

Third Grade Science

Course Description (Storyline):

The performance expectations in third grade help students formulate answers to questions such as: “What is typical weather in different parts of the world and during different times of the year? How can the impact of weather-related hazards be reduced? How do organisms vary in their traits? 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? How do equal and unequal forces on an object affect the object? How can magnets be used?” Students are able to organize and use data to describe typical weather conditions expected during a particular season. By applying their understanding of weather-related hazards, students are able to make a claim about the merit of a design solution that reduces the impacts of such hazards. Students are expected to develop an understanding of the similarities and differences of organisms’ life cycles. An understanding that organisms have different inherited traits, and that the environment can also affect the traits that an organism develops, is acquired by students at this level. In addition, students are able to construct an explanation using evidence for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Students are expected to develop an understanding of types of organisms that lived long ago and also about the nature of their environments. Third graders are expected to develop an understanding of the idea that when the environment changes some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. Students are able to determine the effects of balanced and unbalanced forces on the motion of an object and the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. They are then able to apply their understanding of magnetic interactions to define a simple design problem that can be solved with magnets. The crosscutting concepts of patterns; cause and effect; scale, proportion, and quantity; systems and system models; interdependence of science, engineering, and technology; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas. In the third grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in asking questions and defining problems; developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing

explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information.

Course Rationale:

Knowledge of science, as well as engineering and technology (as stated in the Next Generation Science Standards), is critical in preparing all students for higher education and jobs of the future as well as becoming informed, voting citizens. In addition, students need to gain substance in reading, writing, and figuring math solutions which allows for natural integration within the sciences. It is of critical importance to instill a high interest and knowledge of science so all students can succeed in a technologically advanced, global society whether they choose to pursue college or the workforce upon graduation.

Course Curriculum Map:

Appendix – third grade scope and sequence

Course Materials and Resources:

- Pearson Interactive Science Edition + Digital Courseware 7 year license-1,500
- Teacher Edition Package-60 free
- Leveled Reader Library-60 sets (30 free/30 paid)
- Science Activity Card Set-60 free
- STEM Activity Book 60 free
- Science, Social Studies and ELA Connections books-60 free
- Science Examview CD free
- Science Leveled Reader Database Teacher Access Pack grade k – 5- 60 free

3rd Grade Science

1st Quarter – Engineering Design/Earth’s Systems

Engineering Design

- 1. ETS1-1** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 2. ETS1-2** 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. ETS1-3** 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.

Earth Systems (Weather and Climate)

- 4. ESS2-1** Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
- 5. ESS2-2** Obtain and combine information to describe climates in different regions of the world.

Earth and Human Activity

- 6. ESS3-1** Make a claim about the merit of a design solution that reduces the impacts of a weather related hazard.

2nd Quarter - Physical Science

Motion and Stability: Forces and Interactions

- 1. PS2-1** Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
- 2. PS2-2** Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
- 3. PS2-3** Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
- 4. PS2-4** Define a simple problem that can be solved by applying scientific ideas about magnets.

3rd Quarter and 4th Quarter – Life Science

From Molecules to Organisms: Structures and Processes

- 1. LS1-1** Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Ecosystems: Interactions, Energy, and Dynamics

- 2. LS2-1** Construct an argument that some animals form groups that help members survive.

Heredity: Inheritance and Variation of Traits

3. LS3-1 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.

4. LS3-2 Use evidence to support the explanation that traits can be influenced by the environment.

Biological Evolution: Unity and Diversity

5. LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

6. LS4-2 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.

7. LS4-3 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.

8. LS4-4 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.

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Websites

First quarter:

<http://www.weather.com/weather/tenday/63103> (Current weather conditions)

www.guardian.co.uk/world/natural-disasters (Natural disasters for and extreme weather)

www.weatherstock.com (Images of natural disasters)

<http://urbantext.illinois.edu/gpe/> (The Great Plant Escape)

www.weatherwizkids.com

Second Semester:

Universal websites:

www.unitedstreaming.com

www.brainpopjr.com

<http://kids.nationalgeographic.com/kids/>

<http://songsforteaching.com> (Songs about different concepts)

www.sciencekids.co.nz/sciencefacts.html (Facts about science concepts)