**Science 7-12 Curricular Competency Continuum**

|  |  |  |
| --- | --- | --- |
| **Curricular Competency** | **7-8** | **9-12** |
| **Questioning and Predicting** | I can demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest  I can make observations aimed at identifying my own questions, including increasingly abstract ones, about the natural world  I can formulate multiple hypotheses and predict multiple outcomes | I can demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest  I can make observations aimed at identifying my own questions, including increasingly abstract ones, about the natural world  I can formulate multiple hypotheses and predict multiple outcomes |
| **Planning and Conducting** | 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 assess risks and address ethical issues associated with my proposed methods  I can select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data. | 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 assess risks and address ethical issues associated with my proposed methods  I can select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data |
| **Processing and Analyzing Data and Information** | I can seek and analyze patterns, trends, and connections in data, including describing relationships between variables and identifying inconsistencies  I can use knowledge of scientific concepts to draw conclusions that are consistent with evidence  I can analyze cause and effect relationships | I can experience and interpret the local environment  I can seek and analyze patterns, trends, and connections in data, including describing relationships between variables and identifying inconsistencies  I can use knowledge of scientific concepts to draw conclusions that are consistent with evidence  I can analyze cause and effect relationships |
| **Evaluating** | I can evaluate methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions  I can describe specific ways to improve investigation methods and the quality of the data  I can evaluate the validity of and limitations of a model or analogy in relation to the phenomenon modelled  I can demonstrate an awareness of assumptions, question information given, and identify bias in my own work and secondary sources  I can consider that knowledge has changed over time as tools and technologies have developed  I can exercise a healthy, informed skepticism and use scientific knowledge and findings to form my own investigations and to evaluate claims in secondary sources  I can consider social, ethical, and environmental implications of the findings from my own and others’ investigations  I can critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems | I can evaluate methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions  I can describe specific ways to improve investigation methods and the quality of the data  I can evaluate the validity of and limitations of a model or analogy in relation to the phenomenon modelled  I can demonstrate an awareness of assumptions, question information given, and identify bias in my own work and secondary sources  I can consider that knowledge has changed over time as tools and technologies have developed  I can exercise a healthy, informed skepticism and use scientific knowledge and findings to form my own investigations and to evaluate claims in secondary sources  I can consider social, ethical, and environmental implications of the findings from my own and others’ investigations  I can critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems  I can assess risks in the context of personal safety and social responsibility |
| **Applying and Innovating** | I can contribute to care for self, others, community, and world through personal or collaborative approaches  I can co-operatively design projects with local and/or global connections and applications  I can transfer and apply learning to new situations  I can generate and introduce new or refined ideas when problem solving  I can contribute to finding solutions to problems at a local and/or global level through inquiry | I can contribute to care for self, others, community, and world through personal or collaborative approaches  I can co-operatively design projects with local and/or global connections and applications  I can transfer and apply learning to new situations  I can generate and introduce new or refined ideas when problem solving  I can contribute to finding solutions to problems at a local and/or global level through inquiry |
| **Communicating** | I can formulate physical or mental theoretical models to describe a phenomenon  I can communicate scientific ideas, 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 a variety of experiences, perspectives, and worldviews of place | I can formulate physical or mental theoretical models to describe a phenomenon.  I can communicate scientific ideas, 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 a variety of experiences, perspectives, and worldviews of **place** |