COURSE: Science	GRADE(S): 1st Grade
UNIT: Earth Science- Unit 1: Land, Water, and Air	

NATIONAL STANDARDS:

SCIENCE THEMES: Systems and interactions, models, patterns of change, change over time.

PROCESS SKILLS: Observing, classifying, analyzing and interpreting data, formulating hypotheses, predicting, experimenting/testing, variable recognition and control.

STATE STANDARDS:

3.4.4.D Describe the composition and structure of the universe and the earth's place in it.
- Recognize earth's place in the solar system.
- Explain and illustrate the causes of seasonal changes.
- Describe the solar system motions and use them to explain time (e.g., days, seasons).

3.5.4.A Know basic landforms and earth history.
- Describe earth processes (e.g., rusting, weathering, erosion) that have affected selected physical features in students' neighborhoods.
- Identify various earth structures (e.g., mountains, faults, drainage basins) through the use of models.
- Identify the composition of soil as weathered rock and decomposed organic remains.

3.5.4.B Know types and uses of earth materials.
- Identify uses of various earth materials (e.g., buildings, highways, fuels, growing plants).
- Identify and sort earth materials according to a classification key (e.g., soil/rock type).

ASSESSMENT ANCHORS:

S4.D.1 Earth Features and Processes that Change Earth and Its Resources.

S4.D.1.1 Describe basic landforms in Pennsylvania.
S4.D.1.2 Identify the types and uses of Earth's resources.
S4.D.1.3 Describe Earth's different sources of water or describe changes in the form of water.

KEY CONCEPTS:

1. Earth, the moon and the sun are part of an ever changing system called the Universe.
2. The sun is the source of heat and light that warms the land, air, and water; and night and day is caused by the rotation of the Earth.

UNIT OBJECTIVES:

Students will:

1. *Recognize that the sun is the source of light on Earth.*
   - The Sun is a star, or a big ball of hot gas.
   - Light from the Sun makes the day sky bright and warms Earth.
   - The Sun is bigger than Earth but looks small because it is far away.
   - The Sun seems to move across the sky. The Sun looks as if it is moving because Earth is moving.

2. *Explain how the sun provides heat, which warms the land, air, and water on Earth.*
   - The light from the sun is what travels here, and it is converted into heat energy as it strikes the atmosphere and the ground.

3. *Understand that night and day are caused by the rotation of the Earth.*
   - Earth's rotation (turning around and around) cause day and night.
   - Earth makes one rotation every day.
   - It is night when your part of the world faces away from the Sun.
   - It is day when your part of the Earth faces the Sun.

4. *Know and differentiate objects seen in the day and night sky.*
   - During the day clouds and the sun can be seen in the sky.
   - During the night, stars, the Moon, and some planets may be seen.
   - Stars give off light and seem to move across the night sky.
   - The Moon can be seen at night because of the light reflected from the Sun.
   - The Moon is not a light source; we only see the part lit by the Sun.

5. *Illustrate the major features of the Earth's surface.*
   - There is more water than land on Earth
   - Earth contains different kinds of land and water.
   - Lakes, rivers, and oceans are examples of water found on Earth.
   - Plains, hills, and cliffs are examples of land found on Earth.

6. *List the different types of solid materials found on Earth's surface.*
   - Rocks are nonliving things that come from Earth.
   - Boulders and sand are examples of different kinds of rocks based on size.
   - Rocks are natural resources, useful things that come from nature.
   - Soil may have sand, clay and humus in it.
   - Humus is the loose, crumbly material that results from the decay of organic matter -- leaves, grass clippings, garden waste, peat moss, kitchen scraps, or any such material.
   - Plants live and grow in soil.
   - Some animals live in soil.

7. *Recognize that erosion and weathering change land.*
   - Weathering caused by water and ice can break rocks apart and change them.
   - Wind and water cause erosion by moving rocks and soil.

8. *Identify the natural resources needed by living things and to care for those resources.*
   - Air is a natural resource that people, animals and plants need.
   - Plants need clean air to grow, but some things can make air dirty.
   - Water is a natural resource used by people and animals in many different ways.
   - People should only use as much water as they need. (Conserve)
   - Land is a natural resource that people, animals and plants us in different ways.
   - People may use plants that grow on the land for food or to build things.
   - Minerals are nonliving things that are found in rock and soil.
   - People can reduce, reuse, and recycle to help save Earth's land, water and air.

ACTIVITIES:

1. Conduct simple experiments to show how sunlight changes the temperature of land, air, and water.
2. Demonstrate and describe the concept of rotation.
3. Have students model the movement of rotation.
4. Illustrate a picture indicating how day and night are caused by Earth's rotation.
5. Compare and contrast day and night by characteristic changes in temperature and

ASSESSMENTS:

- ✧ Classroom participation.
- ✧ Completion of activities.
- ✧ Science journal.
- ✧ Watching the Weather Graph.
- ✧ Ups and Downs (reading a thermometer).
- ✧ Soil study observation booklet.

REMEDIATION:

- ✧ One on one instruction.

light. 6. Model the rotation of Earth and its physical relationship to the sun. 7. Observe the position of the sun in the morning, lunchtime, and dismissal. Interpret the relationship between the sun's position in the sky and the general time of day. This includes the sun's relative position in the morning (East), at noon, and the late afternoon (West). 8. Illustrate a night sky including stars and the Moon. 9. Illustrate a day sky including clouds and the Sun. 10. Differentiate items in the sky that our light sources (stars which include the Sun) and those items that reflect the Sun's light (Moon, Earth). 11. Create a graph indicating the amount of water on Earth compared to land. 12. List different types of land and water on Earth. 13. Explore different types of rocks by having each student bring in a rock. Rocks can be sorted by size, color, or textures. 14. Investigate the types of soil by providing students with samples of soil, sand, and humus. 15. Demonstrate the effects of erosion using a model. 16. Illustrate the effects of weathering with visual examples obtained through various forms of media. 17. Identify natural resources such as plants and animals, water, air, land, minerals, forests, and soil. 18. Recognize that many natural resources are limited. 19. Compare and contrast ways of conserving resources. This includes recycling, reusing, and reducing consumption of natural resources. 20. List factors that affect air and water quality. 21. Describe ways students and schools can help improve water and air quality in our communities. 22. Determine some basic factors that affect water quality by conducting simple investigations in the school environment. Students should be able to make and record observations of what happens to runoff water on rainy days. 23. Predict what would happen if natural resources were used up, and explain ways to prevent this from happening. 24. Discuss the value of parks to wildlife and to people.	**ENRICHMENT:** ✧ Independent reading/research. ✧ Design a project illustrating a given unit concept.

RESOURCES:

Kettle Creek Nature Center
Harcourt Series Science Textbook -Leveled Books
Harcourt Reading Series
Harcourt Science Series
Delta Big Books

Books to integrate reading and science instruction:

"Our Earth", by Anne Rockwell
"The Great Trash Bash", by Loreen Leedy
"Recycle Every Day!", by Nancy Elizabeth Wallace

WEBSITES:

Unitedstreaming:
Our Home in Space. 100% Educational Videos. 1999.
unitedstreaming, September 10, 2007
http://www.unitedstreaming.com/

http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=81526E16-D61F-4B63-AE2C-0D5206F339BB

Our Home in Space
Description:
Singing puppets, colorful graphics, and NASA footage come together to teach students about the familiar sights in our sky. Learn about the importance of the sun, some characteristics of the Earth, what causes day and night and the change of seasons, and how the moon moves. Lastly, see the importance of telescopes in revealing the mysteries of our solar system.

Earth: A First Look, Rainbow Educational Media 2000
unitedstreaming, September 10, 2007
http://www.unitedstreaming.com/

http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=B0899F5C-0BD0-4D21-8F19-412627D0264F

Earth: A First Look
Description:
Oceans, mountains, rivers and volcanoes are major features of the earth. This program describes these features and explains how water, air and land provide valuable resources. The structure of the earth, including the crust, mantle and core is also explained. Students will see that

the earth's crust changes because of earthquakes, volcanoes, weathering and erosion.	

COURSE: Science	GRADE(S): 1st Grade
UNIT: Earth Science- Unit 2: Weather	

NATIONAL STANDARDS:

SCIENCE THEMES: Systems and interactions, models, patterns of change, change over time.

PROCESS SKILLS: Observing, classifying, analyzing and interpreting data, formulating hypotheses, predicting, experimenting/testing, variable recognition and control.

STATE STANDARDS:

3.5.1.C Know basic weather elements.

- Identify cloud types.
- Identify weather patterns from data charts (including temperature, wind direction and speed, precipitation) and graphs of the data.
- Explain how the different seasons affect plants, animals, food availability and daily human life.

ASSESSMENT ANCHORS:

S4.D.2 Weather, Climate and Atmospheric Processes

S4.D.2.1 Identify basic weather conditions and how they are measured.

KEY CONCEPTS:

1. Weather changes from day to day and over the seasons.
2. Weather can be described by measurable quantities, such as temperature, wind direction and speed, and precipitation.

UNIT OBJECTIVES:

Students will:

1. *Recognize that that weather changes from day to day and week to week.*
   - Weather is the state of the atmosphere at a given time in a particular place.
   - Understand that features of weather include cloud covering, precipitation, wind and temperature.

2. *Understand that different kinds of clouds signal different kinds of weather.*
   - Clouds — visible collections of water in the air — are a regular feature of Earth's atmosphere. Depending on the conditions of the atmosphere, different types of clouds may form. For example, some clouds produce precipitation, such as rain or snow, while others do little more than appear as decorative figures in the sky.

3. *Identify tools used to measure weather conditions.*
   - A thermometer is a tool used to measure temperature.
   - A wind vane indicates the direction of the wind.
   - A rain gauge is used to measure how much rain falls.

4. *Explain that meteorologists are scientist who study, observe and record information about the weather and who use information to forecast the weather.*
   - Meteorologists study the components of weather -- the conditions of the atmosphere such as temperature, precipitation, wind, and clouds — in an effort to predict the weather and

help people be better prepared.
- People benefit from the work of meteorologists on a daily basis.
- Weather forecasts enable you to plan everything from what you'll wear to whether weekend activities should be indoors or outdoors.
- But when severe weather approaches, meteorologists serve what is perhaps their most important function in society.

5. *Provide examples of how weather affects the decisions people make about the clothing they wear.*
   - Weather is a part of everyday life and can affect little things such as your choice of clothes or activities.
   - Weather can also be severe and affect your life in bigger ways, as seen in the damage done by a hurricane or tornado.

6. *Identify how weather affects outside activities of people.*
   - Sometimes weather can be very dangerous (lightning storms, hurricanes, tornadoes, and blizzards).
   - Dangerous weather is a rare occurrence and explaining that certain types of storms only happen in particular areas.

SUGGESTED ACTIVITIES:

Students will:

1. Using their senses ask students to describe the daily weather.
2. Compare the current day's weather to that of the day before, week before, month before. Use visuals as reminders of the prior weather conditions.
3. Watch a weather report and ask students to list the information given by the meteorologist.
4. Students should role play being weather reporters for their classmates and give a daily weather report.
5. Observe differences in types of clouds.
6. Model clouds in the sky using cotton balls on blue paper.
7. Given illustrations of various clouds; predict the type of weather that will follow.
8. Demonstrate the use of various weather instruments.
9. Using simple tools measure temperature, wind direction and/or rain fall.
10. Chart and graph daily temperatures.
11. Illustrate the clothing that would be worn during given weather conditions.
12. Design and conduct an experiment to draw a conclusion about appropriate clothing for different types of weather.
13. Interpret and summarize given long term weather data.
14. Practice severe weather safety drills.

ASSESSMENTS:

- ✧ Classroom participation.
- ✧ Completion of activities.
- ✧ Science journal.
- ✧ Watching the weather graph.
- ✧ Ups and Downs (Reading a thermometer).
- ✧ Soil study observation booklet.

REMEDIATION:

- ✧ One on one instruction

ENRICHMENT:

- ✧ Independent reading/research.
- ✧ Create a weather booklet detailing average local weather conditions.

RESOURCES:

Kettle Creek Nature Center
Harcourt Series Science Textbook -Leveled Books
Harcourt Reading Series
Harcourt Science Series
Delta Big Books

Books to integrate reading and science instruction:

Unitedstreaming:
http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=876E3388-75E0-4F28-8693-5919FA0ED6CF

Clouds, Weather, and Life
This delightful program introduces children to the basic cloud types. In accordance with the National Science Education Standards and the American Association for the Advancement of Science Benchmarks for Science Literacy, five important scientific concepts of weather are reviewed. These include the hydrologic, or water cycle, that life is dependent upon this cycle, the sun is the causative agent that powers the formation of clouds and the water cycle, the three state of water, and weather is changeable in time and place.

COURSE: Science	GRADE(S): 1st Grade
UNIT: Earth Science- Unit 3: Seasons	

NATIONAL STANDARDS:

SCIENCE THEMES: Systems and interactions, models, patterns of change, change over time.

PROCESS SKILLS: Observing, classifying, analyzing and interpreting data, formulating hypotheses, predicting, experimenting/testing, variable recognition and control.

STATE STANDARDS:

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

ASSESSMENT ANCHORS:

S4.A.3 Systems, Models and Patterns
S4.A.3.3 Identify and make observations about patterns that regularly occur and reoccur in nature.

ELIGIBLE CONTENT:

S4.A.3.3.1 Identify and describe observable patterns (e.g., growth patterns in plants, weather, water cycle.)
S4.A.3.3.2 Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, and lunar phases).

KEY CONCEPTS:

1. The four seasons form a pattern.
2. Weather conditions change seasonally.
3. Plants and animals react to seasonal change in predictable ways.

UNIT OBJECTIVES:

Students will:

1. *Define season and name the four seasons.*
   - We divide the year into seasons, or sets of consecutive months that have similar weather patterns and length of days.
   - There are four seasons in many parts of the world: winter, spring, summer, and fall (also called autumn).
   - Seasons happen in the same cycles year after year and different types of weather occur during different seasons.

2. *Identify characteristics of spring, and describe how spring weather affects living things.*
   - The daylight hours become longer in spring than during the winter. Plants will begin growing and flowers may begin blooming. Spring is a season noted for rain which is important for plants to grow. Many animals are born or hatched in the spring. Other animals that slept through winter (bears) will reappear. Farmers will plant crop during the spring.

3. *Identify characteristics of summer, and describe how summer weather affects living things.*
   - The daylight hours are longer in summer than the spring.
   - Weather can be hot. Animals and people need to find ways to stay cool.
   - Food is easy for animals to find. Young animal grow bigger.

4. *Identify characteristics of fall, and describe how fall weather affects living things.*
   - The daylight hours are fewer in the fall than summer.
   - The temperature gets cooler, causing people to wear warmer clothing.
   - In many places, leaves change their colors and fall from the trees.
   - Plants begin to wilt.
   - Food becomes harder for animals to find.
   - Some animals begin to migrate or move to new places to find food.

5. *Identify characteristics of winter and describe how winter weather affects living things.*
   - Winter has the fewest hours of daylight.
   - In some places, the air is cold. Snow may fall.
   - People in these places wear heavy clothing to stay warm.
   - Many plants have no leaves. Some plants rest during the winter and grow again in the spring. Other plants die in the winter.
   - Food can be hard for animals to find.
   - Some animals hibernate or sleep during the winter.
   - Some animals change color to stay safe. Some grow thick coats to stay warm.

SUGGESTED ACTIVITIES:

1. Relate a temperature and precipitation chart to the corresponding season (daily or weekly).
2. Measure and chart changes in plants during the seasons, including budding, growth, wilting, and losing leaves.
3. Recognize the season that budding and wilting will most likely occur.
4. Predict how an outdoor plant would change through the seasons.
5. Compare and contrast the four seasons of spring, summer, fall (autumn) and winter in terms of temperature, light, and precipitation.
6. Compare and contrast the activities of some common animals (e. g., squirrels, chipmunks, butterflies, bees, ants, bats, and frogs) during summer and winter by describing changes in their behaviors and body covering.
7. Illustrate seasonal changes of a tree located on the school grounds
8. Plant and observe the growth of flowers in the spring.
9. Complete a class mural indicating a common scene during all four seasons.

RESOURCES:

Kettle Creek Nature Center
Harcourt Series Science Textbook-Leveled Books
Harcourt Reading Series
Harcourt Science Series
Delta Big Books

ASSESSMENTS:

- ✧ Classroom participation.
- ✧ Completion of activities.
- ✧ Science journal.

REMEDIATION:

- ✧ One on one instruction.

ENRICHMENT:

- ✧ Independent reading/research.
- ✧ Present information on animals that hibernate during winter.
- ✧ Present information on animals that migrate from Pennsylvania to warmer weather locations.

Books to integrate reading and science instruction: *"Sky Tree: Seeing Science Through Art"*, by Thomas Locker and Candace Christiansen *"When the Root Children Wake Up"*, by Audrey Wood	

COURSE: Science	GRADE(S): 1st Grade
UNIT: Biology Unit – Living Things	

NATIONAL STANDARDS:

SCIENCE THEMES: Systems and interactions, models, patterns of change, change over time

PROCESS SKILLS: Observing, classifying, analyzing and interpreting data, formulating hypotheses, predicting, experimenting/testing, variable recognition and control.

STATE STANDARDS:

3.3.4.A Know the similarities and differences of living things.
- Identify life processes of living things (e.g., growth, digestion, and react to environment).
- Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that similarities and differences are related to environmental habitat.
- Describe basic needs of plants and animals.

3.3.4.B Know that living things are made up of parts that have specific functions.
- Determine how different parts of a living thing work together to make the organism function.

3.3.4.C Know that characteristics are inherited and, thus, offspring closely resemble their parents.
- Identify characteristics for animal and plant survival in different climates.
- Identify physical characteristics that appear in both parents and offspring and differ between families, strains or species.

3.3.4.D Identify changes in living things over time.
- Compare extinct life forms with living organisms.

4.6.4.A Understand that living things are dependent on nonliving things in the environment for survival.
- Identify and categorize living and nonliving things.
- Describe the basic needs of an organism.
- Identify basic needs of a plant and an animal and explain how their needs are met.
- Identify plants and animals with their habitat and food sources.
- Identify environment variables that affect plant growth.
- Describe how animals interact with plants to meet their needs for shelter.
- Understand the components of a food chain.
- Identify a local ecosystem and its living and nonliving components.
- Identify a simple ecosystem and its living and nonliving components.
- Identify animals that live underground.

4.6.5.C Identify how ecosystems change over time.

4.7.4 A Identify differences in living things.
- Explain why plants and animals are different colors, shapes and sizes and how these differences relate to their survival.
- Identify characteristics that living things inherit from their parents.
- Explain why each of the four elements in a habitat is essential for survival.
- Identify local plants or animals and describe their habitat.

4.7.4.B Know that adaptations are important for survival.
- Explain how specific adaptations can help a living organism to survive.
- Explain what happens to a living thing when its food, water, shelter or space is changed.

4.7.4.C Define and understand extinction.
- Identify plants and animals that are extinct.
- Explain why some plants and animals are extinct.

ASSESSMENT ANCHORS:

S4.A.1 Reasoning and Analysis

S4.A.1.1 Identify and explain the pros and cons of applying scientific, environmental, or technological knowledge to possible solutions to problems.

S4.A.2 Processes, Procedures and Tools of Scientific Investigations

S4.A.2.1 Apply skills necessary to conduct an experiment or design a solution to solve a problem.

S4.A.2.2 Identify appropriate instruments for a specific task and describe the information the instrument can provide.

S4.B.1 Structure and Functions of Organisms

S4.B.1.1 Identify and describe similarities and differences between living things and their life processes.

S4.B.2 Continuity of Life

S4.B.2.1 Identify and explain how adaptations help organisms to survive.

S4.B.2.2 Identify that characteristics are inherited and, thus, offspring closely resemble their parents.

S4.B.3 Ecological Behavior and Systems

S4.B.3.1 Identify and describe living and nonliving things in the environment and their interaction.

S4.B.3.2 Describe, explain, and predict change in natural or human-made systems and the possible effects of those changes on the environment.

S4.B.3.3 Identify or describe human reliance on the environment at the individual or the community level.

KEY CONCEPTS:

1. Inquiry, problem solving, critical thinking, measurement, communications, and links to real world applications should be integrated throughout science instruction to develop an understanding of the key concepts and content.
2. The use of technology as a tool for investigating, communicating and doing science must also be integrated throughout this instruction.
3. Organisms can be grouped according to similarities and differences.
4. Living things are made up of parts that have specific functions.
5. Characteristics are passed from parent to offspring.
6. Living things change over time.
7. Living things are dependent on both living and non-living components of the environment.
8. Humans are dependent upon and affect the environment.

UNIT OBJECTIVES:

1. *Understand that to communicate an observation accurately one must provide a clear description of exactly what is observed, and nothing more.*
   - Seeing, hearing, tasting, touching and smelling are senses that are used to make observations of living and nonliving things.

2. *Explain how graphs can be used to display data, making it easier to recognize important information.*
   - Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
3. *Recognize the difference between living/nonliving things.*
   - Living things grow and change.
   - Nonliving things were never alive, do not grow and change and do not need food and water.

4. *Identify the things living things need to survive.*
   - Animals, including people, have basic life needs including air, food, water and a suitable place to live.
   - Plants need air, water, light from the Sun, and space to live and grow.

5. *Describe how living things change as they grow and mature.*
   - Animals and plants grow in different ways over different lengths of time. This process is referred to as a life cycle.
   - Living things grow and change through a specific life cycle.

6. *Identify offspring with their parent (e.g., puppy to dog).*
   - Animals are similar but not identical to their parents.
   - Physical characteristics (e.g., eye color, hair color) that appear in both parents may be passed on to offspring.

7. *Recognize that living things are made up of parts that have specific functions.*
   - Animals have parts with specific functions that extend from the main body, such as arms, legs, wings, fins, and tails.
   - Roots, stems, leaves, and flowers are some parts of plants.
   - The functions of plant parts include roots holding plants in place and absorbing water, seeds making new plants, leaves making food for the plant, and stems holding the plants upright and transporting materials up and down the plant.

8. *Group animals based on their observable characteristics.*
   - Animals can be grouped by body coverings such as hair, fur, feathers, scales, and shells.
   - Simple ways to classify animals are whether they are wild or tame, and whether they live on land or in water.

9. *Group plants based on their parts or their use.*
   - Plants can be categorized by their different characteristics, such as edible/non-edible, flowering/non-flowering, and evergreen/deciduous. ***Students do not need to know the terms non-edible and deciduous. The focus should be on the concept, not the terminology.***

SUGGESTED ACTIVITIES:

Students will:

1. Use their senses to make observations of the physical properties of displayed objects
2. Classify and arrange objects according to at least two attributes or properties so that similarities and differences become apparent.
3. Communicate observations made and data collected orally and with simple graphs, pictures, written statements, and numbers.
4. Answer questions by conducting simple experiments/investigations using simple tools, such as thermometer, ruler, or magnifying glass. A simple experiment is one that changes only one thing at a time (tests only one variable), gives quick results, and provides easily observed changes.
5. Conduct simple experiments/investigation

ASSESSMENTS:

- ✧ Classroom participation.
- ✧ Completion of activities.
- ✧ Science journal.
- ✧ Teacher observations.
- ✧ Projects

REMEDIATION:

- ✧ One on one instruction.

ENRICHMENT:

- ✧ Independent reading.
- ✧ Complete a plant booklet providing details on 12 plants.
- ✧ Prepare and present information the characteristics of two self selected animals. Compare and contrast animal similarities and differences.

related to plant needs by changing one variable (food, air, water, light, and place to grow) at a time. **Students do not need to know the term variable**.

6. Create and interpret a model/drawing of a plant, including seeds, roots, stems, leaves, blossoms and fruits.
7. Identify the functions of the seed, root, stem, and leaf.
8. Classify plants by the characteristics of edible/non-edible, flowering/non-flowering, and evergreen/deciduous using tables, charts, and picture graphs.
9. Make and communicate observations of live animals, including people, about their needs, physical characteristics, and where they live.
10. Describe the life needs of animals including air, food, water, and a suitable place to live.
11. Identify and chart simple characteristics by which animals can be classified, including body coverings (hair, fur, feathers, scales and shells), body shape, appendages (arms, legs, wings, fins, and tails), methods of movement (walking, crawling, flying, and swimming), wild or tame, and water homes or land homes.
12. Distinguish between wild (raccoon, hawk, squirrel, shark) and tame (dog, cat, sheep) animals and recognize examples of each.
13. Infer types of animal homes (water or land) using the physical characteristics of the animals, such as scales and fins that allow fish to live and move in water, fur and legs that allow dogs to live and move on land.
14. Classify animals by where they live (their homes).

RESOURCES:

Harcourt Series Science Textbook
-Leveled Books
Harcourt Reading Series

TITLES TO SUPPORT THE INTEGRATION OF ***PLANTS (BUDDING AND GROWTH)*** INTO READING INSTRUCTION:

SUNFLOWER HOUSE	Eve Bunting

THE VERY HUNGRY CATERPILLAR	Eric Carle
WILD WILD SUNFLOWER CHILD	Nancy White Carlstrom
THE BOY WHO DIDN'T BELIEVE IN SPRING	Lucille Clifton
UNDER THE GREEN WILLOW	Elizabeth Coatsworth
MISS RUMPHIUS	Barbara Cooney
THE TINY SEED	Eric Carle
GROWING VEGETABLE SOUP	Lois Ehlert
EATING THE ALPHABET	Lois Ehlert
PLANTING A RAINBOW	Lois Ehlert
FROM SEED TO PLANT	Gail Gibbons
MUSHROOM IN THE RAIN	Mirra Ginsburg
THE REASON FOR A FLOWER	Ruth Heller
TREE TRUNK TRAFFIC	Bianca Lavies
PUMPKIN CIRCLE: Story of a Garden	George Levenson
ALISON'S ZINNIA	Anita Lobel
THE ROSE IN MY GARDEN	Arnold Lobel
HOW DO APPLES GROW?	Betsy Maestro
THE FLOWER ALPHABET BOOK	Jerry Pallotta
THE LEGEND OF THE BLUEBONNETt	Tomie de Paola
HOW PLANTS GROW	Angela Rouston
LIFE CYCLE OF A SUNFLOWER	Royston
TOPS AND BOTTOMS	Janet Stevens
THE VICTORY GARDEN	Jerry Pallotta and Bob Thomson
THE GIFT OF THE TREE	Alvin Tresselt
WORKING COTTON	Sherley Anne
TITLES TO SUPPORT THE INTEGRATION OF ***ANIMALS (COVERINGS, PREPARING FOR WINTER)*** INTO READING INSTRUCTION	
RACCOONS AND RIPE CORN	Jim Arnosky
AUTUMN STORY	Jill Barklem
IN THE WOODS: WHO'S BEEN HERE?	Lindsay Barrett George

THE CINNAMON HEN'S AUTUMN DAY	*Sandra* Dutton
DO NOT DISTURB	Margery Facklam
ANIMALS AND WHERE THEY LIVE	John Feltwell
POSSUM'S HARVEST MOON	Anne Hunter
THE BEARS' AUTUMN	Keizaburo Tejima
A COLOR OF HIS OWN	Leo Lionni
FREDERICK	*Leo* Lionni
THE STRANGER	*Chris* Van Allsburg
TITLES TO SUPPORT THE INTEGRATION OF ***ANIMALS (LIFE NEEDS, BODY COVERINGS, HABITATS RELATED TO SEASONS, HIBERNATION, MIGRATION)*** INTO READING INSTRUCTION	
ANIMALS IN WINTER	Ron Fisher
ANIMALS IN WINTER	Henrietta Bancroft/Richard G Van Gelder
IN THE SNOW: WHO'S BEEN HERE?	Lindsey Barrett George
WHAT DO ANIMALS DO IN WINTER	*Melvin* and Gilda Berger
STOPPING BY WOODS ON A SNOWY EVENING	RobertFrost/Susan Jeffers
GEOFFREY GROUNDHOG PREDICTS THE WEATHER	Bruce Koscielniak
BACKYARD BIRDS OF WINTER	Carol Lerner
KEEP LOOKING	Millicent Selsam
How to be a Nature Detective	Millicent Selsam
OWL MOON	*Jane* Yolen
MOUSEKIN'S FROSTY FRIEND	Edna Miller
MOUSEKIN'S WOODLAND SLEEPERS	Edna Miller
WHOSE TRACKS ARE THESE?	Jim Nail

WEBSITES;

United Streaming

http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=F6E6ECD0-A045-46D8-

886A-FD3B51614810 ***Growing Plants: Science in a School Garden*** How do plants grow and how do they fit into and interact with the environment? These and many other questions regarding the life cycles and importance of green plants are answered as we join a group of elementary school students in their school garden. Hands-on experiments reinforce for students the concepts covered in the program. You can almost feel the soil on your hands and savor the crunch of a fresh green bean!	

COURSE: Science	GRADE(S): 1st Grade
UNIT: Physical Science- Unit: Chemistry and Physics	

NATIONAL STANDARDS:

SCIENCE THEMES: Systems and interactions, models, patterns of change, change over time

PROCESS SKILLS: Observing, classifying, analyzing and interpreting data, formulating hypotheses, predicting, experimenting/testing, variable recognition and control.

STATE STANDARDS:

3.2.4.A Identify and use the nature of scientific and technological knowledge.
- Distinguish between a scientific fact and a belief.
- Provide clear explanations that account for observations and results.
- Relate how new information can change existing perceptions.

3.2.4.B Describe objects in the world using the five senses.
- Recognize observational descriptors from each of the five senses (e.g., see-blue, feel-rough).
- Use observations to develop a descriptive vocabulary.

3.2.4.C Recognize and use the elements of scientific inquiry to solve problems.
- Generate questions about objects, organisms and/or events that can be answered through scientific investigations.
- Design an investigation.
- Conduct an experiment.
- State a conclusion that is consistent with the information.

3.4.4.A Recognize basic concepts about the structure and properties of matter.
- Describe properties of matter (e.g., hardness, reactions to simple chemical tests).
- Know that combining two or more substances can make new materials with different properties.
- Know different material characteristics (e.g., texture, state of matter, solubility).

3.4.4.C Observe and describe different types of force and motion.
- Recognize forces that attract or repel other objects and demonstrate them.
- Describe various types of motions.
- Compare the relative movement of objects and describe types of motion that are evident.
- Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).

ASSESSMENT ANCHORS:

S4.A.2 Processes, Procedures and Tools of Scientific Investigations

S4.A.2.1 Apply skills necessary to conduct an experiment or design a solution to solve a problem.

S4.A.3 Systems, Models and Patterns

S4.A.3.2 Use models to illustrate simple concepts and compare the models to what it represents.

S4.C.1 Structure, Properties, and Interaction of Matter and Energy

S4.C.1.1 Describe observable physical properties of matter.

S4.C.3 Principles of Motion and Force

S4.C.3.1 Identify and describe different types of force and motion, or the affect of the interaction between force and motion.

ELIGIBLE CONTENT:

S4.A.2.1.1 Generate questions about objects, organisms, or events that can be answered through scientific investigations.
S4.A.2.1.2 Design and describe an investigation (a fair test) to test one variable.
S4.A.2.1.3 Observe a natural phenomenon (e.g., weather changes, length of daylight/night, movement of shadows, animal migrations, growth of plants), record observations, and then make a prediction based on those observations.
S4.A.2.1.4 State a conclusion that is consistent with the information/data.
S4.A.3.2.1 Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas).
S4.A.3.2.2 Use models to make observations to explain how systems work (e.g., water cycle, sun-Earth-moon system).
S4.C.1.1.2 Categorize/group objects using physical characteristics.
S4.C.3.1.1 Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).
S4.C.3.1.2 Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).
S4.C.3.1.3 Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).

KEY CONCEPTS:

1. Matter is identified by specific properties.

UNIT OBJECTIVES:

1. *Understand that matter is something that takes up space.*
   - All things are made of matter.
   - Land, water, and air are made of matter.

2. *Explain that matter can be described by way it looks and feels.*
   - Color, shape, size and texture are properties that can be described.
   - Weight is how heavy matter is. Weight is a property of matter.
   - Matter can be grouped using properties that are the same.

3. *Identify the three states of matter*
   - Matter can be a solid, liquid, or gas.
   - Water is matter because it takes up space. Water is a kind of matter called liquids.
   - Liquids are different from solids because they flow and take the shape of their container.
   - Solids and liquids have some properties that alike and some that are different. Liquids and solids are different types of matter.
   - Gas takes the shape of the container it fills. Air is a gas.

4. *Recognize that objects can be moved through pushes and pulls and sort how they move.*
   - Pushes and pulls are forces.
   - When you push an object you move it away from you.
   - When you pull an object you move it closer to you.

5. *Classify the way objects move, and describe how pushes and pulls can be used to change an object's speed, direction, and position.*
   - Force is used to change the speed or direction of an object's motion. The harder the push or pull, the faster the object will move.

6. *Identify objects as magnetic or nonmagnetic.*
   - A magnet is an object that will attract, or pull, things made of iron.
   - Magnets attract objects without touching them.

SUGGESTED ACTIVITIES:

Students will:

1. Create a Matter poster illustrating various examples of matter.
2. Identify classroom objects "Name that Matter" after hearing a detailed description of the object physical properties.
3. Group objects according to their common physical properties.
4. Identify common materials as solids, liquids, or gases.
5. Explore motion by applying various forces (pushes and pulls) to different size objects.
6. Compare and contrast the directional movement of common amusement park rides (roller coaster, merry-go-round, log ride, Ferris wheel, and bumper cars).
7. Provide students with a large variety of small magnetic and nonmagnetic items. Instruct small groups to predict which items will be attracted to the magnet.

RESOURCES:

Harcourt Series Science Textbook -Leveled Books
Harcourt Reading Series

Websites:

Webquests
United Streaming

http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=BBCE5588-93C8-4914-8442-01D1C296ACB7

Solids, Liquids, and Gases: A First Look

This program explains that matter takes up space and has weight. Solids keep their shape; liquids and gases take the shape of the containers they occupy; and gases fill whatever space is available. Matter can change from one state to another through freezing, melting, condensation and evaporation.

http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=9352FF3A-634D-49EA-8CC5-929DAB10D83B

ASSESSMENTS:

- ✧ Classroom participation
- ✧ Completion of activities
- ✧ Science journal

REMEDIATION:

- ✧ One on one instruction

ENRICHMENT:

- ✧ Independent reading/research
- ✧ Class presentations
- ✧ Design an experiment to change the state of matter.

How Things Move Roll, slide, bounce, and spin. Discover many different ways objects can move. Give your students a preliminary lesson in physical science with this fun program designed to get children thinking about pushes and pulls. Students enjoy learning about position, movement, and the forces used to make objects move.	