4th GRADE SCIENCE

Cardinal Newman Standards: Catholic Identity Integration

- **CS.S.K6.IS8:** Explain how science properly limits its focus to "how" things physically exist and is not designed to answer issues of meaning, the value of things, or the mysteries of the human person.
  (NGSS.4.PS3.1; PS3.2; PS3.3; PS4.1; PS4.2; LS1.1; LS1.2; ESS1.1; ESS2.1; ESS2.2)
- **CS.S.K6.IS9:** Describe how the use of the scientific method to explore and understand nature differs, yet complements, the theological and philosophical questions one asks in order to understand God and His works.
  (NGSS.4.PS3.1; PS3.3; PS3.4; PS4.1; PS4.2; PS4.3; LS1.2; ESS1.1; ESS2.1; ESS2.2; ESS3.1; ESS3.2; ETS1.1; ETS1.2; ETS1.3)
- **CS.S.K6.DS2:** Share concern and care for the environment as a part of God's creation.
  (NGSS.4.PS3.4; PS4.3; LS1.1; LS1.2; ESS2.2; ESS3.1; ESS3.2)
- **CS.S.K6.DS4:** Accept that scientific knowledge is a call to serve and not simply a means to gain power, material prosperity, or success.
  (*NGSS.4.PS3.4; PS4.3; ESS2.1; ESS2.2; ESS3.1; ESS3.2; ETS1.1; ETS1.2; ETS1.3)*

Priority Skills	Supporting Skills
• Use evidence to construct an explanation relating the speed of an object to the energy of that object. • Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. • Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. • Develop a model of waves to describe patterns in terms of amplitude and wavelength. • Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. • Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. • Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment.	• Ask questions and predict outcomes about the changes in energy that occur when objects collide. • Generate and compare multiple solutions that use patterns to transfer information. • Describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. • Analyze and interpret data from maps to describe patterns of Earth's features.

Priority Skills	Supporting Skills
• Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. • Plan and 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.	*(see previous page)*

Essential Questions

- How do internal and external structures support the survival, growth, behavior, and reproduction of plants and animals?
- What is energy and how is it related to motion?
- How can we determine patterns of Earth's features by using maps?
- How can water, ice, wind, vegetation, and other naturally occurring things change the Earth over time?
- How does learning how to apply scientific principles inevitably lead to our call to serve God's gift of the Earth?

Vital Vocabulary

- Amplitude, Behaviors, Construct, Current, Design, Energy, Erosion, Force, Growth, Habitat, Interdependence, Mechanism, Model, Processes, Reproduction, Refine, Relative, Renewable, Sensory Receptors, Speed, Survival, Test, Transfer, Topographic, Velocity, Wave, Wavelength, Weathering

Additional Resources: Cardinal Newman Science Resources, Appendix E