

**LESA
Science Curriculum
2008**

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|---|--------------|
| 1. Strand: Unifying Concepts and Processes | (NSES, IL12) |
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A. Standard: Systems, Order, and Organization

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|---------------------------------------|--|---|---|
| 1. That food has subgroups. | 1. Demonstrate that food has the subgroups of fruits and vegetables. | 1. Read food related stories. Sort plastic "food" into groups of fruits and vegetables. | <i>Stone Soup</i> by Tony Ross, <i>The Very Hungry Caterpillar</i> by Eric Carle |
| 2. That animals have subgroups. | 2. Demonstrate that there are animals that live on the land, in the water, and fly in the air. | 2a. Tell the Bible lesson of creation. 2b. Classify plastic animals observing their habitat. | <i>Bible</i> , Voyages curriculum (CPH), Local zoo, classroom fish tank, Classroom pet, i.e. guinea pig |
| 3. How to apply his/her observations. | 3. Describe the differences between objects. | 3. Sort objects according to their size, shape, or color. | <i>My Very First Colors, Shapes, Sizes and Opposites (My Very First)</i> by Angela Wilkes |

C. Standard: Change, Constancy, and Measurement

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|---|--|--|-----------------------------------|
| 1. Changes and constancy can be measured using proper tools or observation. | 1. Use tools to measure change. | 1. Students observe the daily weather and construct a graph (sunny, rainy, cloudy, snowy, etc.). | Thermometer |

Grade level: Pre-Kindergarten

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2. There are various forms of measurement.

2. Measure objects using various standards of measurements.

2. Measure objects with hand, then with foot, and with a measuring tape.

3. The human body changes.

3. Tell the differences between babies, children, adults, and elders.

3. Compare pictures of family members.

<http://www.preschoolrainbow.org/family-theme.htm>

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3. Strand: Physical Science

(NSES, IL 12, MO 1, 2)

A. Standard: Properties of Objects and Materials

The student will know:

1. Objects can have different sizes, colors, and shapes.

2. Differences between solids, liquids, and gases.

The student will be able to:

1. Sort objects according to size, color, or shape.

2. Compare water in different stages: solid, liquid, and gas.

Suggested Activities

1a. Find different shapes in a picture.
1b. Organize objects according to size.
1c. Construct patterns based on colors.

2. Demonstrate the stages of water by making ice cubes (solid), observing a steam vaporizer (gas).

Suggested Resources

Sticker Activity Shapes by Roger Priddy

Change It!: Solids, Liquids, Gases and You by Adrienne Mason

B. Standard: Position and Motion of Objects

The student will know:

1. The positions: before and after, in front of and behind, over and under, on top of, beneath, and next to a given object.

The student will be able to:

1. Demonstrate the various position of an object in relation to another object.

Suggested Activities

1. Using construction blocks, student demonstrates various positions.

Suggested Resources

"Hokey Pokey" song

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C. Standard: Light, Heat, Electricity, and Magnetism

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|--|--|--|---|
| 1. How the light affects living things. | 1. Observe and state the effects of sunlight on plants. | 1. Place some plants in sunlit area. Place other plants so that they do not get sunlight. Compare and record the observations. | <i>Morning in the Garden</i> by Heather Gondek |
| 2. A shadow is made when something blocks light. | 2. Tell how a shadow is made. | 2. Using a projected light, students observe their shadows. Teacher draws profile of student's shadow. | Various Groundhog Day activities, <i>The Boy with Two Shadows</i> by Margaret Mahy |
| 3. Some objects are attracted by magnets and some are not. | 3. Observe objects that are being attracted to a magnet. | 3. Create a center containing magnets and objects that may or not be attracted to them. | Magnets, magnetic letters |

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4. Strand: Life Science

(NSES, IL12, MO 3, 4)

A. Standard: Characteristics of Organisms

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|--|--|---|---|
| 1. Plants and animals are living things. | 1. Identify living things in the world around them. | 1. Discriminate between the living bunny as a classroom pet and the stuffed bunny in the dress up center. | <i>Sylvester and the Magic Pebble</i> by William Steig, <i>What's Alive?</i> by Kathleen Weidner Zoehfeld |
| 2. What plants need to grow. | 2. Say that plants need air, soil, water, and sun light to grow. | 2. Experiment by growing plants in various environments. | <i>The Life Cycle of a Flower</i> by Molly Aloian |

B. Standard: Life Cycles of Organisms

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|---|---|--|--|
| 1. The different stages in the life of an organism. | 1. Explain that animals are born, grow, have babies, and die. | 1. Develop a life cycle unit (a butterfly, lady bug house, tad pole, hatching eggs, etc.). Record their different stages. Take pictures. | <i>The Very Hungry Caterpillar</i> by Eric Carle, <i>Monarch Butterfly</i> by Gail Gibbons |

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C. Standard: Organisms and Environments

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|--|--|--|--|
| 1. Different animals live in different environments. | 1. Determine where animals live. Name animals that live in water, in the woods, in the desert. | 1a. Field trip around the school. Find animals. 1b. Cut out pictures of animals and sort them according to their environment. | <i>Animal Habitats!</i> by Judy Press |
| 2. The importance of recycling. | 2. Determine whether an item is recyclable or not. | 2a. Recycle paper 2b. Field trip to a recycling plant | <i>Why Should I Recycle?</i> by Jen Greene |

D. Standard: Structure and Function of Living Systems

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|--|--|---|---|
| 1. Parts of the body have special functions. | 1. Tell that the skeleton gives the body its shape and has movable parts (joints) and non-movable parts (bones). | 1. Various songs and finger plays about the body. Books about the body. | <i>The Skeleton Inside You</i> by Philip Balestrino and True Kelley |
| 2. The five senses. | 2. Name and tell the function of the five senses. | 2. Smell flowers and blue cheese. | <i>The Magic School Bus Explores the Senses</i> (Magic School Bus) by Joanna Cole and Bruce Degen |

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5. Strand: Earth and Space Science

(NSES, IL12, MO 5, 6)

A. Standard: Properties of Earth Materials

The student will know:

1. The differences between hard and soft, rough and smooth.

2. The Earth is a special planet.

The student will be able to:

1. Tell apart things that are hard and things that are soft, as well as things that are rough and things that are smooth.

2. Explain that the Earth is the only planet with life on it.

Suggested Activities

1a. Texture rubbing
1b. Guess what is in the bag

2a. History of the Creation (Genesis)
2b. The 7 Days of Creation song

Suggested Resources

www.edhelper.com,
www.edhelper.com, *Everybody Needs a Rock* by Byrd Baylor

Book of Genesis from the *Bible*

B. Standard: Objects in the Sky

The student will know:

1. The different objects in the sky.

The student will be able to:

1. Discriminate between the sun, moon, and stars.

Suggested Activities

1a. Puzzle of the universe
1b. Twinkle, Twinkle Little Star song

Suggested Resources

Harold's Trip to the Sky by Crockett Johnson, *Zoom, Zoom I'm Off to the Moon* by Dan Yaccarino

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C. Standard: Changes in the Earth and Sky

The student will know:

1. What clouds are.

2. Seas, rivers, lakes, and rain are all water.

The student will be able to:

1. Discriminate between a cloudy and a sunny day.

2. Tell if a mass of water is a sea, a river, a lake, or rain.

Suggested Activities

1. Weather Bear

2a. Observe a rainy day.
Analyze what happened to the ground after the rain.
2b. Go to a river.

Suggested Resources

The Storm Book by Charlotte Zolotow

Listen to the Rain by Bill Martin and John Archmault

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6. Strand: Science and Technology

(NSES, IL 13, MO 8)

A. Standard: Abilities of Technological Design

The student will know:

1. That a digital camera, a DVD, a TV, an IPOD, and a computer are technological tools.

The student will be able to:

1. Recognize technological objects.

Suggested Activities

1. Use preschool programs on the computers in the classroom to teach the children how to use a mouse.

Suggested Resources

Computer games: Chicka Chicka Boom Boom, Candyland, Monster's Playground

C. Standard: Abilities to Distinguish Between Natural Objects and Objects Made by Humans

The student will know:

1. The difference between a live baby and a baby doll.

The student will be able to:

1. Determine whether an object is made by God or by humans.

Suggested Activities

1a. Compare and discuss the differences between a baby doll and the baby brother/ sister at home.
1b. Compare and discuss the differences between a bear living in the woods and a teddy bear.

Suggested Resources

How Teddy Bears are Made, A Visit to the Vermont Teddy Bear Factory by Ann Morris

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| 7. Strand: Science in Personal and Social Perspectives | (NSES, IL 12, MO 8) |
|---|---------------------|

A. Standard: Personal Health

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|--|--|---|-----------------------------------|
| 1. The importance of personal hygiene. | 1. Wash hands before any meal. Shower, bathe, or wash daily. | 1a. Teach the children how to wash their hands. 1b. Give a bath to the dolls in the housekeeping area. | Poster on washing hands |
| 2. How to take care of their teeth. | 2. Brush his/her teeth. | 2. Children will discuss the importance of brushing their teeth under adult supervision after every meal. | Colgate Dental Health kit |

D. Standard: Changes in the Environment

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|--|--|---|---|
| 1. The importance of taking care of the environment. | 1. Take responsibility for their share of the environment. | 1a. Putting the used paper in the recycling bin. 1b. Pick up his/her mess after lunch. | http://www.everythingpreschool.com/themes/recycling/index.htm |

F. Standard: Natural Hazards

| <u>The student will know:</u> | <u>The student will be able to:</u> | <u>Suggested Activities</u> | <u>Suggested Resources</u> |
|---|--|--|--|
| 1. How to behave in a tornado, earthquake, or fire drill. | 1. To go to the designated areas in case of a drill or a real situation. | Hold tornado, fire, and earthquake drills. | <i>Twister: A Book about Tornadoes</i> by Rick Thomas. |