



1st Science YSWPCS

Science Fusion

Science Fusion will also be added to the YSWPCS first grade science curriculum. Science Fusion will align with the FOSS curriculum topics. Using both curriculums students will receive both text based instruction as well as hands on experiments.

- Module

Science Fusion Unit 1 How Scientists Work

Investigation

Lesson 1: How Do Engineers Work?

Lesson 2: How Can We Solve a Problem?

Lesson 3: What Materials Make Up Objects?

Lesson 4: How Can Materials Be Sorted?

Part

Lesson 1: SE p. 47-58

Lesson 2: SE p. 59-60

Lesson 3: SE p. 61-72

Lesson 4: SE p. 73-74

Eligible Content

S.K-2.A.1.1.1: Identify a scientific fact as something that can be observed using the five senses.

S.K-2.A.1.1.2: Identify examples of technology.

S.K-2.A.1.1.3: Describe how technology can help people (e.g., home appliances, phones, computers, transportation).

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.A.1.1.2: Identify examples of technology.

S.K-2.A.1.1.3: Describe how technology can help people (e.g., home appliances, phones, computers, transportation).

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.A.1.1.2: Identify examples of technology.

S.K-2.A.1.1.3: Describe how technology can help people (e.g., home appliances, phones, computers, transportation)

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.A.1.1.2: Identify examples of technology.

Common Core Standards/ OCDEL

3.1.A. Know that natural and human-made

objects are made up of parts

- Identify and describe what parts make up a system
- Identify systems that are natural

and human-made

B. Know models as useful simplifications of objects or processes

- Identify different types of models

3.2.A. Identify and use the nature of scientific

and technological knowledge

- Distinguish between a scientific fact and a belief

B. Describe objects in the world using the five senses

- Recognize observational descriptors from each of the five senses
- Use observation to develop a descriptive vocabulary

C. Recognize and use the elements of scientific inquiry to solve problems

- Generate questions about objects, organisms and/or events that can be answered through investigations

- Conduct an experiment

- State a conclusion that is consistent with information

D. Recognize and use the technological design process to solve problems

- Recognize and explain basic problems
- Identifying possible solutions and their course of action
- Try a solution
- Describing the solution, identifying its impacts and modifying if necessary

3.6.A. Know that information technologies

involve encoding, transmitting, receiving, storing, retrieving and decoding

- Identify electronic communication methods that exist in the community

- Demonstrate the ability to communicate an idea by applying basic sketching and drawing techniques

B. Know physical technologies of structural design, analysis and engineering, finance, production, marketing, research and design

- Identify and group a variety of construction tasks

- Know skills used in construction

- Identify examples of manufactured goods present in the home and school

- Identify basic resources needed to produce a manufactured item

3.7.A Explore the use of basic tools, simple

materials and techniques to safely solve problems

- Group tools and machines by their function
- Select and safely apply appropriate tools and materials to solve simple problems

B. Select appropriate instruments to study materials

- Develop simple skills to measure, record, cut and fasten
- Explain appropriate instrument selection for specific tasks

C. Identify basic computer operations and concepts

D. Use basic computer software

E. Identify basic computer communications systems

3.8.A. Explore the use of basic tools, simple

materials and techniques to safely solve problems

- Group tools and machines by their function
- Select and safely apply appropriate tools and materials to solve simple problems

B. Select appropriate instruments to study materials

- Develop simple skills to measure, record, cut and fasten
- Explain appropriate instrument selection for specific tasks

C. Identify basic computer operations and concepts

D. Use basic computer software

E. Identify basic computer communications systems

C. Know the pros and cons of possible solutions to scientific and technological problems in society

Essential Question(s)

How Do Engineers Work?

How Can We Solve a Problem?

What Materials Make Up Objects?

How Can Materials Be Sorted?

Vocabulary

engineer, design process, materials, natural, human-made

Science Content

Follow directions for an investigation to use the sense of touch to identify objects.

Plan and conduct an investigation to compare objects using a balance.

Use the five senses as tools to observe.

Compare observations with others.

Follow directions for an investigation to use inquiry skills such as measuring.

Plan and conduct an investigation to use inquiry skills such as making models.

Raise questions about the natural world and investigate them.

Plan and carry out an investigation based on questions asked.

Generate appropriate explanations based on the investigation.

Assessment(s)

4 weekly quizzes and 1 unit assessment

Duration

3 days per lesson, 12 days total.

Interdisciplinary Connections

Language Arts, Writing, Social Studies, Health

- Module

Science Fusion Unit 2: Technology All Around Us

Investigation

Lesson 1: How Do Engineers Work?

Lesson 2: How Can We Solve a Problem?

Lesson 3: What Materials Make Up Objects?

Lesson 4: How Can Materials Be Sorted?

Part

Lesson 1: SE p. 47-58

Lesson 2: SE p.59-60

Lesson 3:SE p.61-72

Lesson 4: SE p.73-74

Eligible Content

S.K-2.A.3.1.1: Describe a system as being made of multiple parts that work together.**S.K-2.A.1.1.2: Identify examples of technology.**

S.K-2.A.1.1.3: Describe how technology can help people (e.g., home appliances, phones, computers, transportation).

S.K-2.A.2.1.1: Understand that making a change to an investigation may change the outcome(s) of the investigation.

S.K-2.A.2.1.2: Describe outcomes of an investigation.

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

Common Core Standards/ OCDEL

3.6.A Know that information technologies

involve encoding, transmitting, receiving, storing, retrieving and decoding

- Identify electronic communication methods that exist in the community

- Demonstrate the ability to communicate an idea by applying

basic sketching and drawing techniques

B. Know physical technologies of structural design, analysis and engineering, finance, production, marketing, research and design

- Identify and group a variety of construction tasks
- Know skills used in construction
- Identify examples of manufactured goods present in the home and school
- Identify basic resources

4.7.A Explore the use of basic tools, simple

materials and techniques to safely solve problems

- Group tools and machines by their function
- Select and safely apply appropriate tools and materials to solve simple problems

B. Select appropriate instruments to study materials

- Develop simple skills to measure, record, cut and fasten
- Explain appropriate instrument selection for specific tasks

C. Identify basic computer operations

Essential Question(s)

Lesson 1: How Do Engineers Work?

Lesson 2: How Can We Solve a Problem?

Lesson 3: What Materials Make Up Objects?

Lesson 4: How Can Materials Be Sorted?

Vocabulary

engineer, design process, materials, natural, human-made

Science Content

Follow directions for an investigation to use the design process to build a landing pad for an egg.

Plan and conduct an investigation to use the design process to build a paper airplane.

Solve real-world problem.

Follow the steps of the design process.

Make a piece of artwork, and identify its natural and human-made materials.

Plan and conduct an investigation to classify natural and human-made materials.

Use the five senses to observe objects.

Assessment(s)

4 weekly quizzes and 1 unit assessment

Duration

3 lessons per week and 12 days total

Interdisciplinary Connections

Language arts, social studies, writing, health, physical education, art

- Module

Science Fusion Unit 3: Animals

Investigation

Lesson 1: What are living and nonliving things?

Lesson 2: What do Animals Need?

Lesson 3: How Are Animals Different?

Lesson 4: How Can we Group Animals?

Part

Lesson 1 SE pp. 83-92

Lesson 2: SE pp. 93-104

Lesson 3: SE pp. 107-118

Lesson 4: SE pp. 119-122

Eligible Content

S.K-2.B.1.1.1: Describe basic external structures of animals and plants.

S.K-2.B.1.1.2: Identify a plant or animal based on a given life cycle stage (e.g., butterfly, frog, seed-producing plant).

S.K-2.B.2.1.1: Identify and describe habitats (e.g., wetland, meadow, forest, lake, river, ocean, pond).

Common Core Standards/ OCDEL

3.3.A Know the similarities and differences of

living things

- Identify life processes of living things

- Know that some organisms have similar external characteristics and that similarities and differences are related to environmental habitat

- Describe basic needs of plants and animals

B. Know that living things are made up of parts that have specific functions

- Know that different parts of a living thing work together to make the organism function

C. Know that characteristics are inherited and, thus, offspring closely resemble their parents

- Identify physical characteristics that appear in both parents and offspring

D. Identify changes in living things over time (See Environme

4.3.A Know that plants, animals and humans

are dependent on air and water

- Know that all living things need air and water to survive

- Describe potentially dangerous pest controls used in the home

- Identify actions that can prevent or reduce waste pollution

B. Identify how human actions affect environmental health

- Identify litter and its effect on the environment

C. Understand that the elements of natural

systems are interdependent

- Identify some of the organisms that live together in an ecosystem

4.6.A Understand that living things are

dependent on non-living things in the environment for survival

- Identify and categorize living and non-living things
- Describe the basic needs of an organism
- Identify basic needs of a plant and an animal and explain how their needs are met
- Identify plants and animals with their habitat and food sources
- Understand the components of a food chain
- Identify a local ecosystem and its living and non-living components
- Identify a simple ecosystem and its living and non-living components
- Identify common soil textures
- Identify animals that live underground.

Essential Question(s)

What are living and non living things?

What do animals need?

How are animals different?

How can we group animals?

Vocabulary

living, reproduce, nonliving, shelter, reptile, environment, gills, shelter, mammal, bird, amphibian, fish, insect

Science Content

Differentiate between living and nonliving things.

Classify living and nonliving things.

Follow directions for an investigation to observe what mealworms need to grow.

Plan and conduct an investigation to identify how local birds meet their needs for food.

Sort animals by a variety of physical characteristics.

Apply the scientific concepts of scale and measurement.

Observe animals in books and observe their characteristics and properties.

Record observations on a chart.

Observe differences in physical characteristics.

Assessment(s)

4 weekly quizzes and 1 unit assessment

Duration

3 lessons per week, 12 lessons total

Interdisciplinary Connections

health, social, math, studies, writing, physical education

- Module

Science Fusion: Unit 4 Plants

Investigation

Lesson 1: What do plants need?

Lesson 2: Why do plants grow?

Lesson 3: What are some parts of plants?

Lesson 4: How are plants different?

Lesson 5: How can we compare leaves?

Part

Lesson 1: SE pp. 131-140

Lesson 2: SE pp. 141-142

Lesson 3: SE pp. 143-152

Lesson 4: SE pp.155-164

Lesson 5: SE pp. 165-166

Eligible Content

S.K-2.B.1.1.1: Describe basic external structures of animals and plants.

S.K-2.B.1.1.2: Identify a plant or animal based on a given life cycle stage (e.g., butterfly, frog, seed-producing plant).

S.K-2.D.1.2.1: Identify Earth's natural resources.

S.K-2.A.2.1.1: Understand that making a change to an investigation may change the outcome(s) of the investigation.

S.K-2.A.2.1.2: Describe outcomes of an investigation.

Common Core Standards/ OCDEL

4.3.A Know that plants, animals and humans

are dependent on air and water

- Know that all living things need air and water to survive
- Describe potentially dangerous pest controls used in the home
- Identify actions that can prevent or reduce waste pollution

B. Identify how human actions affect environmental health

- Identify litter and its effect on the environment

C. Understand that the elements of natural systems are interdependent

- Identify some of the organisms that live together in an ecosystem

4.6.A Understand that living things are

dependent on non-living things in the environment for survival

- Identify and categorize living and non-living things
- Describe the basic needs of an organism
- Identify basic needs of a plant and an animal and explain how their needs are met
- Identify plants and animals with their habitat and food sources
- Understand the components of a food chain
- Identify a local ecosystem and its living and non-living components
- Identify a simple ecosystem and its living and non-living components
- Identify common soil textures

Essential Question(s)

What do plants need?

Why do plants grow?

What are some parts of plants?

How are plants different?

How can we compare leaves?

Vocabulary

sunlight, soil, nutrients, root, stem, leaf, flower, seed, fruit, flower, cone

Science Content

Observe weather plants grow toward the light.
 Observe how water moves through a plant.
 raise questions about plants and investigate them.
 Observe that all ploants share the same basic needs.
 Explain that a plant will die if its basic needs are not met.
 Observe the diifferences between plant parts such as seeds.
 Plan and conduct an investigationto observe plant parts.
 Compare leaves from different kinds of plants by making rubbings.
 Compare flowers from different kinds of plants.
 Measure adn compare the size of leaves.

Assessment(s)

5 weekly quizzes and 1 unit assessment

Duration

3 days per lesson, 15 days total

Interdisciplinary Connections

language arts, math, health, writing

- Module

Science Fusion: Unit 5 Environments

Investigation

Lesson 1: Where Do Plants and Animals Live?
 Lesson 2: What is a Terrarium?

Part

Lesson 1: SE p. 175-186

Lesson 2: SE p. 189-190

Eligible Content

S.K-2.B.1.1.2: Identify a plant or animal based on a given life cycle stage (e.g., butterfly, frog, seed-producing plant).

S.K-2.B.1.1.1: Describe basic external structures of animals and plants.

Common Core Standards/ OCDEL

4.1.A Identify various types of water environments

- Identify the lotic system (e.g., creeks, rivers, streams)
 - Identify the lentic system (e.g., ponds, lakes, oceans)
- B. Explain differences between moving and still water
- Identify types of precipitation
 - Explain why some water moves and others do not

A. Identify various types of water environments

- Identify the lotic system (e.g., creeks, rivers, streams)
 - Identify the lentic system (e.g., ponds, lakes, oceans)
- B. Explain differences between moving and still water
- Identify types of precipitation
 - Explain why some water moves and others do not

4.6.A Understand that living things are

dependent on non-living things in the environment for survival

- Identify and categorize living and non-living things
- Describe the basic needs of an organism
- Identify basic needs of a plant and an animal and explain how their needs are met
- Identify plants and animals with their habitat and food sources
- Understand the components of a food chain
- Identify a local ecosystem and its living and non-living components
- Identify a simple ecosystem and its living and non-living components
- Identify common soil textures
- Identify animals that live underground.

4.7.A Identify differences in living things

- Identify characteristics that living things inherit from their parents
 - Explain why each of the four elements in a habitat is essential for survival
 - Identify local plants or animals and describe their habitat
- B. Define and understand extinction

Essential Question(s)

Lesson 1 : Where Do Plants and Animals Live?

Lesson 2: What Is a Terrarium?

Vocabulary

environment, shelter, food chain

Science Content

Follow directions for an investigation to observe animal and plant interdependence by modeling a food chain.

Plan and conduct an investigation to make a pet care plan.

Collect, record, and compare information using science tools to support observations of living things in their environment.

Explain that a terrarium has all of the things plants and animals need to survive.

Gather evidence of interdependence among living things.

Use the design process to design a butterfly sanctuary.

Assessment(s)

2 weekly quizzes and 1 unit assessment

Duration

3 lessons a week and 6 lessons total

Interdisciplinary Connections

health, art, writing, social studies

- Module

Science Fusion: Unit 6: Earth's Resources

Investigation

Lesson 1: What can we find on Earth?

Lesson 2: What are rocks and soil?

Lesson 3: What can we observe about rocks?

Lesson 4: How do soils differ?

Lesson 5: Where can we find water?

Lesson 6: How can we save resources?

Part

Lesson 1 SE pp. 199-208 Lesson 2 SE pp. 211-220 Lesson 3 SE pp. 221-222 Lesson 4 SE pp. 223-224 Lesson 5 SE pp. 225-236 Lesson 6 SE pp. 237-248

Eligible Content

S.K-2.A.1.1.1: Identify a scientific fact as something that can be observed using the five senses.

S.K-2.D.1.1.1: Identify different types of Earth materials (e.g., rock, soil, sand, pebbles).

S.K-2.D.1.2.1: Identify Earth's natural resources.

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

Common Core Standards/ OCDEL

A. Identify various types of water environments

-

Identify the lotic system

(e.g., creeks, rivers, streams)

-

Identify the lentic system

(e.g., ponds, lakes, oceans)

B. Explain differences between moving and still water

-

Identify types of precipitation

-

Explain why some water moves and others do not

A. Identify needs of people

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Identify plants, animals and water as natural resources

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Identify how the environment provides for the needs of people

B. Identify products derived from

natural resources

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Identify products made from trees

C. Know that some natural resources have limited life spans

-

Identify renewable and nonrenewable resources used in the local community

-

Identify various means of conserving natural resources

Identify and describe what parts make up a system

Identify systems that are natural and human-made

C. Know basic weather elements

Identify and describe types of fresh and salt-water bodies

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Identify examples of water in the form of solid, liquid and gas on or near the surface of the earth

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Explain and illustrate evaporation and condensation

Essential Question(s)

Lesson 1: What Can We Find on Earth?

Lesson 2: What Are Rocks and Soil?

Lesson 3: What Can We Observe About Rocks?

Lesson 4: How Do Soils Differ?

Lesson 5: Where Can We Find Water?

Lesson 6: How Can We Save Resources?

Vocabulary

natural resources, rock, soil, property, texture, stream, river, lake, ocean, pollution, reduce, reuse, recycle

Science Content

Plan and conduct an investigation to learn about how humans use natural resources such as plants.

Compare how water different soils can hold

Recognize that water, rocks, soil, plants, and animals are found on Earth's surface.

Describe how people use natural resources.

Identify and classify rocks based on their physical properties.

Identify where water is found on Earth.

Describe how pollution affects the environment.

Assessment(s)

6 weekly quizzes and 1 unit assessment

Duration

3 days per lesson, 18 days total

Interdisciplinary Connections

art, social studies, math, and writing

- Module

Exploring Dinosaurs

Investigation

Investigation 1: What is a dinosaur

Investigation 2: Fossils

Investigation: Dinosaur Species

Investigation 4: How Big is a Dinosaur?

Investigation 5: Fictional Dinosaurs

Part

What Is a Dinosaur:

Part 1: pre-assessment, introduce vocabulary and song

Part 2: The Magic School Bus: Herbivore, Omnivore, Carnivore

Part 3: The Magic School Bus: observing the time period

Fossils:

Part 1: Dinosaur Bones

Part 2: A Real Paleontologist

Part 3: Dinosaur Discoveries: Nonsense word bones

Dinosaur Species:

Part 1: Dinosaur

Part 2: Dinosaur goes to school

Part 3: Curious George and the Dinosaur Discoverer

How Big Was a Dinosaur?

Part 1: Big and Small Dinosaurs

Part 2: How Big was a Dinosaur

Part 3: Big and Small Dinosaurs

Fictional Dinosaurs

Part 1: Dancing Dinosaurs

Part 2: Create Your Own Dinosaur!

Part 3: Goldilocks and The Three Dinosaurs

Smart Board Review

Eligible Content

All organisms are made of cells and can be characterized by common aspects of their structure and functioning

Organisms grow, reproduce, and perpetuate other species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Common Core Standards/ OCDEL

PA Common Core:

3.1.1.A1: Categorize living and nonliving things by external characteristics.

3.1.1.A2: Investigate the dependence of living things on the sun's energy, water, food/nutrients, air, living space, and shelter.

3.1.1.A5: Identify and describe animal parts and their function.

3.1.1.A9:

- Distinguish between scientific fact and opinion.

Ask questions about objects, organisms, and events

Essential Question(s)

How do organisms live, grow, and respond to their environment, and reproduce?

How and Why do organisms interact with their environment and what are the effects of these interactions?

What is a paleontologist?

What is a reptile?

When were dinosaurs alive?

What did dinosaurs eat?

What is a fossil?

How do paleontologists use fossils to tell us about dinosaurs?

Why do dinosaurs have sharp or flat teeth?

What are 5 different dinosaur species?

How big was a dinosaur?

Vocabulary

paleontologist, fossil, dinosaur, prehistoric, herbivorous, carnivorous, omnivorous, reptiles, cold-blooded, warm-blooded, extinct

Science Content

Dinosaurs lived during the prehistoric era

Dinosaurs were live reptiles

Fossils include any remains of a former living thing

Fossils are studied by paleontologists

A herbivorous dinosaur ate vegetables

A carnivorous dinosaur ate meat

An omnivorous dinosaur ate meat and vegetables

Organisms obtain the materials they need to grow and survive from their environment

Organisms have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction

Assessment(s)

Pre-Assessment:

Triceretops skelton

Informative:

Daily writings

Observations

Summative Review

Formative:

Unit Test

Duration

15 days

Interdisciplinary Connections

Language Extension:

Listening to a story

Answering comprehension questions

Writing a response

non sense word reviews

Letter Recognition

Mathematics Extension:

addition

subtraction

color by number
connect the dots
counting
geometric shapes

- Module

Unit 7: Weather and Seasons

Investigation

Lesson 1: What is weather?

Lesson 2: What Can We Observe About Weather

Lesson 3: What Are Seasons?

Part

Lesson 1: SE p. 257-266

Lesson 2: SE p. 267-272

Lesson 3: SE p. 273-285

Eligible Content

S.K-2.A.2.1.1: Understand that making a change to an investigation may change the outcome(s) of the investigation.

S.K-2.A.2.1.2: Describe outcomes of an investigation.

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.A.2.1.1: Understand that making a change to an investigation may change the outcome(s) of the investigation.

S.K-2.D.2.1.1: Identify weather variables (i.e., temperature, wind speed, wind direction, and precipitation).

S.K-2.D.2.1.2: Identify how weather conditions affect daily life

Common Core Standards/ OCDEL

Identify cloud types

Explain how the different seasons affect plants, animals, food availability and daily human life

D. Recognize the earth's different water resources

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A. Identify and use the nature of scientific and technological knowledge

Distinguish between a scientific fact and a belief

B. Describe objects in the world using the five senses

Recognize observational descriptors from each of the five senses

Use observation to develop a descriptive vocabulary

C. Recognize and use the elements of scientific inquiry to solve problems

Generate questions about objects, organisms and/or events that can be answered through investigations

Conduct an experiment

State a conclusion that is consistent with information

C. Illustrate patterns that regularly occur and reoccur in nature

Identify observable patterns that occur in nature

Use knowledge of natural patterns to make predictions

D. Know that scale is an important attribute of natural and human-made objects, events and phenomena

E. Recognize change in natural and physical systems

Examine and explain change through recording observations

Describe the change to objects
caused by heat, cold or light

Essential Question(s)

Which tool could be used to measure rainfall?
What can we observe about weather?
In which season do many trees have no leaves?

Vocabulary

wind, weather, temperature, season, weather pattern

Science Content

Identify different kinds of weather.

Identify different tools used to measure weather.

Observe and record weather information over time.

Observe that wind is moving air.

Identify the different seasons and the kinds of weather found in each one.

Record weather information.

Explain how changes in weather affect plants and animals, including humans.

Describe the relationship between daily and seasonal changes.

Assessment(s)

3 weekly quizzes, 1 unit assessment

Duration

3 lessons a week, 9 lessons total

Interdisciplinary Connections

language arts, math, social studies, art, music

- Module

Unit 8: Objects in the Sky

Investigation

Lesson 1: What Can We See in the Sky

Lesson 2: How Does the Sky Seem to Change

Lesson 3: How Does the Sun Seem to Move

Part

Lesson 1: SE pp. 293-302

Lesson 2: SE pp. 305-314

Lesson 3: SE pp. 315-316

Eligible Content

S.K-2.A.1.1.2: Identify examples of technology.

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.A.3.1.1: Describe a system as being made of multiple parts that work together.

S.K-2.C.1.1.1: Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).

Identify cloud types

C. Know basic weather elements

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Identify cloud types

-

Explain how the different seasons

affect plants, animals, food

availability and daily human life

D. Recognize the earth's different water

resources

-

Identify and describe types of fresh

and salt-water bodies

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Identify examples of water in the

form of solid, liquid and gas on or

near the surface of the earth

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Explain and illustrate evaporation and condensation

Essential Question(s)

Lesson 1: What Can We See in the Sky?

Lesson 2: How Does the Sky Seem to Change?

Lesson 3: How Does the Sun Seem to Move?

Vocabulary

sun, star, moon, magnify, telescope, shadow, phases

Science Content

Observe and describe the characteristics of the daytime sky.

Observe and describe the characteristics of the nighttime sky.

Explain how the sun warms the land, air, and water.

Observe and record changes in the appearance of objects in the sky.

Assessment(s)

3 weekly quizzes and 1 unit assessment

Duration

3 days per lesson and 9 days total

Interdisciplinary Connections

physical education, social studies, art, and math

- Module

Air and Weather

Investigation

Investigation 1: Exploring Air

Investigation 2: Observing Weather

Investigation 3: Wind Explorations

Investigation 4: Looking for Change

Part

Exploring air:

Part 1: Air is there

Part 2: Air under water

Part 3: Parachutes

Part 4: Pushing on air

Part 5: Air and weather fountain

Part 6: Balloon rockets

Exploring weather:

Part 1: Weather calendars

Part 2: Measuring templates

Part 3: Watching Clouds

Part 4: Measuring Rain

Wind explorations:

Part 1: Bubbles in the wind

Part 2: Wind speed

Part 3: Pinwheels

Part 4: Wind Vanes

Part 5: Kites

Looking for change:

Part 1: Weather graphs

Part 2: Comparing the seasons

Part 3: The night sky

Eligible Content

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.A.1.1.1: Identify a scientific fact as something that can be observed using the five senses.

S.K-2.C.1.1.1: Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).

S.K-2.D.1.3.2: Describe natural events that alter Earth's surface (e.g., volcanic eruptions, floods, hurricanes, earthquakes).

S.K-2.D.2.1.1: Identify weather variables (i.e., temperature, wind speed, wind direction, and precipitation).

S.K-2.D.2.1.2: Identify how weather conditions affect daily life.

Common Core Standards/ OCDEL

3.1.1.C3:

CONSTANCY AND CHANGE

Describe changes that occur as a result of habitat.

3.1.1.C4:

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

3.2.1.B3: Observe and record daily temperatures. Draw conclusions from daily temperature records as related to heating and cooling.

Essential Question(s)

Exploring air:

How does air interact with objects?

How can I keep a paper towel dry underwater?

How does air affect how a parachute floats to the ground?

What happens when I push air into a smaller space?

How can I use air to push water around a system?

How can I use compressed air to propel a balloon rocket?

Observing weather:

How can we keep a record of daily weather conditions?

How does a thermometer work to measure the temperature?

Are all clouds the same?

What kinds of weather do different clouds bring?

How can we measure the amount of rain that falls?

Wind exploration:

How can bubbles be used to find out about wind speed and direction?

How do people describe the strength of the wind?

How can we use pinwheels to observe the direction of the wind?

How can we use weather instruments to improve kite flying?

Looking for change:

How can we organize weather data collected for a month to look for change?

How can we organize weather data taken over different seasons to look for change?

What is the night sky and how can we monitor and record our observations to look for change?

Vocabulary

Exploring air:

air, air resistance, barrel, bubble, compress, distance, fountain, gas, inflate, invisible, matter, move, paper towel, parachute, plunger, pressure, propel, rocket, submerge, syringe, system, travel, tubing, vial, water

Observing weather:

cirrus, clouds, cold, cool, cumulus, degrees Celsius, degrees Fahrenheit, freezing, hot, meteorologist, monitor, overcast, partly cloudy, rain gauge, rainy, snowy, stratus, sunny, symbol, temperature, thermometer, tool, warm, weather, weather instrument

Wind explorations:

anemometer, bubble, calm, direction, east, flying line, gentle breeze, kite, moderate breeze, north, pinwheel, south, strong breeze, tail, west, wind, wind vane

Looking for Change:

graph, change, column, Moon, precipitation, row, season, star, Sun, total

Science Content

Exploring Air:

- Air is matter.
- Air takes up space.
- Air interacts with objects.
- Air resistance affects how things move.
- Air is all around objects.
- Air can be compressed.
- The pressure from compressed air can move things.
- Air is a gas.

Observing weather:

- Weather is the condition of the atmosphere (air) and changes over time.
- Temperature, precipitation, and cloud types are components of the weather that can be described.
- Meteorologists are scientists who study weather.
- There are different kinds of clouds.
- Rain is water that comes from clouds

Wind explorations:

- Wind is moving air.
- Wind speed and wind direction are components of weather that can be described using anemometers and wind vanes.
- Wind scales are tools used to describe the speed of the wind.

Looking for change:

- Weather conditions change over time.
- Weather observations can be organized, compared, and predicted.
- The Sun heats the Earth during the day.
- Each season has a typical weather pattern that can be observed, compared, and predicted.
- The bright appearance of the Moon changes shape in a pattern that can be observed, compared, and predicted.
- The Sun and Moon appear to move slowly across the sky.

Assessment(s)

Preassessment- ideas about air

Informative:

Anecdotal records

Observations

Formative:

Student Journals

Summative Review

Duration

34 days

Interdisciplinary Connections

1.Math Extensions

- Solve two problems.

Science Extensions

- Student projects.
- Make an air cannon.
- Send air through a garden hose.
- Inflate a ball.

Language Extensions

- Create meteorologist tool kits.
- Explore weather lore.

2.Math Extensions

- Solve two problems.

Art Extensions

- Create foggy-day or cloud pictures.
- Go cloud watching.
- Make spilt-milk images.

Science Extensions

- Keep track of hourly weather.
- Make a temperature graph.
- Compare weather reports.

Language Extension

- Read wind poetry and stories.

3.Math Extensions

- Solve two problems.

Social Studies Extension

- Research kite culture.

Art Extension

- Create a wind catcher.

Science Extensions

- Try new kite designs and materials.
- Have a kite festival.
- Invite a kite expert.
- Bring wind catchers from home.

Language Extension

- Create seasonal acrostic poems.

4.Math Extensions

- Solve two problems.

Science Extension

- Look for weather graphs in the newspaper.

Unit 9: All About Matter

Investigation

Lesson 1: What can we observe about objects?

Lesson 2: What are solids, liquids, and gases?

Lesson 3: How can we measure temperature?

Lesson 4: How can matter change?

Lesson 5: What dissolves in water?

Part

Lesson 1: SE p. 325-336

Lesson 2: SE p. 339-348

Lesson 3: SE p. 349-350

Lesson 4: SE p. 351-360

Lesson 5: SE p. 361-362

Eligible Content

S.K-2.A.2.2.1: Identify simple tools that can be used in an investigation (e.g., measuring cup, hand lens, ruler, balance scale, thermometer).

S.K-2.C.1.1.1: Describe basic changes to properties of matter (e.g., formation of mixtures and solutions, baking and cooking, freezing, heating, evaporating, melting).

S.K-2.D.1.1.1: Identify different types of Earth materials (e.g., rock, soil, sand, pebbles).

S.K-2.D.1.3.1: Identify features on Earth's surface (e.g., lakes, rivers, oceans, mountains, plains, volcanoes).

S.K-2.D.2.1.1: Identify weather variables (i.e., temperature, wind speed, wind direction, and precipitation).

Common Core Standards/ OCDEL

A. Recognize basic concepts about the structure and properties of matter

-

Describe properties of matter

-

Know that combining two or more substances can make new materials with different properties

Describe various types of motions

Essential Question(s)

What can we observe about matter?

What are solids, liquids, and gases?

How can we measure temperature?

How can matter change?

What dissolves in water?

Vocabulary

matter, property, texture, weight, temperature, mass, solid, liquid, gas, mixture, dissolve

Science Content

Determine that everything around us is matter.

Identify examples of physical properties.

Observe objects and sort them by their properties.

Describe the role of scientists.

Realize that scientists come from all backgrounds.

Identify the role of technology in the work of scientists.

Describe how cutting, tearing, breaking, folding, shaping, and dissolving can change matter.

Identify types of mixtures.

Describe how some liquids separate when mixed with water, but others do not.

Identify solids that dissolve in water.

Explain how some solids dissolve better in hot water than cold water.

Identify different kinds of technology and their uses.

Explain the importance of different kinds of technology.

Assessment(s)

5 weekly quizzes, 1 unit assessment

Duration

15 days

Interdisciplinary Connections

language arts, math, art, music, social studies

- Module

Unit 10: Forces and Energy

Investigation

Lesson 1: How do objects move?

Lesson 2: How can we change the way objects move?

Lesson 3: How can we change motion?

Lesson 4: What is sound?

Lesson 5: How do we make sound?

Part

Lesson 1: SE p. 371-378

Lesson 2: SE p. 379-390

Lesson 3: SE p.393-394

Lesson 4: SE p. 395-404

Lesson 5: SE p.405-406

Eligible Content

S.K-2.A.2.1.1: Understand that making a change to an investigation may change the outcome(s) of the investigation.

S.K-2.A.2.1.2: Describe outcomes of an investigation.

Common Core Standards/ OCDEL

Know that combining two or more substances can make new materials with different properties

-

Know different material characteristics

B. Know basic energy types and sources

-

Identify energy forms and examples

C. Observe and describe different types of force and motion

-

Recognize forces that attract and repel other objects and demonstrate them

-

Describe various types of motions

Essential Question(s)

How do objects move?

How can we change the way objects move?

How can we change motion?

What is sound?

How do we make sound?

Vocabulary

motion, speed, push, pull, force, sound, vibrate, loudness, pitch

Science Content

Describe how objects move.

Demonstrate different ways that objects move.

Compare the relative speeds of objects.

Investigate ways to push and pull objects.

Identify and describe forces used to move or stop objects.

Describe how force can be used to change and objects speed, direction, and position.

Assessment(s)

5 weekly quizzes, 1 unit assessment

Duration

15 days

Interdisciplinary Connections

language arts, math, social studies, art, music

- Module

New Plants

Investigation

Investigation 1: Brassica seeds

Investigation 2: Grass and grain seeds

Investigation 3: Stems

Investigation 4: Bulbs and roots

Part

Brassica seeds:

Part 1: Introducing recording

Part 2: Planting Brassica

Part 3: Observing Brassica growth

Grass and grain seeds:

Part 1: Lawns

Part 2: Mowing the lawn

Part 3: Wheat

Stems:

Part 1: Rooting stem and cuttings

Part 2: New plants from cuttings

Part 3: Spuds

Bulbs and roots:

Part 1: Bulbs

Part 2: Planting roots

Eligible Content

s.1.3.3

A. Know the similarities and differences of living things

- Identify life processes of living things
- Know that some organisms have similar external characteristics and that similarities and differences are related to environmental habitat
- Describe basic needs of plants and animals

B. Know that living things are made up of parts that have specific functions

- Know that different parts of a living thing work together to make the organism function

C. Know that characteristics are inherited and, thus, offspring closely resemble their parents

- Identify physical characteristics that appear in both parents and

offspring

D. Identify changes

s.1.4.3

A. Know that plants, animals and humans are dependent on air and water

- Know that all living things need air and water to survive

- Describe potentially dangerous pest controls used in the home

- Identify actions that can prevent or reduce waste pollution

B. Identify how human actions affect environmental health

- Identify litter and its effect on the environment

C. Understand that the elements of natural systems are interdependent

- Identify some of the organisms that live together in an ecosystem

Common Core Standards/ OCDEL

3.1.1.A1: Categorize living and nonliving things by external characteristics.

3.1.1.A2: Investigate the dependence of living things on the sun's energy, water, food/nutrients, air, living space, and shelter.

3.1.1.A5: Identify and describe plant parts and their function.

3.1.1.A9:

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

3.1.1.B1: Grow plants from seed and describe how they grow and change. Compare to adult plants.

Essential Question(s)

Brassica Seeds:

What do we know about plants? How can we learn more about plants?

How can we learn more about plants?

How will we keep track of our new plants?

What do brassica plants need to live and grow?

What changes happen to brassica plants as they grow?

What do plants need?

Grass and grain:

What grows in a lawn?

Do all plants grow back after cutting them back?

How does a seed grow?

Stems:

How do we make a new plant from an old one?

How do we keep our cuttings alive?

Why do potatoes have eyes?

Bulbs and roots:

What are bulbs?

What other plant parts can grow new plants?

Vocabulary

Brassica seeds:

alive, brassica, bud, calendar, change, dead, fertilizer, flower, germination, grow, journal, leaf, light, nutrient, plant, pollen, root, seed, seedling, seedpod, soil, sprout, stem, water

Grass and grain:

alfalfa, bud, change, different, fertilizer, germination, grain, grass, grow, lawn, leaf, mold, mow, plant, root, rya, grass, same, seed, soil, sprout, stem, structure, wheat

Stems:

alive, bud, cutting, fertilizer, grow, leaf, node, plant, potatoe eye, root, soil, sprout, stem

Bulbs and roots:

bud, bulb, carrot, garlic, onion, radish, root, sprout, vermiculite

Science Content

Brassica seeds:

- Plants are alive.
- Seeds are alive and grow into new plants.
- Plants need water, air, nutrients, and light to grow and develop.
- As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.
- Bees and other insects help some plants by moving pollen from flower to flower.

Grass and grain seeds:

- Seeds are alive.
- Seeds need water and light to grow into new plants.
- Some plants die and some plants continue to grow after they are mowed.
- Wheat and other cereals that we eat come from seeds called grains.
- Plants have different structures that function in growth and survival.

Stems:

- New plants can grow from stems of mature plants.
- Plants need water and light to grow.
- Leaves, twigs, and roots develop on stems at the nodes.
- Potatoes are underground stems.

Bulbs and roots:

- Bulbs are alive.
- Bulbs need water to start growing.
- Parts of roots will grow into new plants. Other parts will not.

Assessment(s)

Preassessment

Informative: Anecdotal Records, Observation

Formative: Student Journals

Summative review

Duration

23 days

Interdisciplinary Connections

Brassica Seeds:

Language Extension

- Label a mature plant.

Math Extensions

- Solve two problems.

Science Extensions

- Plant your harvested brassica.
- Look for roadside brassica.

Grass seeds and grain:

Language Extension

- Tell the story of your plant.

Math Extensions

- Solve two problems.

Science Extensions

- Plant oat seeds.
- Grow plants in the dark.
- Plant radish-seed gardens.
- Grow flowers from seed.
- Try growing plants without water.

Stems:

Math Extensions

- Solve two problems.

Science Extensions

- Turn cuttings into gifts.
- Grow spider plants.
- Grow new plants from leaves.

Bulbs and roots:

Language Extension

- Illustrate homonyms.

Math Extensions

- Solve two problems.

Science Extensions

- Eat roots.
- Start other culinary bulbs.
- Grow a sweet potato in water.
- Plant flower bulbs

- Module

Balance and Motion

Investigation

Investigation 1: Balance

Investigation 2: Spinners

Investigation 3: Rollers

Part

Balance:

Part 1: Trick Crayfish

Part 2: Triangle Arch

Part 3: Pencil Trick

Part 4: Mobiles

Spinners:

Part 1: Tops

Part 2: Zoomers

Part 3: Twirlers

Rollers:

Part 1: Rolling Wheels

Part 2: Rolling Cups

Part 3: Rolling Spheres

Eligible Content

Standard 3.4 Physical Science, Chemistry, and Physics

C. Observe and describe different types of force and motion

- Recognize forces that attract and repel other objects and demonstrate them
- Describe various types of motions

3.2.B Physics

3.2.1.B1: Demonstrate various types of motion. Observe and describe how pushes and pulls change the motion of objects.

3.2.1.B7:

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

Essential Question(s)

What are the sequence of events to grow a plant?

What do Brassica plants need to grow?

What changes happen to Brassica plants as they grow?

What grows in a lawn?

Do all plants grow back after cutting them back?

How does a seed grow?

How can we make a new plant from an old one?

How do we keep our suttings alive?

Why do potatoes have eyes?

What other plants grow new plants?

Vocabulary

Investigation 1: Balance

[Arch](#)

[Balance](#)

[Balance point](#)

[Clothespin](#)

[Counterbalance](#)

[Counterweight](#)

[Crayfish](#)

[Mobile](#)

[Object](#)

[Position](#)

[Stable](#)

[System](#)

[Triangle](#)

[Unstable](#)

[Weight](#)

[Wire](#)

Investigation 2: Spinners

[Air resistance](#)

[Axis](#)

[Disk](#)

[Knot](#)

[Motion](#)

[Rotate](#)

[Shaft](#)

[Spin](#)

[Swirl](#)

[Top](#)

[Twirl](#)

[Twirler](#)

[Twist](#)

[Whirl](#)

[Wing](#)

[Zoomer](#)

Investigation 3: Rollers

[Axle](#)

[Loop](#)

[Ramp](#)

[Wheel](#)

[Roll](#)
[Runway](#)
[Slope](#)
[Sphere](#)
[Spiral](#)

Science Stories Terms

[Axis](#)
[Balanced](#)
[Counterbalance](#)
[Counterweight](#)
[Force](#)
[Gravity](#)
[Motion](#)
[Pitch](#)

[Roll](#)
[Spin](#)
[Stable position](#)
[Vibration](#)
[Volume](#)

Science Content

Balance:

- Objects can be balanced in many ways.
- A stable position is one that is steady; the object is not falling over.
- Counterweights can help balance an object.
- A mobile is a system of balanced beams and objects.

Spinners:

- Objects and systems that turn on a central axis exhibit rotational motion.
- The amount and position of mass affect how an object rotates.
- There are different ways to initiate rotational motion.
- The motion of an object can be changed by pushing or pulling.

Rollers:

- Wheels and spheres roll down a slope.
- Axles support wheels.
- Wheel-and-axle systems with wheels of different sizes roll toward the smaller wheel.
- The amount and location of an added weight can change the way a system rolls.

Assessment(s)

Preassessment

Informative: Anecdotal Records, Observation

Formative: Student Journals

Summative review

Duration

23 days

Interdisciplinary Connections

Balance:

Language Extensions

- Read Mirette on the High Wire.
- Write a how-to guide on balancing.

Math Extensions

- Solve two problems.
- Explore a balance used for weighing.

Science Extensions

- Balance new creations.
- Balance objects on strings.
- Make a double balance.
- Set up a mobile center.
- Make big mobiles.
- Student projects.

Art Extension

- Make a balance collage.

Spinners:

Language Extension

- Write poems about spinning.

Math Extensions

- Solve two problems.

Science Extensions

- Explore Tinkertoy™ tops.
- Start a top collection.
- Make big and little tops.
- Make singing zoomers.
- Make drawing tops.
- Make traditional twirly birds.
- Visit a toy store.

Art Extension

- Create spin art.

Language Extensions

- Discuss runway creations.
- Write rolling sentences.
- Write or illustrate the travels of a sphere.

Rollers:

Math Extensions

- Solve two problems.
- Chart rollers and spinners.

Art Extension

- Draw pathways.

Science Extensions

- Make giant wheels.
- Look at rolling toys.
- Investigate force with rolling