Science - Grade 5

Course Description:

The Indian Community School cultivates an enduring cultural identity and critical thinking by weaving indigenous teachings with a distinguished learning environment. The curriculum for this course is developed from the Next Generation Science Standards and the framework of the ICS Our Ways Cultural Calendar. In this course, in order to make sense of their world, 5th graders will develop an understanding of the relationships between organisms, places, things, ideas, and events and how they change over time. They will gather, classify, and interpret this information from a variety of sources in order to recognize how it shapes our world.

Enduring Understandings:

- Scientists develop models to describe scientific phenomenon in order to make sense of the world around them.
- Scientists measure and graph data in order to describe phenomenon and recognize patterns in the world around them.
- Scientists use cause and effect relationships to identify, test, and explain change.
- Scientists use scale, proportion, and quantity to measure and describe physical quantities such as weight, time, temperature, and volume.
- Scientists identify a system's components and their interactions to describe systems and system models.
- Scientists design,develop, and use models to support an argument.
- Scientists analyze and interpret evidence to solve problems and make decisions.

PHYSICAL SCIENCE
• I can develop a model to describe that matter is made of particles too small to be seen. (5-PS1-1) • I can measure and graph quantities. (5-PS1-2) • I can provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. (5-PS1-2) • I can make observations to identify materials based on their properties. (5-PS1-3) • I can take measurements to identify materials based on their properties. (5-PS1-3) • I can conduct an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-4) • I can support an argument that the gravitational force exerted by Earth on objects is directed down. (5-PS2-1) • I can use models to describe that energy in animals' food was once energy from the sun. (5-PS3-1)
LIFE SCIENCE
• I can support an argument that plants get the materials they need for growth chiefly from air and water. (5-LS1-1) • I can develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (5-LS2-1)

EARTH AND SPACE SCIENCE

- I can support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. (5-ESS1-1)
- I can represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. (5-ESS1-2)
- I can develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. (5-ESS2-1)
- I can describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. (5-ESS2-2)
- I can obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. (5-ESS3-1)

ENGINEERING, TECHNOLOGY, AND APPLICATIONS OF SCIENCE

- I can define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1)
- I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. (3-5-ETS1-2)
- I can plan fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1-3)
- I can carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1-3)