



NCEA Science

EP Curriculum Map

NCEA Level 1

Biology

1.1 Practical Biology Investigation

Topics	Lesson Names
Learning Material	<ul style="list-style-type: none">● Introduction to Biology 1.1● Types of Graphs● Using Excel to Draw Graphs● Writing Conclusions● Discussion (Biology Ideas)● Discussion (Evaluation)● Aim and Hypothesis● Independent and Dependent Variables● Controlled Variables● Sources of Error● Methods● Experimental Techniques● Making Results Tables● Graph Conventions
Practice Tasks	<ul style="list-style-type: none">● AS90925: Disinfectants and Bacterial Growth Investigation● AS90925: Elodea Photosynthesis Investigation● AS90925: Handspan Variation Investigation● AS90925: Hydrogen Peroxide Concentration Investigation
Assessments	<ul style="list-style-type: none">● AS90925: Blank Template● AS90925: Disinfectants and Bacterial Growth Investigation● AS90925: Elodea Photosynthesis Investigation● AS90925: Handspan Variation Investigation● AS90925: Hydrogen Peroxide Concentration Investigation

1.3 Demonstrate understanding of biological ideas relating to micro-organisms

Topics	Lesson Names
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Structure of Microorganisms	<ul style="list-style-type: none"> • Meet the Microorganisms • The Structure of Bacteria • The Structure of Fungi • The Structure of Viruses
Life Processes of Microorganisms	<ul style="list-style-type: none"> • Life Processes of Bacteria • Life Processes of Viruses • Life Processes of Fungi
Factors that Affect Microorganisms	<ul style="list-style-type: none"> • Factors that Affect Bacteria • Factors that Affect Fungi
Microorganisms and Disease	<ul style="list-style-type: none"> • Bacterial Disease and Antibiotics • Fungal Diseases • Viral Diseases and Immunisations
Uses of Microorganisms	<ul style="list-style-type: none"> • Bacteria and the Nitrogen Cycle • The Uses of Microorganisms • Microorganisms and Food Production
Revision Lessons	<ul style="list-style-type: none"> • Structure of Microorganisms Revision • Life Processes of Microorganisms Revision • Factors that Affect Microorganisms Revision Lesson • Microorganisms and Disease Revision Lesson • Uses of Microorganisms Revision Lesson
Past Exams	<p>How to Mark NCEA Exams</p> <p><i>By Topic</i></p> <ul style="list-style-type: none"> • Life Processes of Fungi • Life Processes of Viruses • Uses of Micro-organisms <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.3 Micro-organisms - Exam Mode • 2017 - 1.3 Micro-organisms - Exam Mode • 2018 - 1.3 Micro-organisms - Exam Mode • 2019 - 1.3 Micro-organisms - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.3 Micro-organisms - Practice Mode • 2017 - 1.3 Micro-organisms - Practice Mode • 2018 - 1.3 Micro-organisms - Practice Mode • 2019 - 1.3 Micro-organisms - Practice Mode

1.5 Mammals as Consumers

Topics	Lesson Names
Digestion and Circulation	<ul style="list-style-type: none"> • Digestion and Nutrition

	<ul style="list-style-type: none"> • Physical and Chemical Digestion • Digestion - Mouth, Oesophagus and Stomach • Digestion - The Intestines and Other Organs • Circulation of Digested Materials
Digestion in Herbivores Omnivores and Carnivores	<ul style="list-style-type: none"> • Digestion in Herbivores • Digestion in Carnivores • Digestion in Omnivores
Respiration	<ul style="list-style-type: none"> • Respiration • Aerobic and Anaerobic Respiration
Revision Lessons	<ul style="list-style-type: none"> • Digestion and Circulation Revision • Digestion in Herbivores, Carnivores, and Omnivores Revision • Respiration Revision
Past Exams	<p>How to Mark NCEA Exams</p> <ul style="list-style-type: none"> • Digestive Systems • Physical and Chemical Digestion • Respiration and Circulation <p><i>By Topic</i></p> <ul style="list-style-type: none"> • Digestive Systems • Physical and Chemical Digestion • Respiration and Circulation <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.5 Mammals as Consumers - Exam Mode • 2017 - 1.5 Mammals as Consumers - Exam Mode • 2018 - 1.5 Mammals as Consumers - Exam Mode • 2019 - 1.5 Mammals as Consumers - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> • 2017 - 1.5 Mammals as Consumers - Practice Mode • 2018 - 1.5 Mammals as Consumers - Practice Mode • 2019 - 1.5 Mammals as Consumers - Practice Mode

Chemistry

1.1 Practical Chemistry Investigation

Topics	Lesson Names
Overview	<ul style="list-style-type: none"> • 1.1 Chemistry - Teaching PowerPoint
Learning Material	Introduction to Chemistry 1.1

	<ul style="list-style-type: none"> ● Using Excel to Draw Graphs ● Writing Conclusions ● Discussion (Chemistry Ideas) ● Discussion (Evaluation) ● Aim and Hypothesis ● Independent and Dependent Variables ● Controlled Variables ● Sources of Error ● Methods ● Experimental Techniques ● Making Results Tables ● Graphing <p><i>Background Chemistry Ideas</i></p> <ul style="list-style-type: none"> ● Introduction to Rates of Reaction ● Factors Affecting Reaction Rates
Practice Tasks	<ul style="list-style-type: none"> ● AS90930: Disappearing Cross Investigation ● AS90930: Mg + H₂SO₄ Concentration Investigation ● AS90930: Mg + HCl Concentration Investigation ● AS90930: Mg + HCl Temperature Investigation ● AS90930: Purple Flash Investigation
Assessments	<p>*Teachers - How to set up these assessments</p> <ul style="list-style-type: none"> ● AS90930: Blank Template ● AS90930: Disappearing Cross Investigation ● AS90930: Mg + H₂SO₄ Concentration Investigation ● AS90930: Mg + HCl Concentration Investigation ● AS90930: Mg + HCl Temperature Investigation ● AS90930: Purple Flash Investigation

1.3 Carbon Chemistry

Topics	Lesson Names
Structure of Carbon Compounds	<ul style="list-style-type: none"> ● Introduction to Carbon Compounds ● Structure of Alkanes ● Structure of Alkenes ● Structure of Alcohols
Properties of Carbon Compounds	<ul style="list-style-type: none"> ● Melting and Boiling of Carbon Compounds ● Solubility of Carbon Compounds ● Polymerisation of Alkenes ● Complete Combustion Reactions ● Incomplete Combustion Reactions
Production and Processing of Carbon Compounds	<ul style="list-style-type: none"> ● Processing Hydrocarbons ● Production of Alcohols

	<ul style="list-style-type: none"> ● Fossil Fuels ● Biofuels ● Comparison of Fossil fuels and Biofuels
Revision Lessons	<ul style="list-style-type: none"> ● Structure of Carbon Compounds Revision ● Properties of Carbon Compounds Revision ● Production and Processing of Carbon Compounds Revision
Past Exams	<ul style="list-style-type: none"> ● How to Mark NCEA Exams
Past Exams	<p><i>Questions By Topic</i></p> <ul style="list-style-type: none"> ● Combustion of Carbon Compounds ● Production of Carbon Compounds ● Structure and Properties of Carbon Compounds
Past Exams	<p><i>Exam Mode</i></p> <ul style="list-style-type: none"> ● 2016 - 1.3 Carbon Chemistry - Exam Mode ● 2017 - 1.3 Carbon Chemistry - Exam Mode ● 2018 - 1.3 Carbon Chemistry - Exam Mode ● 2019 - 1.3 Carbon Chemistry - Exam Mode
Past Exams	<p><i>Practice Mode</i></p> <ul style="list-style-type: none"> ● 2016 - 1.3 Carbon Chemistry - Practice Mode ● 2017 - 1.3 Carbon Chemistry - Practice Mode ● 2018 - 1.3 Carbon Chemistry - Practice Mode ● 2019 - 1.3 Carbon Chemistry - Practice Mode

1.4 Selected Elements

Topics	Lesson Names
Atomic Structure and the Periodic Table	<ul style="list-style-type: none"> ● The Structure of an Atom ● Atomic Symbols ● Electron Configurations of Atoms ● Organisation of the Periodic Table ● Trends in the Periodic Table
Ions and Ionic Compounds	<ul style="list-style-type: none"> ● Introduction to Ions ● Electron Configuration of Ions ● Ionic Compounds ● Polyatomic Ions and Compounds
Introduction to Chemical Reactions	<ul style="list-style-type: none"> ● Chemical Reactions and Equations ● Balancing Chemical Equations
Properties of Metals	<ul style="list-style-type: none"> ● Physical Properties of Metals ● Alloys and Their Uses ● Chemical Properties of Metals ● Metal Reactions with Oxygen ● Metal Reactions with Water ● Metal Reactions with Acid

Properties of Non-metals	<ul style="list-style-type: none"> • Properties and Uses of Non-metals • Allotropes of Carbon • Allotropes of Oxygen • Chemical Compounds
Key Terms	<ul style="list-style-type: none"> • Key Terms and Definitions • Selected Elements (Name to Symbol) • Selected Compounds (Formula to Name) • Selected Compounds (Name to Formula) • Identifying Ions (Formula to Name) • Selected Elements (Symbol to Name) • Writing Element Names • Writing Element Symbols • Identifying Key Terms from Definitions
Revision Lessons	<ul style="list-style-type: none"> • Atomic Structure and the Periodic Table Revision • Ions and Ionic Compounds Revision • Chemical Reactions Revision • Metal Properties Revision • Metal Reactions Revision • Non-Metals Revision
Past Exams	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> • Atomic Structure • Chemical Reactions • Properties of Metals • Properties of Non-metals and Compounds <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> • 2017 - 1.4 Selected Elements - Exam Mode • 2018 - 1.4 Selected Elements - Exam Mode • 2019 - 1.4 Selected Elements - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> • 2017 - 1.4 Selected Elements - Practice Mode • 2018 - 1.4 Selected Elements - Practice Mode • 2019 - 1.4 Selected Elements - Practice Mode

1.5 Chemical Reactions

Topics	Lesson Names
Introduction to Chemical Reactions	<ul style="list-style-type: none"> • Chemical Reactions and Equations • Balancing Chemical Equations • Introduction to Ions • Ionic Compounds

Types of Chemical Reactions	<ul style="list-style-type: none"> ● Combination Reactions ● Decomposition Reactions ● Solutions and Solubility ● Precipitation Reactions ● Testing for Ions ● Displacement Reactions ● Types of Reactions Revision
Past Exams	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> ● Combination Reactions ● Comparing Reactions ● Decomposition Reactions ● Displacement Reactions ● Precipitation Reactions <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> ● 2016 - 1.5 Chemical Reactions - Exam Mode ● 2017 - 1.5 Chemical Reactions - Exam Mode ● 2018 - 1.5 Chemical Reactions - Exam Mode ● 2019 - 1.5 Chemical Reactions - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> ● 2016 - 1.5 Chemical Reactions - Practice Mode ● 2017 - 1.5 Chemical Reactions - Practice Mode ● 2018 - 1.5 Chemical Reactions - Practice Mode ● 2019 - 1.5 Chemical Reactions - Practice Mode

Physics

1.1 Practical Physics Investigation

Topics	Lesson Names
	<ul style="list-style-type: none"> ● 1.1 Physics - Teaching PowerPoint
Learning Material	<ul style="list-style-type: none"> ● Introduction to Physics 1.1 ● Aim and Hypothesis ● Independent and Dependent Variables ● Sources of Error ● Controlled Variables ● Methods ● Experimental Techniques ● Making Results Tables

	<ul style="list-style-type: none"> ● Graphing 1: Graph Conventions ● Graphing 2: Line of Best Fit ● Graphing 3: Calculating the Gradient ● Graphing 4: Expressing a Linear Relationship Mathematically ● Using Excel to Draw Graphs ● Writing Conclusions ● Discussion (Physics Ideas) ● Discussion (Evaluation)
Practice Tasks	<ul style="list-style-type: none"> ● AS90935: Catapult Investigation ● AS90935: Helicopter Investigation ● AS90935: Ramp Investigation ● AS90935: Spring Investigation
Assessments	<p>*Teachers - How to set up these assessments</p> <ul style="list-style-type: none"> ● AS90935: Blank Template ● AS90935: Catapult Investigation ● AS90935: Helicopter Investigation ● AS90935: Ramp Investigation ● AS90935: Spring Investigation

1.3 Electricity and Magnetism

Topics	Lesson Names
Static Electricity	<ul style="list-style-type: none"> ● Charge ● Conductors and Insulators ● Moving Charge ● Generating Charge ● Charging by Induction ● Electrical Discharge
DC Electricity	<ul style="list-style-type: none"> ● Voltage, Current, and Resistance ● Power and Energy ● Circuit Diagrams ● Series Circuits ● Parallel Circuits
Magnetism	<ul style="list-style-type: none"> ● Bar Magnets ● Magnetic Field of Current-Carrying Wire ● Magnetic Field of a Coiled Wire
Revision Lessons	<ul style="list-style-type: none"> ● Charges, Conductors, and Insulators Revision ● Charging and Discharging Revision ● DC Electricity Revision

	<ul style="list-style-type: none"> • DC Circuits Revision • Magnetism Revision
Past Exams	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> • Circuits • Magnetism • Static <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.3 Electricity and Magnetism - Exam Mode • 2017 - 1.3 Electricity and Magnetism - Exam Mode • 2018 - 1.3 Electricity and Magnetism - Exam Mode • 2019 - 1.3 Electricity and Magnetism - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.3 Electricity and Magnetism - Practice Mode • 2017 - 1.3 Electricity and Magnetism - Practice Mode • 2018 - 1.3 Electricity and Magnetism - Practice Mode • 2019 - 1.3 Electricity and Magnetism - Practice Mode

1.4 Waves (NEW)

Topics	Lesson Names
Wave Properties	<ul style="list-style-type: none"> • Transfer of Energy Through Waves • Transverse and Longitudinal Waves • Wave Graphs • Wave Frequency and Wavefronts • Wave Speed • Context Lesson: Earthquakes and Tsunamis
Wave Behaviour	<ul style="list-style-type: none"> • Diffraction Around a Barrier • Introduction to the Ray Model • Reflection at a Straight Boundary • Refraction of Light • Introduction to Snell's Law • Total Internal Reflection

	<ul style="list-style-type: none"> • White Light
Revision Lessons	<ul style="list-style-type: none"> • Wave Properties Revision • Wave Behaviour Revision
Supporting Resources	<ul style="list-style-type: none"> • Understanding and Graphing Sine • Understanding and Graphing Cosine
Past Exams	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> • Reflection • Refraction • Waves <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.4 Wave Behaviour - Exam Mode • 2017 - 1.4 Wave Behaviour - Exam Mode • 2018 - 1.4 Wave Behaviour - Exam Mode • 2019 - 1.4 Wave Behaviour - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> • 2016 - 1.4 Wave Behaviour - Practice Mode • 2017 - 1.4 Wave Behaviour - Practice Mode • 2018 - 1.4 Wave Behaviour - Practice Mode • 2019 - 1.4 Wave Behaviour - Practice Mode
Key Terms and Definitions (NEW)	<ul style="list-style-type: none"> • Key Terms and Definitions: Properties of Waves • Key Terms and Definitions: Ray Model of Light • Vocabulary: Properties of Waves • Vocabulary: Ray Model of Light

1.5 Heat

Topics	Lesson Names
Heat and Temperature	<ul style="list-style-type: none"> • Heat and Temperature • Specific Heat and Thermal Expansion
Heat Transfer	<ul style="list-style-type: none"> • Conduction • Convection • Radiation • Heat Transfer Comparison
Phase Changes	<ul style="list-style-type: none"> • Types of Phase Changes • Heating and Cooling Curves
Latent Heat and Power	<ul style="list-style-type: none"> • Latent Heat • Specific and Latent Heat • Power and Efficiency
Key Terms	<ul style="list-style-type: none"> • Key Terms and Definitions • Symbols and Key Terms • Units and Key Terms

	<ul style="list-style-type: none"> ● Identifying Key Terms from Definitions ● Identifying Key Terms from Symbols
Revision	<ul style="list-style-type: none"> ● Heat and Temperature Revision ● Heat Transfer Revision ● Phase Changes Revision ● Latent Heat and Power Revision
Exam Questions	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> ● Heat Transfer ● Phase Change <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> ● 2017 - 1.5 Heat - Exam Mode ● 2018 - 1.5 Heat - Exam Mode ● 2019 - 1.5 Heat - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> ● 2017 - 1.5 Heat - Practice Mode ● 2018 - 1.5 Heat - Practice Mode ● 2019 - 1.5 Heat - Practice Mode

Science

1.1 Mechanics

Topics	Lesson Names
Motion	<ul style="list-style-type: none"> ● Distance, Speed, and Time ● Acceleration ● Distance-Time Graphs ● Speed-Time Graphs
Forces	<ul style="list-style-type: none"> ● Introduction to Forces ● Force, Mass and Acceleration ● Mass, Gravity and Weight ● Friction ● Pressure
Work and Energy	<ul style="list-style-type: none"> ● Gravitational Potential Energy ● Kinetic Energy ● Conservation of Energy ● Work ● Power
Revision Lessons	<ul style="list-style-type: none"> ● Motion Revision ● Forces Revision ● Work and Energy Revision

Vocabulary	<ul style="list-style-type: none"> ● Vocabulary: Science 1.1 - Mechanics ● Vocabulary: Science 1.1 Mechanics
Exam Questions	<ul style="list-style-type: none"> ● How to Mark NCEA Exams
Exam Questions	<p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> ● Force and Motion ● Pressure ● Energy ● Question Bank
Exam Questions	<p><i>Exam Mode</i></p> <ul style="list-style-type: none"> ● 2011 - 1.1 Mechanics - Exam Mode ● 2012 - 1.1 Mechanics - Exam Mode ● 2013 - 1.1 Mechanics - Exam Mode ● 2014 - 1.1 Mechanics - Exam Mode ● 2015 - 1.1 Mechanics - Exam Mode ● 2016 - 1.1 Mechanics - Exam Mode ● 2017 - 1.1 Mechanics - Exam Mode ● 2018 - 1.1 Mechanics - Exam Mode ● 2019 - 1.1 Mechanics - Exam Mode
Exam Questions	<p><i>Practice Mode</i></p> <ul style="list-style-type: none"> ● 2011 - 1.1 Mechanics - Practice Mode ● 2012 - 1.1 Mechanics - Practice Mode ● 2013 - 1.1 Mechanics - Practice Mode ● 2014 - 1.1 Mechanics - Practice Mode ● 2015 - 1.1 Mechanics - Practice Mode ● 2016 - 1.1 Mechanics - Practice Mode ● 2017 - 1.1 Mechanics - Practice Mode ● 2018 - 1.1 Mechanics - Practice Mode ● 2019 - 1.1 Mechanics - Practice Mode

1.2 Electricity and Magnetism

Topics	Lesson Names
Static Electricity	<ul style="list-style-type: none"> ● Charge ● Conductors and Insulators ● Moving Charge ● Generating Charge ● Charging by Induction ● Electrical Discharge
DC Electricity	<ul style="list-style-type: none"> ● Voltage, Current, and Resistance ● Power and Energy ● Circuit Diagrams ● Series Circuits ● Parallel Circuits
Magnetism	<ul style="list-style-type: none"> ● Bar Magnets

	<ul style="list-style-type: none"> • Magnetic Field of Current-Carrying Wire • Magnetic Field of a Coiled Wire
Revision Lessons	<ul style="list-style-type: none"> • Charges, Conductors, and Insulators Revision • Charging and Discharging Revision • DC Electricity Revision • DC Circuits Revision • Magnetism Revision

1.3 Wave Behaviour

Topics	Lesson Names
Wave Properties	<ul style="list-style-type: none"> • Transfer of Energy Through Waves • Transverse and Longitudinal Waves • Wave Graphs • Wave Frequency and Wavefronts • Wave Speed • Context Lesson: Earthquakes and Tsunamis
Wave Behaviour	<ul style="list-style-type: none"> • Diffraction Around a Barrier • Introduction to the Ray Model • Reflection at a Straight Boundary • Refraction of Light • Introduction to Snell's Law • Total Internal Reflection • White Light
Revision Lessons	<ul style="list-style-type: none"> • Wave Properties Revision • Wave Behaviour Revision • Ray Model of Light Revision Questions
Supporting Resources	<ul style="list-style-type: none"> • Understanding and Graphing Sine • Understanding and Graphing Cosine
Past Exams	<ul style="list-style-type: none"> • 1.4 Wave Behaviour - Exam Generator • AS90938 (1.4) 2012 - Wave Behaviour • AS90938 (1.4) 2013 - Wave Behaviour • Longitudinal Waves - Exam Questions • Reflection - Exam Questions • Refraction - Exam Questions • Transverse Waves - Exam Questions
Key Terms and Definitions	<ul style="list-style-type: none"> • Key Terms and Definitions: Properties of Waves • Key Terms and Definitions: Ray Model of Light • Vocabulary: Properties of Waves • Vocabulary: Ray Model of Light

1.4 Heat

Topics	Lesson Names
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Heat and Temperature	<ul style="list-style-type: none"> ● Heat and Temperature ● Specific Heat
Heat Transfer	<ul style="list-style-type: none"> ● Conduction ● Convection ● Radiation ● Heat Transfer Comparison
Phase Changes	<ul style="list-style-type: none"> ● Types of Phase Changes ● Heating and Cooling Curves
Latent Heat and Power	<ul style="list-style-type: none"> ● Latent Heat ● Specific and Latent Heat ● Power
Internal Template	<ul style="list-style-type: none"> ● AS90943: Blank Template - 1.4 Heat

1.5 Acids and Bases

Topics	Lesson Names
Atomic Structure	<ul style="list-style-type: none"> ● Introduction to Atoms ● Elements ● Atomic Structure ● Electron Configurations ● Trends in the Periodic Table
Ions and Ionic Compounds	<ul style="list-style-type: none"> ● Introduction to Ions ● Electron Configuration of Ions ● Ionic Compounds
Chemical Equations	<ul style="list-style-type: none"> ● Chemical Reactions and Equations ● Balancing Chemical Equations
Reaction Rates	<ul style="list-style-type: none"> ● Introduction to Rates of Reaction ● Temperature and Reaction Rate ● Concentration and Reaction Rate ● Surface Area and Reaction Rate ● Collision Theory and Reaction Rate
Acid-Base Chemistry	<ul style="list-style-type: none"> ● Acid and Base Solutions ● pH Scale and Indicators ● Neutralisation ● Metal Oxides and Hydroxides ● Metal Carbonates and Hydrogen Carbonates
Revision Lessons	<ul style="list-style-type: none"> ● Atoms Revision ● Ions Revision ● Chemical Equations Revision ● Reaction Rates Revision ● Acid-Base Chemistry Revision
Vocabulary	<ul style="list-style-type: none"> ● First 20 Elements (Name to Symbol)

	<ul style="list-style-type: none"> ● First 20 Elements (Symbol to Name) ● Identifying Ion Formulas ● Terms and Definitions: MCQ ● Terms and Definitions: Spelling ● Writing Element Names ● Writing Element Symbols ● Writing Ion Formulas
Exam Questions	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> ● Atoms and Ions ● Rates of Reaction ● Acids and Base Reactions <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> ● 2011 - 1.5 Acids and Bases - Exam Mode ● 2012 - 1.5 Acids and Bases - Exam Mode ● 2013 - 1.5 Acids and Bases - Exam Mode ● 2014 - 1.5 Acids and Bases - Exam Mode ● 2015 - 1.5 Acids and Bases - Exam Mode ● 2016 - 1.5 Acids and Bases - Exam Mode ● 2017 - 1.5 Acids and Bases - Exam Mode ● 2018 - 1.5 Acids and Bases - Exam Mode ● 2019 - 1.5 Acids and Bases - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> ● 2011 - 1.5 Acids and Bases - Practice Mode ● 2012 - 1.5 Acids and Bases - Practice Mode ● 2013 - 1.5 Acids and Bases - Practice Mode ● 2014 - 1.5 Acids and Bases - Practice Mode ● 2015 - 1.5 Acids and Bases - Practice Mode ● 2016 - 1.5 Acids and Bases - Practice Mode ● 2017 - 1.5 Acids and Bases - Practice Mode ● 2018 - 1.5 Acids and Bases - Practice Mode ● 2019 - 1.5 Acids and Bases - Practice Mode

1.7 Metals

Atomic Structure and Periodic Table	<ul style="list-style-type: none"> ● The Structure of an Atom ● Atomic Symbols ● Electron Configurations of Atoms ● Organisation of the Periodic Table ● Trends in the Periodic Table
Introduction to Chemical Reactions	<ul style="list-style-type: none"> ● Chemical Reactions and Equations ● Balancing Chemical Equations
Properties of Metals	<ul style="list-style-type: none"> ● Physical Properties of Metals

	<ul style="list-style-type: none"> Alloys and Their Uses Chemical Properties of Metals Metal Reactions with Oxygen Metal Reactions with Water Metal Reactions with Acid Preventing Corrosion Extracting Metals from Ores
Key Terms	<ul style="list-style-type: none"> Key Terms and Definitions Selected Elements (Name to Symbol) Selected Elements (Symbol to Name) Selected Compounds (Formula to Name) Selected Compounds (Name to Formula) Identifying Ions (Formula to Name) Writing Element Names Writing Element Symbols Identifying Key Terms from Definitions
Internal Template	<ul style="list-style-type: none"> AS90946: Blank Template - 1.7 Properties of Metals

1.8 Chemical Reactions

Overview	<ul style="list-style-type: none"> 1.8 Chemical Reactions - Teaching PowerPoint
Introduction to Chemical Reactions	<ul style="list-style-type: none"> Chemical Reactions and Equations Balancing Chemical Equations Introduction to Ions Ionic Compound
Types of Chemical Reactions	<ul style="list-style-type: none"> Combination Reactions Decomposition Reactions Solutions and Solubility Precipitation Reactions Testing for Ions Displacement Reactions Types of Reactions Revision
Internal Templates	<ul style="list-style-type: none"> AS90947: 1.8 Selected Chemical Reactions - Making New Substances

1.9 Genetic Variation

Topics	Lesson Names
DNA the Molecule	<ul style="list-style-type: none"> What's in a Genome? The Structure of DNA

	<ul style="list-style-type: none"> ● DNA, Genes and Proteins ● All About Alleles
Genes and Chromosomes	<ul style="list-style-type: none"> ● Homologous Chromosomes ● Sex Chromosomes and Inheritance
Cell Division	<ul style="list-style-type: none"> ● DNA Replication and Cell Division ● Meiosis ● Gametes and Fertilisation
Inheritance	<ul style="list-style-type: none"> ● Mendelian Genetics ● Inheritance ● Making Punnett Squares ● The Test Cross ● Pedigree Charts
Variation	<ul style="list-style-type: none"> ● What is Variation? ● Sexual and Asexual Reproduction ● Mutations ● Natural Selection
Revision Lessons	<ul style="list-style-type: none"> ● DNA the Molecule Revision ● Genes and Chromosomes Revision ● Cell Division Revision ● Inheritance Revision ● Variation Revision
Vocabulary	<ul style="list-style-type: none"> ● Vocabulary: Science 1.9 Genetic Variation
Exam Questions	<p>How to Mark NCEA Exams</p> <p><i>Questions by Topic</i></p> <ul style="list-style-type: none"> ● DNA, Genes and Alleles ● Genetic Variation ● Monohybrid Crosses ● Pedigree Charts ● Question Bank <p><i>Exam Mode</i></p> <ul style="list-style-type: none"> ● 2011 - 1.9 Genetic Variation - Exam Mode ● 2012 - 1.9 Genetic Variation - Exam Mode ● 2013 - 1.9 Genetic Variation - Exam Mode ● 2014 - 1.9 Genetic Variation - Exam Mode ● 2015 - 1.9 Genetic Variation - Exam Mode ● 2016 - 1.9 Genetic Variation - Exam Mode ● 2017 - 1.9 Genetic Variation - Exam Mode ● 2018 - 1.9 Genetic Variation - Exam Mode ● 2019 - 1.9 Genetic Variation - Exam Mode <p><i>Practice Mode</i></p> <ul style="list-style-type: none"> ● 2011 - 1.9 Genetic Variation - Practice Mode ● 2012 - 1.9 Genetic Variation - Practice Mode

	<ul style="list-style-type: none"> ● 2013 - 1.9 Genetic Variation - Practice Mode ● 2014 - 1.9 Genetic Variation - Practice Mode ● 2015 - 1.9 Genetic Variation - Practice Mode ● 2016 - 1.9 Genetic Variation - Practice Mode ● 2017 - 1.9 Genetic Variation - Practice Mode ● 2018 - 1.9 Genetic Variation - Practice Mode ● 2019 - 1.9 Genetic Variation - Practice Mode
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1.11 Microorganisms

Topics	Lesson Names
Structure of Microorganisms	<ul style="list-style-type: none"> ● Meet the Microorganisms ● The Structure of Bacteria ● The Structure of Fungi ● The Structure of Viruses
Life Processes of Microorganisms	<ul style="list-style-type: none"> ● Life Processes of Bacteria ● Life Processes of Viruses ● Life Processes of Fungi
Factors that Affect Microorganisms	<ul style="list-style-type: none"> ● Factors that Affect Bacteria ● Factors that Affect Fungi
Microorganisms and Disease	<ul style="list-style-type: none"> ● Bacterial Disease and Antibiotics ● Fungal Diseases ● Viral Diseases and Immunisations
Uses of Microorganisms	<ul style="list-style-type: none"> ● Bacteria and the Nitrogen Cycle ● The Uses of Microorganisms ● Microorganisms and Food Production
Revision Lessons	<ul style="list-style-type: none"> ● Structure of Microorganisms Revision ● Life Processes of Microorganisms Revision ● Factors that Affect Microorganisms Revision Lesson ● Microorganisms and Disease Revision Lesson ● Uses of Microorganisms Revision Lesson