PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144
CURRICULUM MAP 2ND GRADE – SCIENCE
LIFE

GRADE 2 SCIENCE **REVISED 2016**

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
Students who demonstrate understanding can: **2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.** **2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.**	**Science and Engineering Practices** **Developing and Using Models** Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions**.** • Develop a simple model based on evidence to represent a proposed object or tool. (2-LS2-2) **Planning and Carrying Out Investigations** Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-LS2-1) **Disciplinary Core Ideas (DCI)** **LS2.A: Interdependent Relationships in Ecosystems** • Plants depend on water and light to grow. (2-LS2-1) • Plants depend on animals for pollination or to move their seeds around. (2-LS2-2) **ETS1.B: Developing Possible Solutions** • Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (secondary to 2-LS2-2)	Science Book- Chapter 1 Lesson 3- "What Do Plants Need? Pages 66-73 Chapter 3 Lesson 1 – "What are the parts of a plant/" pages 116-123 Chapter 3 Lesson 3 – "What are some plant life cycles?" pages 132-139	• Test • Hands-on activities • Informal/formal Assessments • Observations

	Crosscutting Concepts **Cause and Effect** • Events have causes that generate observable patterns. (2-LS2-1) **Structure and Function** • The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)		

PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144
CURRICULUM MAP 2ND GRADE – SCIENCE
LIFE

GRADE 2 SCIENCE **REVISED 2016**

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
Students who demonstrate understanding can: **2-LS4-1. Make observations of plants and animals to compare the diversity of life in different hábitats.**	**Science and Engineering Practices** **Planning and Carrying Out Investigations** Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • Make observations (firsthand or from media) to collect data which can be used to make comparisons. (2-LS4-1) **Connections to Nature of Science** Scientific Knowledge is Based on Empirical Evidence • Scientists look for patterns and order when making observations about the world. (2-LS4-1) **Disciplinary Core Ideas (DCI)** **LS4.D: Biodiversity and Humans** • There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)	Science book Chapter 4 "Living things in their environments"	• Test • Hands-on activities • Informal/formal Assessments • Observations

PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144
CURRICULUM MAP 2ND GRADE – SCIENCE
EARTH

GRADE 2 SCIENCE **REVISED 2016**

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
Students who demonstrate understanding can: **2-ESS1-1. Make observations from media to construct an evidence-based account that Earth events can occur quickly or slowly.**	**Science and Engineering Practices** **Constructing Explanations and Designing Solutions** Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (2-ESS1-1) **Disciplinary Core Ideas** **ESS1.C: The History of Planet Earth** • Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (2-ESS1-1) **Crosscutting Concepts** **Stability and Change** • Things may change slowly or rapidly. (2-ESS1-1)		

PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144
CURRICULUM MAP 2ND GRADE – SCIENCE
EARTH

GRADE 2 SCIENCE **REVISED 2016**

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
Students who demonstrate understanding can: **2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.*** **2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.** **2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.** **2-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.**	**Science and Engineering Practices** **Developing and Using Models** Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. • Develop a model to represent patterns in the natural world. (2-ESS2-2) **Constructing Explanations and Designing Solutions** Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Compare multiple solutions to a problem. (2-ESS2-1) **Obtaining, Evaluating, and Communicating Information** Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. • Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question. (2-ESS2-3) **Disciplinary Core Ideas** **ESS2.A: Earth Materials and Systems** • Wind and water can change the shape of the land. (2-ESS2-1) **ESS2.B: Plate Tectonics and Large-Scale System Interactions** • Maps show where things are located. One can mapthe shapes and kinds of land and water in any area. (2-ESS2-2) **ESS2.C: The Roles of Water in Earth's Surface Processes** • Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.(2-ESS2-3)	Science Book- Unit C, Lesson 1, pages 197-201 Science Book page 202 Social Studies book- Unit 2, Lesson 3- Geography book Pages 32 - 45 Science Book Unit C- P204	• Test • Hands-on activities • Informal/formal Assessments • Observations

	ESS3.C: Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (1st-ESS3-3) **ETS1.C: Optimizing the Design Solution** • Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (secondary to 2-ESS2-1) **Crosscutting Concepts** **Patterns** • Patterns in the natural world can be observed. (2-ESS2-2),(2-ESS2-3) **Stability and Change** • Things may change slowly or rapidly. (2-ESS2-1) --- **Connections to Engineering, Technology, and Applications of Science** Influence of Engineering, Technology, and Science on Society and the Natural World • Developing and using technology has impacts on the natural world. (2-ESS2-1) --- **Connections to Nature of Science** Science Addresses Questions About the Natural and Material World • Scientists study the natural and material world. (2-ESS2-1)	Social Studies Book-Geography – pages 32-45	

PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144
CURRICULUM MAP 2ND GRADE – SCIENCE
PHYSICAL

GRADE 2 SCIENCE — REVISED 2016

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
Students who demonstrate understanding can: **2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.** **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.** **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.** **2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.**	**Science and Engineering Practices** **Planning and Carrying Out Investigations** Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. • Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.(2-PS1-1) **Analyzing and Interpreting Data** Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. • Analyze data from tests of an object or tool to determine if it works as intended. (2-PS1-2) **Constructing Explanations and Designing Solutions** Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (2-PS1-3) **Engaging in Argument from Evidence** Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s). • Construct an argument with evidence to support a claim. (2-PS1-4) --- **Connections to Nature of Science** Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena. • Scientists search for cause and effect relationships to explain natural events. (2-PS1-4)	Chapters 9 & 10 – changing substances from liquid to solid to vapor (i.e.)	• Test • Hands-on activities • Informal/formal Assessments • Observations

Disciplinary Core Ideas (DCI)

PS1.A: Structure and Properties of Matter

- Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (2-PS1-1)
- Different properties are suited to different purposes. (2-PS1-2),(2-PS1-3)
- A great variety of objects can be built up from a small set of pieces. (2-PS1-3)

PS1.B: Chemical Reactions

- Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (2-PS1-4)

Crosscutting Concepts

Patterns

- Patterns in the natural and human designed world can be observed. (2-PS1-1)

Cause and Effect

- Events have causes that generate observable patterns. (2-PS1-4)
- Simple tests can be designed to gather evidence to support or refute student ideas about causes. (2-PS1-2)

Energy and Matter

- Objects may break into smaller pieces and be put together into larger pieces, or change shapes. (2-PS1-3)

Connections to Engineering, Technology, and Applications of Science

Influence of Engineering, Technology, and Science on Society and the Natural World

- Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world. (2-PS1-2)

PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144

CURRICULUM MAP 2ND GRADE - SCIENCE

ENGINEERING DESIGN

GRADE 2ND SCIENCE — REVISED 2016

Next Generation Science Standard Performance Expectations	Performance Outcomes		Assessments
Students who demonstrate understanding can: **K-2-ETS1-1.** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. **K-2-ETS1-2.** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. **K-2-ETS1-3**. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Science and Engineering Practices** Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions. •Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1) •Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1) **Developing and Using Models** Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. •Develop a simple model based on evidence to represent a proposed object or tool. (K-2-ETS1-2) **Analyzing and Interpreting Data** Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. •Analyze data from tests of an object or tool to determine if it works as intended. (K-2-ETS1-3) **Disciplinary Core Ideas** **ETS1.A: Defining and Delimiting Engineering Problems** •A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1) •Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1) •Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1) **ETS1.B: Developing Possible Solutions** •Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (K-2-ETS1-2)	• Library • Science A-Z • Lab Experiments • Museum & Zoo Field Trips • Internet • Leveled Readers • Cross-Curriculum Texts • Career Community Involvement • Utilizing professional experts	• Test • Hands-on activities • Informal/formal Assessments • Observations

	ETS1.C: Optimizing the Design Solution •Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (K-2-ETS1-3) **Crosscutting Concepts** **Structure and Function** •The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-2)		