Science K-10 – Content

Grade	Biology	Chemistry	Physics	Earth/space
K	• basic needs of plants and animals • adaptations of local plants and animals • local First Peoples uses of plants and animals	• properties of familiar materials	• effects of pushes/pulls on movement • effects of size, shape, and materials on movement	• weather changes • seasonal changes • living things make changes to accommodate daily and seasonal cycles • First Peoples knowledge of seasonal changes
1	• classification of living and non-living things • names of local plants and animals • structural features of living things in the local environment • behavioural adaptations of animals in the local environment	• specific properties of materials allow us to use them in different ways	• natural and artificial sources of light and sound • properties of light and sound depend on their source and the objects with which they interact	• common objects in the sky • the knowledge of First Peoples – shared First Peoples knowledge of the sky – local First Peoples knowledge of the local landscape, plants and animals – local First Peoples understanding and use of seasonal rounds • local patterns that occur on Earth and in the sky
2	• metamorphic and non-metamorphic life cycles of different organisms • similarities and differences between offspring and parent • First Peoples use of their knowledge of life cycles	• physical ways of changing materials • chemical ways of changing materials	• types of forces	• water sources including local watersheds • water conservation • the water cycle • local First People's knowledge of water: – water cycles – conservation – connection to other systems
3	• biodiversity in the local environment • the knowledge of local First Peoples of ecosystems • energy is needed for life	• matter is anything that has mass and takes up space • atoms are building blocks of matter	• sources of thermal energy • transfer of thermal energy	• major local landforms • local First Peoples knowledge of local landforms • observable changes in the local environment caused by erosion and deposition by wind, water, and ice

Science K-10 – Content – *continued*

Grade	Biology	Chemistry	Physics	Earth/space
4	• sensing and responding: – humans – other animals – plants • biomes as large regions with similar environmental features	• phases of matter • the effect of temperature on particle movement	• energy: – has various forms – is conserved • devices that transform energy	• local changes caused by Earth's axis, rotation, and orbit • the effects of the relative positions of the sun, moon, and Earth including local First Peoples perspectives
5	• basic structures and functions of body systems: – digestive – musculoskeletal – respiratory – circulatory	• solutions and solubility	• properties of simple machines and their force effects • machines: – constructed – found in nature • power – the rate at which energy is transferred	• the rock cycle • local types of earth materials • First Peoples concepts of interconnectedness in the environment • the nature of sustainable practices around BC's resources • First Peoples knowledge of sustainable practices
6	• the basic structures and functions of body systems: – excretory – reproductive – hormonal – nervous	• heterogeneous mixtures • mixtures: – separated using a difference in component properties – local First Peoples knowledge of separation and extraction methods	• Newton's three laws of motion • effects of balanced and unbalanced forces in daily physical activities • force of gravity	• the overall scale, structure, and age of the universe • the position, motion, and components of our solar system in our galaxy
7	• organisms have evolved over time • survival needs • natural selection	• elements and compounds are pure substances • crystalline structure of solids • chemical changes	• electricity – generated in different ways with different environmental impacts – electromagnetism	• the fossil record provides evidence for changes in biodiversity over geological time • First Peoples knowledge of changes in biodiversity over time • evidence of climate change over geological time and the recent impacts of humans: – physical records – local First Peoples knowledge of climate change

Science K-10 – Content

Grade	Biology	Chemistry	Physics	Earth/space
8	• characteristics of life • cell theory and types of cells • photosynthesis and cellular respiration • the relationship of micro-organisms with living things: – basic functions of the immune system – vaccination and antibiotics – impacts of epidemics and pandemics on human populations	• kinetic molecular theory (KMT) • atomic theory and models	• protons, neutrons, and quarks • electrons and leptons • types and effects of electromagnetic radiation • light: – properties – behaviours – ways of sensing	• plate tectonic movement • major geological events of local significance • First Peoples knowledge of: – local geological formations – significant local geological events • layers of Earth
9	• asexual reproduction: – mitosis – different forms • sexual reproduction: – meiosis – human sexual reproduction	• element properties as organized in the periodic table • The arrangement of electrons determines the compounds formed by elements	• circuits – must be complete for electrons to flow • voltage, current, and resistance	• effects of solar radiation on the cycling of matter and energy • matter cycles within biotic and abiotic components of ecosystems • sustainability of systems • First Peoples knowledge of interconnectedness and sustainability
10	• DNA structure and function • patterns of inheritance • mechanisms for the diversity of life – mutation and its impact on evolution – natural selection and artificial selection • applied genetics and ethical considerations	• rearrangement of atoms in chemical reactions • acid-base chemistry • law of conservation of mass • energy change during chemical reactions • practical applications and implications of chemical processes, including First Peoples knowledge	• nuclear energy and radiation • law of conservation of energy • potential and kinetic energy • transformation of energy • local and global impacts of energy transformations from technologies	• formation of the universe: – big bang theory – components of the universe over time • astronomical data and collection methods