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| **Strand: Scientific Literacy** Students will develop the skills required for scientific and technological inquiries, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions. |
| **Big Idea:** Investigation | **Skill Descriptor:** Plan investigations to answer questions about relationships between and among variables observed in:(7) Matter and Earth surface processes.(8) Motion and stability, the Laws of Motion, and space exploration. | **Achievement Indicators:** * Ask questions from observation of phenomena, models, or unexpected results that lead to fair scientific tests or practical problems to solve.
* Determine dependent, independent, and control variables to formulate hypotheses for scientific inquiry.
* Define problems and working criteria for scientific inquiry.
* Choose and explain the required equipment and materials to carry out fair tests or build models or prototypes.
* Develop investigation procedures for fair tests with guidance.
* Respond to the ideas of others and acknowledge their contributions.
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| **Skill Descriptor:**Collect and represent data using tools and methods appropriate for investigations of: (7) Matter and Earth surface processes.(8) Motion and stability, the Laws of Motion, and space exploration. | **Achievement Indicators:*** Select and use measurement tools and equipment.
* Collect and record qualitative and quantitative data using formal measurements, drawings, charts, maps, graphs, labelled drawings, tables, and various methods.
* Create models that describe relationships amongst variables.
* Apply scientific ideas or technological principles to fair tests or models.
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| **Big Idea:**Sensemaking | **Skill Descriptor:** Analyze and interpret qualitative and quantitative data to construct explanations and conclusions. | **Achievement Indicators:*** Represent and organize titled and labelled collected data using drawings, digital technologies, simple text, tables, and other graphical formats.
* Evaluate the precision/validity/reliability of tests and identify possible sources of errors.
* Interpret maps, graphs, statistics and probability across spatial and temporal scales.
* Apply mean, median, mode, and variability concepts in data analysis.
* Confirm or refute hypotheses using collected data, other sources, and/or reliable media.
* Identify new questions that arise from scientific inquiry or new information.
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| **Big Idea:**Communication | **Skill Descriptor:**Communicate procedure, result, and conclusion using a variety of media and working collaboratively. | **Achievement Indicators:*** Communicate procedures, results, and conclusions of scientific inquiry in a clear and logical order.
* Use formal science, mathematics, and technology language.
* Discuss observations and ideas from scientific inquiry, peers, educators, and/or guests.
* Support or refute hypotheses using evidence from data analysis.
* Communicate how problems were solved or can be solved.
* Suggest reasons if data does not follow general trends or expected relationships.
* Work collaboratively with team members to develop and carry out plans, and examine own knowledge and knowledge of peers.
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| **Strand: Learning & Living Sustainably**Students will demonstrate an understanding of the nature of science and technology. Of the relationships between science and technology, and of the social and environmental contexts of science and technology (STSE) |
| **Big Idea:**Responsible & Sustainable Application | **Skill Descriptor:**Apply scientific and technological knowledge and an understanding of sustainable practices responsibly with respect to: (7) Matter and Earth surface processes.(8) Motion and stability, the Laws of Motion, and space exploration. | **Achievement Indicators:*** Discuss how contact with Europeans has impacted Wabanaki connections to the natural world. (7/8)
* Identify the impacts that seasonal cycles and natural seasonal events have on Wabanaki Peoples (7)
* Describe how changes in the natural environment in New Brunswick have impacted Wabanaki territories. (7)
* Discuss elements of Wabanaki worldviews (8)
* Outline the relationship Wabanaki peoples have throughout time with living things, land, water, ecosystems, and the environment. (7)
* Develop solutions to community issues and challenges concerned with resource use and waste management. (7)
* Apply science and technological knowledge when considering issues of concern. (7/8)
* Reflect on aspects of applications, decisions, and possible actions of issues of concern. (7/8)
* Use equipment safely while carrying out scientific inquiry. (7/8)
* Use tools and materials safely when building models and prototypes. (7/8)
* Discuss the design process of models or prototypes. (7/8)
* Iterate to improve designed solution models or prototypes. (7/8)
* Apply scientific ideas or technological principles to test models or prototypes. (7/8)
* Explore Canadian-based science and technology careers in related areas of personal interest. (7/8)
* Describe the causes and effects of climate change. (7)
* Apply systems thinking to understandings of ecosystem interdependence. (7)
* Describe the need for more responsible consumption and production patterns. (7)
* Analyze the benefits and drawbacks of human space exploration. (8)
* Raise awareness about the importance of global partnerships for sustainable development. (8)
* Differentiate between adaptation and mitigation measures as solutions to climate change. (8)
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