



# **Pine Grove Area**

SCHOOL DISTRICT

**Science**

**Second Grade Science**

**April 15, 2009**

## **I. PHILOSOPHY**

The second grade science course of the Pine Grove Area School District has been structured to expose students systematically and thematically to the concepts of the natural world. The second grade curriculum begins the process at the second grade level and will allow for the accommodations of many learning styles, motivational levels, and academic abilities.

## **II. CORE CONCEPTS**

1. Scientific Method – Utilize the steps of the scientific method to answer questions and solve problems.
2. Weather – Identify cloud types and weather patterns from data charts.
3. Earth Science – Investigate the basic landforms and Earth history.
4. Natural Resources – Identify products derived from natural resources.
5. Ecosystems – Understand that living things are dependent on nonliving things in the environment for survival.
6. Changes in Matter – Understand that some things can change from one form of matter to another.
7. Physical Science, Chemistry and Physics – Observe and describe different types of force and motion (magnets).
8. Environmental Health – Conclude that plants, animals and humans are dependent on air and water.
9. Plant Life Cycles – Determine ways that new plants can develop from mature plants.

### **III. COURSE OF STUDY**

A. Course Name: Science

B. Grade Level: Second Grade

C. Length of Course: all year

1. Frequency: four times a week

2. Duration: 20 minutes per class

D. Academic Level: Second Grade

E. Credits: None

F. Prerequisites: None

G. Course Description:

The second grade science curriculum will build upon previously learned concepts and ideas and expose students to concepts of science in nine core areas. Emphasis will be placed on meeting each student's academic abilities and learning styles.

**IV. CONTENT: Second Grade Science**

**CORE CONCEPT 1: Scientific Method**

**MAJOR OBJECTIVE: Utilize the steps of the scientific method to answer questions and solve problems.**

<b>CURRICULUM STANDARD:</b>			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.2.4.A</b> Identify and use the nature of scientific and technological knowledge.</p> <ul style="list-style-type: none"> <li>• Distinguish between a scientific fact and a belief.</li> <li>• Provide clear explanations that account for observations and results.</li> <li>• Relate how new information can change existing perceptions.</li> </ul>	<p>Teacher will guide students to:</p> <p>Discriminate between a scientific fact and a belief.</p> <p>Make clear explanations that account for observations and results.</p> <p>Discuss ways in which new information can change existing perceptions.</p>	<p>Teacher evaluation of</p> <p>Students' written responses</p> <p>Whole class discussion</p> <p>Teacher observation of activities and experiments</p> <p>Written or oral descriptions</p> <p>Independent or small group activities</p>	<p>Textbook resources</p> <p>Computer programs/ websites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Bulletin Board Display</p> <p>Lab materials and resources</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 1: Scientific Method**

**MAJOR OBJECTIVE: Utilize the steps of the scientific method to answer questions and solve problems.**

**CURRICULUM STANDARD:**

PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.2.4.B</b> Describe objects in the world using the five senses.</p> <ul style="list-style-type: none"><li>• Recognize observational descriptors from each of the five senses. (e.g., see-blue, feel-rough).</li><li>• Use observations to develop a descriptive vocabulary.</li></ul>	<p>Teacher will guide students to:</p> <p>Compare and contrast observational descriptors from each of the five senses.</p> <p>Utilize observations to develop a descriptive vocabulary.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Venn diagram</p> <p>Rubrics</p> <p>Written or oral student descriptions</p> <p>Partner project</p> <p>Student activities and experiments</p>	<p>Textbook resources</p> <p>Computer programs/ websites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Bulletin board display</p> <p>Lab materials and resources</p> <p>Pictures</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 1: Scientific Method**

**MAJOR OBJECTIVE: Utilize the steps of the scientific method to answer questions and solve problems.**

**CURRICULUM STANDARD:**

PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.2.4.C</b> Recognize and use the elements of scientific inquiry to solve problems.</p> <ul style="list-style-type: none"><li>• Generate questions about objects, organisms and/or events that can be answered through scientific investigations.</li><li>• Design an investigation.</li><li>• Conduct an experiment.</li><li>• State a conclusion that is consistent with the information.</li></ul>	<p>Teacher will guide students to:</p> <p>Compose questions about objects, organisms, and/ or events that can be answered through scientific investigations.</p> <p>Create an investigation.</p> <p>Perform an experiment.</p> <p>Interpret a conclusion that is consistent with the information.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Rubrics</p> <p>Projects</p> <p>Small group activity</p> <p>Student activities and experiments</p> <p>Oral questions and answers</p> <p>Written and oral descriptions</p>	<p>Textbook resources</p> <p>Computer programs/ websites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library/AV resources</p> <p>Charts</p> <p>Data sheets</p> <p>Bulletin board display</p> <p>Lab materials and resources</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 2: Weather**

**MAJOR OBJECTIVE: Identify cloud types and weather patterns from data charts.**

<b>CURRICULUM STANDARD:</b>			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.5.4.C</b> Know basic weather elements.</p> <ul style="list-style-type: none"><li>• Identify cloud types.</li><li>• Identify weather patterns from data charts (including temperature, wind direction and speed, precipitation) and graphs of the data.</li><li>• Explain how the different seasons affect plants, animals, food availability and daily human life.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify various cloud types</p> <p>Utilize charts to track changes in weather.</p> <p>Observe pictures of trees and describe changes that have taken place throughout the seasons.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Independent or small group activities</p> <p>Rubrics</p> <p>Student activities and experiments</p> <p>Student Identification</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental resources</p> <p>Library/ AV resources</p> <p>Weather chart</p> <p>Pictures</p> <p>Weather instruments</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 2: Weather**

**MAJOR OBJECTIVE: Identify cloud types and weather patterns from data charts.**

<b>CURRICULUM STANDARD:</b>			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.1.4.B</b> Explain the differences between moving and still water.</p> <ul style="list-style-type: none"><li>Identify types of precipitation.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify various forms of precipitation</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Oral questions and answers</p> <p>Whole classroom discussion</p> <p>Student identification</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Charts</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 3: Earth Science**

**MAJOR OBJECTIVE: Investigate the basic landforms and Earth history.**

**CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.5.4.A</b> Know basic landforms and Earth history.</p> <ul style="list-style-type: none"><li>• Describe earth processes (e.g., rusting, weathering, erosion that have affected selected physical features in students' neighborhoods.</li><li>• Identify various earth structures (e.g., mountains, faults, drainage basins) through the use of models.</li><li>• Describe fossils and the type of environment they lived in (e.g., tropical, aquatic, desert).</li></ul>	<p>Teacher will guide students to:</p> <p>Compare and contrast ways that wind and water can be both hurtful and harmful to the Earth's surface.</p> <p>Create landform pictures that include mountains, plains, rivers, and lakes.</p> <p>Understand that fossils provide evidence about plants and animals that lived long ago and present examples of fossils to the class.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Teacher observation of activities</p> <p>Classroom discussion</p> <p>Written and oral descriptions</p> <p>Independent activity</p> <p>Rubrics</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Fossils</p> <p>Map</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 3: Earth Science**

**MAJOR OBJECTIVE: Investigate the basic landforms and Earth history.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.5.4.B</b> Know types and uses of earth materials.</p> <ul style="list-style-type: none"><li>• Identify uses of various earth materials (e.g., buildings, highways, fuels, growing plants).</li><li>• Identify and sort earth materials according to a classification key (e.g., soil/rock type)</li></ul>	<p>Teacher will guide students to:</p> <p>Classify and identify uses of various materials of the earth.</p> <p>Identify and sort materials according to a key</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Oral questions and answers</p> <p>Student activities and experiments</p> <p>Whole class discussion</p> <p>Independent or small group activity</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Pictures</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 3: Earth Science**

**MAJOR OBJECTIVE: Investigate the basic landforms and Earth history.**

**CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.5.4.D</b> Recognize the earth's different water resources.</p> <ul style="list-style-type: none"><li>• Know that approximately three-fourths of the Earth is covered by water.</li><li>• Identify and describe types of fresh and salt-water bodies.</li><li>• Identify examples of water in the form of solid, liquid and gas on or near the surface of the earth.</li><li>• Explain and illustrate evaporation and condensation.</li></ul>	<p>Teacher will guide students to:</p> <p>Differentiate between water and land area on a diagram of the Earth.</p> <p>Classify bodies of water into fresh and salt-water categories.</p> <p>Identify the solids, liquid, and gaseous forms of water on a picture or photograph.</p> <p>Explain and illustrate the evaporation cycle as it pertains to the Earth.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Whole class discussion</p> <p>Student activities and experiments</p> <p>Student identification</p> <p>Project</p> <p>Rubric</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Globe</p> <p>Map</p> <p>Picture of the water cycle</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 4: Natural Resources**

**MAJOR OBJECTIVE: Identify products derived from natural resources.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.2.4. A</b> Identify needs of people.</p> <ul style="list-style-type: none"><li>Identify plants, animals, water, air, minerals and fossil fuels as natural resources.</li><li>Identify how the environment provides for the needs of people.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify various natural resources and their use, including, water, sun, land, coal, plants, animals and trees.</p> <p>Differentiate various ways the environment can serve the needs of people</p> <p>Make a poster displaying various ways people use natural resources in our environment.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Whole class discussion</p> <p>Small group activity</p> <p>Student identification</p> <p>Teacher observation of activity</p> <p>Poster</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Pictures</p>
<p><b>PA Standard 4.2.4. B</b> Identify products derived from natural resources.</p> <ul style="list-style-type: none"><li>Identify products made from trees.</li><li>Identify by-products of plants and animals.</li><li>Identify the sources of manmade products (e.g., plastics, metal, aluminum, fabrics, paper, cardboard)</li></ul>	<p>Teacher will guide students to:</p> <p>Recognize and identify products in the classroom and home environment made from trees</p> <p>Recognize and identify various products made from plants and animals.</p> <p>Identify the source of manmade products mad from natural resources in PA and the US</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Whole class discussion</p> <p>Independent activity</p> <p>Teacher observation of activity</p> <p>Student observations</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Pictures</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 4: Natural Resources**

**MAJOR OBJECTIVE: Identify products derived from natural resources.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.2.4 C</b> Know that some natural resources have limited life spans.</p> <ul style="list-style-type: none"><li>• Know that natural resources have varying life spans</li><li>• Identify various means of conserving natural resources.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify life spans of various natural resources.</p> <p>Brainstorm ways people can conserve natural resources.</p>	<p>Teacher evaluation of:</p> <p>Whole class discussion</p> <p>Written or oral descriptions</p> <p>Student performance</p> <p>Oral question and answer</p> <p>Students' written responses</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p>
<p><b>PA Standard 4.2.4. D</b> Identify by-products and their use of natural resources.</p> <ul style="list-style-type: none"><li>• Understand the waste stream</li><li>• Identify those items that can be recycled and those that cannot</li><li>• Identify use of reusable products</li><li>• Identify the use of compost, landfills and incinerators.</li></ul>	<p>Teacher will guide students to:</p> <p>Describe the waste stream and it's importance</p> <p>Identify materials that can be reduced, reused, and recycled.</p> <p>List reusable products in our homes and school</p> <p>Compare/contrast composting, landfills and incinerator use</p>	<p>Teacher evaluation of:</p> <p>Independent activities</p> <p>Whole class discussion</p> <p>Teacher observation of activities</p> <p>Student performance</p> <p>Written or oral descriptions</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Recycling bin</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 5: Ecosystems**

**MAJOR OBJECTIVE: Understand that living things are dependent on nonliving things in the environment for survival.**

**CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.6.4.A</b> Understand that living things are dependent on nonliving things in the environment for survival.</p> <ul style="list-style-type: none"><li>• Identify and categorize living and nonliving things.</li><li>• Identify basic needs of a plant and an animal and explain how their needs are met.</li><li>• Identify plants and animals with their habitat and food sources.</li><li>• Describe how animals interact with plants to meet their needs for shelter.</li><li>• Identify a local ecosystem and its living and nonliving components.</li><li>• Understand the components of a food chain</li><li>• Identify a simple ecosystem and its living and nonliving components.</li></ul>	<p>Teacher will guide students to:</p> <p>Classify living and nonliving things in the environment.</p> <p>Plant a seed, observe and chart its growth as it is nurtured.</p> <p>Classify plants and animals that exist in various habitats including ponds, oceans, woods, and deserts.</p> <p>Describe and design a habitat environment that includes plants and animals that live there.</p> <p>Draw and describe a local food chain</p> <p>Choose an ecosystem and label the living and nonliving components.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Student identification</p> <p>Whole class discussion</p> <p>Teacher observation of project</p> <p>Small group project</p> <p>Rubric</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Pictures of ecosystems</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 5: Ecosystems**

**MAJOR OBJECTIVE: Understand that living things are dependent on nonliving things in the environment for survival.**

**CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.6.4.B</b> Understand the concept of cycles.</p> <ul style="list-style-type: none"><li>• Explain the water cycle.</li></ul>	<p>Teacher will guide students to:</p> <p>Label the parts of a water cycle.</p>	<p>Teacher evaluation of:</p> <p>Student identification</p> <p>Students' written responses</p> <p>Whole class discussion</p> <p>Independent activity</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Poster of the water cycle</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 6: Changes in Matter**

**MAJOR OBJECTIVE: Understand that some things can change from one form of matter to another.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.4.4.A</b> Recognize basic concepts about the structure and properties of matter.</p> <ul style="list-style-type: none"><li>• Describe properties of matter (e.g., hardness, reactions to simple chemical tests).</li><li>• Know that combining two or more substances can make new materials with different properties.</li><li>• Know different material characteristics (e.g., texture, state of matter, solubility).</li></ul>	<p>Teacher will guide students to:</p> <p>Use five senses to describe the properties of matter.</p> <p>Describe and explain how water changes state (e.g. melting, freezing, condensation, and evaporation.)</p> <p>Describe and analyze the results when a balloon half filled with baking soda is placed on top of a bottle that is a quarter of the way filled with vinegar.</p>	<p>Teacher evaluation of:</p> <p>Students' oral and written responses</p> <p>Student observations</p> <p>Small group activity</p> <p>Oral questions and answers</p> <p>Whole class discussion</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Materials for experiment</p>
<p><b>PA Standard 3.5.4. D</b> Recognize the earth's different water resources.</p> <ul style="list-style-type: none"><li>• Identify examples of water in the form of solid, liquid and gas on or near the surface of the earth.</li><li>• Explain and illustrate evaporation and condensation.</li></ul>	<p>Teacher will guide students to:</p> <p>Discuss where in the environment they would see the different states of matter.</p> <p>Observe changes in a glass of water over time.</p> <p>Identify three states of matter</p> <p>Label important steps in the process of evaporation cycle</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Whole class discussion</p> <p>Independent activity</p> <p>Oral question and answer</p> <p>Student performance</p> <p>Student observations</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 7: Physical Science, Chemistry, and Physics**

**MAJOR OBJECTIVE: Observe and describe different types of force and motion (magnets).**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.4.4.C</b> Observe and describe different types of force and motion.</p> <ul style="list-style-type: none"><li>• Recognize forces that attract or repel other objects and demonstrate them.</li><li>• Describe various types of motions.</li></ul>	<p>Teacher will guide students to:</p> <p>Use a magnet to move certain objects (e.g. key, staples, nail, paper clip, etc.)</p> <p>Synthesize why certain objects will or will not be moved by a magnet</p> <p>Use two magnets to demonstrate how two like poles repel each other and two unlike poles attract.</p>	<p>Teacher evaluation of:</p> <p>Independent activity</p> <p>Student observations</p> <p>Teacher observation of activity or experiment</p> <p>Whole class discussion</p> <p>Written or oral student descriptions</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Magnets</p> <p>Various materials that both attract and repel magnets</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 8: Environmental Health**

**MAJOR OBJECTIVE: Conclude that plants, animals, and humans are dependent on air and water.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.3.4.A</b> Know that plants, animals and humans are dependent on air and water.</p> <ul style="list-style-type: none"><li>• Know that all living things need air and water to survive.</li><li>• Identify different areas where health can be affected by air, water or land pollution.</li><li>• Identify actions that can prevent or reduce waste pollution.</li></ul>	<p>Teacher will guide students to:</p> <p>Plant a seed, observe and chart its growth as it is nurtured.</p> <p>Evaluate how the health of animals can be affected by pollution.</p> <p>List ways to reduce waste pollution.</p>	<p>Teacher evaluation of:</p> <p>Student observations</p> <p>Independent activity</p> <p>Whole class discussion</p> <p>Written or oral students responses</p> <p>Teacher observations of activities</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Materials for planting a seed</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 8: Environmental Health**

**MAJOR OBJECTIVE: Conclude that plants, animals, and humans are dependent on air and water.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.3.4.B</b> Identify how human actions affect environmental health.</p> <ul style="list-style-type: none"><li>• Identify pollutants.</li><li>• Identify sources of pollution.</li><li>• Identify litter and its effect on the environment.</li><li>• Describe how people can reduce pollution.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify forms of pollution and describe the effects that various pollutants can have on the environment.</p> <p>Describe relationships between various forms of pollution and the actions that cause them.</p> <p>Analyze the effects of picking up litter around the school environment.</p> <p>Participate in the school's recycling program.</p>	<p>Teacher evaluation of:</p> <p>Students' written responses</p> <p>Independent activity</p> <p>Whole class discussion</p> <p>Teacher observations of activities</p> <p>Student identification</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Posters</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 8: Environmental Health**

**MAJOR OBJECTIVE: Conclude that plants, animals, and humans are dependent on air and water.**

**CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 4.3.4.C</b> Understand that the elements of natural systems are interdependent.</p> <ul style="list-style-type: none"><li>• Identify some of the organisms that live together in an ecosystem.</li><li>• Understand that the components of a system all play a part in a healthy natural system.</li><li>• Identify the effects of a healthy environment on the ecosystem.</li></ul>	<p>Teacher will guide students to:</p> <p>Choose an ecosystem and describe its components.</p> <p>Analyze how a community would be different without trees.</p> <p>Propose ways to keep the environment healthy.</p>	<p>Teacher evaluation of:</p> <p>Student performance</p> <p>Independent or small group activity</p> <p>Whole class discussion</p> <p>Written or oral students responses</p> <p>Teacher observations of activities</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 9: Plant Life Cycles**

**MAJOR OBJECTIVE: Determine ways that new plants can develop from mature plants.**

**CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.3.4.A</b> Know the similarities and differences of living things.</p> <ul style="list-style-type: none"><li>• Identify life processes of living things (e.g., growth, digestion, react to environment).</li><li>• Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that similarities and differences are related to environmental habitat.</li><li>• Describe basic needs of plants and animals.</li></ul>	<p>Teacher will guide students to:</p> <p>Draw and describe the sequence of the life-cycle stages of a pumpkin.</p> <p>Investigate the characteristics of plants to determine how they are used to protect themselves in their environment.</p> <p>Describe and detail the growth processes as related to planting a seed in soil and providing it with water and sunlight,</p>	<p>Teacher evaluation of:</p> <p>Independent activities</p> <p>Whole class discussion</p> <p>Teacher observation of activities</p> <p>Rubrics</p> <p>Students' written responses</p> <p>Student observations</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Materials for planting projects</p> <p>Pictures</p>

**CONTENT: Second Grade Science**

**CORE CONCEPT 9: Plant Life Cycles**

**MAJOR OBJECTIVE: Determine ways that new plants can develop from mature plants.**

<b>CURRICULUM STANDARD:</b>			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p><b>PA Standard 3.3.4.B</b> Know that living things are made up of parts that have specific functions.</p> <ul style="list-style-type: none"><li>• Determine how different parts of a living thing work together to make the organism function.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify and label the parts of a plant.</p> <p>Place celery in colored water to show how the roots of a plant work.</p>	<p>Teacher evaluation of:</p> <p>Student Performance</p> <p>Student observation</p> <p>Whole class discussion</p> <p>Written or oral descriptions</p> <p>Teacher observations</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p> <p>Celery and colored water</p>
<p><b>PA Standard 3.3.4.C</b> Know that characteristics are inherited and, thus, offspring closely resemble their parents.</p> <ul style="list-style-type: none"><li>• Identify characteristics for animal and plant survival in different climates.</li><li>• Identify physical characteristics that appear in both parents and offspring and differ between families, strains or species.</li></ul>	<p>Teacher will guide students to:</p> <p>Identify the parts of a cactus plant that would help it survive in a desert.</p> <p>Use a venn diagram to show the difference between a coniferous and a deciduous tree.</p>	<p>Teacher evaluation of:</p> <p>Written or oral student descriptions</p> <p>Student performance</p> <p>Teacher observation</p> <p>Whole class discussion</p> <p>Student Identification</p>	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Journal or notebook</p> <p>Publisher's supplemental materials</p> <p>Library /AV resources</p>

**V. EXPECTED LEVELS OF ACHIEVEMENT**

A. Students are expected to reach the second grade level of achievement in science. These skills include all of those noted in the specific content area of this curriculum.

B. Grading system for all second grade science classes is as follows:

<b>Grading Scale</b>	
S	Satisfactory
N	Partial progress
O	Excellent

C. Each student's grade will be determined at the conclusion of each marking period.