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|  | **Earth /Space Science**  ***Students in grade five will understand that the earth is part of a solar system, made up of distinct parts, which have temporal and interrelationships.***  ***Students will:*** | **Physical Science**  ***Students in grade five will understand that:***  ***Energy is necessary for change to occur in matter. Energy can be stored, transferred and transformed, but cannot be destroyed.***  ***The motion of an object is affected by force.***  ***Students will:*** | **Physical Science**  ***Students in grade five will understand that:***  ***All living organisms have identifiable structures and characteristics that allow for survival.***  ***All living organisms have identifiable structures and characteristics that allow for classification.***  ***Energy flows and matter recycles through an ecosystem.***  ***Students will:*** |
| **Change** | *Recognize and describe how the regular and predictable motions of the earth and moon explain certain earth phenomena, such as day and night, seasons, the year, shadows and the tides.* | *Explain that when a force is applied to an object, it reacts in one of three ways: the object either speeds up, slows down, or goes in a different direction.*  *Describe how the balanced and unbalanced forces are related to an object’s motion.*  *Explain that an object’s motion can be tracked and measured over time and that the data can be used to describe its position.* | *Provide examples of how all organisms, including humans, impact their environment; and explain how some changes can be detrimental to other organisms.*  *Explain how changes in environmental conditions can affect the survival of individual organisms and the entire species.* |
| **Interrelationships** | *State that the sun is the source of all energy*  *Identify Gravity as the force holding objects against the Earth.*  *Explain the relationship between the sun, earth and the moon and their impact on climate, seasons, day and night.* | *Differentiate between weight and mass.*  *Describe the relationship between the strength of a force on an object and the resulting effect, such as the greater the force, the greater the change in motion.*  *Describe the relationship between the strength of a force on an object and the resulting effect, such as the greater the force, the greater the change in motion.*  *State Bernoulli’s Principle* | *Define a populations as all individuals of a species that exist together at a given place and time; and explain that all populations living together in a community, along with the physical factors with which they interact, compose an ecosystem.*  *Explain how insects and various other organisms depend on dead plant and animal matter for food; and describe how this process contributes to the system.*  *Describe the significance of plants in the environment.*  *Identify plant parts functions.*  *Explain the impact raptors have on the environment and the effects that would occur if raptors did not exist.* |
| **Scale** | *Recognize that all planets are different in size, composition, and distance from the sun.* | *Conceptualize the differences in speed between objects.* | *Recognize that the length and quality of life are influenced by many factors, including diet, medical care, gender, and environmental conditions.*  *List ways that raptors differ from other types of birds.* |
| **Modeling** | *Recognize that of all the known planets, Earth appears to be somewhat unique; and describe the conditions that exist on earth that allow it to support life.* | *Construct Rube Goldberg model incorporating Newton’s three laws of motion* | *Using food webs, identify and describe the ways in which organisms interact and depend on one another in an ecosystem.*  *Demonstrate understanding of how plants respond to light and gravity.*  *Explain how plants help keep the carbon dioxide and oxygen cycle balanced.* |
| **Inquiry/Process** | *Explain the historical perspective of planetary exploration and man’s achievement in space, beginning with Russia’s Sputnik and mission in 1957.*  *Describe man’s perception of the constellations throughout history; and explain how he has used them to his advantage, including navigational purposes and to explain historical events.*  *Explore the use of technology over time used to explore and understand space.* | *Differentiate between kinetic energy, which is the energy of motion and potential energy, which depends on relative positions.* | *Compare and contrast plant cells to animal cells.*  *Use a dichotomous key to classify different vertebrates.*  *Demonstrate understanding of how plants respond to light and gravity.*  *Explain how plants help keep the carbon dioxide and oxygen cycle balanced.*  *List ways that raptors differ from other types of birds.* |