

Oxford Area School District Science Scope and Sequence

Quarter 1: Grade 1

3.1.1.A

Organisms and cells

- Characterize living and non living things by external characteristics.
- Investigate the dependence of living things on the sun's energy, water, food/nutrients, air, living space, and shelter.
- Identify and describe plant parts and their function

3.1.1.B

Genetics

- Grow plants from seeds and describe how they grow and change. Compare to adult plants.

3.1.1.C

Evolution

- **CONSTANCY AND CHANGE** Describe changes that occur as a result of habitat

Oxford Area School District Science Scope and Sequence

Quarter 2: Grade 1

3.2.1.B Physics

- Demonstrate various types of motion. Observe and describe how pushes and pulls change the motion of objects.
- Observe and record daily temperatures. Draw conclusions from daily temperature records as related to heating and cooling.
- Compare and contrast how light travels through different materials. Explore how mirrors and prisms can be used to redirect a light beam.
- 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.

3.3.1.B Origin and Evolution of the Universe

- Explain why shadows fall in different places at different times of the day.

3.2.1.A Chemistry

- Observe and describe the properties of liquids and solids. Investigate what happens when solids are mixed with water and other liquids are mixed with water.
- Identify how heating, melting, cooling, etc., may cause changes in properties of materials
- Observe and describe what happens when substances are heated and cooled. Distinguish between changes that are reversible (melting, freezing) and not reversible (e.g. baking a cake, burning fuel).
- CONSTANCY AND CHANGE Recognize that everything is made of matter.

3.3.1.A Earth Structure, Processes and Cycles

- Observe, describe, and sort earth materials. Compare the composition of different soils.
- Identify and describe types of fresh and salt-water bodies (ocean, rivers, lakes, ponds).
- Become familiar with weather instruments. Collect, describe, and record basic information about weather over time.

Oxford Area School District Science Scope and Sequence

Quarter 3: Grade 1

4.3.1 *Natural Resources*

- Identify some renewable resources used in the community.
- Recognize the difference between renewable and nonrenewable resources.

4.4.1 *Agriculture and Society*

- Describe the role of soil in agricultural systems.
- Identify products and by-products of the agricultural system.
- Describe the life cycle of different plants and animals in a terrestrial habitat
- Identify tools used by native Americans and early settlers in agriculture.

4.5.1 *Humans and the Environment*

- Identify resources humans use from the environment
- Describe why people consider some insects, plants and other living things to be pests, and ways to control their population numbers.
- Describe how pollution affects the health of a habitat
- Identify where the waste from home, school and community go for disposal.

Oxford Area School District Science Scope and Sequence

Quarter 4: Grade 1

4.2.1 *Watersheds and Wetlands*

- Explain the path water takes as it moves through the water cycle.

4.1.1 *Ecology*

- Identify and describe the basic needs of living things in a terrestrial habitat
- Describe a simple food chain within a terrestrial habitat.
- Identify living things that are threatened, endangered, or extinct.
- Describe the seasons and describe how the change of the season affects living things

Science as Inquiry

- Distinguish between 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 reviewed and ask questions about the work of other scientists.

Subject Curriculum – Grade level 1st Structure and Function			
Big Idea – Organisms have characteristic structures, functions, and behaviors that allow them to grow, reproduce, and die.			
Essential Question- How do the structures of organisms enable life’s functions?			
Concepts/Standards	Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts	Resources	Assessments
<ul style="list-style-type: none"> 3.1.1.A Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 	<ul style="list-style-type: none"> Design a device that solves a specific problem. All organisms have external parts. Different animals use their body parts in different ways. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals and plants respond with behaviors that help them survive. The shape and stability of structures of natural and designed objects are related to their functions. Human-made products need to be designed by applying knowledge of natural world. 	HMH Into Science	-Unit Test
Vocabulary Mimic, problem, solution			

Subject Curriculum – Grade level 1st Growth and Development of Organisms			
Big Idea –The characteristic structures, functions, and behaviors of organisms change in predictable ways as they progress from birth to old age.			
Essential Question- How do organisms grow and develop?			
Concepts/Standards	Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts	Resources	Assessments
<ul style="list-style-type: none"> 3.1.1.B Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 	<ul style="list-style-type: none"> Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world Scientists look for patterns when making observations. Adult plants and animals can have young and engage in behaviors that help them survive. Patterns in both natural and human worlds can be observed. 	HMH Into Science	- Unit Test
Vocabulary Behavior, observe, offspring			

Subject Curriculum – Grade level 1st Inheritance of Traits			
Big Idea – Offspring resemble, but are not identical to, their parents due to traits being passed from one generation to the next via genes			
Essential Question- How are the characteristics of one generation related to the previous generation?			
Concepts/Standards	Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts	Resources	Assessments
<ul style="list-style-type: none"> 3.1.1.C Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. 	<ul style="list-style-type: none"> Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. 	HMH Into Science	Unit Tests
Vocabulary Similar, vary			

Subject Curriculum – Grade level 1st Wave Properties			
Big Idea – What are the characteristic properties and behaviors of waves?			
Essential Question- How do particles combine to form the variety of matter one observes?			
Concepts/Standards	Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts	Resources	Assessments
<ul style="list-style-type: none"> 3.2.1.A Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. 	<ul style="list-style-type: none"> Plan and conduct investigations collaboratively to produce evidence to answer a question. Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. Simple tests can be designed to gather evidence to support or refute student ideas about causes. 	HMH Into Science	Unit Tests
Vocabulary Energy, investigation, material, sound, vibration, waves			

Subject Curriculum – Grade level 1st Electromagnetic Radiation			
Big Idea – Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave pattern of changing electric and magnetic fields that interact with matter.			
Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave pattern of changing electric and magnetic fields that interact with matter.			
Essential Question-			
<ol style="list-style-type: none"> 1. What is light? How can one explain the varied effects that involve light? What other forms of electromagnetic radiation are there? 2. What is light? How can one explain the varied effects that involve light? What other forms of electromagnetic radiation are there? 			
Concepts/Standards	Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts	Resources	Assessments
<ul style="list-style-type: none"> • 3.2.1.B Make observations to construct an evidence-based account that objects can be seen only when illuminated. • 3.2.1.C Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. 	<ul style="list-style-type: none"> • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. • Plan and conduct investigations collaboratively to produce evidence to answer a question. • Objects can be seen if light is available to illuminate them or if they give off their own light. • Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light 	HMH Into Science	Unit Tests

	<p>cannot reach. Mirrors can be used to redirect a light beam.</p> <ul style="list-style-type: none"> • Simple tests can be designed to gather evidence to support or refute student ideas about causes. • Simple tests can be designed to gather evidence to support or refute student ideas about causes. 		
<p>Vocabulary Illuminate, light, light beam, mirror, reflection</p>			

<p>Subject Curriculum – Grade level 1st Information Technologies and Instrumentation</p>			
<p>Big Idea – Useful modern technologies and instruments have been designed based on an understanding of waves and their interactions with matter.</p>			
<p>Essential Question- How are instruments that transmit and detect waves used to extend human senses?</p>			
<p>Concepts/Standards</p>	<p>Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts</p>	<p>Resources</p>	<p>Assessments</p>

<p>3.2.1.D Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</p>	<ul style="list-style-type: none"> • Use tools and materials provided to design a device that solves a specific problem. • People also use a variety of devices to communicate (send and receive information) over long distances. • People depend on various technologies in their lives; human life would be very different without technology. 	<p>HMH Into Science</p>	<p>Unit Tests</p>
<p>Vocabulary Communicate, distance, sound</p>			

<p>Subject Curriculum – Grade level 1st The Universe and Its Stars</p>			
<p>Big Idea – We can infer information about stars based on observations we make from Earth.</p>			
<p>Essential Question- What is the universe, and what is Earth’s place in it? What is the universe, and what goes on in stars?</p>			
<p>Concepts/Standards</p>	<p>Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts</p>	<p>Resources</p>	<p>Assessments</p>

<p>3.3.1.A Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p>	<ul style="list-style-type: none"> • Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. • Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. • Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. 	<p>HMH Into Science</p>	<p>Unit Tests</p>
<p>Vocabulary Changes, describe, moon, observe, pattern</p>			

<p>Subject Curriculum – Grade level 1st Earth and the Solar System</p>			
<p>Big Idea Observations of the sky can be explained by predictable patterns of the movement of Earth, moon, sun and planets.</p>			
<p>Essential Question- What are the predictable patterns caused by Earth’s movement in the solar system?</p>			
<p>Concepts/Standards</p>	<p>Science and Engineering Practices Disciplinary Core Ideas Cross Cutting Concepts</p>	<p>Resources</p>	<p>Assessments</p>
<p>3.3.1.B Make observations at different times of year to relate the amount of daylight to the time of year.</p>	<ul style="list-style-type: none"> • Make observations (firsthand or from media) to collect data that can be used to make comparisons. 	<p>HMH Into Science</p>	<p>Unit Tests</p>

	<ul style="list-style-type: none">• Seasonal patterns of sunrise and sunset can be observed, described, and predicted.• Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.		
Vocabulary Predict, sky, sunrise, sunset			