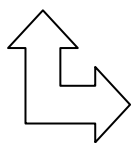


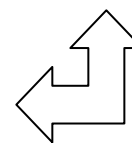
Grade 2 Science

Unit Title	2.1 Energy in Motion
Time frame	12 Weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Social Studies- Using a compass Physical Education- Gravity Games Language Arts/ESL- Word of the Day (Vocabulary Words) Technology- Use the internet to explore batteries, forces and motion.

Essential Questions	↔	Big Ideas
<ul style="list-style-type: none"> • How can energy be transferred from one material to another? • What happens to a material when energy is transferred to it? 	↔	Changes take place because of the transfer of energy. Energy is transferred to matter through the action of forces. Different forces are responsible for the transfer of the different forms of energy.



Learning Targets-students will be able to:
<ul style="list-style-type: none"> •Recognize a force as something that pushes or pulls on an object to make it move •Identify that a force is used to change the location of an object and the direction it is moving in •Describe which poles of magnets attract and repel each other •Give examples of ways magnets are used •Recognize that weight, friction, and distance affect the force needed to move objects •Explain how to measure motion •Determine how much force is needed to move an



object

- List objects that operate on batteries and objects that “do work” such as an eraser and do not require batteries
- Compare the types of batteries and the objects the power and form conclusions about the relationship between batteries and work required
- Explain where energy comes from

Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

Content Standards

5.1 Science Practices: All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

Physical Science

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.

5.2.2.E.1 Investigate and model the various ways that inanimate objects can move.

5.2.2.E.2 Predict an object’s relative speed, path, or how far it will travel using various forces and surfaces.

5.2.2.E.3 Distinguish a force that acts by direct contact with an object(e.g., by pushing or pulling) from a force that can act without direct contact (e.g., that attraction between a magnet and a steel paper.)

Approaches to Learning

- Observation Skills
- Analyzing Skills
- Evaluation Skills

Learning Experiences

Suggested activities

- Magnet Exploration Activities (Reproducible Student Booklet)
- Learning Centers
- Experiments with magnets and batteries

Teaching Strategies

- Direct Instruction
- Differentiated Instruction
- Interdisciplinary Activities
- Cooperative Learning Activities
- Reinforcement and Remediation
- Review Exercises
- ActivBoard Presentations
- Experiments/Problem Solving Activities
- Viewing of Videos

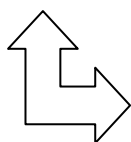
Resources

- Harcourt Science- Grade 2 Book
- Activ Board
- Magic School Bus
- The Science Notebook & Teacher Created Materials, Inc.
- Posters/Models
- Videos
- Trade Books

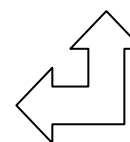
Grade 2 Science

Unit Title	2.2 Space and Weather
Time frame	8 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Language Arts: Make a Four-Seasons book Art: Draw the Phases of the Moon Math: Estimating Stars Technology- Use the internet to explore space and weather.

Essential Questions	↔	Big Ideas
<ul style="list-style-type: none"> To what extent are the properties of objects in our solar system predictable? What causes these patterns? What is the source of the resources used to meet the basic needs of living organisms? 	↔	<p>Observable, predictable patterns in the solar system occur because of gravitational interactions and energy from the Sun.</p> <p>The Earth is a system, continuously moving resources from one part of the system to another.</p>



Learning Targets-students will be able to:
<ul style="list-style-type: none"> Identify and compare stars and planets Identify a group of stars as a constellation Identify characteristics of the sun Compare day and night . Describe how they occur Describe how Earth orbits the sun Identify the causes of seasons on Earth Demonstrate how the reflection of the sun's light enables us to see the moon Explain how sunlight and the moon's orbit around



Earth make the moon appear to change shape

- Identify ways the weather can change from day to day; season to season
- Describe the water cycle
- Identify tools used to measure weather conditions
- Predict the weather using different kinds of clouds as indicators of weather changes
- Identify different weather conditions
- Describe ways to prepare different weather conditions

Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

Content Standards

5.1 Science Practices: All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

Earth System Science

5.4.A Objects in the Universe: *Our Universe has been expanding and evolving for 13.7 billion years under the influence of gravitational and nuclear forces. As gravity governs its expansion, organizational patterns, and the movement of celestial bodies, nuclear forces within stars govern its evolution through the processes of stellar birth and death. These processes also governed the formation of our Solar System 4.6 billion years ago.*

5.4.2.G.1 Observe and discuss evaporation and condensation

5.4.2.G.2 Identify and use water conservation practices

Approaches to Learning

- Observation Skills

- Analyzing Skills
- Evaluation Skills

Learning Experiences

Suggested activities

- Make a Constellation Telescope
- Make Models
- Play “Order Please” Planet Order
- K-W-L charts
- Venn Diagrams

Teaching Strategies

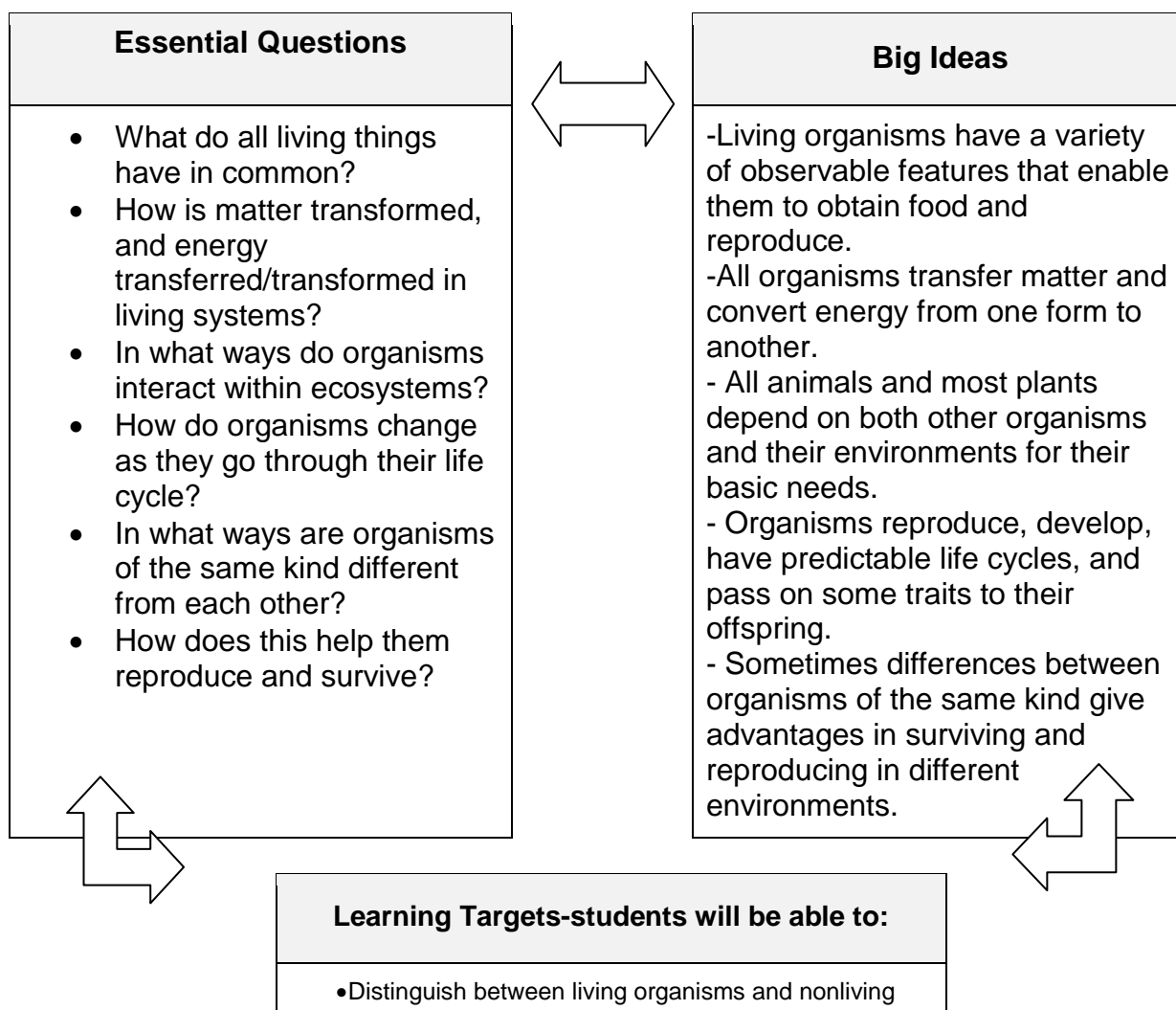
- Direct Instruction
- Differentiated Instruction
- Interdisciplinary Activities
- Cooperative Learning Activities
- Reinforcement and Remediation
- Review Exercises
- ActivBoard Presentations
- Experiments/Problems Solving Activities
- Viewing of Videos

Resources

- Activ Board
- Magic School Bus
- Harcourt Science-Grade 2 book
- Posters/Maps/Models
- Hand outs
- Videos
- Trade Books
- Class Trip

Grade 2 Science

Unit Title	2.3 Living Things Grow and Change
Time frame	10 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Language Arts: Read aloud Literatures Art: Seed Mosaics Physical Education: Hand Shadows Technology- Use the internet to explore plants, animals and humans.



objects

- Compare living organisms and nonliving objects
- Identify sunlight, air, nutrients and water as things plants need to grow
- Observe and describe ways a plant may be affected by its environment
- Observe plants to determine how they are alike and different
- Identify plants that can be alike and different in different places
- Recognize that science skills are used in many careers
- Describe how animals are alike and different
- Identify characteristics for classifying animals
- Analyze and describe the sequence of events of the life cycle
- Recognize that animals/people grow to resemble their parents

Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

Content Standards

5.1 Science Practices: All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

Life Science

5.3.2.A.1 Group living and nonliving things according to the characteristics that they share.

5.3.2.B.1 Describe the requirements for the care of plants and animals related to meeting their energy needs.

- 5.3.2.B.2** Compare how different animals obtain food and water.
- 5.3.2.B.3** Explain that most plants get water from soil through their roots and gather light through their leaves
- 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.
- 5.3.2.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.
- 5.3.2.E.1** Describe similarities and differences in observable traits between parents and offspring.
- 5.3.2.E.2** Describe how similar structures found in different organisms (e.g., eyes, ears, mouths) have similar functions and enable those organisms to survive in different environments.
- 5.4.2.E.1** Describe the relationship between the sun and plant growth.

Approaches to Learning

- Observation Skills
- Analyzing Skills
- Evaluation Skills

Learning Experiences

Suggested activities

- Plant journal
- Draw a plant and label parts
- Make a life cycle mobile of an animal
- K-W-L charts
- Venn Diagrams

Teaching Strategies

- Direct Instruction
- Differentiated Instruction
- Interdisciplinary Activities
- Cooperative Learning Activities
- Reinforcement and Remediation
- Review Exercises
- ActivBoard Presentations
- Experiments/Problems Solving Activities
- Viewing of Videos

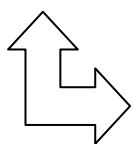
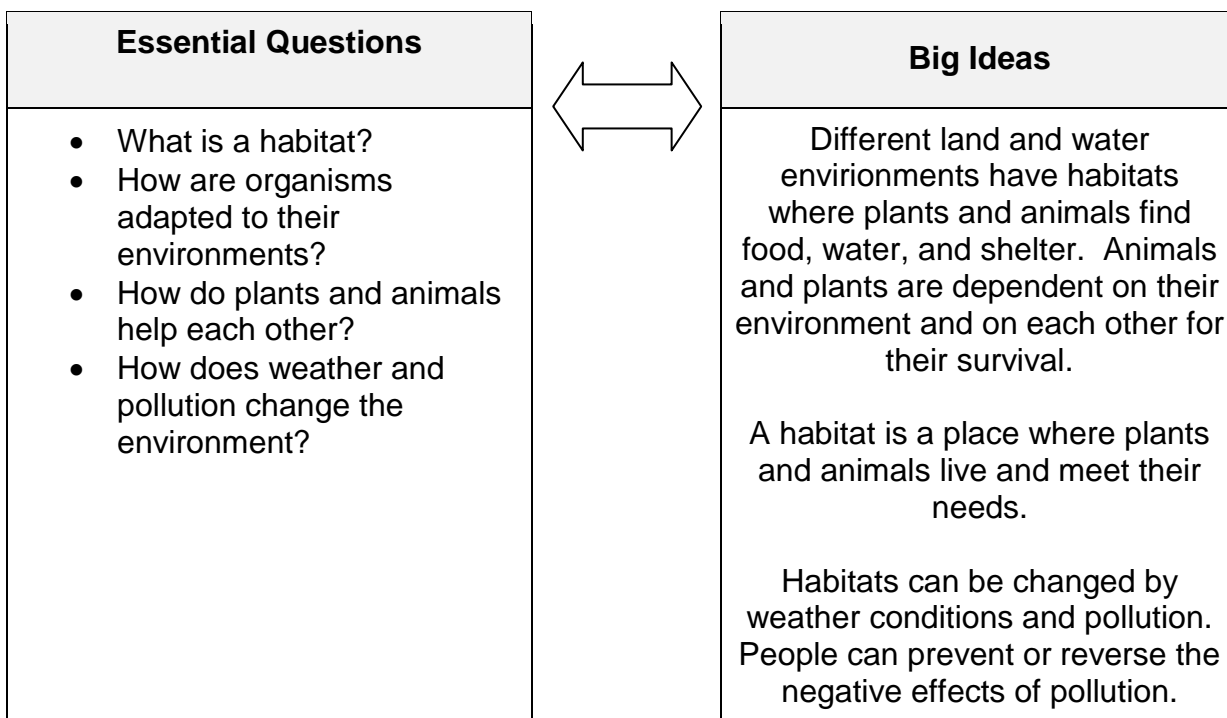
Resources

- Activ Board

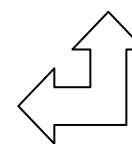
- Magic School Bus
- Harcourt Science-Grade 2 book
- Posters/Maps/Models
- Hand outs
- Videos
- Trade Books
- Class Trip

Grade 2 Science

Unit Title	2.4 Homes for Living Things
Time frame	10 weeks
21 st Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Language Arts: Write a Pollution Acrostic Poem Art: Habitat Mural Math: Make a Rainfall Graph Technology: Use the internet to explore habitats and pollution.



Learning Targets-students will be able to:
<ul style="list-style-type: none"> • Identify a habitat as a place where a plant or an animal lives and grows • Recognize that different habitats meet the needs of different plants and animals • Identify and describe different kinds of land and water



environments and habitats

- Provide examples of animals meeting their needs in different land and water habitats
- Describe different types of animal adaptations
- Recognize that adaptations enable an animal to survive
- Identify and describe ways in which plants and animals help each other
- Describe and give examples of food chains
- Recognize that science skills are used in a variety of careers
- Explain how too much rain or too little rain can change a habitat
- Identify the 3 main types of pollution
- Describe ways pollution can harm plants and animals
- Identify ways to keep the environment clean

Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

Content Standards

5.1 Science Practices: All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

Earth System Science

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.

B. Matter and Energy Transformations : Food is required for energy and building cellular materials. Organisms in an ecosystem have different ways of obtaining food, and some organisms obtain their food directly from other organisms.

C. Interdependence : All animals and most plants depend on both other organisms and their environment to meet their basic needs.

Approaches to Learning

- Observation Skills
- Analyzing Skills
- Evaluation Skills

Learning Experiences

Suggested activities

- Recycle Project (Cardboard Box)
- “Clean up” Walk
- Animal Habitat Book
- K-W-L Charts
- Create a food chain

Teaching Strategies

- Direct Instruction
- Differentiated Instruction
- Interdisciplinary Activities
- Cooperative Learning Activities
- Reinforcement and Remediation
- Review Exercises
- ActivBoard Presentations
- Experiments/Problems Solving Activities
- Viewing of Videos

Resources

- Activ Board
- Magic School Bus
- Harcourt Science-Grade 2 book
- Posters/Maps/Models
- Hand outs
- Videos
- Trade Books
- Class Trip