure of Molecules (12 lessons)
  - Radiation (8 lessons)
  - Properties of Molecules (4 lessons)
- Chemical Reactions
  - Simple Chemical Reactions (7 lessons)



- Release and Absorption of Energy (8 lessons)
  - Rates of Reaction (8 lessons)
  - Chemical Equilibrium and Yield (13 lessons)
  - Conservation of Mass (5 lessons)
- Forces and Interactions
  - Newton's Second Law of Motion (12 lessons)
  - Momentum (3 lessons)
  - Collisions (3 lessons)
  - Gravitational and Electrostatic Forces (12 lessons)
  - Electric Currents (9 lessons)
- Energy
  - Energy in Systems (9 lessons)
  - Energy changes (2 lessons)
  - Transforming Energy (3 lessons)
  - Thermal Energy Transfer (8 lessons)
  - Charged Particles (14 lessons)
- Waves and Electromagnetic Radiation
  - Properties of Waves (6 lessons)
  - Waves and Digital Information (11 lessons)
  - Electromagnetic Radiation (9 lessons)
  - Effects of Electromagnetic Radiation (4 lessons)
  - Waves and Technology (4 lessons)

# IB

## IB Middle Years: Biology

- Cells and Microscopy (45 lessons)
  - Cells
  - Microscopes
  - Cell Division
  - Levels of Organisation
- Ecosystems
  - Basic (31 lessons)
    - Adaptations
    - Living Things and Their Environments
  - Intermediate (26 lessons)
    - Classification
    - Interactions in Ecosystems
  - Advanced (45 lessons)
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    - Changes in Ecosystems
    - Conservation
- Evolution (31 lessons)
- Genetics (37 lessons)
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  - Advanced (61 lessons)

## IB Middle Years: Chemistry

- States of Matter
  - Basic (8 lessons)
  - Intermediate (6 lessons)
- Changing States
  - Basic (9 lessons)
  - Intermediate (10 lessons)
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  - Basic (8 lessons)
  - Intermediate (10 lessons)
- Mixtures (18 lessons)
- Elements and Compounds (7 lessons)
- Atomic Structure
  - Intermediate (4 lessons)
  - Advanced (2 lessons)
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- Types of Chemical Reactions
  - Intermediate (13 lessons)
  - Advanced (7 lessons)
- Isotopes and Radiation
  - Intermediate (12 lessons)
  - Advanced (1 lesson)
- The Periodic Table
  - Intermediate (4 lessons)
  - Advanced (7 lessons)
- Chemistry in Society
  - Basic (1 lesson)
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#### IB Middle Years: Earth and Space

- Earth's Resources (42 lessons)
- Earth's Structure (59 lessons)
- Global Events
  - Basic (19 lessons)
  - Intermediate (36 lessons)
- Space
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  - Intermediate (32 lessons)
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- Communication with Waves (11 lessons)
- Electricity
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  - Intermediate (24 lessons)
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    - Disease spread and transmission
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    - Biodiversity
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  - Ecosystem Dynamics (12 lessons)
    - Changes in ecosystems
    - Population ecology

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  - Properties and Structure of Atoms (30 lessons)
    - Atomic structure
    - Periodic table and trends
    - Isotopes
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  - Properties and Structure of Materials (16 lessons)
    - Compounds and mixtures

- Bonding and properties
- Molecular Interactions
  - Intermolecular Forces and Gases (21 lessons)
  - Chemical Equilibrium Systems (15 lessons)
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    - Solutions and molarity
    - Identifying ions in solution
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    - Temperature and specific heat capacity
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- Properties of Waves
  - Wave Properties (8 lessons)
  - Sound (4 lessons)
  - Light (13 lessons)
  - The Ray Model for Curved Optics (3 lessons)



- Electrical Quantities
  - Electrical Circuits (32 lessons)
  - Electromagnetism (26 lessons)

# Australian Curriculum

## Year 5

- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
- Light (14 lessons)
- States of Matter (17 lessons)
- The Solar System (11 lessons)

## Year 6

- An Introduction to Science (32 lessons)
- Chemical Changes (17 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
- Living Things and Their Environment (16 lessons)

## Year 7

- An Introduction to Science (32 lessons)
- Classification (24 lessons)
- Earth's Resources (22 lessons)
- Earth, Moon and Sun (28 lessons)
- Forces (29 lessons)
- Interactions in Ecosystems (38 lessons)
- Mixtures (31 lessons)
- The Water Cycle (19 lessons)

## Year 8

- Cells (39 lessons)
- Elements and Compounds (19 lessons)
- Energy (35 lessons)
- Introduction to Chemical Reactions (16 lessons)
- Living Systems (57 lessons)
- Matter (23 lessons)
- Rocks (29 lessons)

## Year 9

- Atoms (29 lessons)
- Changing Earth (32 lessons)
- Chemical Reactions (15 lessons)
- Communication With Waves (8 lessons)
- Ecosystems (36 lessons)
- Electricity (15 lessons)
- Heat (10 lessons)

- Homeostasis and Disease (49 lessons)
- Light (18 lessons)
- Sound (9 lessons)
- Types of Chemical Reactions (16 lessons)

#### Year 10

- Balancing Equations (11 lessons)
- Energy and Systems (19 lessons)
- Evolution (29 lessons)
- Force and Motion (37 lessons)
- Genetic (35 lessons)
- Global Systems (34 lessons)
- Magnets (15 lessons)
- Organising and Classifying Elements (33 lessons)
- Rates of Reaction and Types of Reactions (31 lessons)
- The Universe (29 lessons)

#### Senior Biology

- Biodiversity and the Interconnectedness of Life
  - Describing Biodiversity (14 lessons)
    - Biodiversity
    - Classification
  - Ecosystem Dynamics (37 lessons)
    - Population Ecology
    - Changes in Ecosystems
- From Single Cells to Multicellular Organisms
  - Cells as the Basis of Life (26 lessons)
    - Types of cells
    - Cell membranes
    - Enzymes, energy and metabolism
  - Multicellular Organisms (23 lessons)
    - Cell differentiation
    - Gas and nutrient exchange and transport
    - Plant systems
- Continuity of Species
  - Heredity (29 lessons)
  - Continuity of Life on Earth (18 lessons)
    - Evolution and natural selection
- Surviving in a Changing Environment
  - Homeostasis (13 lessons)
  - Infectious Disease (14 lessons)
- Physiology
  - Animal Physiology (19 lessons)
  - Plant Physiology (4 lessons)

## Senior Chemistry

- Chemical Fundamentals - Structure, Properties and Reactions
  - Properties and Structure of Atoms (31 lessons)
    - Periodic table and trends
    - Atomic structure and isotopes
    - Introduction to bonding
  - Properties and Structure of Materials (15 lessons)
    - Compounds and mixtures
    - Bonding and properties
  - Chemical Reactions (40 lessons)
    - Endothermic and exothermic reactions
    - Fuels
    - Moles and law of conservation
    - Chemical reactions
- Molecular Interactions and Reactions
  - Intermolecular Forces and Gases (19 lessons)
  - Aqueous Solutions and Acidity (18 lessons)
  - Rates of Chemical Reactions (10 lessons)
- Equilibrium, Acids and Redox Reactions
  - Chemical Equilibrium Systems (15 lessons)
    - Equilibrium constants
    - Properties of acids and bases
    - pH scale
  - Oxidation and Reduction (10 lessons)
- Structure, Synthesis and Design
  - Properties and Structure of Organic Materials (15 lessons)

## Senior Earth and Environmental Science

- Climate Science (7 lessons)
- Earth's Processes (6 lessons)
- Earth's Resources (18 lessons)
- Energy Transformations (10 lessons)
- Hazards (9 lessons)
- Human Impacts (8 lessons)
- Plate Tectonics (5 lessons)
- Resource Management (9 lessons)

## Senior Human Biology

- The Functioning Human Body (34 lessons)
  - Cells and tissue
  - Metabolism
  - Organ systems

- Reproduction and Inheritance (18 lessons)
  - DNA and inheritance
  - Cell reproduction
  - Human reproduction
- Homeostasis and Disease (24 lessons)
  - Homeostasis
  - The nervous and endocrine systems
  - Response to infection
- Human Variation and Evolution (7 lessons)

#### Senior Physics

- Thermal, Nuclear and Electrical Physics
  - Heating Processes (18 lessons)
  - Ionising Radiation and Nuclear Reactions (20 lessons)
  - Electrical Circuits (19 lessons)
- Linear Motion and Waves
  - Linear Motion and Force (55 lessons)
  - Waves (33 lessons)
- Gravity and Electromagnetism
  - Gravity and Motion (24 lessons)
  - Electromagnetism (26 lessons)

#### Senior Psychology

- Individual Development
  - The Role of the Brain (2 lessons)
  - Human Consciousness and Sleep (3 lessons)

# New Zealand Curriculum

## NZC Living World

- Living or Non-Living (13 lessons)
- Cell Biology (25 lessons)
- Animal Systems (63 lessons)
- Plant Systems (10 lessons)
- Adaptations and Ecosystems (40 lessons)
- Food Chains and Food Webs (13 lessons)
- New Zealand Ecology (15 lessons)
- Classification (17 lessons)
- Genetics and Evolution of NZ Species (48 lessons)

## NZC Material World

- States of Matter (19 lessons)
- Changing States (19 lessons)
- Physical and Chemical Properties (30 lessons)
- Elements, Compounds and Mixtures (29 lessons)
- Structure of Matter (22 lessons)
- Chemical Reactions and Equations (17 lessons)
- Chemistry and Society (19 lessons)

## NZC Nature of Science

- Introduction to Science (17 lessons)
- Diagnostic Assessments (3 lessons)
- The Five Science Capabilities (100+ lessons)
- Practical Investigations (80 lessons)
- Reading Comprehension (44 lessons)
- Data Interpretation (35 lessons)
- Science in Context Units (100+ lessons)
- Monthly Science News (28 lessons)

## NZC Physical World

- Forces (30 lessons)
- Motion (10 lessons)
- Energy (70 lessons)
- Electricity and Magnetism (24 lessons)

## NZC Planet Earth and Beyond

- Earth Systems (29 lessons)
- Rocks and the Rock Cycle (9 lessons)

- Earthquakes, Volcanoes and Tsunamis (15 lessons)
- Earth's Spheres (26 lessons)
- The Human Impact (21 lessons)
- The Solar System and Beyond (39 lessons)

#### NCEA Level 1

- Biology
  - 1.1 Practical Biology Investigation (24 lessons)
  - 1.3 Microorganisms (20 lessons)
  - 1.5 Mammals as Consumers (14 lessons)
- Chemistry
  - 1.1 Practical chemistry Investigation (21 lessons)
  - 1.3 Carbon Chemistry (13 lessons)
  - 1.4 Selected Elements (36 lessons)
  - 1.5 Chemical Reactions (11 lessons)
- Physics
  - 1.1 Practical Physics Investigation (21 lessons)
  - 1.3 Electricity and Magnetism (19 lessons)
  - 1.4 Waves (13 lessons)
  - 1.5 Heat (20 lessons)
- Science
  - 1.1 Mechanics (18 lessons)
  - 1.5 Acids and Bases (29 lessons)
  - 1.9 Genetic Variation (23 lessons)
  - Internal Standards
    - 1.2 Electricity and Magnetism (19 lessons)
    - 1.3 Wave Behaviour (13 lessons)
    - 1.4 Heat (11 lessons)
    - 1.7 Metals (21 lessons)
    - 1.8 Chemical Reactions (11 lessons)
    - 1.11 Microorganisms (20 lessons)
- Senior Science Skills (29 lessons)

#### NCEA Level 2

- Biology
  - 2.1 Biology Investigation (15 lessons)
  - 2.4 Life Processes at the Cellular Level (25 lessons)
  - 2.5 Genetic Variation and Change (20 lessons)
  - 2.6 Ecological Communities (9 lessons)
  - 2.7 Gene Expression (15 lessons)
- Chemistry
  - 2.1 Investigate a Substance in a Consumer Product (7 lessons)

- 2.2 Investigate a Chemical Species in a Sample (7 lessons)
- 2.4 Structure and Bonding (36 lessons)
- 2.5 Organic Chemistry (38 lessons)
- 2.6 Chemical Reactivity (23 lessons)
- 2.7 Oxidation and Reduction (5 lessons)
- NZ Chemistry Olympiad (4 lessons)
- Earth and Space Science
  - 2.5 Extreme Earth Events in NZ (25 lessons)
  - 2.6 Stars and Planetary Systems (17 lessons)
  - 2.7 Physical Principles Related to Earth Systems (3 lessons)
- Physics
  - 2.1 Non-Linear Investigation (6 lessons)
  - 2.3 Waves (18 lessons)
  - 2.4 Mechanics (29 lessons)
  - 2.5 Atomic & Nuclear Physics (8 lessons)
  - 2.6 Electricity and Electromagnetism (32 lessons)
- Senior Science Skills (29 lessons)

### NCEA Level 3

- Biology
  - 3.3 Plant and Animal Responses to the External Environment (19 lessons)
  - 3.4 Maintaining Homeostasis (17 lessons)
  - 3.5 Evolutionary Processes Leading to Speciation (10 lessons)
  - 3.6 Trends in Human Evolution (20 lessons)
  - Scholarship Biology (3 lessons)
- Chemistry
  - 3.2 Spectroscopy (5 lessons)
  - 3.4 Thermochemical Principles (31 lessons)
  - 3.5 Organic Chemistry (58 lessons)
  - 3.6 Aqueous Systems (22 lessons)
  - 3.7 Oxidation and Reduction (10 lessons)
  - Scholarship Chemistry (3 lessons)
- Earth and Space Science
  - 3.4 Ocean System Processes (2 lessons)
  - 3.5 Atmosphere System Processes (20 lessons)
- Physics
  - 3.3 Wave Systems (8 lessons)
  - 3.4 Mechanical Systems (24 lessons)
  - 3.5 Modern Physics (16 lessons)
  - 3.6 Electrical Systems (17 lessons)
  - Scholarship Physics (3 lessons)
- Senior Science Skills (29 lessons)





# NSW

## NSW Stage 3

- An Introduction to Science (32 lessons)
- Earth and Space
  - Extreme Natural Events (20 lessons)
  - The Solar System (11 lessons)
- Living World
  - Adaptations (16 lessons)
  - Living Things and Their Environment (27 lessons)
- Material World
  - Chemical Changes (28 lessons)
  - States of Matter (17 lessons)
- Physical World
  - Electricity (11 lessons)
  - Light (14 lessons)

## NSW Stage 4

- An Introduction to Science (32 lessons)
- Chemical Science
  - Elements and Compounds (19 lessons)
  - Introduction to Chemical Reactions (16 lessons)
  - Matter (23 lessons)
  - Mixtures (31 lessons)
- Earth and Space
  - Earth's Resources and the Water Cycle (41 lessons)
  - Earth, Moon and Sun (28 lessons)
  - Rocks (29 lessons)
- Living World
  - Cells (39 lessons)
  - Classification (24 lessons)
  - Interactions in Ecosystems (38 lessons)
  - Living Systems (57 lessons)
- Physical World
  - Energy (35 lessons)
  - Forces (29 lessons)

## NSW Stage 5

- Chemical World
  - Atoms (29 lessons)
  - Balancing Equations (11 lessons)
  - Chemical Reactions (15 lessons)

- Organising and Classifying Elements (33 lessons)
- Rates of Reactions and Types of Reactions (31 lessons)
- Types of Chemical Reactions (16 lessons)
- Earth and Space
  - Changing Earth (32 lessons)
  - Global Systems (34 lessons)
  - The Universe (29 lessons)
- Living World
  - Ecosystems (36 lessons)
  - Evolution (29 lessons)
  - Genetics (35 lessons)
  - Homeostasis and Disease (49 lessons)
- Physical World
  - Communication With Waves (8 lessons)
  - Electricity (15 lessons)
  - Energy and System (19 lessons)
  - Force and Motion (37 lessons)
  - Heat (10 lessons)
  - Light (18 lessons)
  - Magnets (15 lessons)
  - Sound (9 lessons)

## NSW Stage 6

- Biology
  - Cells as the Basis of Life (28 lessons)
  - Organisation of Living Things (38 lessons)
  - Biological Diversity (34 lessons)
  - Ecosystem Dynamics (33 lessons)
  - Heredity (41 lessons)
  - Genetic Change (17 lessons)
  - Infectious Disease (38 lessons)
  - Non-infectious Disease and Disorders (17 lessons)
  - Biology Experiments (3 lessons)
- Chemistry
  - Properties and Structure of Matter (76 lessons)
  - Introduction to Quantitative Chemistry (20 lessons)
  - Reactive Chemistry (26 lessons)
  - Drivers of Reactions (26 lessons)
  - Equilibrium and Acid Reactions (29 lessons)
  - Acid/Base Reactions (10 lessons)
  - Organic Chemistry (45 lessons)
  - Applying Chemical Ideas (3 lessons)
- Earth and Environmental Science
  - Earth's Resources (18 lessons)

- Plate Tectonics (5 lessons)
- Energy transformations(10 lessons)
- Human Impacts (8 lessons)
- Earth's Processes (6 lessons)
- Hazards (9 lessons)
- Climate Science (7 lessons)
- Resource Management (9 lessons)
- Investigating Science
  - Investigating Science (34 lessons)
    - Cause and effect
    - Scientific models
  - Physical World (23 lessons)
    - Force and motion
    - Energy
  - Earth and Space (47 lessons)
    - Earth's resources
    - Resource management
    - Human Impact
    - Earth's processes and hazards
  - Living World (71 lessons)
    - Organisation of living things
    - Ecosystems
    - Genetics
    - Disease and disorders
  - Chemical World (26 lessons)
    - Properties of matter
    - Chemical reactions
- Life Skills
  - An Introduction to Science (32 lessons)
  - Chemical World (50 lessons)
    - Chemical change
    - Properties of substances
  - Earth & Space (86 lessons)
    - Earth and the solar system
    - Earth's resources
  - Living World (36 lessons)
    - Environment
    - Human body
    - Structure and function
  - Physical World (26 lessons)
    - Energy
    - Types of Forces
  - Science Skills (71 lessons)
- Physics

- Kinematics (19 lessons)
- Dynamics (15 lessons)
- Waves and Thermodynamics (43 lessons)
- Electricity and Magnetism (25 lessons)
- Advanced Mechanics (15 lessons)
- Electromagnetism (15 lessons)
- The Nature of Light (21 lessons)
- From the Universe to the Atom (26 lessons)

# QLD

## Year 5

- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
- Light (14 lessons)
- States of Matter (17 lessons)
- The Solar System (11 lessons)

## Year 6

- An Introduction to Science (32 lessons)
- Chemical Changes (16 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
- Living Things and Their Environment (15 lessons)

## Year 7

- An Introduction to Science (32 lessons)
- Classification (24 lessons)
- Earth's Resources (22 lessons)
- Earth, Moon and Sun (28 lessons)
- Forces (29 lessons)
- Interactions in Ecosystems (38 lessons)
- Mixtures (31 lessons)
- The Water Cycle (19 lessons)

## Year 8

- Cells (39 lessons)
- Elements and Compounds (19 lessons)
- Energy (35 lessons)
- Introduction to Chemical Reactions (16 lessons)
- Living Systems (57 lessons)
- Matter (23 lessons)
- Rocks (29 lessons)

## Year 9

- Atoms (29 lessons)
- Changing Earth (32 lessons)
- Chemical Reactions (15 lessons)
- Communication With Waves (8 lessons)
- Ecosystems (36 lessons)
- Electricity (15 lessons)
- Heat (10 lessons)

- Homeostasis and Disease (49 lessons)
- Light (18 lessons)
- Sound (9 lessons)
- Types of Chemical Reactions (16 lessons)

#### Year 10

- Balancing Equations (11 lessons)
- Energy and Systems (19 lessons)
- Evolution (29 lessons)
- Force and Motion (37 lessons)
- Genetic (35 lessons)
- Global Systems (34 lessons)
- Magnets (15 lessons)
- Organising and Classifying Elements (33 lessons)
- Rates of Reaction and Types of Reactions (31 lessons)
- The Universe (29 lessons)

#### QCAA Senior Biology

- Cells and Multicellular Organisms
  - Cells as the Basis of Life (26 lessons)
    - Types of cells
    - Cell membranes
    - Enzymes, energy and metabolism
  - Multicellular Organisms (23 lessons)
    - Cell differentiation
    - Gas and nutrient exchange and transport
    - Plant systems
- Maintaining the Internal Environment
  - Homeostasis
  - Infectious Disease
- Biodiversity and the Interconnectedness of Life
  - Describing Biodiversity (14 lessons)
    - Biodiversity
    - Classification
  - Ecosystem Dynamics (37 lessons)
    - Population Ecology
    - Changes in Ecosystems
- Heredity and Continuity of Life
  - DNA, Genes and the Continuity of Life (27 lessons)
  - Continuity of Life on Earth (12 lessons)

#### QCAA Senior Chemistry

- Chemical Fundamentals - Structure, Properties and Reactions



- Properties and Structure of Atoms (32 lessons)
- Properties and Structure of Materials (16 lessons)
- Chemical Reactions (40 lessons)
- Molecular Interactions and Reactions
  - Intermolecular Forces and Gases (19 lessons)
  - Aqueous Solutions and Acidity (18 lessons)
  - Rates of Chemical Reactions (10 lessons)
- Equilibrium, Acids and Redox Reactions
  - Chemical Equilibrium Systems (25 lessons)
  - Oxidation and Reduction (10 lessons)
- Structure, Synthesis and Design
  - Properties and Structure of Organic Materials (47 lessons)
- Communicating in Science
  - Using Cognitive Verbs (8 lessons)
  - Writing a Scientific Report (6 lessons)

#### QCAA Senior Physics

- Thermal, Nuclear and Electrical Physics
  - Heating Processes
  - Ionising Radiation & Nuclear Reactions
  - Electrical Circuits
- Linear Motion and Waves
  - Linear Motion and Force
  - Waves
- Gravity and Electromagnetism
  - Gravity and Motion
  - Electromagnetism
- Revolutions in Modern Physics
  - Special Relativity
  - Quantum Theory
  - The Standard Model
- Communicating in Science
  - Using Cognitive Verbs (8 lessons)
  - Writing a Scientific Report (6 lessons)

#### QCAA Senior Psychology

- Individual Development
  - The Role of the Brain (2 lessons)
  - Human Consciousness and Sleep (3 lessons)
- Individual Behaviour
  - Intelligence (2 lessons)
  - Emotion and Motivation (6 lessons)
- The Influence of Others
  - Social Psychology (5 lessons)



- Communicating in Science
  - Using Cognitive Verbs (8 lessons)
  - Writing a Scientific Report (6 lessons)

# VIC

\*Note: The VIC template has both VC- and AC-aligned junior science folders because some schools follow AC, some follow VC and some do a combination of the two.

## VC Level 05 and 06

- An Introduction to Science (32 lessons)
- Biological Sciences
  - Adaptations (16 lessons)
  - Living Things and Their Environment (15 lessons)
- Chemical Sciences
  - Chemical Changes (15 lessons)
  - States of Matter (15 lessons)
- Earth and Space Sciences
  - Extreme Natural Events (16 lessons)
  - The Solar System
- Physical Sciences
  - Electricity (10 lessons)
  - Light (13 lessons)

## VC Level 07 and 08

- An Introduction to Science (32 lessons)
- Biological Sciences
  - Cells (39 lessons)
  - Classification (24 lessons)
  - Interactions in Ecosystems (37 lessons)
  - Living Systems (55 lessons)
- Chemical Sciences
  - Elements and Compounds (19 lessons)
  - Introduction to Chemical Reactions (18 lessons)
  - Matter (23 lessons)
  - Mixtures (28 lessons)
- Earth and Space Sciences
  - Earth's Resources (21 lessons)
  - Earth, Moon and Sun (27 lessons)
  - Rocks (27 lessons)
  - The Water Cycle (15 lessons)
- Ethical Capability (9 lessons)
- Physical Sciences
  - Energy (40 lessons)
  - Forces (26 lessons)
  - Light (18 lessons)

- Sound (9 lessons)

#### VC Level 09 and 10

- Biological Sciences
  - Ecosystems (34 lessons)
  - Evolution (27 lessons)
  - Genetics (33 lessons)
  - Homeostasis and Disease (44 lessons)
  - The Nervous System (11 lessons)
- Chemical Sciences
  - Atoms (25 lessons)
  - Balancing Equations (11 lessons)
  - Chemical Reactions (13 lessons)
  - Chemical Reactions and Rates of Reaction (26 lessons)
  - Organising and Classifying Elements (34 lessons)
  - Types of Chemical Reactions (15 lessons)
- Earth and Space Sciences
  - Changing Earth (30 lessons)
  - Global Systems (30 lessons)
  - The Universe (28 lessons)
- Ethical Capability (2 lessons)
- Physical Sciences
  - Electricity (15 lessons)
  - Energy and System (18 lessons)
  - Force and Motion (36 lessons)
  - Heat transfer (10 lessons)
  - Magnets (12 lessons)

#### Year 5 AC Science Course

- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
- Light (14 lessons)
- States of Matter (17 lessons)
- The Solar System (11 lessons)

#### Year 6 AC Science Course

- An Introduction to Science (32 lessons)
- Chemical Changes (16 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
- Living Things and Their Environment (15 lessons)

#### Year 7 AC Science Course

- An Introduction to Science (32 lessons)

- Classification (24 lessons)
- Earth's Resources (22 lessons)
- Earth, Moon and Sun (28 lessons)
- Forces (29 lessons)
- Interactions in Ecosystems (38 lessons)
- Mixtures (31 lessons)
- The Water Cycle (19 lessons)

#### Year 8 AC Science Course

- Cells (39 lessons)
- Elements and Compounds (19 lessons)
- Energy (35 lessons)
- Introduction to Chemical Reactions (16 lessons)
- Living Systems (57 lessons)
- Matter (23 lessons)
- Rocks (29 lessons)

#### Year 9 AC Science Course

- Atoms (29 lessons)
- Changing Earth (32 lessons)
- Chemical Reactions (15 lessons)
- Communication With Waves (8 lessons)
- Ecosystems (36 lessons)
- Electricity (15 lessons)
- Heat (10 lessons)
- Homeostasis and Disease (49 lessons)
- Light (18 lessons)
- Sound (9 lessons)
- Types of Chemical Reactions (16 lessons)

#### Year 10 AC Science Course

- Balancing Equations (11 lessons)
- Energy and Systems (19 lessons)
- Evolution (29 lessons)
- Force and Motion (37 lessons)
- Genetic (35 lessons)
- Global Systems (34 lessons)
- Magnets (15 lessons)
- Organising and Classifying Elements (33 lessons)
- Rates of Reaction and Types of Reactions (31 lessons)
- The Universe (29 lessons)

#### VCE Year 11 and 12

- VCE Biology



- How do living things stay alive?
  - How do organisms function? (47 lessons)
  - How do living systems sustain life? (38 lessons)
- How is continuity of life maintained?
  - How does reproduction maintain the continuity of life? (17 lessons)
  - How is inheritance explained? (22 lessons)
- How do cells maintain life?
  - How do cellular processes work? (30 lessons)
  - How do cells communicate? (35 lessons)
- How does life change and respond to change over time?
  - How are species related? (52 lessons)
  - How do humans impact on biological processes? (11 lessons)
- VCE Chemistry
  - How can the diversity of materials be explained?
    - How can knowledge of elements explain the properties of matter? (41 lessons)
    - How can the versatility of non-metals be explained? (43 lessons)
  - What makes water such a unique chemical?
    - How do substances interact with water? (29 lessons)
    - How are substances in water measured and analysed? (19 lessons)
  - How can chemical processes be designed to optimise efficiency?
    - What are the options for energy production? (35 lessons)
    - How can the yield of a chemical product be optimised? (18 lessons)
  - How are organic compounds categorised, analysed and used?
    - How can the diversity of carbon compounds be explained and categorised? (63 lessons)
    - What is the chemistry of food? (17 lessons)
- VCE Physics
  - What ideas explain the physical world?
    - How can thermal effects be explained? (42 lessons)
    - How do electric circuits work? (21 lessons)
    - What is matter and how is it formed? (30 lessons)
  - What do experiments reveal about the physical world?
    - How can motions be described and explained? (50 lessons)
    - What are stars? (22 lessons)
    - Is there life beyond Earth's solar system? (16 lessons)
    - How do forces act on the human body? (4 lessons)
    - How can AC electricity charge a DC device? (15 lessons)
    - How do heavy things fly? (7 lessons)
    - How do fusion and fission compare as viable nuclear energy power sources? (8 lessons)
    - How is radiation used to maintain human health? (11 lessons)
    - How do particle accelerators work? (1 lesson)
    - How can human vision be enhanced? (20 lessons)
    - How do instruments make music? (15 lessons)

- How can performance in ball sports be improved? (10 lessons)
    - How does the human body use electricity? (21 lessons)
  - How do fields explain motion and electricity?
    - How do things move without contact? (19 lessons)
    - How are fields used to move electrical energy? (15 lessons)
    - How fast can things go? (40 lessons)
  - How can two contradictory models explain both light and matter?
    - How can waves explain the behaviour of light? (23 lessons)
    - How are light and matter similar? (14 lessons)
- VCE Psychology
  - How are behaviour and mental processes shaped?
    - Role of the brain (6 lessons)
  - How do external factors influence behaviour and mental processes?
    - Social influences on behaviour (5 lessons)
  - How does experience affect behaviour and mental processes?
    - Nervous system functioning (1 lesson)
  - How is wellbeing developed and maintained?
    - Levels of consciousness (3 lessons)
    - Mental wellbeing (3 lessons)

# ACT

## Year 5

- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
- Light (14 lessons)
- States of Matter (17 lessons)
- The Solar System (11 lessons)

## Year 6

- An Introduction to Science (32 lessons)
- Chemical Changes (17 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
- Living Things and Their Environment (16 lessons)

## Year 7

- An Introduction to Science (32 lessons)
- Classification (24 lessons)
- Earth's Resources (22 lessons)
- Earth, Moon and Sun (28 lessons)
- Forces (29 lessons)
- Interactions in Ecosystems (38 lessons)
- Mixtures (31 lessons)
- The Water Cycle (19 lessons)

## Year 8

- Cells (39 lessons)
- Elements and Compounds (19 lessons)
- Energy (35 lessons)
- Introduction to Chemical Reactions (16 lessons)
- Living Systems (57 lessons)
- Matter (23 lessons)
- Rocks (29 lessons)

## Year 9

- Atoms (29 lessons)
- Changing Earth (32 lessons)
- Chemical Reactions (15 lessons)
- Communication With Waves (8 lessons)
- Ecosystems (36 lessons)
- Electricity (15 lessons)
- Heat (10 lessons)

- Homeostasis and Disease (49 lessons)
- Light (18 lessons)
- Sound (9 lessons)
- Types of Chemical Reactions (16 lessons)

#### Year 10

- Balancing Equations (11 lessons)
- Energy and Systems (19 lessons)
- Evolution (29 lessons)
- Force and Motion (37 lessons)
- Genetic (35 lessons)
- Global Systems (34 lessons)
- Magnets (15 lessons)
- Organising and Classifying Elements (33 lessons)
- Rates of Reaction and Types of Reactions (31 lessons)
- The Universe (29 lessons)

#### Senior Biology

- Biodiversity and the Interconnectedness of Life
  - Describing Biodiversity (14 lessons)
    - Biodiversity
    - Classification
  - Ecosystem Dynamics (37 lessons)
    - Population Ecology
    - Changes in Ecosystems
- From Single Cells to Multicellular Organisms
  - Cells as the Basis of Life (26 lessons)
    - Types of cells
    - Cell membranes
    - Enzymes, energy and metabolism
  - Multicellular Organisms (23 lessons)
    - Cell differentiation
    - Gas and nutrient exchange and transport
    - Plant systems
- Continuity of Species
  - Heredity (29 lessons)
  - Continuity of Life on Earth (18 lessons)
    - Evolution and natural selection
- Surviving in a Changing Environment
  - Homeostasis (13 lessons)
  - Infectious Disease (14 lessons)
- Physiology
  - Animal Physiology (19 lessons)
  - Plant Physiology (4 lessons)



## Senior Chemistry

- Chemical Fundamentals - Structure, Properties and Reactions
  - Properties and Structure of Atoms (31 lessons)
    - Periodic table and trends
    - Atomic structure and isotopes
    - Introduction to bonding
  - Properties and Structure of Materials (15 lessons)
    - Compounds and mixtures
    - Bonding and properties
  - Chemical Reactions (40 lessons)
    - Endothermic and exothermic reactions
    - Fuels
    - Moles and law of conservation
    - Chemical reactions
- Molecular Interactions and Reactions
  - Intermolecular Forces and Gases (19 lessons)
  - Aqueous Solutions and Acidity (18 lessons)
  - Rates of Chemical Reactions (10 lessons)
- Equilibrium, Acids and Redox Reactions
  - Chemical Equilibrium Systems (15 lessons)
    - Equilibrium constants
    - Properties of acids and bases
    - pH scale
  - Oxidation and Reduction (10 lessons)
- Structure, Synthesis and Design
  - Properties and Structure of Organic Materials (15 lessons)

## Senior Earth and Environmental Science

- Climate Science (7 lessons)
- Earth's Processes (6 lessons)
- Earth's Resources (18 lessons)
- Energy Transformations (10 lessons)
- Hazards (9 lessons)
- Human Impacts (8 lessons)
- Plate Tectonics (5 lessons)
- Resource Management (9 lessons)

## Senior Human Biology

- The Functioning Human Body (34 lessons)
  - Cells and tissue
  - Metabolism
  - Organ systems

- Reproduction and Inheritance (18 lessons)
  - DNA and inheritance
  - Cell reproduction
  - Human reproduction
- Homeostasis and Disease (24 lessons)
  - Homeostasis
  - The nervous and endocrine systems
  - Response to infection
- Human Variation and Evolution (7 lessons)

#### Senior Physics

- Thermal, Nuclear and Electrical Physics
  - Heating Processes (18 lessons)
  - Ionising Radiation and Nuclear Reactions (20 lessons)
  - Electrical Circuits (19 lessons)
- Linear Motion and Waves
  - Linear Motion and Force (55 lessons)
  - Waves (33 lessons)
- Gravity and Electromagnetism
  - Gravity and Motion (24 lessons)
  - Electromagnetism (26 lessons)

#### Senior Psychology

- Individual Development
  - The Role of the Brain (2 lessons)
  - Human Consciousness and Sleep (3 lessons)

# TAS

## Year 5

- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
- Light (14 lessons)
- States of Matter (17 lessons)
- The Solar System (11 lessons)

## Year 6

- An Introduction to Science (32 lessons)
- Chemical Changes (17 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
- Living Things and Their Environment (16 lessons)

## Year 7

- An Introduction to Science (32 lessons)
- Classification (24 lessons)
- Earth's Resources (22 lessons)
- Earth, Moon and Sun (28 lessons)
- Forces (29 lessons)
- Interactions in Ecosystems (38 lessons)
- Mixtures (31 lessons)
- The Water Cycle (19 lessons)

## Year 8

- Cells (39 lessons)
- Elements and Compounds (19 lessons)
- Energy (35 lessons)
- Introduction to Chemical Reactions (16 lessons)
- Living Systems (57 lessons)
- Matter (23 lessons)
- Rocks (29 lessons)

## Year 9

- Atoms (29 lessons)
- Changing Earth (32 lessons)
- Chemical Reactions (15 lessons)
- Communication With Waves (8 lessons)
- Ecosystems (36 lessons)
- Electricity (15 lessons)
- Heat (10 lessons)

- Homeostasis and Disease (49 lessons)
- Light (18 lessons)
- Sound (9 lessons)
- Types of Chemical Reactions (16 lessons)

#### Year 10

- Balancing Equations (11 lessons)
- Energy and Systems (19 lessons)
- Evolution (29 lessons)
- Force and Motion (37 lessons)
- Genetic (35 lessons)
- Global Systems (34 lessons)
- Magnets (15 lessons)
- Organising and Classifying Elements (33 lessons)
- Rates of Reaction and Types of Reactions (31 lessons)
- The Universe (29 lessons)

#### Senior Biology

- Biodiversity and the Interconnectedness of Life
  - Describing Biodiversity (14 lessons)
    - Biodiversity
    - Classification
  - Ecosystem Dynamics (37 lessons)
    - Population Ecology
    - Changes in Ecosystems
- From Single Cells to Multicellular Organisms
  - Cells as the Basis of Life (26 lessons)
    - Types of cells
    - Cell membranes
    - Enzymes, energy and metabolism
  - Multicellular Organisms (23 lessons)
    - Cell differentiation
    - Gas and nutrient exchange and transport
    - Plant systems
- Continuity of Species
  - Heredity (29 lessons)
  - Continuity of Life on Earth (18 lessons)
    - Evolution and natural selection
- Surviving in a Changing Environment
  - Homeostasis (13 lessons)
  - Infectious Disease (14 lessons)
- Physiology
  - Animal Physiology (19 lessons)
  - Plant Physiology (4 lessons)

## Senior Chemistry

- Chemical Fundamentals - Structure, Properties and Reactions
  - Properties and Structure of Atoms (31 lessons)
    - Periodic table and trends
    - Atomic structure and isotopes
    - Introduction to bonding
  - Properties and Structure of Materials (15 lessons)
    - Compounds and mixtures
    - Bonding and properties
  - Chemical Reactions (40 lessons)
    - Endothermic and exothermic reactions
    - Fuels
    - Moles and law of conservation
    - Chemical reactions
- Molecular Interactions and Reactions
  - Intermolecular Forces and Gases (19 lessons)
  - Aqueous Solutions and Acidity (18 lessons)
  - Rates of Chemical Reactions (10 lessons)
- Equilibrium, Acids and Redox Reactions
  - Chemical Equilibrium Systems (15 lessons)
    - Equilibrium constants
    - Properties of acids and bases
    - pH scale
  - Oxidation and Reduction (10 lessons)
- Structure, Synthesis and Design
  - Properties and Structure of Organic Materials (15 lessons)

## Senior Earth and Environmental Science

- Climate Science (7 lessons)
- Earth's Processes (6 lessons)
- Earth's Resources (18 lessons)
- Energy Transformations (10 lessons)
- Hazards (9 lessons)
- Human Impacts (8 lessons)
- Plate Tectonics (5 lessons)
- Resource Management (9 lessons)

## Senior Human Biology

- The Functioning Human Body (34 lessons)
  - Cells and tissue
  - Metabolism
  - Organ systems

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  - DNA and inheritance
  - Cell reproduction
  - Human reproduction
- Homeostasis and Disease (24 lessons)
  - Homeostasis
  - The nervous and endocrine systems
  - Response to infection
- Human Variation and Evolution (7 lessons)

#### Senior Physics

- Thermal, Nuclear and Electrical Physics
  - Heating Processes (18 lessons)
  - Ionising Radiation and Nuclear Reactions (20 lessons)
  - Electrical Circuits (19 lessons)
- Linear Motion and Waves
  - Linear Motion and Force (55 lessons)
  - Waves (33 lessons)
- Gravity and Electromagnetism
  - Gravity and Motion (24 lessons)
  - Electromagnetism (26 lessons)

#### Senior Psychology

- Individual Development
  - The Role of the Brain (2 lessons)
  - Human Consciousness and Sleep (3 lessons)

# NT

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- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
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- States of Matter (17 lessons)
- The Solar System (11 lessons)

## Year 6

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- Chemical Changes (17 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
- Living Things and Their Environment (16 lessons)

## Year 7

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- Classification (24 lessons)
- Earth's Resources (22 lessons)
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- Mixtures (31 lessons)
- The Water Cycle (19 lessons)

## Year 8

- Cells (39 lessons)
- Elements and Compounds (19 lessons)
- Energy (35 lessons)
- Introduction to Chemical Reactions (16 lessons)
- Living Systems (57 lessons)
- Matter (23 lessons)
- Rocks (29 lessons)

## Year 9

- Atoms (29 lessons)
- Changing Earth (32 lessons)
- Chemical Reactions (15 lessons)
- Communication With Waves (8 lessons)
- Ecosystems (36 lessons)
- Electricity (15 lessons)
- Heat (10 lessons)

- Homeostasis and Disease (49 lessons)
- Light (18 lessons)
- Sound (9 lessons)
- Types of Chemical Reactions (16 lessons)

#### Year 10

- Balancing Equations (11 lessons)
- Energy and Systems (19 lessons)
- Evolution (29 lessons)
- Force and Motion (37 lessons)
- Genetic (35 lessons)
- Global Systems (34 lessons)
- Magnets (15 lessons)
- Organising and Classifying Elements (33 lessons)
- Rates of Reaction and Types of Reactions (31 lessons)
- The Universe (29 lessons)

#### Senior Biology

- Biodiversity and the Interconnectedness of Life
  - Describing Biodiversity (14 lessons)
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    - Changes in Ecosystems
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    - Cell differentiation
    - Gas and nutrient exchange and transport
    - Plant systems
- Continuity of Species
  - Heredity (29 lessons)
  - Continuity of Life on Earth (18 lessons)
    - Evolution and natural selection
- Surviving in a Changing Environment
  - Homeostasis (13 lessons)
  - Infectious Disease (14 lessons)
- Physiology
  - Animal Physiology (19 lessons)
  - Plant Physiology (4 lessons)



## Senior Chemistry

- Chemical Fundamentals - Structure, Properties and Reactions
  - Properties and Structure of Atoms (31 lessons)
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    - Atomic structure and isotopes
    - Introduction to bonding
  - Properties and Structure of Materials (15 lessons)
    - Compounds and mixtures
    - Bonding and properties
  - Chemical Reactions (40 lessons)
    - Endothermic and exothermic reactions
    - Fuels
    - Moles and law of conservation
    - Chemical reactions
- Molecular Interactions and Reactions
  - Intermolecular Forces and Gases (19 lessons)
  - Aqueous Solutions and Acidity (18 lessons)
  - Rates of Chemical Reactions (10 lessons)
- Equilibrium, Acids and Redox Reactions
  - Chemical Equilibrium Systems (15 lessons)
    - Equilibrium constants
    - Properties of acids and bases
    - pH scale
  - Oxidation and Reduction (10 lessons)
- Structure, Synthesis and Design
  - Properties and Structure of Organic Materials (15 lessons)

## Senior Earth and Environmental Science

- Climate Science (7 lessons)
- Earth's Processes (6 lessons)
- Earth's Resources (18 lessons)
- Energy Transformations (10 lessons)
- Hazards (9 lessons)
- Human Impacts (8 lessons)
- Plate Tectonics (5 lessons)
- Resource Management (9 lessons)

## Senior Human Biology

- The Functioning Human Body (34 lessons)
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  - The nervous and endocrine systems
  - Response to infection
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#### Senior Physics

- Thermal, Nuclear and Electrical Physics
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  - Electrical Circuits (19 lessons)
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  - Linear Motion and Force (55 lessons)
  - Waves (33 lessons)
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  - Gravity and Motion (24 lessons)
  - Electromagnetism (26 lessons)

#### Senior Psychology

- Individual Development
  - The Role of the Brain (2 lessons)
  - Human Consciousness and Sleep (3 lessons)

# SA

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- Adaptations (16 lessons)
- An Introduction to Science (32 lessons)
- Light (14 lessons)
- States of Matter (17 lessons)
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## Year 6

- An Introduction to Science (32 lessons)
- Chemical Changes (17 lessons)
- Electricity (11 lessons)
- Extreme Natural Events (20 lessons)
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#### Senior Psychology

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