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| **2022 Science 9 Competency Power Standards** |
| BIG IDEAS* Electric current is the flow of electric charge.
* **C**ells are derived from cells.
* The electron arrangement of atoms impacts their chemical nature.
* The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.
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| 1. **QUESTIONING, PREDICTING, PLANNING & CONDUCTING INVESTIGATIONS**
* Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest
* Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world
* Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative)
* Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data
* Ensure that safety and ethical guidelines are followed in their investigations
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| 1. **ANALYZING DATA**
* Experience and interpret the local environment
* Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information
* Seek and analyze patterns, trends, and connections in data, including describing relationships between variables (dependent and independent) and identifying inconsistencies
* Construct, analyze and interpret graphs (including interpolation and extrapolation), models and/or diagrams
* Use knowledge of scientific concepts to draw conclusions that are consistent with evidence
* Analyze cause-and-effect relationships
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| 1. **EVALUATING , APPLICATION & INNOVATION**
* Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions
* Describe specific ways to improve their investigation methods and the quality of the data
* Exercise a healthy, informed skepticism, and use scientific knowledge and findings to form their own investigations and to evaluate claims in secondary sources
* Consider social, ethical, and environmental implications of the findings from their own and others’ investigations
* Contribute to care for self, others, community, and world through individual or collaborative approaches
* Transfer and apply learning to new situations
* Generate and introduce new or refined ideas when problem solving
* Contribute to finding solutions to problems at a local and/or global level through inquiry
* Consider the role of scientists in innovation and connect scientific explorations to careers in science
* Consider the changes in knowledge over time as tools and technologies have developed
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| 1. **COMMUNICATING**
* Formulate physical or mental theoretical models to describe a phenomenon
* Communicate scientific ideas, claims, information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations
* Express and reflect on a variety of experiences, perspectives, and worldviews through place
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| **Science 9 Content Power Standards** |
| 1. **ELECTRICITY**: circuits must be complete for electrons to flow & voltage, current, and resistance & sustainability of electric power systems
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| 1. **BIOLOGY**: cells & asexual reproduction including mitosis and different forms & sexual reproduction including meiosis and human sexual reproduction
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| 1. **CHEMISTRY**: element properties as organized in the periodic table & the arrangement of electrons determines the compounds formed by elements
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| 1. **ECOLOGY**: matter cycles within biotic and abiotic components of ecosystems
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