Dennis-Yarmouth Regional School District Science Scope and Sequence Grade 4

Unit Name	Unit Description / Overview	Stage 1: Desired Results Enduring Understandings - Students will understand that	Essential Questions	Standards
Master Unit 1 Organism Structures	This unit instructs the students on the relationship between structures found internally and externally in plants and animals with their functions to allow those organisms to survive in their environments. It is a major recurring Science theme which spirals through the grade levels.	Plants and Animals have specific internal and external characteristics, such as legs, wings, or stems and bark, etc. These characteristics help them to survive. The processes of survival include: growth, feeding habits, many behaviors such as nesting, baring teeth, plants reaching toward the light, etc., and reproduction.	What are animal structures that support survival, growth, and reproduction? What are plant structures that support survival, growth, and reproduction?	4-LS1-1. Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction.
Master Unit 2 Changes over Time to Earth's Surface and Resources	Grade 4 students interpret patterns of change over time as related to the deposition and erosion in landscape formation. With that change comes a shift in availability of natural resources, both renewable and renewable. Students learn ideas to reduce the impact of humans and natural disasters in order to conserve those resources.	Humans consume certain types of energy and fuels That they are derived from different sources Humans are affected by natural disasters. Humans do design ways to protect life and property from those disasters.	What can workers expect to see while on the job? What can you do to protect Earth B resources? What risks are involved with working on the mine? How will your company try to minimize the risks of coal mining?	 4-ESS1-1. Use evidence from a given landscape that includes simple landforms and rock layers to support a claim about the role of erosion or deposition in the formation of the landscape over long periods of time. 4-ESS2-1. Make observations and collect data to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering and moved around through erosion by water, ice, wind, and vegetation. 4-ESS2-2. Analyze and interpret maps of Earth@nountain ranges, deep ocean trenches, volcanoes, and earthquake epicenters to describe patterns of these features and their locations relative to boundaries between continents and occans. 4-ESS2-3. Dobtain information to describe that energy and fuels humans use are derived from natural resources and that some energy and fuel sources are renewable and some are not. 4-ESS2-3. Plan and carry out tests of one or more design features of a given model or prototype in which variables are considered to identify which features need to be improved. Apply the results of tests to redesign a model or prototype. 4.3-5-ETS1-5(MA). Evaluate relevant design features that must be considered to in puilding a model or prototype of a
Master Unit 3 Using Energy Transformations	In this science unit, students explore the world of energy. Students learn what energy is, the different ways that energy is transferred from place to place, and the ways energy can be converted from one type to another.	the speed of an object directly relates to its amount of energy energy can be transferred in different modes that changes in energy occur when objects come in contact with each other.	How would energy be transferred if a speeding asteroid collided with a spaceship? How could electric currents be used in a warning system?	 4.3-5-ETS1-5(MA). Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem. 4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object. 4-PS3-2. Make observations to show that energy can be transferred from place to place by sound, light, heat, and electric currents. 4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide. 4-PS3-4. Apply scientific principles of energy and motion to test and refine a device that converts kinetic energy to electrical energy or uses stored energy to cause motion or produce light or sound.

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Master Unit 4 Communicating Using Wave Energy	In this unit, the students learned about types of energy and how it is transferred between objects. The pattern of energy travel was introduced. This unit will focus on the motion of energy, the types of waves and their structure, and further applications of waves such as in coding and communication.	 Energy, such as sound and light travels in waves. Waves of energy travel with predictable, regular patterns. Energy patterns may be designed to transfer information. 	How do light and sound work? What is a unique pattern that will transmit a signal to others? What type of technology could be used to transmit light or sound?	 4.3-5-ETS1-3. Plan and carry out tests of one or more design features of a given model or prototype in which variables are controlled and failure points are considered to identify which features need to be improved. Apply the results of tests to redesign a model or prototype. 4-P54-1. Develop a model of a simple mechanical wave (including sound) to communicate that waves (a) are regular patterns of motion along which energy travels, and (b) can cause objects to move. 4-P54-2. Develop a model to describe that light must reflect off an object and enter the eye for the object to be seen. 4-P54-3. Develop and compare multiple ways to transfer information through encoding, sending, receiving, and decoding a pattern.