

Havre Public Schools Science Second Grade

Course Information:

Grade Level: 2

Length: Full Year

Essential Understanding:

In 2nd Grade, students will be exposed to 4 strands of science: physical science, life science, earth and space science and engineering and design. Students should be able to read second grade level science text, understand material read to them, and plan and conduct investigations to increase understanding.

Course Objectives:

- Literary skills will be applied to non-fiction science text.
- Design and conduct investigations and/or experiments.
- Use and analyze texts, experiments, investigations, and visual sources in order to increase understanding.
- Students will have an understanding of the three states of matter and the physical changes the properties make.
- Understand what a plant needs to survive.
- Model dispersing of seeds and pollination.
- Compare and contrast the diversity of life in plants and animals.
- Prove that Earth events can occur fast or slow.
- Explain wind and water's effects on the shape of land.
- Model landforms and bodies of water.

Student Objectives:

- I can read grade-level nonfiction science text.
- I can design and conduct experiments.
- I can understand the three states of matter and their physical changes.
- I can investigate what a plant needs to survive.
- I can create a model to show the dispersing of seeds or pollination.
- I can understand the differences between life forms and their habitats.
- I can provide examples of fast and slow changes on Earth.
- I can explain wind and water's impact on the shape of land.
- I can create models of landforms and bodies of water.

Pacing

Topic	Standard	Experiments/Projects
States of Matter (1 st trimester)	Physical Science PS1 -Plan and conduct an investigation to describe and classify various materials by their observable properties. -Conduct an investigation and analyze data to determine which materials have the properties best suited for an intended purpose. -Make observations to construct an evidence-based claim of how an object made of a small set of pieces can be disassembled and made into a new object. -Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	* Describing Matter * Properties of Matter * Understanding Solids, Liquids, and Gases and Using Them * Changing Matter * Temperature and Matter * Matter Within Objects

	Earth and Space Science ESS2 -Obtain information to identify where water is found on Earth and that water can be solid, liquid, or gas.	
Plant and Animal Life Cycles (2 nd trimester)	Life Science LS4 -Make observations of plants and animals to compare and contrast the diversity of life in different habitats.	* Plant Life Cycle * Plant Needs * Animal Life Cycles * Animal Needs * Plants Rely on Animals
Fast and Slow Changes (3 rd trimester)	Earth and Space Science ESS1 -Use information from several sources to provide evidence that Earth events can occur quickly or slowly. -Construct explanations to compare multiple physical and naturally built designs which impact wind or water's effect on the shape of the land.	* Describing Earth's Land * Exploring Earth's Water * Fast Changes on Earth * Slow Changes on Earth * People Change the Earth * Protecting Earth's Land and Water
	-Develop models to represent the shapes and kinds of land and bodies of water in an area. -Obtain information to identify where water is found on Earth and that water can be solid, liquid, or gas.	
Plants and Pollination (3 rd trimester)	Life Science LS2 -Plan and conduct a cause-and-effect investigation to determine whether plants need sunlight and water to grow. -Develop a simple model that mimics the structure and function of an animal in dispersing seeds or pollinating plants. -Make observations of plants and animals to compare and contrast the diversity of life in different habitats.	* Plant Life Cycle * Plant Needs * Animal Life Cycles * Animal Needs * Plants Rely on Animals
STEM (infused throughout each standard)	Physical Science PS1 -Conduct an investigation and analyze data to determine which materials have the properties best suited for an intended purpose. -Make observations to construct an evidence-based claim of how an object made of a small set of pieces can be disassembled and made into a new object.	All lessons taught in each standard has a STEM project associated within it.

Trimester 1
States of Matter
STEM

NGSS PS1 & NGSS ESS2
NGSS PS1, PS2, PS3, & PS4

Trimester 2
Plant and Animal Life Cycle
STEM

NGSS LS1 & NGSS LS2
NGSS PS1, PS2, PS3, & PS4

Trimester 3
Fast and Slow Changes
Plants and Pollination
STEM

NGSS ESS1 & NGSS ESS2
NGSS LS2
NGSS PS1, PS2, PS3, & PS4

Montana's Next Generation Science Standards:

Physical Science PS1 (NGSS identifier)

- 2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.**

Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.

- 2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.**

Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency. Assessment Boundary: Assessment of quantitative measurements is limited to length.

- 2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.**

Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.

- 2-PS1-4. Construct an argument with the evidence that some changes caused by heating or cooling can be reversed and some cannot.**

Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.

Life Science LS2 (NGSS Identifier)

- 2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.**

Assessment Boundary: Assessment is limited to testing one variable at a time.

- 2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.**

Life Science LS4 (NGSS Identifier)

- 2-LS4-1. Make Observations of plants and animals to compare the diversity of life in different habitats.**

Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.

Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.

Earth and Space Science ESS1 (NGSS Identifier)

- 2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.**

Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.

Assessment Boundary: Assessment does not include quantitative measurements of timescales.

Earth and Space Science ESS2 (NGSS Identifier)

- 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.**

Clarification Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

- 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.**

Assessment Boundary: Assessment does not include quantitative scaling in models.

- 2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.**

Resources

Science Standards- <https://opi.mt.gov/LinkClick.aspx?fileticket=qHA5q8j-oGw%3d&portalid=182>
[Comparison MT Sci Content Standards and NGSS.pdf](#)

Model Curriculum Guide <https://opi.mt.gov/Educators/Teaching-Learning/K-12-Content-Standards/Science-Standards#88989482-resources>

“Next Generation Science Standards.” NGSS Fact Sheet | Next Generation Science Standards, 10 Dec. 2018, www.nextgenscience.org/.

Google Earth

Super Teachers

Superkids Reading Program

Mystery Science <https://mysteryscience.com/>
www.youtube.com

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