**Brigantine Public School District**

Curriculum Template

**ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS**

| Curriculum Design | |
|---|---|
| **Content Area: Science** | |
| **Course Title: General Science** | **Grade Level: 2** |

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|---|---|
| **Unit 1: Objects in the Universe** | **8 Weeks** |
| **Unit 2: Ecosystems** | **8 Weeks** |
| **Unit 3: Changes in Nature** | **8 Weeks** |
| **Unit 4: Weather** | **8 Weeks** |
| **Unit 5: Transfer of Energy** | **8 Weeks** |

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| **Date Created:** | **July 2011** |
| **Board Approved on:** | **August 25, 2011** |

## Unit 1 Overview

**Content Area: Earth Science**

**Unit 1 Title:** Objects in the Universe

**Grade Level: 2**

**Unit Summary**

- The Sun will be identified as a star.
- The Moon is not a star and can be seen at various times of the day and night.
- The Moon appears to be different shapes at different times of the month.

**Primary interdisciplinary connections:** Math, Language Arts, and Technology

**21st century themes: 9.1-** This unit infuses the 21st Century Life & Careers standard 9.1, strands A-D. These strands include: Critical Thinking and Problem Solving; Creativity and Innovation; Collaboration, Teamwork and Leadership and Cross Cultural Understanding and Interpersonal Communication.

## Learning Targets

**Standards:**

**5.4 Earth Systems Science** Earth operates as a set of complex, dynamic, and interconnected systems, and is part of the all-encompassing system of the universe.

**5.1. A.B.C.D. Science Practices** This unit will infuse the four strands of the Science Practices standard. These focus on understanding scientific explanations; generating scientific evidence through active investigation; reflecting on scientific knowledge; and participating productively in science.

**Content Statements**

- The sun is a star that can only be seen during the day.
- The moon is not a star and can be seen sometimes at night and sometimes during the day.
- The Moon appears to have different shapes on different days.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| 5.4.2.A.1 | Determine a set of general rules describing when the Sun and Moon are visible based on actual sky observations. |

| Unit Essential Questions | Unit Enduring Understandings |
|---|---|
| • How are the Sun and Moon different? | • The sun is a star but the Moon is not<br>• The Sun can be seen during the day and |

| | |
|---|---|
| • How are they alike?<br>• How does the Moon change? | the Moon can sometimes be seen during the day but mainly at night. |

**Evidence of Learning**

**Suggested Summative Assessment**

Chapter Tests

**Formative Assessments**

- www.njcccs.org Classroom Application Docs
- Hands-on activities
- Performance based assessments
- Labs
- Projects
- Teacher observation

## Unit 2 Overview

**Content Area: Earth Science**

**Unit 2 Title:** Ecosystems

**Grade Level: 2**

**Unit Summary**

- All animals and most plants depend on both other organisms and their environment to meet their basic needs.
- Plants and animals have features that help them survive in different environments.
- The biogeochemical cycles in the Earth's systems include the flow of resources from one reservoir in the hydrosphere, geosphere, atmosphere, or biosphere to another.
- These cycles are driven by Earth's internal and external sources of energy, and are impacted by human activity.

**Primary interdisciplinary connections:** Math, Language Arts, and Technology

**21st century themes: 9.1-** This unit infuses the 21st Century Life & Careers standard 9.1, strands A-D. These strands include: Critical Thinking and Problem Solving; Creativity and Innovation; Collaboration, Teamwork and Leadership and Cross Cultural Understanding and Interpersonal Communication.

## Learning Targets

**Standards:**

**5.3 Life Science**: All students will understand that life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

**5.4 Earth Systems Science** Earth operates as a set of complex, dynamic, and interconnected systems, and is part of the all-encompassing system of the universe.

**5.1. A.B.C.D. Science Practices** This unit will infuse the four strands of the Science Practices standard. These focus on understanding scientific explanations; generating scientific evidence through active investigation; reflecting on scientific knowledge; and participating productively in science.

**Content Statements**

- Organisms interact and are interdependent in various ways; for example, they provide food and shelter to one another.
- A habitat supports the growth of many different plants and animals by meeting their

basic needs of food, water, and shelter.
- Humans can change natural habitats in ways that can be helpful or harmful for the plants and animals that live there.
- There are many sources and uses of water.
- Organisms have basic needs and they meet those needs within their environment.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| **5.3.2.C.1** | Describe the ways in which organisms interact with each other and their habitats in order to meet basic needs. |
| **5.3.2.C.2** | Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals. |
| **5.3.2.C.3** | Communicate ways that humans protect habitats and/or improve conditions for the growth of the plants and animals that live there, or ways that humans might harm habitats. |
| **5.4.2.G.2** | Identify and use water conservation practices. |
| **5.4.2.G.3** | Identify and categorize the basic needs of living organisms as they relate to the environment. |

**Unit Essential Questions**

- In what ways do organisms interact within ecosystems?
- How do humans influence habitats?
- How can we conserve and recycle water?

**Unit Enduring Understandings**

- All animals and most plants depend on both other organisms and their environments for their basic needs.
- Humans have positive and/or negative influences on habitats
- The water supply is an exhaustible resource and must be protected
- We can influence nature through recycling and conservation

**Evidence of Learning**

**Suggested Summative Assessment**

Chapter Tests

**Formative Assessments**

- www.njcccs.org Classroom Application Docs
- Hands-on activities
- Performance based assessments
- Labs
- Projects
- Teacher observation

## Unit 3 Overview

**Content Area: Life Science**

**Unit 3 Title: Changes in Nature**

**Grade Level: 2**

**Unit Summary**

- Organisms reproduce, develop, and have predictable life cycles.
- Organisms contain genetic information that influences their traits, and they pass this on to their offspring during reproduction.

**Primary interdisciplinary connections:** Math, Language Arts, and Technology

**21st century themes: 9.1-** This unit infuses the 21st Century Life & Careers standard 9.1, strands A-D. These strands include: Critical Thinking and Problem Solving; Creativity and Innovation; Collaboration, Teamwork and Leadership and Cross Cultural Understanding and Interpersonal Communication.

## Learning Targets

**Standards:**

**5.3 Life Science**: All students will understand that life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.

**5.1. A.B.C.D. Science Practices** This unit will infuse the four strands of the Science Practices standard. These focus on understanding scientific explanations; generating scientific evidence through active investigation; reflecting on scientific knowledge; and participating productively in science.

**Content Statements**

- Living organisms grow and develop in a predictable manner.
- Living organisms reproduce.
- Plants and animals often resemble their parents.
- Organisms have predictable characteristics at different stages of development.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| **5.3.2.A.1** | Group living and nonliving things according to the characteristics that they share. |
| **5.3.2.D.1** | Record the observable characteristics of plants and animals to determine the similarities and differences between parents and their offspring. |
| **5.3.2.D.2** | Determine the characteristic changes that occur during the life cycle of plants and animals by examining a variety of species, and distinguish between growth and development. |

| **Unit Essential Questions** | **Unit Enduring Understandings** |
|---|---|
| • How do organisms change as they go through their life cycle?<br>• In what ways are organisms of the same kind different from each other?<br>• How does this help them reproduce and survive? | • Organisms reproduce, develop and have predictable life cycles.<br>• Organisms pass on some traits to their offspring.<br>• Sometimes differences between organisms of the same kind give advantages in surviving and reproducing in different environments. |

**Evidence of Learning**

**Suggested Summative Assessment**

Chapter Tests

**Formative Assessments**

- www.njcccs.org Classroom Application Docs
- Hands-on activities
- Performance based assessments
- Labs
- Projects
- Teacher observation

## Unit 4 Overview

**Content Area: Earth Science**

**Unit 4 Title:** Weather

**Target Course/Grade Level: 2**

**Unit Summary**

Earth's weather and climate systems are the result of complex interactions between land, ocean, ice, and atmosphere

**Primary interdisciplinary connections:** Math, Language Arts, and Technology

**21st century themes: 9.1-** This unit infuses the 21st Century Life & Careers standard 9.1, strands A-D. These strands include: Critical Thinking and Problem Solving; Creativity and Innovation; Collaboration, Teamwork and Leadership and Cross Cultural Understanding and Interpersonal Communication.

## Learning Targets

**Standards:**

**5.4 Earth Systems Science**: All students will understand that Earth operates as a set of complex, dynamic, and interconnected systems, and is a part of the all-encompassing system of the universe.

**5.1. A.B.C.D. Science Practices** This unit will infuse the four strands of the Science Practices standard. These focus on understanding scientific explanations; generating scientific evidence through active investigation; reflecting on scientific knowledge; and participating productively in science.

**Content Statements**

- Current weather conditions include air movement, clouds, and precipitation.
- Weather conditions affect our daily lives.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| 5.4.2.F.1 | Observe and document daily weather conditions and discuss how the weather influences your activities for the day. |

| Unit Essential Questions | Unit Enduring Understandings |
|---|---|
| • How does weather influence our daily lives?<br>• How do we predict weather?<br>• What types of weather do we experience? | • Weather influences our lives in many ways.<br>• Weather can be predicted using weather instruments.<br>• Weather patterns vary depending on where you live |

| Evidence of Learning | |
|---|---|
| **Suggested Summative Assessment**<br>Chapter Tests | |
| **Formative Assessments**<br>• www.njcccs.org Classroom Application Docs<br>• Hands-on activities<br>• Performance based assessments | • Labs<br>• Projects<br>• Teacher observation |

## Unit 5 Overview

**Content Area: Physical Science**

**Unit 5 Title:** Energy Transfer

**Grade Level: 2**

**Unit Summary**

The conservation of energy can be demonstrated by keeping track of familiar forms of energy as they are transferred from one object to another.

**Primary interdisciplinary connections:** Math, Language Arts, and Technology

**21st century themes: 9.1-** This unit infuses the 21st Century Life & Careers standard 9.1, strands A-D. These strands include: Critical Thinking and Problem Solving; Creativity and Innovation; Collaboration, Teamwork and Leadership and Cross Cultural Understanding and Interpersonal Communication.

## Learning Targets

**Standards:**
**5.2 Physical Science:** Physical science principles, including fundamental ideas about matter, energy, and motion, are powerful conceptual tools for making sense of phenomena in physical, living, and Earth systems science.

**5.1. A.B.C.D. Science Practices** This unit will infuse the four strands of the Science Practices standard. These focus on understanding scientific explanations; generating scientific evidence through active investigation; reflecting on scientific knowledge; and participating productively in science.

**Content Statements**

- Batteries supply energy to produce light, sound, or heat.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| 5.2.2.D.1 | Predict and confirm the brightness of a light, the volume of sound, or the amount of heat when given the number of batteries, or the size of batteries. |

| Unit Essential Questions | Unit Enduring Understandings |
|---|---|
| • How do batteries supply energy?<br>• How can energy be transferred from one material to another and what happens to a material when energy is transferred to it? | • Changes take place because of the transfer of energy/action of forces.<br>• Different forces are responsible for the transfer of the different forms of energy. |

| Evidence of Learning | |
|---|---|
| **Suggested Summative Assessment**<br>Chapter Tests | |
| **Formative Assessments**<br>• www.njcccs.org Classroom Application Docs<br>• Hands-on activities<br>• Performance based assessments | • Labs<br>• Projects<br>• Teacher observation |