

Science Grade 8

Standards	<p style="text-align: center;">Not Proficient</p> <p>Students who perform at this level have not demonstrated mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are not prepared for the next level of study.</p>	<p style="text-align: center;">Approaching Proficient</p> <p>Students who perform at this level demonstrate partial mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are minimally prepared for the next level of study.</p>	<p style="text-align: center;">* Proficient</p> <p>Students who perform at this level demonstrate mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are well prepared for the next level of study.</p>	<p style="text-align: center;">Advanced</p> <p>Students who perform at this level demonstrate superior mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are significantly prepared for the next level of study.</p>
Embedded Inquiry	<p>NOTE: embedded standards are taught and assessed as components that are integrated into the science content at each grade level or course.</p>			
Embedded Technology and Engineering	<p>NOTE: embedded standards are taught and assessed as components that are integrated into the science content at each grade level or course.</p>			

<p style="text-align: center;">5.0 Biodiversity and Change</p>	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Grade 8 topic of Biodiversity and Change.</p>	<p>A student at this level can identify simple criteria to classify organisms into groups and use a simple classification key to identify a specific organism. The student recognizes how structural, behavioral, and physiological adaptations enable a population to survive and realizes that variations enhance a population's chances for survival. He/she recognizes the importance of maintaining the earth's biodiversity and understands that new technologies produce benefits and unintended consequences. The student identifies how fossils in sedimentary rock layers provide evidence of changing life forms.</p>	<p>A student at this level can apply different criteria to classify organisms into groups and use a simple classification key to identify an unknown organism. He/she analyzes how structural, behavioral, and physiological adaptations enable a population to survive, and can explain how variation enhances a population's chances for survival. He/she understands the importance of maintaining the earth's biodiversity and can compare intended benefits with the unintended consequences of a new technology. The student compares fossils in different sedimentary rock layers to provide evidence of changing life forms.</p>	<p>A student at this level can evaluate different criteria used to classify organisms into groups and design a classification key to identify a specific organism. The student explains how structural, behavioral, and physiological adaptations enable a population to survive and predicts which variations enhance a population's chances for survival. He/she evaluates the advantages of maintaining the earth's biodiversity and can differentiate between the intended benefits and unintended consequences of a new technology. The student compares fossils in sedimentary rock layers to create a geologic time table.</p>

9.0 Matter	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Grade 8 topic of Matter.</p>	<p>A student at this level recognizes that matter is comprised of atoms and recognizes that the properties of matter are determined by the structure and arrangement of atoms. The student can distinguish between physical and chemical changes. He/she can define elements, mixtures, and compounds. The student realizes that the atmosphere is a mixture of gases. The student recognizes that the periodic table represents all the known elements. The student can identify a balanced equation and define the Law of Conservation of Mass. He/she applies materials and techniques to identify acids and bases.</p>	<p>A student at this level understands that all matter is made of atoms and can explain how the properties of matter are determined by the structure and arrangement of atoms. He/she interprets data from an investigation to differentiate between physical and chemical changes. The student applies their understanding of the atmosphere to distinguish among elements, compounds, and mixtures. The student applies the periodic table to determine the characteristics of an element. The student applies the Law of Conservation of Mass to interpret a chemical reaction represented by an equation. He/she can describe the properties of acids and bases.</p>	<p>A student at this level understands that atoms contain subatomic particles which determine their properties. He/she designs an investigation to explore the differences between physical and chemical changes. The student can classify a substance as an element, compound, or mixture and apply this understanding to conclude that the atmosphere is a mixture of gases. The student can apply the periodic table to predict an element's properties based on its atomic number. He/she can balance a simple equation according to the Law of Conservation of Mass. He/she applies their knowledge of acids and bases to write the formula equation for an acid and base neutralization reaction.</p>

12.0 Forces in Nature

A student at this level has not demonstrated a basic understanding of the principles associated with the Grade 8 topic of Forces of Nature.

A student at this level can define electricity and magnetism. The student can describe an electromagnet and its component parts. The student recognizes that the earth has a magnetic field. He/she understands that distance and mass influence gravity and that gravitational attraction affects the movement of objects in the solar system.

A student at this level understands the relationship between magnetism and electricity and can relate these concepts to the design of electrical power generating facilities. He/she can interpret the results of an investigation designed to alter the strength of an electromagnet, identify possible sources of error, and offer alternative explanations. The student compares and contrasts the earth's magnetic field with that of a magnet/electromagnet. He/she can identify factors that affect the amount of gravitational force between objects and knows that gravity controls the movement of objects in the solar system.

A student at this level can design investigations to explore the relationship between magnetism and electricity and conditions that affect the strength of an electromagnet. He/she can describe the global and social impacts of the earth's magnetic field. The student can analyze data to reach conclusions about the effect of mass and distance on the amount of gravitational force between objects. He/she can construct a model to demonstrate how gravity controls the movement of objects in the solar system.