

Idaho Partners - Science Standards for Grade 2

**The Idaho GLOBE Partnership
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57. SCIENCE STANDARDS - GRADE 2

The samples associated with the content standards are meant to illustrate meaning and to represent possible areas of applications. They are not intended to be an exhaustive list, but are samples of applications that would demonstrate learning.

58. UNIFYING CONCEPTS OF SCIENCE.

| Standards - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| 1. Understand concepts and processes of evidence, models, and explanation. | 1. Explore the concepts of observation and data collection. | 1. Seasons Investigation 2. Use GLOBE observations to predict the local weather |

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| | <ol style="list-style-type: none"> 1. Explore and use various models. | <ol style="list-style-type: none"> 1. Water cycle. 2. Macro-Invertebrate Habitats. 3. Use GLOBE visualizations. |
| <ol style="list-style-type: none"> 1. Understand constancy, change, and measurement. | <ol style="list-style-type: none"> a. Understand that changes occur and can be measured. | <ol style="list-style-type: none"> 1. Atmosphere protocols 2. Seasons Investigation |
| | <ol style="list-style-type: none"> b. Measure in standard and non-standard systems. | <ul style="list-style-type: none"> • Log of Land cover site. • Keep GLOBE journal. • Metrics |
| <ul style="list-style-type: none"> • Understand the theory that evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state. | <ol style="list-style-type: none"> 1. Understand the concepts of past, present, and future. | <ol style="list-style-type: none"> 1. Plant experiments (monitor changes under different conditions [dark, under watered, over watered, no soil]). 2. Compare the changes in the Seasons Investigation. |
| <ol style="list-style-type: none"> 1. Understand concepts of form and function. | <ol style="list-style-type: none"> 1. Identify shape and use of objects. | <ol style="list-style-type: none"> 1. Research birds to learn why they have different beaks or feet. (GLOBE) |

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| | | <p>2. Write a story about why animals have certain characteristics (webbed feet, flat tails, claws, fangs).</p> |
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59. CONCEPTS OF SCIENTIFIC INQUIRY.

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| <p>1. Understand scientific inquiry and develop critical thinking skills.</p> | <p>1. Brainstorm questions that can be investigated.</p> | <p>1. Scientific experiments that stimulate students to ask questions such as:</p> <ul style="list-style-type: none"> ○ GLOBE Investigation ○ GLOBE student research projects |
| | <p>1. Make observations.</p> | <p>1. Atmosphere, Land cover, Hydrology protocols</p> |
| | <p>1. Use various tools to gather information.</p> | <p>1. Given an assortment of GLOBE tools, students will choose the appropriate tool(s) to measure and weigh</p> |

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| | | an object and record data. |
| | 1. Explore information and evidence. | 1. Analyze data by: <ul style="list-style-type: none"> • Graphing • Class discussion • Using GLOBE graphing and Visualization tools |
| | 1. Use observations to make guesses. | 1. Present data from GLOBE investigations. 2. Compare results. |
| | 1. Communicate observations. | 1. GLOBE graphing tools 2. GLOBE Visualization 3. Maps of study sites |

60. CONCEPTS OF PHYSICAL SCIENCE.

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| 1. Understand the structure and functions of matter and molecules and their interactions. | 1. Know that objects have combinations of properties. | 1. Identify objects and two or more of their properties (color, harness, size, shape, texture, smell). 2. Water Detectives |

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| | 1. Recognize and classify matter as a solid, liquid, or gas. | 1. Explain the water cycle 2. Discuss GLOBE precipitation protocols for winter and summer |
| | 1. Recognize that matter can change states (solid, liquid, gas). | 1. Seasons Investigation |
| 1. Understand concepts of motion and forces. | 1. Explore the position and motion of objects. | n/a |
| | • Explore different kinds of energy. | n/a |

61. **CELLULAR AND MOLECULAR CONCEPTS.**

Cellular and Molecular Concepts standards do not apply at this grade level.

62. **INTERDEPENDENCE OF ORGANISMS AND BIOLOGICAL CHANGE.**

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| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| <p>1. Understand the theory of biological evolution.</p> | <p>1. Observe and explore the life cycles of plants and animals and their basic needs.</p> | <p>1. Plant a seed and monitor its growth. 2. Hatch an egg. 3. Observe macroinvertebrates as they turn into adults. 4. Observe tadpoles in an aquarium over time.</p> |
| | <p>1. Recognize that animals live in different habitats for which they are suited.</p> | <p>1. Macroinvertebrates Activity 2. GLOBE Bird Activity 3. Create a habitat in your classroom by adding animals that would live there. Observe different habitats (ant farm, aquarium, beehive).</p> |

63. MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS.

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| <p>1. Understand the relationship between matter, energy, and organization to trace matter as it cycles and energy as it flows through living systems and</p> | <p>1. Understand that living things need food to survive.</p> | <p>1. 1. Learn about different systems that keep a tree alive ("Project Learning Tree," Tree Factory).</p> |

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| <p>between living systems and the environment.</p> | | <ol style="list-style-type: none"> 2. Identify the components of a habitat and the basic need for them ("Project Wild," Habitat Lap Sit Activity). 3. Choose an animal in your hydrology site and create a diorama or mobile of that animal in their habitat keeping in mind their needs. |
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64. EARTH AND SPACE SYSTEMS.

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| <ol style="list-style-type: none"> 1. Understand scientific theories of origin and subsequent changes in the universe and earth systems. | <ol style="list-style-type: none"> 1. Identify the four seasons and their characteristics. | <ol style="list-style-type: none"> 1. GLOBE Seasons activities 2. Draw a picture of a tree depicting its appearance through all four seasons. 3. As a yearlong bulletin board display, decorate a deciduous tree according to the season. |

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| | <ol style="list-style-type: none"> 1. Understand the characteristics of different weather conditions. | <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> 1. GLOBE Atmosphere protocols 2. GLBOE Seasons Activities |
| <ol style="list-style-type: none"> 1. Understand geo-chemical cycles and energy in the earth system. | <ol style="list-style-type: none"> 1. Explore evaporation and precipitation. | <ol style="list-style-type: none"> 1. Using a wet paper towel, wipe a chalkboard or desk and determine where the water goes. 2. Water cycle |

65. **TECHNOLOGY.**

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| <ol style="list-style-type: none"> 1. Understand the relationship between science and technology and develop the abilities of technological design and application. | <ol style="list-style-type: none"> 1. Distinguish between natural objects and objects made by humans. | <ol style="list-style-type: none"> 1. Tree versus computer |
| | <ol style="list-style-type: none"> 1. Recognize that people have invented tools | <ol style="list-style-type: none"> 1. Do a GLOBE activity with and without a GLOBE |

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| | for everyday life and for scientific investigations. | tool and determine which task was easier. 2. Invent a tool to complete a task. |
| | 1. Create a tool to perform a specific function. | 1. 1. Create a tubular densiometer |
| | 1. Use available and appropriate technology. | 1. Use the GLOBE website as a research source. 2. Use a GLOBE tools to see more detail than the human eye can provide. |

66. **PERSONAL AND SOCIAL PERSPECTIVES.**

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| 1. Understand common environmental quality issues, both natural and human induced. | 1. Identify the characteristics of the local environment. | 1. Observe a map of the town using Terraserver software |
| 1. Understand the importance of | 1. | 1. Start a classroom/school- |

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| natural resources and the need to manage and conserve them. | 1. Understand the concept of recycling. | recycling program. 2. Field trip to a recycling center. 3. Make your own recycled paper. |
| | 1. 1. Understand the conservation of natural resources. | 1. Guest speakers from various natural resource and conservation professions. 2. Measure classroom and home resource use (how much water to wash hands, brush teeth, drinking). |

67. HISTORY OF SCIENCE.

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| 1. Understand the significance of major scientific milestones. | 1. Understand major contributions of various scientists and researchers. | 1. 1. GLOBE Scientists Corner |

68. INTERDISCIPLINARY CONCEPTS.

| Standard - The student will: | Content Knowledge and Skills: | Samples of Applications: |
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| 1. Understand that interpersonal relationships are important in scientific endeavors. | 1. Learn appropriate cooperation and interaction skills. | 1. Perform GLOBE protocols where each student is given a particular task. |
| 1. Understand technical communication. | 1. Understand and follow instructions. | 1. Follow GLOBE protocols |

569. -- 571. (RESERVED).

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