

Year 11 / NCEA Level 1 Science

	2024 Standard											
	Science				PESS				CB			
	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4
Literacy or Numeracy Standard	L			L				N				
Communicating in Science												
<i>1. Command Words in Science</i>												
1. Understanding Scientific Verbs												
2. Definitions: Understanding Scientific Verbs												
3. Spelling: Understanding Scientific Verbs												
<i>2. Research</i>												
1. Types of Sources												
2. Source Analysis												
3. Source Referencing												
4. Research Questions												
<i>3. Data, Results and Analysis</i>												
Collecting and Tabulating Data												
Quality of Data												
Rounding to Decimal Places												
Rounding to Significant Figures												
Statistics												
<i>4. Writing Scientific Reports</i>												
1. Writing a Scientific Report												
2. Answering Scientific Questions												
3. Writing a Discussion												
4. Writing an Abstract												
5. Writing Conclusions												
<i>5. Referencing</i>												
5. Citations, Footnotes, Bibliographies and Reference Lists												
6. Annotated Bibliography												
Living World 1. Microorganisms												
Te Muriwai: Microorganisms												
<i>1. Structure of Microorganisms</i>												
1. Meet the Microorganisms												
2. The Structure of Bacteria												
3. The Structure of Fungi												
4. The Structure of Viruses												
<i>2. Life Processes of Microorganisms</i>												
1. Life Processes of Bacteria												
2. Life Processes of Viruses												
3. Life Processes of Fungi												
<i>3. Factors that Affect Microorganisms</i>												
1. Factors that Affect Bacteria												
2. Factors that Affect Fungi												
<i>4. Microorganisms and Disease</i>												
1. Bacterial Disease and Antibiotics												
2. Fungal Diseases												
3. Viral Diseases and Immunisations												
4. Rongoā Māori												
5. Food Preservation												
6. Food Preservation: Effectiveness of Kawakawa Leaves for Food Preservation												
7. Food Preservation: Pikopiko Preservation												
<i>5. Uses of Microorganisms</i>												
1. Bacteria and the Nitrogen Cycle												
2. The Uses of Microorganisms												
3. Microorganisms and Food Production												
<i>6. Revision Lessons</i>												
1. Structure of Microorganisms Revision												
2. Life Processes of Microorganisms Revision												
3. Factors that Affect Microorganisms Revision Lesson												
4. Microorganisms and Disease Revision Lesson												
5. Uses of Microorganisms Revision Lesson												
Living World 2. Mammalian Biology												
Te Muriwai: Mammalian Biology												
<i>1. Digestion and Circulation</i>												
1. Digestion and Nutrition												
2. Physical and Chemical Digestion												
3. Digestion - Mouth, Oesophagus and Stomach												
4. Digestion - The Intestines and Other Organs												
5. Circulation of Digested Materials												
6. Digestion in Herbivores												
7. Digestion in Carnivores												
8. Digestion in Omnivores												
<i>2. Respiration</i>												
1. Respiration												
2. Aerobic and Anaerobic Respiration												
<i>3. Revision Lessons</i>												
1. Digestion and Circulation Revision												
2. Digestion in Herbivores, Carnivores, and Omnivores Revision												
3. Respiration Revision												
Living World 3. Plant Biology												
Te Muriwai: Plant Biology												
1. Plant Structure												
2. Native Bush												
3. Photosynthesis												
4. Nutrient Cycles												
5. Plant Reproduction												
6. Pollination												

New lessons

Supplementary Resources

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	Science				PESS				CB			
	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4
7. Seed Dispersal												
8. Germination												
9. Monocultures												
Living World 4. Genetics												
Te Muriwai: Genetics												
1. DNA the Molecule												
1. What's in a Genome?												
2. The Structure of DNA												
3. DNA, Genes and Proteins												
4. All About Alleles												
2. Genes and Chromosomes												
1. Homologous Chromosomes												
2. Sex Chromosomes and Inheritance												
3. Cell Division												
1. DNA Replication and Cell Division												
2. Meiosis												
3. Gametes and Fertilisation												
4. Inheritance												
1. Mendelian Genetics												
2. Inheritance												
3. Making Punnett Squares												
4. The Test Cross												
5. Pedigree Charts												
5. Variation												
1. What is Variation?												
2. Sexual and Asexual Reproduction												
3. Mutations												
4. Natural Selection												
5. Artificial Selection												
6. The Travelling Kūmara												
7. Ethics and Tikanga of Genetic Modification												
6. Revision Lessons												
1. DNA the Molecule Revision												
2. Genes and Chromosomes Revision												
3. Cell Division Revision												
4. Inheritance Revision												
5. Variation Revision												
7. Vocabulary												
Vocabulary List: Science - Genetic Variation												
Vocabulary Quiz: Science - Genetic Variation												
Material World 1. Carbon Chemistry												
Te Muriwai: Carbon Chemistry												
1. Structure of Carbon Compounds												
1. Introduction to Carbon Compounds												
2. Structure of Alkanes												
3. Structure of Alkenes												
4. Structure of Alcohols												
2. Properties of Carbon Compounds												
1. Melting and Boiling of Carbon Compounds												
2. Solubility of Carbon Compounds												
3. Polymerisation of Alkenes												
4. Complete Combustion Reactions												
5. Incomplete Combustion Reactions												
3. Production and Processing of Carbon Compounds												
1. Processing Hydrocarbons												
2. Production of Alcohols												
3. Fossil Fuels												
4. Biofuels												
5. Comparison of Fossil Fuels and Biofuels												
4. Revision Lessons												
1. Structure of Carbon Compounds Revision												
2. Properties of Carbon Compounds Revision												
3. Production and Processing of Carbon Compounds Revision												
Key Terms and Definitions: Fuels												
Spelling: Fuels												
Material World 2. Elements and their Uses												
Te Muriwai: Elements and their Uses												
1. Atomic Structure and the Periodic Table												
1. The Structure of an Atom												
2. Atomic Symbols												
3. Electron Configurations of Atoms												
4. Organisation of the Periodic Table												
5. Trends in the Periodic Table												
2. Ions and Ionic Compounds												
1. Introduction to Ions												
2. Electron Configuration of Ions												
3. Ionic Compounds												
4. Polyatomic Ions and Compounds												
3. Introduction to Chemical Reactions												
1. Chemical Reactions and Equations												
2. Balancing Chemical Equations												
4. Properties of Metals												
1. Physical Properties of Metals												
2. Alloys and Their Uses												

New Lessons

Supplementary Resources

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	Science				PESS				CB			
	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4
3. Chemical Properties of Metals												
4. Metal Reactions with Oxygen												
5. Metal Reactions with Water												
6. Metal Reactions with Acid												
7. Preventing Corrosion												
8. Extracting Metals from Ores												
9. Extracting Iron from Ironsands												
5. Properties of Non-metals												
1. Properties and Uses of Non-metals												
2. Allotropes of Carbon												
3. Allotropes of Oxygen												
4. Chemical Compounds												
5. Isotopes and Radioactive Dating												
6. Key Terms												
1. Key Terms and Definitions												
2. Selected Elements (Name to Symbol)												
3. Selected Compounds (Formula to Name)												
4. Selected Compounds (Name to Formula)												
5. Identifying Ions (Formula to Name)												
6. Selected Elements (Symbol to Name)												
7. Writing Element Names												
8. Writing Element Symbols												
9. Identifying Key Terms from Definitions												
7. Revision Lessons												
1. Atomic Structure and the Periodic Table Revision												
2. Ions and Ionic Compounds Revision												
3. Chemical Reactions Revision												
4. Metal Properties Revision												
5. Metal Reactions Revision												
6. Non-Metals Revision												
Material World 3. Chemical Reactions												
Te Muriwai: Chemical Reactions												
1. Introduction to Chemical Reactions												
1. Chemical Reactions and Equations												
2. Balancing Chemical Equations												
3. Introduction to Ions												
4. Ionic Compounds												
2. Rates of Reaction												
1. Introduction to Rates of Reaction												
2. Temperature and Reaction Rate												
3. Concentration and Reaction Rate												
4. Surface Area and Reaction Rate												
5. Collision Theory and Reaction Rate												
3. Types of Chemical Reactions												
1. Combination Reactions												
2. Decomposition Reactions												
3. Solutions and Solubility												
4. Precipitation Reactions												
5. Testing for Ions												
6. Displacement Reactions												
4. Revision Lessons												
1. Types of Reactions Revision												
2. Reaction Rates Revision												
Material World 4. Neutralisation												
Te Muriwai: Neutralisation												
1. Acids and Bases												
1. Acid and Base Solutions												
2. pH Scale and Indicators												
3. Neutralisation												
4. Metal Oxides and Hydroxides												
5. Metal Carbonates and Hydrogen Carbonates												
2. Revision Lessons												
1. Atoms Revision												
2. Ions Revision												
3. Chemical Equations Revision												
4. Acid-Base Chemistry Revision												
3. Vocabulary												
First 20 Elements (Name to Symbol)												
First 20 Elements (Symbol to Name)												
Identifying Ion Formulas												
Terms and Definitions: MCO												
Terms and Definitions: Spelling												
Writing Element Names												
Writing Element Symbols												
Writing Ion Formulas												
Material World 5. Soil Science												
Te Muriwai: Soil Science												
1. What is Soil?												
2. Soil Chemistry												
3. Soil Biology												
4. Soil Fertility and Management												
5. Soil Filtration and Management												
Physical World 1. Electricity and Magnetism												
Te Muriwai: Electricity and Magnetism												

New lessons

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	Science				PESS				CB				
	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	
1. Static Electricity													
1. Charge													
2. Conductors and Insulators													
3. Moving Charge													
4. Generating Charge													
5. Charging by Induction													
6. Electrical Discharge													
7. Static Charge													
8. Devices that Apply Static Charge Concepts													
2. DC Electricity													
1. Voltage, Current, and Resistance													
2. Resistance Basics													
3. Resistance													
4. Ohm's Law													
5. Power													
6. Power and Energy													
7. Circuit Diagrams													
8. Series Circuits													
9. Parallel Circuits and Total Resistance													
10. Total Circuit Properties of Parallel Circuits													
3. Magnetism													
1. Bar Magnets													
2. Magnetic Field of a Current-Carrying Wire													
3. Magnetic Field of a Coiled Wire													
4. Generating Electricity													
4. Revision Lessons													
1. Charges, Conductors, and Insulators Revision													
2. Charging and Discharging Revision													
3. DC Electricity Revision													
4. DC Circuits Revision													
5. Magnetism Revision													
Physical World 2. Waves													
Te Muriwai: Waves													
1. Wave Properties													
1. Transfer of Energy Through Waves													
2. Transverse and Longitudinal Waves													
3. Wave Graphs													
4. Wave Frequency and Wavefronts													
5. Wave Speed													
Context Lesson: Earthquakes and Tsunamis													
2. Wave Behaviour													
1. Introduction to the Ray Model													
3. Reflection at a Straight Boundary													
3. Refraction of Light													
4. Introduction to Snell's Law													
5. Total Internal Reflection													
6. White Light													
7. Diffraction Around a Barrier													
8. Ocean Waves													
3. Supporting Resources													
1. Understanding and Graphing Sine													
2. Understanding and Graphing Cosine													
4. Revision Lessons													
1. Wave Properties Revision													
2. Wave Behaviour Revision													
3. Ray Model of Light Revision Questions													
4. Angles of Refraction Revision													
5. Vocabulary													
Key Terms and Definitions: Properties of Waves													
Key Terms and Definitions: Ray Model of Light													
Vocabulary: Properties of Waves													
Vocabulary: Ray Model of Light													
Physical World 3. Heat													
Te Muriwai: Heat													
1. Heat and Temperature													
1. Heat and Temperature													
2. Specific Heat and Thermal Expansion													
2. Heat Transfer													
1. Conduction													
2. Convection													
3. Radiation													
4. Heat Transfer Comparison													
5. Heat Transfer in a Hāngī													
3. Phase Changes													
1. Types of Phase Changes													
2. Heating and Cooling Curves													
4. Latent Heat and Power													
1. Latent Heat													
2. Specific and Latent Heat													
3. Power and Efficiency													
5. Vocabulary													
1. Key Terms and Definitions													
2. Symbols and Key Terms													
3. Units and Key Terms													

New lessons

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	Science				PESS				CB				
	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	1.1	1.2	1.3	1.4	
4. Identifying Key Terms from Definitions													
5. Identifying Key Terms from Symbols													
6. Revision Lessons													
1. Heat and Temperature Revision													
2. Heat Transfer Revision													
3. Phase Changes Revision													
4. Latent Heat and Power Revision													
Physical World 4. Mechanics													
Te Muriwai: Mechanics													
1. Motion													
1. Distance, Speed, and Time													
2. Acceleration													
3. Distance-Time Graphs													
4. Speed-Time Graphs													
2. Forces													
1. Introduction to Forces													
2. Force, Mass and Acceleration													
3. Mass, Gravity and Weight													
4. Friction													
5. Pressure													
6. Buoyancy													
3. Work and Energy													
1. Gravitational Potential Energy													
2. Kinetic Energy													
3. Conservation of Energy													
4. Work													
5. Power													
4. Vocabulary													
Vocabulary List: Science - Mechanics													
Vocabulary Quiz: Science - Mechanics													
5. Revision Lessons													
1. Motion Revision													
2. Forces Revision													
3. Work and Energy Revision													
Planet Earth and Beyond 1. Maramataka: Astronomical Cycles													
1. Maramataka - The Māori Creation Narrative													
2. Maramataka: The Seasons													
3. Maramataka: Solar and Lunar Calendars													
4. Maramataka: The Māori Lunar Calendar													
5. The Nights of Maramataka													
6. Maramataka: Eclipses													
Planet Earth and Beyond 2. The Water Cycle													
Te Muriwai: The Water Cycle													
1. The Earth's Spheres													
2. The Water Cycle Overview													
3. Precipitation													
4. Storms													
5. Ice													
6. Ocean Currents													
7. Tides													
8. Human Impacts													
9. Water Quality													
Planet Earth and Beyond 3. The Rock Cycle													
Te Muriwai: The Rock Cycle													
1. The Rock Cycle - Overview													
2. Plate Tectonics													
3. Building for Earthquakes													
4. Volcanoes													
5. Weathering and Erosion													
6. Fossils													
7. Geothermal Activity													

New lessons

Supplementary Resources