

## Young Scholars of Western Pennsylvania Charter School

### 5th Science Fusion YSWPCS

- Unit

Unit 1: How Scientists Work

Lesson

Lesson 1: What is Science?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understand that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.1.1.1; S.5.A.1.1.3; S.5.A.1.1.3

Science Content

- Describe the relationship between evidence and opinion in scientific explanation.
- Demonstrate the ability to observe, infer, investigate, compare, communicate, classify, order, draw conclusions, and use time/space relationships.
- Identify elements of well-designed investigations and valid conclusions.
- Explain how communication and collaboration among scientists can lead to constructive debate and changes in scientific thinking.

Vocabulary

investigation, science, evidence, opinion

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

13 Days (Whole Unit)

Interdisciplinary Connections

Social Studies - Timeline showing development of video games

Math - Make a line graph showing number of extrasolar planets discovered

Language Arts - Write a Help Wanted Ad

Art - Communicate with Multimedia

• Unit

Lesson

\*Lesson 2: How Do Scientists Learn About the Natural World?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.2.1.1; S.5.A.2.1.2; S.5.A.3.1.1

Science Content

- Describe how scientific knowledge differs from information gathered in other ways.
- Explain the relationship between evidence and explanations in science.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: What Are Some Types of Investigations?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.1.1.1; S.5.A.1.1.2; S.5.A.1.1.3; S.5.A.2.1.2; S.5.A.3.2.1

Science Content

- Explain that there are many methods to investigate phenomena, and compare various forms of investigations.
- Design controlled experiments and explain the importance of a control.
- Demonstrate the ability to predict; hypothesize; identify and control variables; experiment; formulate and use models; and collect, record, and interpret data.

Vocabulary

scientific methods, experiment, variable, control

Assessment(s)

Brain Check

## Informal Comprehension Questions

Duration

Interdisciplinary Connections

Social Studies - Construct a map

Language Arts - Write a summary abstract

Math - Construct line graphs recording temperature

Physical Education - design a spreadsheet to record a physical activity

• Unit

Lesson

Lesson 4: How Do You Perform a Controlled Experiment?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understand that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.1.1.1; S.5.A.1.1.2; S.5.A.2.1.1; S.5.1.2.1.2

Science Content

- Record data from repeated trials.
- Manipulate two types of variables.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

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Interdisciplinary Connections

N/A

- Unit

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Lesson

Lesson 5: What Are Some Science Tools?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.2.2.1; S.5.A.2.2.2

Science Content

- Demonstrate proper and safe use of science tools.
- Explain the importance of accuracy in measurements.
- Demonstrate the ability to use numbers and measure.

Vocabulary

microscopic, balance, spring scale, accurate

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

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Interdisciplinary Connections

Math - Comparing measurement tools

Art - Draw a close-up

Social Studies - Investigate Latitude and Longitude

Language Arts - Write an invitation

- Unit

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Lesson

Lesson 6: How Can Scientists Learn from Observations?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.1.1.1; S.5.A.1.1.2; S.5.A.2.2.1; S.5.A.2.2.2

Science Content

- Observe the natural world.
- Record observations.
- Explain why some investigations can only be conducted by observation.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

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Interdisciplinary Connections

N/A

- Unit

Unit 2: The Engineering Process

## Lesson

Lesson 1: What is the Design Process?

## Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

## Eligible Content

S.5.A.1.1.1; S.5.A.1.1.3

## Science Content

- Define engineering and technology.
- Identify how engineers find solutions to problems.
- Explain why a prototype is developed.

## Vocabulary

engineering, technology, prototype, criteria

## Assessment(s)

Brain Check

Informal Comprehension Questions

## Duration

9 Days (Whole Unit)

## Interdisciplinary Connections

Writing - Write a letter about an invention

Social Studies - Discover types of everyday technologies created due to research by NASA

Art - Illustrate changes to telephone

Physical Education - Compare gym of mid-1800s to present day gym

- Unit

## Lesson

Lesson 2: How Can You Design a Solution to a Problem?

## Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understand that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

## Eligible Content

S.5.A.1.1.1; S.5.A.1.1.2; S.5.A.1.1.3; S.5.A.2.1.1; S.5.A.2.2.2

## Science Content

- Build a model to solve a problem.
- Explain how redesign differs from design.
- Test a model using a unit of measurement.
- Redesign a model based on test results.
- Keep accurate design records.

## Vocabulary

N/A

## Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

- Unit

Lesson

Lesson 3: How Does Technology Improve Our Lives?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.1.1.1; S.5.A.2.2.2

Science Content

- o Give examples of technology used in daily life.
- o Describe why new products are developed.
- o Identify consequences or tradeoffs associated with new technology.

Vocabulary

bioengineering, biotechnology

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Music - Create a song about technology

Art - Illustrate history of technology products

Social Studies - Research the dangers of sending text messages while driving

Physical Education - Report on bioengineering foods

- Unit

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Lesson

Lesson 4: How Can You Use Engineering to Solve a Problem?

Standard(s)

3.1.5.A.9: Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understand that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.

Eligible Content

S.5.A.2.1.1; S.5.A.2.2.2

Science Content

- Construct an object (can opener).
- Design a tool to assist in the construction of the object.
- Analyze a tool and evaluate its effectiveness.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

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Interdisciplinary Connections

N/A

• Unit

Unit 3: Cells to Body Systems

Lesson

Lesson 1: What Are Cells?

Standard(s)

3.1.5.A.5: Explain the concept of a cell as the basic unit of life. Compare and contrast plant and animal cells.

Eligible Content

S.5.B.1.1.1; S.5.B.1.1.2; S.5.B.1.1.3

Science Content

- Describe how cells are the basic unit of structure and function in living things.
- Identify the parts of plant and animal cells.
- Explain the cell theory.

Vocabulary

cell, organism, cell membrane, nucleus, inherited trait, dominant trait, recessive trait

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

15 Days (Whole Unit)

Interdisciplinary Connections

Art - Make a 3-D Cell

Physical Education - Make a poster about recessive diseases

Writing - Write a poem about a cell

Social Studies - Identify pros and cons of gene testing

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- Unit

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Lesson

Lesson 2: How Can We Observe Cells?

Standard(s)

3.1.5.A.5: Explain the concept of a cell as the basic unit of life. Compare and contrast plant and animal cells.

Eligible Content

S.5.A.2.2.1; S.5.A.2.2.2; S.5.B.1.1.3

Science Content

- Use a microscope to observe cell structures of different kinds of cells.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

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Interdisciplinary Connections

N/A

- Unit

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Lesson

Lesson 3: How Do Cells Work Together?

Standard(s)

3.1.5.A.5: Explain the concept of a cell as the basic unit of life. Compare and contrast plant and animal cells.

Eligible Content

S.5.B.1.1.1; S.5.B.1.1.2

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 Science Content

- Describe the relationship between organs, organ systems, and organisms.
- Describe nervous system structures and their functions.
- Explain how the parts of the integumentary system help it function.

## Vocabulary

tissue, organ system, skin, organ, brain

## Assessment(s)

Brain Check

Informal Comprehension Questions

## Duration

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 Interdisciplinary Connections

Writing - Make a chart comparing structures for five senses

Physical Education - Nervous system race

Art - Make a sense organ

Math - Compare range of hearing frequencies with graph

- Unit

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## Lesson

Lesson 4: How Do Our Bodies Move, Breathe, and Circulate Blood?

## Standard(s)

3.1.5.A5 - Explain the concept of a cell as the basic unit of life. Compare and contrast plants and animal cells.

## Eligible Content

S.5.B.1.1.1; S.5.B.1.1.2

## Science Content

- Describe the structures of the skeletal system and their functions.
- Explain how the muscular system functions.
- Describe how the human body respires.
- Describe how nutrients and oxygen are obtained and transported through the human body.

## Vocabulary

bone, muscle, lung, heart

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

Interdisciplinary Connections

Music - Play a wind instrument  
Writing - Write a story traveling on a red blood cell  
Math - estimate the number of heart beats in one day  
Language Arts - Graphic organizer with heart-related words

• Unit

Lesson

Lesson 5: How Do Our Bodies Digest Food, Remove Wastes, and Send Messages?

Standard(s)

3.1.5.A5 - Explain the concept of a cell as the basic unit of life. Compare and contrast plants and animal cells.

Eligible Content

3.5.B.1.1.1; 3.5.B.1.1.2; 3.5.B.1.1.3

Science Content

- o Sequence the path of digestion in humans, and know the function of each organ involved with the process.
- o Describe the role of the kidneys and bladder in the process of waste removal.
- o Describe the function of the endocrine system and the role of hormones as chemical messengers.

Vocabulary

stomach, liver, pancreas, kidney, bladder

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

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Interdisciplinary Connections

Writing - Describe an imaginary robot that functions exactly like a human.

Math - Find an average

Physical Education - Monitoring your breathing

Writing - Persuasive letter for school cafeterias to post nutrition information

• Unit

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Lesson

Lesson 6: How Does the Body Stay Cool?

Standard(s)

3.1.5.A5 - Explain the concept of a cell as the basic unit of life. Compare and contrast plants and animal cells.

Eligible Content

S.5.B.1.1.1; S.5.B.1.1.2; S.5.B.1.1.3

Science Content

- Demonstrate the effects of evaporative cooling on body temperature.
- Identify a control group and explain why it is necessary in an experiment.
- Explain the difference between personal interpretation and verified observation.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

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Interdisciplinary Connections

N/A

• Unit

Unit 4: How Living Things Grow and Reproduce

Lesson

Lesson 1: How Are Living Things Grouped?

Standard(s)

3.1.5.A.3: Compare and contrast the similarities and differences in life cycles of different organisms.

Eligible Content

S.5.B.1.1.3

Science Content

- o Identify characteristics used to classify a group of objects.
- o Describe the basic characteristics of the six kingdoms of organisms.
- o Describe how scientists classify living things.

Vocabulary

classification, dichotomous key, domain, genus, species

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

15 Days (Whole Unit)

Interdisciplinary Connections

Art - Make your own classification table

Writing - Narrative about finding a new life form

Physical Education - Classifying diseases - caused by bacteria/viruses

Social Studies - Archea that live in extreme environments

• Unit

Lesson

## Lesson 2: What Is a Dichotomous Key?

## Standard(s)

3.1.5.B.1: Differentiate between inherited and acquired characteristics of plants and animals.

## Eligible Content

## Science Content

- Classify items based on characteristics they have or lack.
- Use a dichotomous key to classify items.

## Vocabulary

N/A

## Assessment(s)

Lab Sheet

## Duration

## Interdisciplinary Connections

N/A

- Unit

## Lesson

Lesson 3: How Do Plants Grow and Reproduce?

## Standard(s)

3.1.5.A.2: Describe how life on earth depends on energy from the sun.

3.1.5.A.3: Compare and contrast the similarities and differences in life cycles of different organisms.

## Eligible Content

S.5.B.1.1.3; S.5.B.2.1.3

## Science Content

- Know the reproductive structures of some vascular plants.
- Describe fertilization and seed development in plants.
- Explain the life cycle of simple plants.

Vocabulary

nonvascular plant, vascular plant, spore, gymnosperm, angiosperm, germinate

Assessment(s)

Duration

Interdisciplinary Connections

Art - Expressing with plants

Math - Germination rates calculations

Writing - Write about Mesozoic Era plants

Social Studies - write about the roles that flowers play in the lives of humans

• Unit

Lesson

Lesson 4: What Factors Affect Germination Rate?

Standard(s)

3.1.5.A.2 - Describe how life on earth depends on energy from the sun.

Eligible Content

S.5.B.2.1.4

Science Content

- Observe and record how light affects germination rate.
- Observe and record how amount of water affects germination rate.
- Infer what other factors may affect germination rate.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 5: How Do Animals Grow and Reproduce?

Standard(s)

3.1.5.A.3: Compare and contrast the similarities and differences in life cycles of different organisms.

Eligible Content

S.5.B.2.1.2; S.5.B.2.1.3

Science Content

- Describe how vertebrates and invertebrates are classified, and identify members of each group.
- Recognize that animal growth involves life cycles.
- Identify the stages of complete and incomplete metamorphosis.

Vocabulary

vertebrate, invertebrate, complete metamorphosis, incomplete metamorphosis, life cycle

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Music - Animals in song

Language Arts - Find all uses of the term "metamorphosis"

Writing - Write a story from the point of view of an insect as it goes through metamorphosis

Social Studies - Summarize ape communication research

• Unit

Lesson

Lesson 6: What Are Physical and Behavioral Adaptations?

Standard(s)

3.1.5.A.3: Compare and contrast the similarities and differences in life cycles of different organisms.

3.1.5.B.1: Differentiate between inherited and acquired characteristics of plants and animals.

Eligible Content

S.5.B.2.1.1; S.5.B.2.1.2; S.5.B.2.1.3

Science Content

- o Define adaptation.
- o Explain what physical and behavioral adaptations are.
- o Describe how a life cycle variation could help an organism survive in a particular habitat.

Vocabulary

adaptation, instinct

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Art - Comic book story about a superhero adaptation

Math - Word problem after hibernation

Writing - Form and function fill in the blank

Health - Presenting on human adaptations that help them stay healthy

- Unit

Unit 5: Ecosystems

Lesson

## Lesson 1: What is an Ecosystem?

## Standard(s)

3.1.5.A.2: Describe how life on earth depends on energy from the sun.

3.1.5.C.1: Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.

## Eligible Content

S.5.B.3.1.1; S.5.B.3.1.2

## Science Content

- Know what an ecosystem is.
- Explain how organisms interact with living and nonliving things in their ecosystem.
- Identify factors that affect diversity.

## Vocabulary

environment, ecosystem, population, community, habitat, niche

## Assessment(s)

Brain Check

Informal Comprehension Questions

## Duration

11 Days (Whole Unit)

## Interdisciplinary Connections

Art - make dioramas or collages of an ecosystem

Health - Discuss implications of destroying rain-forest ecosystems in terms of the effect on the discovery of new medicines.

Writing - Write descriptions of habitats that exist in their ecosystem

Social Studies - Research efforts to preserve tropical rain forests

- Unit

## Lesson

Lesson 2: What Makes Up a Land Ecosystem?

## Standard(s)

3.1.5.C.1: Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.

## Eligible Content

S.5.B.3.1.1; S.5.B.3.1.2

## Science Content

- Observe, identify, and classify common organisms in a land ecosystem,
- Compare the role, size, and diversity of organisms in an area.
- Draw conclusions about how organisms interact in a land ecosystem.

## Vocabulary

N/A

## Assessment(s)

Lab Sheet

## Duration

## Interdisciplinary Connections

N/A

- Unit

## Lesson

Lesson 3: How Do Environmental Changes Affect Organisms?

## Standard(s)

3.1.5.C.1: Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.

3.1.5.C.2: Give examples of how inherited characteristics (e.g., shape of beak, length of neck, location of eyes, shape of teeth) may change over time as adaptations to changes in the environment that enable organisms to survive

## Eligible Content

S.5.B.2.1.3; S.5.B.2.1.4

## Science Content

- Recognize succession as a change of the organisms living in an ecosystem.

- o Describe how changing ecosystems affect the organisms living there.
- o Explain how changes can cause extinction.

Vocabulary

succession, extinction

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Music - Write a song to a familiar tune about conserving resources

Writing - Persuasive letter about solving a problem in your community

Language Arts - Word origins of environment, ecosystem, habitat, and drought

Social Studies - Investigate how the cultures of local peoples living in rain-forest areas have been changed due to destruction

• Unit

Lesson

Lesson 4: How Does Drought Affect Plants?

Standard(s)

3.1.5.B.1: Differentiate between inherited and acquired characteristics of plants and animals.

Eligible Content

S.5.B.2.1.4

Science Content

- o Model normal growing conditions, drought, and flood conditions.
- o Describe how normal growing conditions affect plants.
- o Describe the effects of drought conditions on plant growth.
- o Describe the effects of flood conditions on plant growth.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Unit 6: Energy and Ecosystems

Lesson

Lesson 1: What Are Roles of Organisms in Ecosystems?

Standard(s)

3.1.5.C.1: Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.

Eligible Content

S.5.B.3.1.1

Science Content

- Identify producers and consumers.
- Define and describe photosynthesis.
- Learn how organisms obtain nutrients.

Vocabulary

photosynthesis, producer, decomposer, chlorophyll, consumer

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

9 Days (Whole Unit)

Interdisciplinary Connections

Math - Tree word problem

Writing - Write a one-paragraph explanation of why the dodo died out

Art - Draw animals that live in a pond and draw food cycle arrows

Writing - Write a short story about how the world would change if rain forests disappeared

• Unit



Lesson

Lesson 2: How Does Energy Move Through Ecosystems?

Standard(s)

3.1.5.A.2: Describe how life on earth depends on energy from the sun.

Eligible Content

S.5.B.3.1.2

Science Content

- o Describe how energy moves through an ecosystem.
- o Understand food chains and food webs.

Vocabulary

food chain, food web, energy pyramid

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration



Interdisciplinary Connections

Art - Illustrating food chain in your neighborhood

Math - Feeding fractions word problem

Writing - Write a letter to a pen pal in Canada explaining why the tundra should be preserved

Health - Determine how much energy it takes to raise plants as opposed to animals

- Unit

Lesson

Lesson 3: What Role Do Decomposers Play?

Standard(s)

Eligible Content

S.5.B.3.1.1

Science Content

- o Observe the growth of a fungus.
- o Describe the decomposition process.
- o Classify a fungus as a decomposer.
- o Explain why decomposers are important to an ecosystem.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

- Unit

Unit 7: Natural Resources

Lesson

Lesson 1: How Do People Use Resources?

Standard(s)

3.3.5.A.2: Describe the usefulness of Earth's physical resources as raw materials for the human made world.

Eligible Content

S.5.B.3.2.1; S.5.B.3.2.2

Science Content

- o Explain what a resource is.
- o Identify some of the resources found in the United States.
- o Describe air, water, and land pollution.

Vocabulary

natural resource, renewable resource, nonrenewable resource, pollution

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

9 Days (Whole Unit)

Interdisciplinary Connections

Math - Solving a word problem  
Art - Draw a diagram that shows how groundwater becomes contaminated.  
Writing - Write a letter about the importance of preventing pollution  
Social Studies - Categorize state's resources as renewable or nonrenewable

• Unit

Lesson

Lesson 2: How Do People Conserve Resources?

Standard(s)

3.3.5.A.2: Describe the usefulness of Earth's physical resources as raw materials for the human made world.

Eligible Content

S.5.B.3.2.3

Science Content

- o Understand conservation and its importance.
- o Identify ways in which people can contribute to conservation efforts.

Vocabulary

conservation

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Social Studies - Make a map of the town in which they live

Physical Education - Pick up litter and sort out recyclable items

Art - Draw a poster that shows how to conserve resources

Writing - Story from the point of view of a recyclable item from human use to recycling bins

• Unit

Lesson

Lesson 3: How Can We Conserve Resources?

Standard(s)

3.3.5.A.2: Describe the usefulness of Earth's physical resources as raw materials for the human made world.

Eligible Content

S.5.B.3.2.3

Science Content

- Draw conclusions about how recycled paper can conserve resources.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Unit 8 - Changes to Earth's Surface

Lesson

Lesson 1: How Do Weathering and Erosion Shape Earth's Surface?

Standard(s)

3.3.5.A.1: Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Eligible Content

S.5.D.1.1.1; S.5.D.1.1.2

Science Content

- Explain what is weathering and how it can change rock.
- Explain how erosion and deposition change Earth's surface.
- Describe how landforms can change over time.
- Contrast physical weathering and erosion.

Vocabulary

weathering, erosion, deposition, sediment

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

11 Days (Whole Unit)

Interdisciplinary Connections

Art - Map of state showing where various landforms are found

Math - Solve a word problem

Social Studies - Give an oral report about ice mummies

Writing - Write a story about a grain of sediment that has been weathered from a mountain

• Unit

Lesson

Lesson 2: How Does Water Change Earth's Surface?

Standard(s)

3.3.5.A.1: Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Eligible Content

S.5.D.1.1.1; S.5.D.1.1.2

Science Content

- Compare the effects of water moving at different speeds.
- Hypothesize about the causes and effects of water speed and slope in erosion.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: How Do Movements of the Crust Change Earth?

Standard(s)

3.3.5.A.3: Explain how geological processes observed today such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those in the past.

Eligible Content

S.5.D.1.1.1; S.5.D.1.1.2

Science Content

- o Describe what is below Earth's surface.
- o Explain how the movement of Earth's crust can change Earth's surface.

Vocabulary

crust, mantle, core, plate tectonics, earthquake, epicenter, fault, volcano

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

Interdisciplinary Connections

Social Studies - Researching Pompeii or Herculaneum  
Writing - First person account of being at a baseball game during an earthquake  
Math - Calculate fault motion  
Art - Timeline of an eruption

- Unit

Lesson

Lesson 4: How Do Plates Move?

Standard(s)

3.3.5.A.3: Explain how geological processes observed today such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those in the past.

Eligible Content

S.5.A.3.2.1

Science Content

- o Students will model the movement of plates.

- o Students will recognize what happens to Earth's surface when plates move.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

- Unit

Unit 9: The Rock Cycle

Lesson

Lesson 1: What Are Minerals?

Standard(s)

3.3.5.A1 - Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Eligible Content

S.5.C.1.1.1

Science Content

- o Explain what minerals are and how they form.
- o Identify the physical properties of minerals.
- o Sort minerals into groups based on their physical properties.

Vocabulary

mineral

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

11 Days (Whole Unit)

Interdisciplinary Connections

Art: Crafts with crystals

Math: Using percents to discuss mineral composition

Social Studies: Make a fact sheet about the state mineral

Writing: Research difference between minerals and mineral nutrients

• Unit

Lesson

Lesson 2: What Are Properties of Minerals?

Standard(s)

3.3.5.A1 - Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Eligible Content

S.5.C.1.1.1

Science Content

- o Describe the physical properties of several mineral samples.
- o Compare and contrast the hardness and streak of several minerals.
- o Predict the relative hardness of a mineral.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: How Can Rocks Be Classified?

Standard(s)

3.3.5.A1 - Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Eligible Content

S.5.C.1.1.1

Science Content

- o Recognize that Earth's surface is made up of rocks.
- o Recognize the physical characteristics of rock.
- o Identify the three types of rock, and explain how each forms.

Vocabulary

rock, igneous rock, metamorphic rock, sedimentary rock

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Art: Rock sculptor presentation and student clay sculptures

Math: Number line lava temperature

Social Studies: student-made poster about an important building or monument made out of rock materials

Writing: Fact sheet about specific type of rock

• Unit

Lesson

Lesson 4: How Can You Model Changes in Rock?

Standard(s)

3.3.5.A1 - Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.

Eligible Content

S.5.A.3.2.1

Science Content

o Students will explore how rock changes from one type to another.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Unit 10: Fossils

Lesson

Lesson 1: What Are Fossils?

Standard(s)

3.3.5.A2 - Describe the usefulness of Earth's physical resources as raw materials for the human made world.

Eligible Content

S.5.B.3.2.1

Science Content

o Understand how fossils and fossil fuels are formed.  
o Recognize different types of fossils.

Vocabulary

fossil, cast, mold, fossil fuel

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

9 Days (Whole Unit)

Interdisciplinary Connections

Art: Dinosaur models

Art: Drawing ancient organisms as they might have looked when they were alive

Social Studies: Create a map of coal deposits in North America

Math: Scale models of a prehistoric predator compared to a whale shark

• Unit

Lesson

Lesson 2: What Was Ancient Earth Like?

Standard(s)

3.3.5.A3 - Explain how geological processes observed today such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those in the past.

Eligible Content

S.5.D.1.1.2

Science Content

- Relate what fossils tell us about Earth's history.
- Describe what an index fossil is.
- Understand how fossils can be used to learn about ancient ecosystems.

Vocabulary

index fossil, mass extinction

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Art: Diorama of Pleistocene Epoch

Social Studies: Discuss period place names

Writing: Explain how scientists use fossils and rocks to interpret what an ancient environment was like

Social Studies: Research the discovery of an asteroid hitting Earth

- Unit

Lesson

Lesson 3: How Can Scientists Use Fossils?

Standard(s)

3.3.5.A3 - Explain how geological processes observed today such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those in the past.

Eligible Content

S.5.D.1.1.2

Science Content

- Understand how fossils are used to find the ages of rock layers.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

- Unit

Unit 11: Earth's Oceans

Lesson

Lesson 1: What Are the Oceans Like?

Standard(s)

3.3.5.A4 - Explain the basic components of the water cycle

Eligible Content

S.5.D.1.2.1

Science Content

- o Recognize how water differs in different parts of the ocean.
- o Describe what the ocean floor looks like.

Vocabulary

salinity, water pressure, continental shelf, continental slope, abyssal plain

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

11 Days (Whole Unit)

Interdisciplinary Connections

Language Arts: Adding suffixes -al or -ic

Art: Draw an animation sequence of a volcanic mountain building up underwater until it becomes an island

Writing: News report about a submersible that has traveled to ocean's deepest spot

Math: Model ocean volumes

- Unit

Lesson

Lesson 2: How Does Ocean Water Move?

Standard(s)

3.3.5.A4 - Explain the basic components of the water cycle.

Eligible Content

S.5.D.2.1.1; S.5.D.2.1.2

Science Content

- o Understand how ocean waves form.
- o Identify what causes currents and tides.
- o Explain how ocean waves and currents shape the shore.

Vocabulary

wave, current, tide, shore, jetty

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Writing: Five-day journal of an ocean crossing

Math: Find the mean high tide level

Language Arts: explore synonyms for wave

Art: Model a tsunami

- Unit

Lesson

Lesson 3: How Can You Model Ocean Water?

Standard(s)

3.3.5.A4 - Explain the basic components of the water cycle.

Eligible Content

S.5.D.2.1.1; S.5.D.2.1.2

Science Content

- o Observe how temperature affects ocean currents.
- o Observe how salinity affects ocean currents.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 4: What Are Some Ocean Ecosystems?

Standard(s)

3.1.5.C1 - Describe how some organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.

Eligible Content

S.5.B.3.1.1; S.5.B.3.1.2

Science Content

- o Recognize different ocean ecosystems.
- o Understand how the environment affects ocean ecosystems.

Vocabulary

intertidal zone, coral reef, plankton

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Language Arts: Make flash cards of organisms found in each of the ecosystems described in the lesson

Art: Make an ecosystem food web mobile

Math: Construct a bar graph

Music: Model whale songs

• Unit

Unit 12: The Solar System and the Universe

Lesson

Lesson 1: What Objects Are Part of the Solar System?

Standard(s)

3.3.5.B.1: Provide evidence that the earth revolves around (orbits) the sun in a year's time and that the earth rotates on its axis once approximately every 24 hours.

Eligible Content

3.5.D.3.1.2

Science Content

- Identify the major components of the solar system.
- Describe the major characteristics of the planets of the solar system.
- Compare and contrast the inner and outer planets.
- Describe some of the smaller objects that orbit the sun, such as asteroids, meteoroids, comets, and dwarf planets.

Vocabulary

solar system, planet, comet, dwarf planet, asteroid

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

9 Days (Whole Unit)

Interdisciplinary Connections

Language Arts: Write space poems  
Art: Create impressionist art that depicts a space scene  
Social Studies: Make a timeline of the discovery of Uranus, Neptune, and Pluto

Writing: Write a newspaper account of a comet's discovery

• Unit

Lesson

Lesson 2: How Do We Observe Objects in the Solar System?

Standard(s)

Eligible Content

S.5.A.3.2.1

Science Content

- Describe and model ways scientists learn about objects in the solar system.
- Demonstrate how observations are made and refined by asking questions.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: What Are Stars and Galaxies?

Standard(s)

Eligible Content

Science Content

- Explain that stars are very large and appear small in the sky because they are far away.
- Explain what galaxies are and how they are classified.
- Describe the solar system's place in the Milky Way galaxy.

Vocabulary

astronomy, star, universe, galaxy

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

Interdisciplinary Connections

Art: Create a model of the galaxy  
Social Studies: Research the history of galaxies and create an illustrated poster  
Math: Compare light-years and illustrate findings  
Language Arts: Research why stars were named as they were

• Unit

Unit 13: Matter

Lesson

Lesson 1: What Are Solids, Liquids, and Gases?

Standard(s)

3.2.5.A.1: Describe how water can be changed from one state to another by adding or taking away heat.

Eligible Content

S.5.C.1.1.1; S.5.C.1.2.1

Science Content

- Describe some physical properties of matter.
- Relate the states of matter to temperature and the arrangement and movement of particles.
- Compare solids, liquids, and gases based on their physical properties.

Vocabulary

matter, temperature, liquid, volume, solid, gas

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

15 Days (Whole Unit)

Interdisciplinary Connections

Art: Design pieces of artwork that have five properties on a list  
Writing: Write a poem about properties or states of matter  
Social Studies: Describe properties of two symbols of another country  
Health and Physical Education: Prepare a skit that shows at least one example of how solids, liquids, and gases are necessary for various sports

• Unit

Lesson

Lesson 2: How Does Water Change?

Standard(s)

3.2.5.A.1: Describe how water can be changed from one state to another by adding or taking away heat.

Eligible Content

S.5.C.1.1.1; S.5.C.1.2.1

Science Content

- Students will recognize that some properties, such as shape and appearance, may change during a change of state.
- Students will recognize that the mass of water remains unchanged as it undergoes a change of state.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: How Does Matter Change?

Standard(s)

3.2.5.A.1: Describe how water can be changed from one state to another by adding or taking away heat.

Eligible Content

S.5.C.1.2.2

Science Content

- Compare and contrast physical changes and chemical changes.
- Understand that during any physical or chemical change, the total mass remains unchanged.

Vocabulary

physical change, chemical change, reaction, conservation of mass

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Social Studies: Melt ice and discuss how global warming might affect glaciers and shorelines

Math: Mass word problem

Health and Physical Education: Measure temperature and discuss perspiration's role in controlling body temperature

Writing: Write a menu and list any physical or chemical changes used in preparing the item

- Unit

Lesson

Lesson 4: What Are Mixtures and Solutions?

Standard(s)

Eligible Content

S.5.C.1.1.1; S.5.C.1.2.2

Science Content

- o Compare and contrast mixtures and solutions.
- o Determine ways that mixtures can be separated.
- o Classify substances based on whether they dissolve in water.
- o Relate the properties of mixtures with the proportions of starting materials.

Vocabulary

mixture, solution

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Art: Mixing paint to compare shades

Math: Finding percentages in alloy compositions

Health and Physical Education: Research the importance of a specific vitamin to the human body

Social Studies: Research components of soil and examine a local soil sample

- Unit

Lesson

Lesson 5: What Affects the Speed of Dissolving?

Standard(s)

Eligible Content

S.5.C.1.2.2

Science Content

- Experiment to determine how temperature, stirring, and particle size affect the rate at which substances dissolve.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 6: What is the Atomic Theory?

Standard(s)

Eligible Content

Science Content

- Explain that matter is made of atoms and describe the structure of an atom.
- Identify some elements and describe how elements differ from one another.
- Compare an element to a compound.

Vocabulary

atom, element, molecule, atomic theory, compound

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Art: Make natural dyes

Writing: Write a quote from a famous scientist that relates to atoms

Health and Physical Education: Graph the composition of the human body

Math: Calculating amount of hydrogen atoms in an alkane

- Unit

Unit 14: Light and Sound

Lesson

Lesson 1: What is Sound?

Standard(s)

3.2.5.B.5: Compare the characteristics of sound as it is transmitted through different materials. Relate the rate of vibration to the pitch of the sound.

Eligible Content

S.5.C.2.1.1

Science Content

- o Recognize that sound travels in waves.
- o Understand that sound is transmitted by vibrations through mediums.

Vocabulary

wave, wavelength, amplitude, volume, pitch, frequency

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

13 Days (Whole Unit)

Interdisciplinary Connections

Music: Demonstrate pitch and volume

Health: Use an informational table to learn about decibel levels

Social Studies: Research and present on a sound scientist

Art: Make a painting or drawing that captures, illustrates, or otherwise involves some concept about sound

• Unit

Lesson

Lesson 2: How Does Sound Travel Through Solids, Liquids, and Gases?

Standard(s)

3.2.5.B.5: Compare the characteristics of sound as it is transmitted through different materials. Relate the rate of vibration to the pitch of the sound.

Eligible Content

S.5.C.2.1.1

Science Content

- Describe the differences in a given wave when it passes through different media.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: What is Light?

Standard(s)

3.2.5.B2 - Examine how energy can be transferred from one form to another

Eligible Content

S.5.C.2.1.1

Science Content

- Explain what light is and how it travels.
- Describe the electromagnetic spectrum

Vocabulary

light, electromagnetic spectrum

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Health: Make a poster of dangers and tips of using lasers

Math: Calculate how long it would take light to reach from Earth to Jupiter and Saturn

Art: Make a detailed painting that illustrates one or more of light's characteristics

Writing: Write a short science fiction story that involves the use of infrared, ultraviolet, X-ray, visible, or laser light

Unit

Lesson

Lesson 4: What Are Some Properties of Light?

Standard(s)

3.2.5.B2 - Examine how energy can be transferred from one form to another.

Eligible Content

S.5.C.2.1.1; S.5.C.2.1.2

Science Content

- Describe the effects of matter on light.
- Identify objects that are transparent, translucent, and opaque.

- o Identify the physical attributes of a convex lens, a concave lens, and a prism and where each is used.

Vocabulary

opaque, transparent, translucent, reflection, refraction, prism

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

Interdisciplinary Connections

Language Arts: Make a word web based around the terms opaque, transparent, and translucent

Social Studies: Research how lenses are manufactured

Art: Draw and label a prism and its effects

Math: Explain a camera's settings

• Unit

Lesson

Lesson 5: What Happens When Light is Reflected?

Standard(s)

Eligible Content

Science Content

- o Students will observe how a mirror reflects light.
- o Students will measure angles using a protractor.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

- Unit

Unit 15 - Forces and Motion

Lesson

Lesson 1: What Are Forces?

Standard(s)

3.2.5.B.1: Explain how mass of an object resists change to motion.

Eligible Content

S.5.C.3.1.1; S.5.C.3.1.2

Science Content

- o Identify some common forces.
- o Describe how varying the strength of a force affects the motion of an object.
- o Describe how objects of varying mass are each affected by a similar force.
- o Compare and contrast balanced and unbalanced forces.

Vocabulary

force, friction, unbalanced forces, gravity, balanced forces

Assessment(s)

Brain Check

Informal Comprehension Questions

Duration

11 Days (Whole Unit)

Interdisciplinary Connections

Physical Education: Identify objects that change their motion in the sport and the object that exerts the forces that cause the changes in motion.

Social Studies: Research Newton's laws of motion and make an illustrated poster that describes each law

Math: Word problem involving force

Writing: Research the reasons why astronauts experience "weightlessness"

• Unit

Lesson

Lesson 2: How Do Forces Affect Motion?

Standard(s)

3.2.5.B.1: Explain how mass of an object resists change to motion.

Eligible Content

S.5.C.3.1.2

Science Content

- Experiment to determine how the size of a force affects the motion of an object
- Experiment to determine how the mass of an object affects the object's motion when a force is applied.
- Explain why it is necessary to repeat measurements in an investigation.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

• Unit

Lesson

Lesson 3: What Are Balanced and Unbalanced Forces?

Standard(s)

3.2.5.B.1 - Explain how mass of an object resists change to motion.

Eligible Content

S.5.C.3.1.2

Science Content

- o Describe balanced and unbalanced forces.
- o Identify the forces that act on an object you are trying to move, and explain how to measure the force needed to overcome each.

Vocabulary

N/A

Assessment(s)

Lab Sheet

Duration

Interdisciplinary Connections

N/A

- Unit

Lesson

Lesson 4: What Are Newton's Laws?

Standard(s)

Eligible Content

S.5.C.3.1.2

Science Content

- o Explain the laws of motion
- o Describe inertia
- o Relate motion in space to the lack of gravity in orbit around Earth.

Vocabulary

inertia

Assessment(s)

Brain Check  
Informal Comprehension Questions

Duration

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Interdisciplinary Connections

Art: Draw and label forces

Social Studies: International Space Station poster

Physical Education: Demonstrate Newton's ideas

Music: Write how a person produces sound with each instrument, including explanation of how forces are applied as the instrument is played