**SCIENCE K-10 CURRICULAR COMPETENCY CONTINUUM**

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| Core Competency | Curricular Competency | **K** | **1-2** | **3-4** | **5-6** | **7-8** | **9-10** |
| **THINKING** | **Questioning & Predicting** | I can demonstrate curiosity and a sense of wonder about the world. | | | I can demonstrate a sustained curiosity about a scientific topic or problem of personal interest. | I can demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest. | |
| I can observe objects and events in familiar contexts. | | | I can make observations in familiar or unfamiliar contexts. | I can make observations aimed at identifying my own questions about the natural world. | I can make observations aimed at identifying my own questions, including increasingly complex ones, about the natural world. |
| I can ask simple questions about familiar objects and events. | I can ask questions about familiar objects and events. | I can identify questions about familiar objects and events that can be investigated scientifically. | I can identify questions to answer or problems to solve through scientific inquiry. | | I can formulate multiple hypotheses and predict multiple outcomes. |
|  | I can formulate alternative "if…then…" hypotheses based on my questions. |
|  | I can make simple predictions about familiar objects and events. | I can make predictions based on prior knowledge. | I can make predictions about what the findings of my inquiry will be. | |  |
| **Planning & Conducting** |  |  | I can suggest ways to plan and conduct an inquiry to find answers to my questions. | I can, with support, plan appropriate investigations to answer my questions or solve problems I have identified. | I can collaboratively plan a range of investigation types, including field work and experiments, to answer my questions or solve problems I have identified. | I can collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative). |
| I can consider ethical responsibilities when deciding how to conduct an experiment. | I can decide which variable should be changed and measured for a fair test. | I can measure and control variables (dependent and independent) through fair tests | I can assess risks and address ethical, cultural and/or environmental issues associated with my proposed methods and those of others. |
| I can make exploratory observations using my senses | I can make and record observations. | I can make observations about living and non-living things in the local environment | I can observe, measure, and record data, using appropriate tools, including digital technologies. | I can observe, measure, & record data (qualitative and quantitative), using equipment including digital technologies, with accuracy and precision. | I can select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data. |
| I can safely manipulate materials. | I can safely manipulate materials to test ideas and predictions. | I can safely use appropriate tools to make observations and measurements, using formal measurements and digital technology as appropriate. | I can use equipment and materials safely, identifying potential risks. | I can ensure that safety and ethical guidelines are followed in my investigations. | |
| I can make simple measurements using non-standard units. | I can make and record simple measurements using informal or non-standard methods. | I can collect simple data. | I can choose appropriate data to collect to answer my questions. | I can use appropriate SI units and perform simple unit conversions. |  |
| **Processing and Analyzing Data & Information** | I can experience and interpret the local environment. | | | | | |
| I can recognize First Peoples stories (including oral and written narratives), songs, and art, as ways to share knowledge. | | I can identify First Peoples perspectives and knowledge as sources of information. | | I can apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. | |
|  | I can sort and classify data and information using methods such as drawings, pictographs and provided tables. | I can sort and classify data and information using drawings or provided tables | I can construct and use a variety of methods, including tables, graphs, and digital technologies, as appropriate, to represent patterns or relationships in data. | I can construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate. | I can construct, analyze and interpret graphs (including interpolation and extrapolation), models and/or diagrams. |
| I can discuss observations. | I can identify simple patterns and connections. | I can use tables, simple bar graphs or other formats to represent data and show simple patterns and trends. | I can identify patterns and connections in data. | I can seek patterns and connections in data from my own investigations and secondary sources. | I can seek and analyze patterns, trends, and connections in data, including describing relationships between variables (depending and independent) and identifying inconsistencies. |
| I can represent observations and ideas by drawing charts and simple pictographs | I can compare observations with predictions through discussion. | I can compare results with predictions, suggesting possible reasons for findings. | I can compare data with predictions and develop explanations for results. | I can use scientific understanding to identify relationships and draw conclusions. | I can use knowledge of scientific concepts to draw conclusions that are consistent with evidence. |
| I can demonstrate an openness to new ideas and a consideration of alternatives. | I can analyze cause-and-effect relationships. |

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| **THINKING (con't)** | **Evaluating** |  | I can compare my observations with those of others. | I can reflect on whether an investigation was a fair test. | I can evaluate whether my investigations were fair tests | I can reflect on my investigation methods, including the adequacy of controls on variables (dependent and independent) and the quality of the data collected. | I can evaluate my methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. |
|  | I can make simple inferences based on my results and prior knowledge. | I can identify possible sources of error. | I can identify possible sources of error and suggest improvements to my investigation methods. | I can describe specific ways to improve their investigation methods and the quality of the data. |
| I can evaluate the validity and limitations of a model or analogy in relation to the phenomenon modeled. |
| I can suggest improvements to my investigation methods. | I can demonstrate an awareness of assumptions and bias in my own work and secondary sources. | I can demonstrate an awareness of assumptions, question information given, and identify bias in my own work and secondary sources. |
| I can identify some of the assumptions in secondary sources. | I can exercise a healthy, informed skepticism and use scientific knowledge and findings from their own investigations to evaluate claims in secondary sources. | |
|  | I can demonstrate an understanding and appreciation of evidence. | | I can demonstrate an understanding and appreciation of evidence (qualitative and quantitative). | I can critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems. |
| I can consider some environmental consequences of my actions. | I can identify some simple environmental implications of my own and others’ actions. | I can identify some of the social, ethical, and environmental implications of the findings from my own and others’ investigations. | I can consider social, ethical, and environmental implications of the findings from mine and others' investigation. | |
|  | | | | | I can consider the changes in knowledge over time as tools and technologies have developed. |
| I can connect scientific explorations to careers in science. |
| **PERSONAL AND SOCIAL** | **Applying and innovating** | I can take part in caring for self, family, classroom and school through personal approaches. | | I can contribute to care for self, others, school, and neighbourhood through personal or collaborative approaches. | I can contribute to care for self, others, school, and neighbourhood through personal or collaborative approaches. | I can contribute to care for self, others, community, and the world through personal or collaborative approaches. | |
| I can transfer and apply learning to new situations. | | | | | |
| I can generate and introduce new or refined ideas when problem solving. | | | | | |
|  | | I can co-operatively design projects. | | | I can contribute to finding solutions to problems at a local/or global level through inquiry. |
| I can consider the role of scientists in innovation. |
| **COMMUNICATION** | **Communicating** | I can share observations and ideas orally. | I can communicate observations and ideas using oral or written language, drawing, or role play. | I can represent and communicate ideas and findings in a variety of ways such as diagrams and simple reports, using digital technologies as appropriate. | I can communicate ideas, explanations, and processes in a variety of ways. | I can communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate. | I can 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. |
| I can express and reflect on personal experiences of **place.** | | I can express and reflect on personal or shared experiences of **place**. | I can express and reflect on personal, shared, or others’ experiences of place | I can express and reflect on a variety of experiences and perspective of place. | I can express and reflect on a variety of experiences, perspectives, and worldviews through place. |
|  | | | | | I can formulate physical or mental theoretical models to describe a phenomenon. |