|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Science 6** (Planning KDU) | | | | | |
| **CORE COMPETENCIES**  **COMMUNICATION** | | **CORE COMPETENCIES**  **THINKING (CRITICAL/CREATIVE)** | | **CORE COMPETENCIES**  **(PERSONAL/SOCIAL)** | |
| **CURRICULAR COMPETENCIES** | **BIG IDEA (Understand…)** | | **What do we want students to DO?**  **(Activities, lessons…)** | | **Content (& Elaborations)**  **(Know)** |
| **Questioning and predicting**  *(\*Change is making the form, nature, content or future course of something different from what it is or what it would be if left alone.  For example, Newton’s third law, the idea that for every action there is an equal and opposite reaction describes the changes that occur in response to pushes and pulls.  Key questions about change: How has our solar system changed over time? How has the exploration of extreme environments on Earth and in space changed in the last decade?)*   * Demonstrate a sustained curiosity about a scientific topic or problem of personal interest * Make observations in familiar or unfamiliar contexts * Identify questions to answer or problems to solve through scientific inquiry * Make predictions about the findings of their inquiry   **Planning and conducting**   * With support, plan appropriate investigations to answer their questions or solve problems they have identified * Decide which variable should be changed and measured for a fair test * Choose appropriate data to collect to answer their questions * Observe, measure, and record data, using appropriate tools, including digital technologies * Use equipment and materials safely, identifying potential risks   **Processing and analyzing data and information**   * Experience and interpret the local environment * Identify First Peoples perspectives and knowledge as sources of information * Construct and use a variety of methods, including tables, graphs, and digital technologies, as appropriate, to represent patterns or relationships in data * Identify patterns and connections in data * Compare data with predictions and develop explanations for results * Demonstrate an openness to new ideas and consideration of alternatives   **Evaluating**   * Evaluate whether their investigations were fair tests * Identify possible sources of error * Suggest improvements to their investigation methods * Identify some of the assumptions in secondary sources *(secondary sources of evidence could include anthropological and contemporary accounts of First Peoples of BC, news media, archives, journals, etc.)* * Demonstrate an understanding and appreciation of evidence * Identify some of the social, ethical, and environmental implications of the findings from their own and others’ investigations   **Applying and innovating**   * Contribute to care for self, others, and community through personal or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   **Communicating**   * Communicate ideas, explanations, and processes in a variety of ways * Express and reflect on personal, shared, or others’ experiences of place *(* *Place is any environment, locality, or context with which people interact to learn, create memory, reflect on history, connect with culture, and establish identity. The connection between people and place is foundational to First Peoples perspectives of the world.  Key questions about place: How does place influence your ability to plan and conduct an inquiry? How does your understanding of place affect the ways in which you collect evidence and evaluate it? How do the place-based experiences and stories of others affect the ways in which you communicate your findings and other information? Ways of knowing refers to the various beliefs about the nature of knowledge that people have; they can include, but are not limited to, Aboriginal, gender-related, subject/discipline specific, cultural, embodied and intuitive beliefs about knowledge. What are the connections between ways of knowing and place?)* | Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment | | *Questions to support inquiry with students:*   * How are internal systems necessary for survival? * What do your body systems require for survival? * How do your body systems interact with one another? | | **Core Focus: BIOLOGY**   * the basic structures and functions of body systems *(* *First People’s understandings of body systems in humans and animals):*   + Excretory *(kidneys, ureters, bladder etc.)*   + reproductive *(ovaries, testes etc)*   + hormonal *(chemical messengers in the body (e.g., insulin, adrenalin)*   + nervous *(brain, spinal cord, etc.; role of receptors — the brain interprets the signals received and can make mistakes (e.g., optical illusions) in those interpretations)* |
| **Evidence of Experience (Show)** | | | | |
| **BIG IDEA (Understand…)** | | **What do we want students to DO?**  **(Activities, lessons…)** | | **Content (& Elaborations)**  **(Know)** |
| Everyday materials are often mixtures. | | *Questions to support inquiry with students:*   * What is a heterogeneous mixture? * How can mixtures be separated? | | **Core Focus: CHEMISTRY**   * heterogeneous mixtures *(suspensions (eg., salad dressing), emulsions (e.g., milk), colloids (eg., aerosols))* * mixtures:   + separated using a difference in component properties *(density (e.g., centrifuge or settling, silt deposits in a river delta, tailings ponds, Roman aqueduct settling sections); particle size (e.g., sieves, filters))*   + local First Peoples knowledge *(historical and current First Peoples use of separation and extraction methods (e.g., eulachon oil, extraction of medicines from plants, pigments, etc.))* of separation and extraction methods |
| **Evidence of Experience (Show)** | | | | |
| **BIG IDEA (Understand…)** | | **What do we want students to DO?**  **(Activities, lessons…)** | | **Content (& Elaborations)**  **(Know)** |
| Newton’s three laws of motion describe the relationship between force and motion. | | *Questions to support inquiry with students:*   * What is the difference between motion caused by balanced forces and motion caused by unbalanced forces? * How are balanced and unbalanced forces evident in your life and activities? | | **Core Focus: PHYSICS**   * Newton’s three laws of motion *(first law: objects will stay stopped or in constant motion until acted upon by an outside force; second law: only an unbalanced force causes acceleration; third law: every force has an equal and opposite reaction force)* * effects of balanced and unbalanced forces (*balanced forces are equal and opposite forces (eg., sitting in a chair); unbalanced forces are unequal; one force is larger (eg., race cars on different ramps, mousetrap cars, rockets)* in daily physical activities *(examples of effects of balanced and unbalanced forces in school sports and physical education activities)* * force of gravity*(gravity is the force of attraction between objects that pulls all objects toward each other; on Earth, gravity pulls objects toward the centre of the planet (eg., falling objects, egg drop))* |
| **Evidence of Experience (Show)** | | | | |
| **BIG IDEA (Understand…)** | | **What do we want students to DO?**  **(Activities, lessons…)** | | **Content (& Elaborations)**  **(Know)** |
| The solar system is part of the Milky Way, which is one of billions of galaxies. | | *Questions to support inquiry with students:*   * What are the relationships between Earth and the rest of the universe? * What is an extreme environment? * What extreme environments exist on Earth or in our galaxy?   *Key questions about change:*   * How has our solar system changed over time? * How has the exploration of extreme environments on Earth and in space changed in the last decade? | | **Core Focus: EARTH/SPACE**   * the overall scale, structure, and age of the universe * The position, motion, and components of our solar system *(planets, moons, asteroids, meteors, comets, etc. First Peoples perspectives regarding aurora borealis and other celestial phenomena; extreme environments including contributions of Canadians to exploration technologies (e.g., Canadarm, Newt Suit, VENUS and NEPTUNE programs))*  in our galaxy * **extreme environments *(****plac* |
| **Evidence of Experience (Show)** | | | | |