Science - 2

Course #: E3202, E3209

Course Description:

The performance expectations in second grade help students formulate answers to questions such as: “How does land change and what are some things that cause it to change? What are the different kinds of land and bodies of water? How are materials similar and different from one another, and how do the properties of the materials relate to their use? What do plants need to grow? How many types of living things live in a place?” Students are expected to develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students are also expected to compare the diversity of life in different habitats. An understanding of observable properties of materials is developed by students at this level through analysis and classification of different materials. Students are able to apply their understanding of the idea that wind and water can change the shape of the land to compare design solutions to slow or prevent such change. Students are able to use information and models to identify and represent the shapes and kinds of land and bodies of water in an area and where water is found on Earth. The crosscutting concepts of patterns; cause and effect; energy and matter; structure and function; stability and change; 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 second grade performance expectations, students are expected to demonstrate grade appropriate proficiency in 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. Students are expected to use these practices to demonstrate understanding of the core ideas.

Course Proficiencies:

The following is a list of skills and concepts students will be proficient in upon successful completion of this course. These proficiencies form the basis of assessment of each student's achievement. Students who demonstrate understanding can:

1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. ***(2-PS1-1)***
2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. ***(2-PS1-2)***
3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. ***(2-PS1-3)***

4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. ***(2-PS1-4)***
5. Plan and conduct an investigation to determine if plants need sunlight and water to grow. ***(2-LS2-1)***
6. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. ***(2-LS2-2)***
7. Make observations of plants and animals to compare the diversity of life in different habitats. ***(2-LS4-1)***
8. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. ***(2-ESS1-1)***
9. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. ***(2-ESS2-1)***
10. Develop a model to represent the shapes and kinds of land and bodies of water in an area. ***(2-ESS2-2)***
11. Obtain information to identify where water is found on Earth and that it can be solid or liquid. ***(2-ESS2-3)***
12. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. ***(K-2-ETS1-1)***
13. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. ***(K-2-ETS1-2)***
14. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. ***(K-2-ETS1-3)***
15. Select and use technology applications effectively and productively to gather, evaluate and use the information to explore a problem, develop a solution, and communicate ideas. ***(8.1.2.A.2, 8.1.2.A.4, 8.1.2.E.1, 8.1.2.F.1)***
16. Develop an understanding of the nature and impact of technology, engineering, design, and computational thinking on the individual, global society, and the environment. ***(8.2.2.A.4, 8.2.2.B.2, 8.2.2.C.1-4, 8.2.2.D.1, 8.2.2.E.1)***
17. Relate how the skills and knowledge acquired lay the foundation for future academic and career success. ***(9.2.4.A.3, 9.2.4.A.4)***

Assessment:

In grade 2, student progress in science is measured through teacher observation of students as they work with science materials, work with their peers and independently, and by the questions they ask and answer. Students will also maintain a science journal to record their observations, analyze data and draw conclusions. Students' progress will also be assessed through benchmarks and/or a summative assessment at the end of each investigation.

Board Adopted Materials:

Teaching Resources and Related Student Materials:
Title: FOSS (Full Options Science System) Next Generation
Modules:

1. Insects and Plants
2. Solids and Liquids
3. Pebbles, Sand and Silt

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