SPRING GROVE AREA SCHOOL DISTRICT

PLANNED COURSE OVERVIEW

Course Title: Science	**Length of Course:** 30 cycles
Grade Level(s): Kindergarten	**Periods Per Cycle:** 3
Units of Credit:	**Length of Period:** 20 minutes
Classification: Required	**Total Instructional Time:** 30 hours

Course Description

This course provides students with a foundation of skills in Life, Earth and Physical Science.

Instructional Strategies, Learning Practices, Activities, and Experiences

Anchor Charts
Anticipatory Sets
Bell Ringers
Class Discussions
Closure
Critical Thinking
Graphic Organizers
Guided Reading
Higher Level Questioning
Homework
Interaction Sequence
Internet Research
Journals
Paper and Pencil Activities
Posted Objectives
Practice Exercises
Presentations
Question – Answer Relationships
Quizzes
Reports and Speeches
Research
Small Group Interventions
Teacher Demonstrations
Technology Integration
Videos/DVDs
Wait-Time
Wait-Time Extended

Assessments

Homework
Oral Projects
Presentations
Projects
Reports
Teacher Observations
Teacher-Made Tests and Quizzes

Materials/Resources

FOSS (Full Option Science System)
Guest Speakers
Internet
Leveled Readers
Resource Books
SAS (Standards Aligned System)
Supplemental Readings
Videos/DVDs

Adopted: 1/27/88
Revised: 9/3/91; 12/8/97; 11/15/01; 8/20/07; 5/19/14

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PLANNED COURSE: Science ***LEVEL: Kindergarten***

Science and Technology and Engineering Education

3.1 Biological Sciences
3.1.A Organisms and Cells

CONTENT/KEY CONCEPTS	OBJECTIVES/STANDARDS
Common Characteristics of Life	3.1.K.A1. – Identify the similarities and differences of living and nonliving things.
Life Cycles	3.1.K.A3. – Observe, compare, and describe stages of life cycles for plants and/or animals.
Form and Function	3.1.K.A5. – Observe and describe structures and behaviors of a variety of common animals.
Science as Inquiry	3.1.K.A9. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

3.1.B. Genetics	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Heredity	3.1.K.B1. - Observe and describe how young animals resemble their parents and other animals of the same kind.
Science as Inquiry	3.1.K. B6. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

3.1.C. Evolution	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Adaptation	3.1.K.C2. - Describe changes animals and plants undergo throughout the seasons.
Unifying Themes	3.1.K.C3. - CONSTANCY AND CHANGE - Describe changes that occur as a result of climate.
Science as Inquiry	3.1.K.C4. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

3.2. Physical Sciences: Chemistry and Physics
3.2.A. Chemistry

CONTENT/KEY CONCEPTS	OBJECTIVES/STANDARDS
Properties of Matter	3.2.K.A1. - Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses.
Matter and Energy	3.2.K.A3. - Describe the way matter can change.
Unifying Themes	3.2.K.A5. - CONSTANCY AND CHANGE - Recognize that everything is made of matter.
Science as Inquiry	3.2.K.A6. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

3.2.B. Physics	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Heat/Heat Transfer	3.2.K.B3. - Describe how temperature can affect the body.
Unifying Themes	3.2.K.B6. - ENERGY - 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.
Science as Inquiry	3.2.K.B7. - • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

3.3. Earth and Space Sciences
3.3.A. Earth Structure, Processes and Cycles

CONTENT/KEY CONCEPTS	OBJECTIVES/STANDARDS
Earth Features and the Processes that Change It	3.3.K.A1. - Distinguish between three types of earth materials – rock, soil, and sand.
Water	3.3.K.A4. - Identify sources of water for human consumption and use.
Weather and Climate	3.3.K.A5. - Record daily weather conditions using simple charts and graphs Identify seasonal changes in the environment. Distinguish between types of precipitation.
Science as Inquiry	3.3.K.A7. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

3.3. Earth and Space Sciences
3.3.B. Origin and Evolution of the Universe

CONTENT/KEY CONCEPTS	OBJECTIVES/STANDARDS
Science as Inquiry	3.3.K.B3. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Environment and Ecology

4.1 Ecology	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
The Environment	4.1.K.A. - Identify the similarities and differences of living and non-living things within the immediate and surrounding **environment**.
Biodiversity	4.1.K.D. - Observe and describe what happens to living things when needs are met.
Succession	4.1.K.E. - Identify how the changes of seasons affect their local **environment**.
Science as Inquiry	4.1.K.F. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced and review and ask questions about the work of other scientists.

4.2 Watersheds and Wetlands	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Watersheds	4.2.K.A. - Identify components of a **water cycle**.
Wetlands	4.2.K.B. - Differentiate between **terrestrial**, **aquatic**, and **wetland ecosystems** in Pennsylvania.
Aquatic Ecosystem	4.2.K.C. - Identify that there are living and nonliving components in an **aquatic habitat**.
Science as Inquiry	4.2.K.D. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced and review and ask questions about the work of other scientists.

4.3 Natural Resources	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Use of Natural Resources	4.3.K.A. - Identify some **renewable resources** used in the classroom.
Availability of Natural Resources	4.3.K.B. - Recognize the importance of conserving **natural resources**.
Science as Inquiry	4.3.K.C. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced and review and ask questions about the work of other scientists.

4.4 Agriculture and Society	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Food and Fiber Systems	4.4.K.A. - Identify common plants and animals found in Pennsylvania agricultural systems.
Importance of Agriculture	4.4.K.B. - Identify common plants and animals used by people.
Applying Sciences to Agriculture	4.4.K.C. - Observe and describe stages of life cycles for plants and animals.
Technology Influences on Agriculture	4.4.K.D. - Identify tools and machinery commonly used in **agriculture**.
Science as Inquiry	4.4.K.E. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced and review and ask questions about the work of other scientists.

4.5 Humans and the Environment	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Sustainability	4.5.K.A. - Identify what people use in their everyday life.
Integrated Pest Management	4.5.K.B. - Identify common **pests** in our homes, gardens and neighborhoods.
Pollution	4.5.K.C. - Identify different types of **pollution** (land, water or air) and their sources.
Waste Management	4.5.K.D. - Identify waste and practice ways to **reduce**, **reuse** and **recycle**.
Science as Inquiry	4.5.K.F. – • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • 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. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced and review and ask questions about the work of other scientists.