



VALWOOD

GO BEYOND

Second Grade Science Curriculum

2nd Grade Overview Science

Course Description		Topics at a Glance	
<p>In second grade science, students will be practicing scientific skills such as observing, asking questions, and making predictions. Students will record observations using science notebooks. Science content in second grade will include simple force and motion, the relationship between insects and their habitats, and weather.</p>		<ul style="list-style-type: none"> ● Scientific Terms and Tools ● The Earth's Resources ● Weather ● Animals ● Plants ● The Environment 	
Assessments		Notes for Second Grade	
<ul style="list-style-type: none"> ● Teacher-created assessments ● Science notebooks 		<ol style="list-style-type: none"> 1. Science in second grade is built upon what the children already know which enables them to connect to new concepts and skills. 2. Students in second grade are given the opportunity to inquire, investigate and experiment using science tools. They learn that there is a certain method that scientist use to make valid conclusions. They also learn that scientists use certain terms. 3. Life Science activities gives students the opportunities to observe and investigate plants and animals and their behavior, systems and habitats. 4. Earth science activities give students the opportunity to discover and study weather patterns and its effect on the environment and living things. 5. Earth science also gives second grade students the opportunity to investigate the earth's many resources. 6. Local resources that can be used in second grade science include a field trip to Grand Bay. 	
Grade Level Expectations			
Standard	Big Ideas for Second Grade		
1. Life Science	<ol style="list-style-type: none"> 1. Organisms depend on their habitat's nonliving parts to satisfy their needs. 2. Each plant or animal has different structures or behaviors that serve different functions. 		
2. Ecology	<ol style="list-style-type: none"> 1. The environment affects the living things in many ways. 		
3. Earth Systems Science	<ol style="list-style-type: none"> 1. Weather and the changing seasons impact the environment and organisms such as humans, plants, and other animals. 2. The earth has many resources that meet the basic needs of living things. 		
4. General Science	<ol style="list-style-type: none"> 1. Scientists use specific tools and terms to do their work. 		

1. General Science

Students know and understand common properties, forms and changes in matter and energy.

Prepared Graduates

The preschool through twelfth-grade concepts and skills that all students who complete the Valwood School education system must master to ensure their success in a postsecondary and workforce setting.

Prepared Graduate Competencies in the Physical Science standard:

- Observe, explain, and predict outcomes in a variety of scientific topics using science tools.
- Apply an understanding that science requires different tools for different reasons and the use of the scientific method and terminology is a critical part of being a scientist.
- *Engage in scientific inquiry by asking or responding to scientifically oriented questions, collecting and analyzing data, giving priority to evidence, formulating explanations based on evidence, connecting explanations to scientific knowledge, and communicating and justifying explanations.*

Content Area: Science - Second Grade	
Standard: 1. General Science	
Prepared Graduates: Observe, explain, and predict outcomes in a variety of scientific topics using science tools	
GRADE LEVEL EXPECTATION	
Concepts and skills students master: 1. Correct usage of scientific terminology and tools when making an observation	
Evidence Outcomes	21st Century Skills and Readiness Competencies
Students can: <ol style="list-style-type: none"> a. Identify and predict outcomes of experiments using a variety of science tools b. Analyze and interpret observable data about the experiment performed using tools such as a microscope, hand lens, ruler, scale, balance, and/or measuring tape 	Inquiry Questions: <ol style="list-style-type: none"> 1. How do the steps in a scientific process help a scientist reach a conclusion or answer a question? 2. How does knowing which tool to use help with an outcome? 3. How do we work like a scientist?
	Relevance and Application: <ol style="list-style-type: none"> 1. To build a strong foundation in science vocabulary and understanding to be used in all future scientific topics. 2. In many recreational activities, we ask questions to find the result of a problem or to reach a conclusion.
	Nature of Discipline: <ol style="list-style-type: none"> 1. Select appropriate tools for data collection. 2. Usage of proper terms and steps in order to execute constructive experiments and enable correct manipulation of tools. 3. Collaboratively design an experiment, identifying the constants and variables.

2. Life Science

Students know and understand the characteristics and structure of living things, the processes of life and how living things interact with each other and their environment.

Prepared Graduates

The preschool through twelfth-grade concepts and skills that all students who complete the Valwood School education system must master to ensure their success in a postsecondary and workforce setting.

Prepared Graduate Competencies in the Life Science standard:

- Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection
- Explain and illustrate with examples how living systems interact with the biotic and abiotic environment
- Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment
- Explain how biological evolution accounts for the unity and diversity of living organisms

Content Area: Science – Second Grade	
Standard: 2. Life Science	
Prepared Graduates: Explain and illustrate with examples how living systems interact with the biotic and abiotic environment	
GRADE LEVEL EXPECTATION	
Concepts and skills students master: 1. Organisms (<i>insects</i>) depend on their habitat's nonliving parts to satisfy their needs	
Evidence Outcomes	21st Century Skills and Readiness Competencies
Students can: <ol style="list-style-type: none"> Use evidence to develop a scientific explanation about how organisms (<i>example: insects</i>) depend on their habitat Analyze and interpret data about nonliving components of a habitat Assess and provide feedback on other scientific explanations regarding why an organism (<i>example: insects</i>) can survive in its habitat Assess how living things depend on the health of their habitats Use instruments to make observations about habitat components 	Inquiry Questions: <ol style="list-style-type: none"> What are the basic needs of plants and animals? How are the basic needs of all living things similar and different? How do living things depend on their environment? How does an organism respond when basic needs are not met? <i>What makes a habitat healthy?</i> <i>How do the physical characteristics of organisms (example: insects) help them to survive?</i>
	Relevance and Application: <ol style="list-style-type: none"> Living things depend on the health of their habitats. Different organisms have different needs. <i>Each plant or animal has different structures on behaviors that serve different functions.</i> <i>The diversity of insects in an outdoor area like a school yard can indicate the health of the habitat.</i>
	Nature of Discipline: <ol style="list-style-type: none"> Describe different ways that scientists seek to understand organisms and their interactions with the environment. Collaborate with other students in developing a scientific explanation about how organisms depend on their habitats.

Content Area: Science - Second Grade	
Standard: 2. Life Science	
Prepared Graduates: Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection	
GRADE LEVEL EXPECTATION	
Concepts and skills students master: 2. Each plant or animal has different structures or behaviors that serve different functions	
Evidence Outcomes	21st Century Skills and Readiness Competencies
Students can: <ol style="list-style-type: none"> a. Use evidence to develop an explanation as to why a habitat is or is not suitable for a specific organism b. Analyze and interpret data about structures or behaviors of a population that help that population survive 	Inquiry Questions: <ol style="list-style-type: none"> 1. What different structures do plants and animals have that perform the same functions? For example, what different structures do plants and animals have to get water?
	Relevance and Application: <ol style="list-style-type: none"> 1. A single environment can support a variety of living things that use different kinds and amounts of resources. 2. Body designs, such as the skull of a woodpecker or the nose of a dog, serve specific and unique jobs.
	Nature of Discipline: <ol style="list-style-type: none"> 1. Give feedback regarding the advantages of specific structures and behaviors. 2. Share observations, and provide and respond to feedback on ideas about the advantages of specific structures and behaviors.

3. Earth Systems Science

Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.

Prepared Graduates:

The preschool through twelfth-grade concepts and skills that all students who complete the Valwood School education system must master to ensure their success in a postsecondary and workforce setting.

Prepared Graduate Competencies in the Earth Systems Science standard:

- Describe and interpret how Earth's geologic history and place in space are relevant to our understanding of the processes that have shaped our planet
- Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system
- Describe how humans are dependent on the diversity of resources provided by Earth and Sun

Content Area: Science - Second Grade	
Standard: 3. Earth Systems Science	
Prepared Graduates: Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system	
GRADE LEVEL EXPECTATION: Second Grade Concepts and skills students master: 1. Weather and the changing seasons impact the environment and organisms such as humans, plants, and other animals	
Evidence Outcomes	21st Century Skills and Readiness Competencies
Students can: <ol style="list-style-type: none"> a. Use evidence to develop a scientific explanation for how the weather and changing seasons impact the organisms such as humans, plants, and other animals – and the environment b. Analyze and interpret data such as temperatures in different locations (sun or shade) at different times and seasons as evidence of how organisms and the environment are influenced by the weather and changing seasons c. Analyze ways in which severe weather contributes to catastrophic events such as floods and forest fires 	Inquiry Questions: <ol style="list-style-type: none"> 1. How does the temperature change at different times during the day (morning, noon, and evening) and from day to day? 2. What changes do we make in our daily lives based on changes in the weather? 3. How do weather patterns change throughout the year?
	Relevance and Application: <ol style="list-style-type: none"> 1. The weather and changing seasons impact organisms such as humans, plants, and other animals – and the environment. 2. Organisms and the environment are influenced by the weather and changing seasons.
	Nature of Discipline: <ol style="list-style-type: none"> 1. Ask testable questions about weather and the seasons. 2. Make predictions, share thinking, and ask others how they know that organisms and the environment are influenced by the weather and changing seasons. 3. Select and use appropriate tools to measure, record, and communicate data about the weather using appropriate units.