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|  | **K**  **Patterns** | **1**  **Form & Function** | **2**  **SCIENCE K-9 CONTINUUM OF CONTENT (KNOW)**  **Cycles** | **3**  **Cause & Effect** | **4**  **Order** | **5**  **Systems** | **6**  **Change** | **7**  **Evolution** | **8**  **Matter and Energy** | **9**  **Interactions** |
| **BIOLOGY** | * basic needs of plants and animals * adaptations of local plants and animals * local First Peoples uses of plants and animals * living things make changes to accommodate daily and seasonal cycles | * 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 | * 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 | * biodiversity in the local environment * the knowledge of local First Peoples of ecosystems * energy is needed for life | * sensing and responding: * humans * other animals * plants * biomes are large regions with similar environmental features | * basic structures and functions of body systems: * digestive * excretory * respiratory * circulatory | * the basic structures and functions of body systems: * musculoskeletal * reproductive * hormonal * nervous | * **organisms have evolved over time** * **survival needs** * **natural selection** | * **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 | * asexual reproduction: * **mitosis** * **different forms** * sexual reproduction: * **meiosis** * **human sexual reproduction** |
| **CHEMISTRY** | * properties of familiar materials | * specific properties of materials allow us to use them in different ways | * physical ways of changing materials * chemical ways of changing materials | * matter is anything that takes up space * atoms are the building block of matter | * phases of matter * the effect of temperature on particle movement | * solutions and solubility | * heterogeneous mixtures * mixtures:   + separated using a difference in component properties   + local First Peoples knowledge of separation and extraction methods | * **elements** and **compounds** are pure **substances** * **chemical changes** | * **kinetic molecular theory (KMT)** * **atomic theory** and **models** * **protons, neutrons, and quarks** * **electrons and leptons** | * element properties as organized in the **periodic table** * the arrangement of electrons determines the compounds formed by elements |
| **PHYSICS** | * effects of pushes/pulls on movement * effects of size, shape, and materials on movement | * natural and artificial sources of light and sound * properties of light and sound depend on their source and the objects with which they interact | * types of forces | * sources of thermal energy * transfer of thermal energy | * Energy:   + has various forms   + is conserved * Energy is conserved * devices that transform energy | * properties of simple machines and their force effects * machines:   + constructed   + found in nature * power- the rate at which energy is transformed | * Newton's three laws of motion * effects of balanced and unbalanced forces in daily physical activities * force of gravity | * electricity: * **generated in different ways** with different environmental impacts * electro**magnetism** | * **types** and **effects** of electromagnetic radiation * light: * **properties** * **behaviours** * **ways of sensing** | * **circuits** — must be complete for electrons to flow * **voltage, current, and resistance** |
| **EARTH & SPACE SCIENCE** | * weather changes * seasonal changes * First Peoples knowledge of seasonal changes | * common objects in the sky * the knowledge of First Peoples:   + shared Frist 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 | * water sources, including local watersheds * water conservation * the water cycle * local First Peoples knowledge of water   + water cycles   + conservation   + connection to other systems | * 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 | * local changes caused by Earth's axis, rotation, and orbit * the effects of the relative position of the sun, moon, and Earth including local First Peoples perspectives | * local types of earth materials * the rock cycle * First Peoples concept of interconnectedness in the environment * the nature of sustainable practices around BC's resources * First Peoples knowledge of sustainable practices | * the overall scale, structure, and age of the universe * the position, motion, and components of our solar system in our galaxy | * **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** | * **plate tectonic movement** * major geological events of local significance * First Peoples knowledge of: * local geological formations * significant local geological events * **layers in Earth** | * **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** |