Science (Grade 3)

Course Description:

The curriculum for this required course is developed from the http://www.nextgenscience.org/ .
Students will be exposed to and practice skills related to Science and Engineering practices, crosscutting concepts, and core ideas in science that all students in K-12 should master in order to prepare for success in college or 21st century careers. The standards are organized by the four disciplinary core ideas: Life Science, Physical Science, Earth and Space, and Engineering, Technology and the Application of Science. The information in this course overview outlines what students should understand and be able to do by the end of the year.

Mastery Standards:

Life Science

Standard SCI.LS1: Students use science and engineering practices, crosscutting concepts, and an understanding of structures and processes (on a scale from molecules to organisms) to make sense of phenomena and solve problems.

Standard SCI.LS2: Students use science and engineering practices, crosscutting concepts, and an understanding of the interactions, energy, and dynamics within ecosystems to make sense of phenomena and solve problems.

Standard SCI.LS3: Students use science and engineering practices, crosscutting concepts, and an understanding of heredity to make sense of phenomena and solve problems.

Standard SCI.LS4: Students use science and engineering practices, crosscutting concepts, and an understanding of biological evolution to make sense of phenomena and solve problems.

Physical Science

Standard SCI.PS2: Students use science and engineering practices, crosscutting concepts, and an understanding of forces, interactions, motion and stability to make sense of phenomena and solve problems.

Earth & Space Science

Standard SCI.ESS2: Students use science and engineering practices, crosscutting concepts, and an understanding of Earth's systems to make sense of phenomena and solve problems.

Standard SCI.ESS3: Students use science and engineering practices, crosscutting concepts, and an understanding of the Earth and human activity to make sense of phenomena and solve problems.

Engineering, Technology, and the Application of Science

Standard SCI.ETS1: Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.

Standard SCI.ETS2: Students use science and engineering practices, crosscutting concepts, and an understanding of the links among Engineering, Technology, Science, and Society to make sense of phenomena and solve problems.

Standard SCI.ETS3: Students use science and engineering practices, crosscutting concepts, and and understanding of the nature of science and engineering to make sense of phenomena and solve problems

Unit	Description of Unit and Learning Targets
Unit Title: Forces and Interactions **Mystery Science: Invisible Forces** Essential Questions: ● How do equal and unequal forces on an object affect the object? ● How can magnets be used?	Students will……. Learning Targets: ● I can plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. (Object Ex: Ball vs. Box) ● I can make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. (Ex: Swing, see-saw, ball in a bowl) ● I can ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. (Ex: balloon/hair, rod/paper)**M4, M5** ● I can define a simple problem that can be solved by applying scientific ideas about magnets. (Ex: latch for a door) **M4, M5**
Unit Title: Interdependent Relationships in Ecosystems Essential Questions: ● How are plants, animals, and environments of the past similar or different from current plants, animals, and environments? ● What happens to organisms when their environment changes?	Students will... Learning Targets: ● I can construct an argument that some animals form groups that help members survive. **M1** ● I can analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago (Ex: fossils). **M1** ● I can construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all (Ex: needs and characteristics of the habitats and organisms).**M1** ● I can make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change (Ex: changes in land, water, temperature, food, and other organisms).
Unit Title: Inheritance and Variation of Traits: Life Cycles and Traits Essential Questions: ● How do organisms vary in their traits?	Students will... Learning Targets: ● I can develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, and reproduction, and death. (Ex: Similar pattern for life form) ● I can analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. **M4, M5** ● I can use evidence to support the explanation that traits can be influenced by the environment. (Ex: Pet Dog-too much food = overweight) ● I can use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. (Ex: Camouflage, Larger thorns) **M4, M5**
Unit Title: Weather and Climate Essential Questions: ● What is typical weather in different parts of the world and during different times of the year?	Students will… Learning Targets: ● I can represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. (Ex: temp, precipitation, wind)**M3**

● How can the impact of weather-related hazards be reduced?	● I can obtain and combine information to describe climates in different regions of the world. **M3** ● I can make a claim about the merit of a solution that reduces the impacts of a weather related hazard. (Ex: lightning rods, flood barriers)**M4**