8th Grade Science – "I Can" Statements

- I can construct a model of how a planet's interior became organized into layers from cosmic debris.
- I can explain the effect of gravity on newly forming planets.
- I can design a method to determine the relative density of a material.
- I can orally present to the class, using a model to explain that as planets form, the materials which are densest move to the core, and materials become part of the planet in decreasing degrees of density. (planetary differentiation)
- I can compare and contrast the speed and movement of different seismic waves.
- I can evaluate seismic data and relate it to how scientists have determined the layers of Earth's interior.
- I can model and explain how S and P waves move through the earth.
- I can describe various historical theories and data evidence that have led to the presentday Plate Tectonic Theory.
- I can describe Wegener's Theory of Continental Drift.
- I can model and explain the process of sea-floor spreading.
- I can model and explain how convection currents in the mantle cause the movement of tectonic plates.
- I can describe the movement and interaction of the 3 primary types of plate boundaries (convergent, divergent, transform).
- I can use a boundary map to explain various plate interactions around the world.
- I can explain the resulting geologic effects of plate boundary movement and interaction.
- I can identify specific geologic events and features around the world and explain how plate movement or interaction is responsible for such events.
- I can identify various landforms on a map (i.e. mountains, valleys, ridges, plateaus, depressions).
- I can use maps to determine what caused constructive and destructive features.
- I can compare maps of various locations to identify differences in landforms.
- I can construct a model of a beach that is experiencing erosion and deposition.
- I can design an experiment to test the best method to reduce erosion.
- I can describe the conditions and constructive/destructive processes that form various landforms.
- I can explain how plate tectonics acts as constructive and destructive processes that can cause changes in earth's surface.
- I can investigate virtual dig sites using various methods in order to determine relative and absolute ages of rock layers.
- I can interpret index fossils and radiometric dating results to explain the law of superposition.
- I can interpret and understand past environments by developing and using ice core models.
- I can explain how diversity can result from sexual reproduction.

- I can describe how variations may allow for survival when the environment changes.
- I can use data and evidence from geologic and fossil records to infer what the environment was like at the time of deposition.
- I can explain that every organism alive today comes from a long line of ancestors who reproduced successfully every generation.
- I can describe reproduction as the transfer of genetic information from one generation to the next.
- I can predict the probability of traits that can occur with mixing of genes from two individuals (sexual reproduction).
- I can use a model to represent the transfer of genes from one individual to the next generation (asexual reproduction).
- I can compare the characteristics of asexual and sexual reproduction. (identical v. unique offspring; low energy expenditure v. high energy expenditure; short amount of time v. longer gestation, etc.)
- I can compare meiosis and mitosis, their phases and purposes.
- I can explain how traits are passed from one generation to the next.
- I can identify the difference between dominant and recessive traits.
- I can demonstrate the Mendelian Law of Segregation.
- I can demonstrate the Mendelian Law of Independent Assortment.
- I can analyze Family Histories to Identify Inherited Genetic Disorders.
- I can identify forces that act at a distance, such as gravity, magnetism, and electrical.
- I can describe some of the properties of magnets and some of the basic behaviors of magnetic forces.
- I can use a field model to explain the effects of forces that act at a distance.
- I can generate an electric current by passing a conductive wire through a magnetic field and quantify electric current, using a galvanometer or multimeter.
- I can demonstrate that the Earth has a magnetic field.
- I can explain that objects and particles have stored energy due to their position from a reference point and this energy has the potential to cause motion.
- I can explain that a field originates at a source and radiates away from that source decreasing in strength.
- I can demonstrate how electrons transfer electrical and magnetic (electromagnetic) energy through waves.
- I can plan, design, construct and implement an electromagnetic system to solve a realworld problem.
- I can describe motion in relation to reference points. The students can demonstrate how forces can oppose the motion of an object.
- I can describe a force by its magnitude and direction. The students can construct a force diagram.
- I can describe how net force affects an object’s direction and/or speed. The students can demonstrate how forces are related to Newton’s 1st Law of Motion(inertia).
- I can apply knowledge about forces to solve a problem by designing a solution.

- I can explore, investigate, and explain various types of potential energy.