



Southmoreland School District Kindergarten Science Curriculum Overview

Overview:

At this level, students will observe and describe scientific processes and participate in experiments using simple tools to gather data and understand how to use the data collected to provide an explanation of/to the process.

Module Titles:

Module 1: Organisms and Cells

Module 2: Genetics

Module 3: Evolution

Module 4: Chemistry

Module 5: Physics

Module 6: Earth Structure, Processes and Cycles

Module 7: Origin and Evolution of the Universe

Module Overviews:

Module 1: Organisms and Cells

Students will be able to identify the similarities and differences of living and non-living things. The stages of life cycles for plants and/or animals will be observed, compared, and described. In kindergarten, we look at the life cycles of monarch butterflies, apples, pumpkins, flowers, tadpoles for some examples. Students will observe and describe structures and behaviors of a variety of common animals. They will distinguish between scientific fact and opinion and ask questions about objects, organisms, and events. Students will understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Students will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. They will use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Students will use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

Module 2: Genetics

Students will be able to observe and describe how young animals resemble their parents and other animals of the same kind (learning through books, pictures, online resources and a field trip to the farm). They will distinguish between scientific fact and opinion. Students will ask questions about objects, organisms, and events. They will understand that all scientific investigations involve asking and answering questions and



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comparing the answer with what is already known. Students will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Using simple equipment (tools and other technologies), they will gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Students will use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

Module 3: Evolution

Students will be able to describe changes animals and plants undergo throughout the seasons. They will describe changes that occur as a result of climate, distinguish between scientific fact and opinion and ask questions about objects, organisms, and events. For example, what do animals need to do to prepare for winter or hibernation? Students will understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. They will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. They will use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information, use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

Module 4: Chemistry

Students will identify and classify objects by observable properties of matter and compare different kinds of materials and discuss their uses. They will describe the way matter can change (ice cube melting) and recognize that everything is made of matter. Students will distinguish between scientific fact and opinion. They will ask questions about objects, organisms, and events. Students will understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. They will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Using simple equipment (tools and other technologies), students will gather data (through observation) and understand that this allows scientists to collect more information than relying only on their senses to gather information. They will use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

Module 5: Physics

Students will be able to describe how temperature can affect the body. They will recognize that light from the sun is an important source of energy for living and nonliving systems and some source of energy is needed for all organisms to stay alive and grow.



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In kindergarten, we discuss the needs of plants in order to grow (sun, soil, water and air). Students will distinguish between scientific fact and opinion. They will ask questions about objects, organisms, and events. Students will understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. They will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Students will use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. They will use that data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

Module 6: Earth Structure, Processes and Cycles

Students will be able to distinguish between three types of earth materials – rock, soil, and sand. They will identify sources of water for human consumption and use. They record daily weather conditions using simple charts and graphs (precipitation and temperatures). Students will identify the four seasons (winter, spring, summer and fall). They will distinguish between scientific fact and opinion. Students will ask questions about objects, organisms, and events. They will understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Students will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Using simple equipment (tools and other technologies), students will gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. They will use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Students will distinguish between types of precipitation (snow, rain, sleet, etc.).

Module 7: Origin and Evolution of the Universe

Students will be able to distinguish between scientific fact and opinion. They will be able to ask questions about objects, organisms, and events. Students will be able to understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. They will plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Students will use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. They will use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.