Minnesota Science

Grade K

Adopted 2019

Kindergarten

Earth and Space Science

1. Asking questions and defining problems `0E.1.1`
    1. Students will be able to ask questions about aspects of the phenomena they observe, the conclusions they draw from their models or scientific investigations, each other's ideas, and the information they read. `0E.1.1.1`
        1. Ask questions to obtain information from weather forecasts to prepare for and respond to severe weather. `0E.1.1.1.1`
        2. Ask questions about how a person may reduce the amount of natural resources the individual uses. `0E.1.1.1.2`
1. Analyzing and interpreting data `0E.2.1`
    1. Students will be able to represent observations and data in order to recognize patterns in the data, the meaning of those patterns, and possible relationships between variables. `0E.2.1.1`
        2. Make daily and seasonal observations of local weather conditions to describe patterns over time. `0E.2.1.1.2`

Physical Science

2. Planning and carrying out investigations. OP.1.2

    1. Students will be able to design and conduct investigations in the classroom, laboratory, and/or field to test students' ideas and questions, and will organize and collect data to provide evidence to support claims the students make about phenomena. OP.1.2.1

        1. Collect and organize observational data to determine the effect of sunlight on Earth's surface. 0P.1.2.1.1

1. Analyzing and interpreting data OP.2.1

    1. Students will be able to represent observations and data in order to recognize patterns in the data, the meaning of those patterns, and possible relationships between variables. OP.2.1.1

        1. Sort objects in terms of natural/human-made, color, size, shape, and texture, then communicate the reasoning for the sorting system. 0P.2.1.1.1

2. Using mathematics and computational thinking OP.2.2

    1. Students will be able to use mathematics to represent physical variables and their relationships; compare mathematical expressions to the real world; and engage in computational thinking as they use or develop algorithms to describe the natural or designed worlds. OP.2.2.1

        1. Identify and describe patterns that emerge from the effects of different strengths or different directions of pushes and pulls on the motion of an object. 0P.2.2.1.1

2. Constructing explanations and designing solutions. OP.3.2

    2. Students will be able to use their understanding of scientific principles and the engineering design process to design solutions that meet established criteria and constraints. OP.3.2.2

        1. Design and build a structure to reduce the warming effect of sunlight on Earth's surface. 0P.3.2.2.1

1. Engaging in argument from evidence. OP.4.1

    1. Students will be able to engage in argument from evidence for the explanations the students construct, defend and revise their interpretations when presented with new evidence, critically evaluate the scientific arguments of others, and present counterarguments. OP.4.1.1

        1. Construct an argument supported by evidence for whether a design solution works as intended to change the speed or direction of an object with a push or a pull. 0P.4.1.1.1

2. Obtaining, evaluating and communicating information OP.4.2

    1. Students will be able to read and interpret multiple sources to obtain information, evaluate the merit and validity of claims and design solutions, and communicate information, ideas, and evidence in a variety of formats. OP.4.2.1

1. Communicate design ideas for a structure that reduces the warming effect of sunlight on Earth's surface. 0P.4.2.1.1

Life Science

2. Planning and carrying out investigations. 0L.1.2
    1. Students will be able to design and conduct investigations in the classroom, laboratory, and/or field to test students' ideas and questions, and will organize and collect data to provide evidence to support claims the students make about phenomena. 0L.1.2.1
        2. Make observations of plants and animals to compare the diversity of life in different habitats. 0L.1.2.1.2
1. Analyzing and interpreting data. 0L.2.1
    1. Students will be able to represent observations and data in order to recognize patterns in the data, the meaning of those patterns, and possible relationships between variables. 0L.2.1.1
        3. Record and use observations to describe patterns of what plants and animals (including humans) need to survive. 0L.2.1.1.3
1. Developing and using models. 0L.3.1
    1. Students will be able to develop, revise, and use models to represent the students' understanding of phenomena or systems as they develop questions, predictions and/or explanations, and communicate ideas to others. 0L.3.1.1
        1. Develop a simple model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. 0L.3.1.1.1