

Grade 1st	Standards 5.1 Science Practices: Students will understand that science is both a body of knowledge and an evidence-based model building enterprise that continually extends, refines, and revises knowledge. The four Science Practices Strands encompass the knowledge and reasoning skills that students must acquire to be proficient in Science.			
Strand A. Understanding Scientific Explanations				
Content – Understanding		CPI #	Proficiency	Cumulative Progress Indicator – Skill
Foundational scientific concepts and principles and the links between them are more useful than discrete facts.		5.1.4.A.1	D	Demonstrate understanding of the interrelationships among foundational scientific concepts.
Casual connections developed between foundational concepts and principals are used to explain cause and effect relationships.		5.1.4.A.2	D	Develop and use conceptual frameworks that advance cause and effect explanations.
Conceptual frameworks are used to make sense of natural phenomena.		5.1.4.A.3	D	Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.
Strand B. Generating Scientific Evidence Through Active Investigations				
Content – Understanding		CPI #	Proficiency	Cumulative Progress Indicator – Skill
Building and refining models and explanations requires generation and evaluation of evidence.		5.1.4.B.1	D	Ask questions and give priority to evidence when constructing answers.
Empirical investigations require careful design and analysis in order to generate valid evidence.		5.1.4.B.2	D	Use measurement tools and observation schedules to collect and analyze data; evaluate evidence when building and revising models and explanations of natural phenomena.
Mathematics and technology are used to gather, analyze, and communicate results.		5.1.4.B.3	D	Use scientific models as well as mathematical tools and technologies to gather and evaluate evidence and measure phenomena.
Empirical evidence is used to construct and defend arguments.		5.1.4.B.4	I	Formulate explanations from evidence.
Strand C. Reflecting on Scientific Knowledge				
Content – Understanding		CPI #	Proficiency	Cumulative Progress Indicator – Skill
Scientific knowledge builds upon itself over time.		5.1.4.C.1	D	Ask new questions as evidence emerges from the use of measurement tools.
Scientific knowledge can be revised as evidence emerges.		5.1.4.C.2	D	Evaluate observations and measurements for accuracy and use the results to construct and defend arguments or to develop a new model.

Scientific knowledge is constructed based on evidence and arguments based on that evidence.	5.1.4.C.3	D	Present evidence to interpret and/or predict cause and effect outcomes of investigations.
Strand D. Participating Productively in Science			
Content – Understanding	CPI #	Proficiency	Cumulative Progress Indicator – Skill
In order to determine which arguments and explanations are most persuasive, communities of learners work collaboratively to pose, refine, and evaluate questions, investigations, models and theories (e.g., argumentation, representation, visualization, etc.).	5.1.4.D.2	I	Engage in productive scientific discussion practices during conversation with peers in the context of scientific investigations and model building.
A proactive sense of accuracy, thoroughness and safety is required to consider and respond to unanticipated circumstances.	5.1.4.D.3	D	Engage in safe and accurate scientific practices when designing, implementing and reporting investigations.
Instruments and specimens used in science are properly cared for and organisms, when used, are treated humanely, responsibly, and ethically.	5.1.4.D.4	D	Demonstrate how to use scientific tools and instruments and how to handle animals with respect for their safety and welfare.