|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **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**
 |