Unit 1 Summary:
In this unit, students will demonstrate what it means to think like a scientist. Students will practice asking questions to get information or clarify a problem. They will practice forming a hypothesis and experimenting to discover the answer. Students will also use drawings in order to design a solution to a problem. Lastly, students will form conclusions by comparing strengths and weaknesses.

Title of Unit:	**Subject Area:**
Introduction to Scientific Method and Engineering	Science

Next Generation Science Standards:

Science and Engineering Practices

Students who demonstrate understanding can:

K-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-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-ETS1-3 Analyze data from two tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

I Can Statements

I can think like a scientist.

I can ask questions and make observations to find a solution to a problem.

I can draw or build an object that solves a problem.

I can compare two objects and tell which one is better at solving a problem.

Academic Vocabulary
Observe
Solve
Problem
Question
Hypothesis
Experiment
Solution
Conclusion

Assessments

Formative	**Summative**
Questioning Accountable Talk Thumbs up/thumbs down Pair-Share **Common Formative** Observation Exit slips White Boards	Unit 1 Trimester Assessment Drawings Demonstrations

Resources

Books

- S is for Scientists: A Discovery Alphabet (Larry Verstraete)
- Mad Magaret Experiments with the Scientific Method (Eric Braun)
- Mistakes that Worked (Charlotte Jones)
- The Most Magnificent Thing (Ashley Spires)
- Meet Einsteen (Mariela Kleiner)
- What is Science? (Rebecca Kai Dotlich)
- What is a Scientist? (Barbara Lehn)
- It's Not Magic, It's Science (Hope Buttitta)
- Science Safety Rules (Kelli Hicks)
- I Use Science Tools (Kelli Hicks)

Readworks.org

- The Flying Machine
- The Bicycle Problem
- A Sticky Idea
- Ben Franklin's Idea
- Edison Tried and Tried Again

YouTube
Lessons By Frank

Unit 2 Summary:
In this unit, students will be able to distinguish between a push and a pull. Students will also be able to demonstrate and record data to compare the effects of different types of force on an object. Students will be able to design a structure that will reduce the effects of sunlight on the Earth's surface.

Title of Unit:	**Subject Area:**
Energy	Science

Next Generation Science Standards:

Physical Science

Students who demonstrate understanding can:

K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

K-PS2-2 Analyze and determine if a design solution works as intended to change the speed or direction of an object with a push or pull.

K-PS3-1 Make observations to determine the effect of sunlight on the Earth's surface.

K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.

I Can Statements

I can describe what happens to the motion of an object when pushed or pulled.

I can demonstrate different strengths of pushes and pulls on an object.

I can describe what happens to the motion of an object as more force is applied in the push or pull.

I can plan and conduct an investigation to compare the effects of different strengths of pushes and pulls on the motion of an object.

I can analyze data to determine if a design solution worked as intended to change the speed or direction of an object with a push or pull.

I can record data from an investigation.

I can explain how sunlight effects us.

I can explain what sunlight does to the earth surface.

I can build a structure to reduce the effects of sunlight on the Earth's surface.

Academic Vocabulary
Push
Pull
Motion
Force
Speed
Energy

Assessments

Formative	**Summative**
Questioning Accountable Talk Thumbs up/thumbs down Pair-Share **Common Formative** Observation Exit slips White Boards	Unit 2 Trimester Assessment Drawings Demonstrations

Resources

Books

- Forces Make Things Move-Let's Read and Find Out Science (by Kimberly Brubaker Bradley)
- Push and Pull-Rookie Read About Science (by Patricia J. Murphy)
- Gravity is a Mystery-Let's Read and Find Out Science (by Franklyn M. Branley)
- Oscar and the Cricket-A Book About Rolling and Moving (by Geoff Waring)
- Push and Pull-Investigate (by Charlotte Guillain)
- Push and Pull-The Way Things Move (Lola M. Schaefer)
- Give it a Push! Give it a Pull! (by Jennifer Boothroyd)
- Motion: Push and Pull, Fast and Slow (by Darlene Stille)
- Move it! Motion, Forces and You (by Adrienne Mason)
- Forces and Motion: A Question and Answer Book (by Catherine A. Welch)
- And Everyone Shouted, "Pull!": A First Look at Force and Motion (by Claire Llewellyn)
- Sheep in a Jeep (by Nancy E. Shaw)
- Energy From the Sun (Alan Fowler)
- Energy Makes Things Happen (Kimberly Brubaker Bradley)
- The Sun: Our Nearest Star (Franklyn Branley)
- Sunshine Makes the Seasons (Franklyn Branley)

Readworks.org

- A Big Push
- Will you push or pull?
- Who can pull harder?
- Racing cars can go?
- How to ride a skateboard?

YouTube
Science Clubhouse
Lessons By Frank
The Science Penguin

Unit 3 Summary:
In this unit, students will learn about the different types of weather and the importance of weather forecasting. Students will track daily weather to identify patterns in the weather and describe how these patterns help meteorologists predict future weather.

Title of Unit:	**Subject Area:**
Weather	Science

Next Generation Science Standards:

Earth and Space Science

Students who demonstrate understanding can:
K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time.

K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

I Can Statements

I can observe, record and describe daily weather.

I can name the four seasons and describe the weather during each season.

I can count the number of sunny, cloudy, windy, rainy, snowy, hot, cold and foggy days in a month by interpreting a monthly weather graph and calculating the number of days.

I can describe daily and monthly patterns of weather over time.

I can tell what a meteorologist does and why weather forecasting is important.

I can name ways to stay safe during severe weather.

Academic Vocabulary
Sunny
Cloudy
Windy
Rainy
Snowy
Hot
Warm
Cold
Forecast
Meteorologist
Stormchaser

Assessments

Formative	**Summative**
Questioning Accountable Talk Thumbs up/thumbs down Pair-Share **Common Formative** Observation Exit slips White Boards	Unit 3 Trimester Assessment Writings/Drawings Demonstrations

Resources

Books

- What Will the Weather Be? (Lynda DeWitt)
- Cloudy with a Chance of Meatballs (Judi Barrett)
- Floods (Casey Landers)
- Blizzards (Justin McCory Martin)
- Hurricanes (Justin McCory Martin)
- Tornadoes (Justin McCory Martin)
- Heat Waves (Lydia Carlin)
- Lightning (Justin McCory Martin)
- Rain (Erin Edison)
- Sunlight (Erin Edison)
- Lightning (Erin Edison)
- Snow (Erin Edison)
- Wind (Erin Edison)
- Clouds(Erin Edison)
- Rain (Marion Dane Bauer)
- Clouds (Marion Dane Bauer)
- Rain (Marion Dane Bauer)
- Wind (Marion Dane Bauer)
- The Kids Book of Weather Forecasting (Mark Breen)
- Weather Words and What They Mean (Gail Gibbons)
- Oh Say Can You Say What's the Weather Today? (Tish Rabe)
- Weather (Seymour Simon)

Readworks.org

- Cloudy and Sunny
- A Tornado Is Coming
- Clouds and Rain
- Blow, Wind, Blow
- The Story of a Snowflake
- The Longest and Shortest Days
- A Hurricane Is a Big Storm
- Walt's Class Watches Weather

DVD

- Weather (DK Eyewitness)

Lessons By Frank

You Tube

Science Clubhouse

Unit 4 Summary:
In this unit, students will be able to differentiate between living and nonliving things. Students will also understand how plants and animals adapt to their environments.

Title of Unit:	**Subject Area:**
Living and Nonliving	Science

Next Generation Science Standards:

Interdependent Relationships in Ecosystems: Animals, Plants and Their Environment

Students who demonstrate understanding can:

K-LS1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

E-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

I Can Statements

I can name what plants need to survive.

I can name what animals need to survive.

I can explain why animals live where they do.

I can explain how animals can change the environment to meet their needs.

I can explain how plants can change the environment to meet their needs.

I can explain the needs of plants and animals in relation to where they live.

Academic Vocabulary
Living
Nonliving
Habitat
Environment

Assessments

Formative	**Summative**
Questioning Accountable Talk Thumbs up/thumbs down Pair-Share **Common Formative** Observation Exit slips White Boards	Unit 4 Trimester Assessment Drawings Demonstrations

Resources

Books

- Living and Nonliving (Carol Lindeen)
- What's Alive (Kathleen Weidner Zoehfeld)
- Living and Nonliving (Kelli Hicks)
- Is It Living or Nonliving? (Rebecca Rissman)
- I Am a Living Thing (Bobbie Kalman)
- Living Things Need Water (Bobbie Kalman)
- Air (Why Living Things Need) (Daniel Nunn)
- Food (Why Living Things Need) (Daniel Nunn)
- Water (Why Living Things Need) (Daniel Nunn)
- Homes (Why Living Things Need) (Daniel Nunn)
- Light (Why Living Things Need) (Daniel Nunn)
- Water (What Living Things Need) (Vic Parker)
- Homes (What Living Things Need) (Vic Parker)
- Light (What Living Things Need) (Vic Parker)
- Air (What Living Things Need) (Vic Parker)
- Desert Animal Adaptations (Lisa Amstutz)
- Ocean Animal Adaptations (Julie Murphy)
- Animal Habitats (Julie K. Lundgren)

Readworks.org

You Tube Videos

Lessons By Frank

The Lion King Movie

Unit 5 Summary:
In this unit, students will be able to identify negative and positive choices humans can make and the impact of these choices on land, water, air and other living things in the environment. Students will identify a variety of ways to take care of the earth.

Title of Unit:	**Subject Area:**
Earth and the Environment	Science

Next Generation Science Standards:

Interdependent Relationships in Ecosystems: Animals, Plants and Their Environment

Students who demonstrate understanding can:

K-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.

I Can Statements

I can identify human actions that have an observable impact on land, water and air.

I can make choices to reduce human impact on the land, water and air.

I can communicate solutions that will reduce the impact of humans on land, water and air.

I can identify human actions that have an observable impact on other living things in the local environment.

I can make choices to reduce human impact on other living things in the local environment.

I can communicate solutions that will reduce the impact of humans on other living things in the environment.

I can draw, dictate and/or write to compose an informative text about taking care of the environment.

Academic Vocabulary
Recycle
Reduce
Reuse
Human impact
Human action
Problem
Solution

Assessments	
Formative Questioning Accountable Talk Thumbs up/thumbs down Pair-Share **Common Formative** Observation Exit slips White Boards	**Summative** Unit 5 Trimester Assessment Drawings Demonstrations

Resources

Books

- Saving Energy (Charlotte Gullian)
- Saving Water (Charlotte Gullian)
- Caring For Nature (Charlotte Gullian)
- Cleaning Up Litter (Charlotte Gullian)
- Reusing and Recycling (Charlotte Gullian)
- Why Should I Recycle? (Jen Green)
- Why Should I Save Energy? (Jen Green)
- Why Should I Protect Nature? (Jen Green)
- The Adventures of a Plastic Bottle: A Story About Recycling (Allision Inches)
- I Can Save the Earth: One Little Monster Learns to Reduce, Reuse and Recylce (Allison Inches)
- The Three R's: Reuse, Reduce, Recycle (Nuria Roca)
- Where Does Garbage Go? (Paul Showers)
- Michael Recycle (Ellie Bethel)
- The Adventures of an Aluminum Can: A Story About Recycling (Allison Inches)
- Michael Recycle Meets Litterbug Doug (Ellie Bethel)
- Compost Stew: An A to Z Recipe for the Earth (Mary Mckenna Siddals)
- Earth Day Everyday (Lisa Bullard)
- Looking After My Environment (Neil Morris)
- Saving Water (Neil Morris)
- Recycling (Neil Morris)
- Saving Energy (Neil Morris)

Readworks.org

- How Trees Help
- Save Your Paper, Help Earth

You Tube Videos

Lessons By Frank

The Lorax Movie

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