

Curriculum Map: 2nd Grade Science

Course: SCIENCE! Sub-topic: General

Grade(s): None specified

Course Description: In the second grade social science course, students will explore varying units of study that align with the Next Generation State Standards. Many of the units include the life cycles of various living things, and the units are aligned with the themes and seasons throughout the year.

Course Textbooks, Workbooks, Materials Citations: Materials are all supplementary and include units found online and books.

Unit: Life Cycle of Apples

Timeline: Week 1 to 3

Unit Description: Students will study the life cycle of an apple tree as well as the parts of an apple.

Unit Essential Questions: How does an apple tree change throughout the seasons of a year?
What are the main parts of an apple?
What is the legend of Johnny Appleseed?

Unit Big Ideas: Parts of an Apple
Cycle of an Apple Tree Through the Seasons
Johnny Appleseed

Unit Materials: Supplementary materials acquired from online resources and books will be used.

Unit Assignments: Labeling Activities
Depictions of the differences between the seasons of an apple tree
Johnny Appleseed informational writing

Unit Key Terminology & Definitions: Winter
Spring
Summer
Fall
Core
Seeds
Stem
Leaves
Johnny Appleseed

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-PS1-1 \(Advanced\)](#) Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

[2-ESS1-1 \(Advanced\)](#) Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

[K-2-ETS1-2 \(Advanced\)](#) 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.

(* standards consolidated from Topic level)

Topic: Parts of an Apple

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-PS1-1 \(Advanced\)](#) Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

[K-2-ETS1-2 \(Advanced\)](#) 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.

Topic: Apple Trees Through the Seasons

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS1-1 \(Advanced\)](#) Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Topic: Johnny Appleseed

Minutes for Topic: 90

Unit: Exploration and Characteristics of Autumn

Timeline: Week 1 to 5

Unit

Description: Students will explore the changes that occur throughout the season of Autumn.

Unit Essential Questions: Why do some leaves change color and fall to the ground?

How do animals change their lifestyles to prepare for the season change?

Unit Big Ideas: Changing of the leaves

Changes in animals

Unit Materials: Supplementary materials acquired from online resources and books are used.

Unit

Assignments: Leaf activity

Unit Key Terminology & Deciduous trees

Definitions: Evergreen trees

Chlorophyll

Hibernation

Harvest

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS2-1 \(Advanced\)](#) Plan and conduct an investigation to determine if plants need sunlight and water to grow.

[2-ESS1-1 \(Advanced\)](#) Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

(* standards consolidated from Topic level)

Topic: Leaves

Minutes for Topic: 60

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS2-1 \(Advanced\)](#) Plan and conduct an investigation to determine if plants need sunlight and water to grow.

Topic: Change of Seasons

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS1-1 \(Advanced\)](#) Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Unit: Bats

Timeline: Week 1 to 4

Unit Description: Students will study the unique characteristics of a bat and how they have adapted to their environments.

Unit Essential Questions: How does echolocation help a bat?
Why are bats nocturnal?

Unit Big Ideas: Echolocation

Parts of a Bat

Diet

Habitat

Nocturnal

Unit Materials: Supplementary materials acquired from online resources and books will be used.

Unit Assignments: Labeling
Informational Writing

Unit Key Terminology & Definitions: Echolocation
Nocturnal

Habitat

Wings

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

(* standards consolidated from Topic level)

Topic: Characteristics and Parts of a Bat

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Echolocation

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Types of Bats and their Habitats

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

Unit: Owls

Timeline: Week 1 to 4

Unit

Description:

Students will learn the characteristics of an owl and how they have adapted to their habitats.

Unit Essential

Questions:

How has an owl adapted to its environment?

Why is it important for an owl to be nocturnal?

Unit Big Ideas: Nocturnal

Hunting

Unit Materials: Supplementary materials will be acquired from online resources and books for this unit.

Unit Key

Communication

Terminology &

Definitions:

Nocturnal

Adaptations

Habitat

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

[K-2-ETS1-2 \(Advanced\)](#)

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.

(* standards consolidated from Topic level)

Topic: Parts of an Owl

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[K-2-ETS1-2 \(Advanced\)](#)

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.

Topic: Living in a Nocturnal Habitat

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Types and Characteristics of Owls

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#)

Make observations of plants and animals to compare the diversity of life in different habitats.

Unit: Skeletons

Timeline: Week 1 to 4

Unit**Description:** Students will learn the basic structure of the human skeleton.**Unit Essential****Questions:** What is the purpose of a skeletal structure?**Unit Big Ideas:** Skeletal Structure**Unit Materials:** Supplementary materials acquired from online resources and books will be used.**Unit Key** Bone**Terminology &****Definitions:** Structure**STANDARDS: STANDARDS**

NGSS Arranged by Topic - Science (2013)

[K-2-ETS1-2 \(Advanced\)](#)

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.

(* standards consolidated from Topic level)

Topic: Bones of the Body

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[K-2-ETS1-2 \(Advanced\)](#)

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.

Topic: Purpose of Bone Structure

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[K-2-ETS1-2 \(Advanced\)](#)

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.

Unit: Life Cycle of a Pumpkin

Timeline: Week 1 to 4

Unit Description: Students will learn the life cycle of a pumpkin plant and the many ways a pumpkin can be used.

Unit Essential Questions: How is the life cycle of a pumpkin similar to that of an apple?
What are the essential parts to the life cycle of a pumpkin?
How are pumpkins used?

Unit Big Ideas: Life Cycle of a Pumpkin
Ways a pumpkin can be used

Unit Materials: Supplementary materials will be acquired from online resources and books for this unit.

Unit Assignments: Labeling Activities
Pumpkin Activity

Unit Key Terminology & Definitions: Seeds
Flower
Vines
Pollination
Cycle

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS2-1 \(Advanced\)](#)

Plan and conduct an investigation to determine if plants need sunlight and water to grow.

[K-2-ETS1-2 \(Advanced\)](#)

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.

(* standards consolidated from Topic level)

Topic: Parts of a Pumpkin

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[K-2-ETS1-2 \(Advanced\)](#)

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.

Topic: Life Cycle of the Pumpkin Plant

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

Topic: Harvest and Purpose of Pumpkins

Minutes for Topic: 30

Unit: The First Thanksgiving

Timeline: Week 1 to 4

Unit Description: Students will learn about the First Thanksgiving through their study of the pilgrims making their voyage to America from England. Students will also study the interaction between the Wampanoag tribe and the Pilgrims.

Unit Essential Questions: Why did the Pilgrims make the voyage across the ocean?
How did the Wampanoag tribe help the Pilgrims adjust to the New Land?
How did the Pilgrims thank the Wampanoag tribe?

Unit Big Ideas: Pilgrims
Voyage on the Mayflower
Church of England
Wampanoag Indians
First Thanksgiving

Unit Materials: Supplementary materials will be acquired through online resources and books for this unit.

Unit Key Terminology & Definitions: Mayflower
Pilgrims
Church of England
Wampanoag Native Americans
Samoset
Massasoit
Squanto
Celebration

Topic: The Mayflower and Pilgrims

Minutes for Topic: 30

Topic: Reason Behind Leaving England

Minutes for Topic: 30

Topic: Roles of the Men, Women, and Children

Minutes for Topic: 30

Topic: The Wampanoag Tribe

Minutes for Topic: 30

Topic: Samoset, Massasoit, and Squanto

Minutes for Topic: 30

Topic: Celebration Behind the First Thanksgiving

Minutes for Topic: 30

Unit: Holidays Around the World

Timeline: Week 1 to 4

Unit Description: Students will compare and contrast the holidays celebrated in December from around the world.

Unit Essential Questions: How are the holidays the same?
How are the holidays different?

Unit Big Ideas: Holidays
Traditions

Unit Materials: Supplementary materials will be acquired through online resources and books.

Unit Key Terminology & Definitions: Traditions
Holidays

Topic: Christmas
Minutes for Topic: 30

Topic: Hanukkah
Minutes for Topic: 30

Topic: Saint Lucia Day (Sweden)
Minutes for Topic: 30

Topic: Christmas in Mexico
Minutes for Topic: 30

Topic: Christmas in Italy
Minutes for Topic: 30

Unit: Penguins and Polar Bears

Timeline: Week 1 to 4

Unit Description: Students will study the penguin and polar bear species, their habitats, and the affect that the environment has on the bodies of the animals.

Unit Essential Questions: How are the polar bear and penguin habitats the same? How are they different?
How are the penguin and polar bear bodies the same? Different?
In what ways have their bodies adapted to the environment?
What are the roles of the males and females of the groups?

Unit Big Ideas: Habitats
Blubber
Diet
Roles of the males and females
Adaptations to the environment

Unit Materials: Supplementary materials will be acquired from online resources and books.

Unit Key Terminology & Definitions: Blubber
Diet

Habitats

Adaptations

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

(* standards consolidated from Topic level)

Topic: Habitats of Penguins

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Parts of a Penguin

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Types of Penguins

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Roles of the Male and Female Penguins

Minutes for Topic: 30

Topic: Habitat of Polar Bears

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Parts of a Polar Bear

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Diet and Hunting Strategies of Polar Bears

Minutes for Topic: 30

Unit: Groundhogs

Timeline: Week 1 to 4

Unit Description: Students will study the anatomy of a groundhog, its habitat, and the folklore surrounding Groundhog's Day.

Unit Essential Questions: How does a groundhog utilize the environment to keep it healthy?
What is the folklore surrounding Groundhog's Day?

Unit Big Ideas: Names for the groundhogs
Anatomical adaptations to the environment
Folklore surrounding Groundhog's Day

Unit Materials: Supplementary materials acquired from online resources and book will be used.

Unit Key Terminology & Definitions: Whistle Pigs
Groundhogs
Woodchucks
Folklore
Predictions

STANDARDS: STANDARDS
NGSS Arranged by Topic - Science (2013)
[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

(* standards consolidated from Topic level)

Topic: Characteristics of a Goundhog

Minutes for Topic: 60

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS4-1 \(Advanced\)](#) Make observations of plants and animals to compare the diversity of life in different habitats.

Topic: Folklore Surrounding "Groundhog Day"

Minutes for Topic: 60

Unit: Dental Health

Timeline: Week 1 to 4

Unit Description: Students will explore the importance of good dental hygiene.

Unit Essential Questions: In what ways can we show good dental hygiene?
What is the importance of good dental hygiene?

Unit Big Ideas: Dental Hygiene

Unit Materials: Supplementary materials acquired from online resources and books will be used.

Unit Key Terminology & Definitions: Dental Hygiene

Topic: How to Take Care of Our Teeth

Minutes for Topic: 30

Topic: Importance Behind Good Dental Health

Minutes for Topic: 30

Unit: Weather

Timeline: Week 1 to 4

Unit Description: Students will learn and observe the characteristics and differences between types of weather.

Unit Essential Questions: What are the characteristics of:
a hurricane?
a tornado?
a thunderstorm?
a snow storm?
a blizzard?
How do meteorologists make predictions of the weather?
How can clouds be so different?

Unit Big Ideas: Hurricanes
Tornadoes
Thunderstorms
Snow Storms / Blizzards
Weather predictions
Types of clouds

Unit Materials: Supplementary materials will be acquired from online resources and books.

Unit Key Terminology & Definitions: Predictions
Cumulonimbus clouds
Cirrus clouds
Cumulus clouds
Tornado
Hurricane
Thunderstorm
Blizzard
Snow storm
Meteorologist

STANDARDS: STANDARDS
[NGSS Arranged by Topic - Science \(2013\)](#)
[2-ESS1-1 \(Advanced\)](#) Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

(* standards consolidated from Topic level)

Topic: Varying Types of Weather and Its Characteristics

Minutes for Topic: 60

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS1-1 \(Advanced\)](#)

Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Topic: Clouds

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS1-1 \(Advanced\)](#)

Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Topic: Temperature and Weather

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS1-1 \(Advanced\)](#)

Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Topic: Patterns of Weather and Seasons

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS1-1 \(Advanced\)](#)

Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Unit: Water Cycle

Timeline: Week 1 to 4

Unit**Description:** Students will discover the process known as the water cycle.**Unit Essential Questions:** What are the three main parts of the water cycle?

How do the parts of the water cycle work together?

Unit Big Ideas: Precipitation

Evaporation

Condensation

Water Cycle

Unit Materials: Supplementary materials will be acquired from online resources and books.**Unit Key Terminology &** Precipitation**Definitions:** Evaporation

Condensation

Water Cycle

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS2-1 \(Advanced\)](#) Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

(* standards consolidated from Topic level)

Topic:

Topic: Water Cycle

Minutes for Topic: 60

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-ESS2-1 \(Advanced\)](#) Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

Unit: Life Cycle of a Plant

Timeline: Week 1 to 4

Unit

Description: Students will explore and observe the parts of a plant and how its life is a cycle.

Unit Essential Questions: How does the life of a plant keep repeating?

What are the parts of a plant? What are their jobs?

Unit Big Ideas: Sprouts

Roots

Shoots

Flower Parts

Life cycle of a plant

Unit Materials: Supplementary materials will be acquired from online resources and books.

Unit Key Terminology & Sprouts

Definitions: Shoots

Roots

Petals

Stem

Cycle

STANDARDS: STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS2-1 \(Advanced\)](#) Plan and conduct an investigation to determine if plants need sunlight and water to grow.

(* standards consolidated from Topic level)

Topic: Parts of a Plant

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS2-1 \(Advanced\)](#)

Plan and conduct an investigation to determine if plants need sunlight and water to grow.

Topic: Cycle of a Plant

Minutes for Topic: 30

STANDARDS

NGSS Arranged by Topic - Science (2013)

[2-LS2-1 \(Advanced\)](#)

Plan and conduct an investigation to determine if plants need sunlight and water to grow.

Topic: Different Types of Plants

Minutes for Topic: 30

Unit: Earth Day

Timeline: Week 1 to 4

Unit

Description: Students will learn the importance and meaning behind Earth Day.

Unit Essential Questions: Why was Earth Day made a national holiday?

What does it mean to reduce? Reuse? Recycle?

Unit Big Ideas: Reduce

Reuse

Recycle

Conservation

Unit Key Terminology & Definitions: Reduce

Reuse

Recycle

Conservation

Topic: Reasons Behind Earth Day

Minutes for Topic: 30

Topic: How to Help Our Earth

Minutes for Topic: 30

Unit: Embryology

Timeline: Week 1 to 4

Unit

Description: Students will learn the life cycle of a chick through an embryology unit with in-classroom

incubation.

Unit Essential Questions: How does the life cycle of a chick keep repeating?

Tell the process of incubation for a chick.

Unit Big Ideas: Life cycle of a chick

Incubation

Unit Materials: Supplementary materials will be acquired from online resources and books.

Penn State Extension will provide materials for the embryology unit (incubation process)

Unit Key Incubation

Terminology &

Definitions: Life cycle

Embryo

Air sac

Shell

Shell membrane

Topic: Life Cycle of a Chicken

Minutes for Topic: 120

Topic: Parts of a Chick

Minutes for Topic: 30

Topic: Process and Responsibilities of Incubation

Minutes for Topic: 30