

Freetown Lakeville Public Schools

Grade 2 Science and Technology/Engineering
Unit Guide

8/20/2002

Grade 2 Science and Technology/Engineering Curriculum Guideline

Unit: Color and Light

Topic:

Student Learning Objectives

- 50104** Recognize that the sun supplies heat and light to the earth and is necessary for life.
- 50104** Recognize that the sun supplies heat and light to the earth and is necessary for life.

Textbook References, Resources and Materials

Suggested Instructional Strategies

Selected read-alouds from books noted in the Weather TU
Science journal writing, poems, Links paragraph writing.

The Water Cycle: Make terrariums in plastic soda bottles by cutting 2 liter bottles in half. Fill with soil, rock, and a plant or two. Add water. Cover by putting the top half of the bottle back on, with the cap. Tape the pieces together. Sit these on the windowsill and let the sun set the water cycle into action.

Paper and pencil tasks in the Weather TU help children become more familiar with the water cycle.

Assessment

Science lab demonstrations

Observation for cooperation in groups

Use rubrics for writing activities.

Selection and supply assessment sheets are available in the Weather TU and in SBG Discovery Works Weather Teacher Resource Book.

Grade 2 Science and Technology/Engineering Curriculum Guideline

Unit: Interaction of Living Things

Topic:

Student Learning Objectives

- 50106** Recognize that animals (including humans) and plants are living things that grow, give birth (or hatch eggs), and need food, air, and water.
- 50107** Differentiate between living and nonliving things. Group both living and nonliving things according to the characteristics that they share.
- 50112** Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).

Textbook References, Resources and Materials

TM: Interaction of Living Things

Living Things
- live plants (seedlings)
- paper towels
- water
- tin pan

plastic/glass terrarium
- gravel, soil, plants, animals, water, rocks, insects

Wildlife fact file cards or Library of animal books

Seeds, soil, containers, water, small plants

TM: Interaction of Living Things

Visit playground to collect items - see manual

Magazines

Terrarium
- container
- soil
- dead leaves
- moist wood
- sow bugs

Ant farm

Record book

Tweezers
Slotted spoon
Foam peanuts
Tray
Animal magazines
Writing/drawing paper

Grade 2 Science and Technology/Engineering Curriculum Guideline

- 50119** Identify materials that come from natural resources.
Describe the difference between materials from natural resources and man-made materials.
- Writing and drawing
Paper
Chart paper
- 50120** Identify and explain some possible uses for natural materials (e.g. wood, cotton, fur, wool) and human-made materials (e.g., plastic, Styrofoam).
- Paper
Materials
- 50104** Recognize that the sun supplies heat and light to the earth and is necessary for life.
- 50111** Recognize changes in appearance that animals and plants go through as the seasons change.
- 50106** Recognize that animals (including humans) and plants are living things that grow, give birth (or hatch eggs), and need food, air, and water.
- TM: Interaction of Living Things
- Living Things
- live plants (seedlings)
- paper towels
- water
- tin pan
- plastic/glass terrarium
- gravel, soil, plants, animals, water, rocks, insects
- Wildlife fact file cards or Library of animal books
- Seeds, soil, containers, water, small plants

Grade 2 Science and Technology/Engineering Curriculum Guideline

50112 Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).

Terrarium
- container
- soil
- dead leaves
- moist wood
- sow bugs

Ant farm

Record book

Tweezers
Slotted spoon
Foam peanuts
Tray
Animal magazines
Writing/drawing paper

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Suggested Instructional Strategies

SBG Discovery Works: Interaction of Living Things-Lesson 6. Eating like a bird. Students use tools to discover why bird beaks are different, and are adapted for their environment. Students experiment picking up one piece of rice at a time with both a tweezer and a slotted spoon. Next they try both tools to get foam peanuts out of a tray of water. Students record their findings in their Science Notebooks. They discover the differences between a pinching beak and a scooping beak or bill.

Look for many ideas in the Habitats Thematic Unit for creative arts, writing, and assorted paper and pencil tasks.

Assessment

SBG Discovery Works Lesson Assessment Sheets

SBG Discovery Works Performance Assessment Standards

SBG Discovery Works Unit Test

Rubrics for written assignments in Science Notebooks

Selection and supply assessments from paper and pencil tasks in Thematic Unit

Grade 2 Science and Technology/Engineering Curriculum Guideline

Unit: Solids, Liquids and Gases

Topic:

Student Learning Objectives

- 50114** Sort objects by observable properties such as size, shape, color, weight, and texture.
- 50115** Identify objects and materials as solid, liquid, or gas. Recognize that solids have a definite shape and that liquids and gases take the shape of their container.
- 50119** Identify materials that come from natural resources.

Describe the difference between materials from natural resources and man-made materials.
- 50120** Identify and explain some possible uses for natural materials (e.g. wood, cotton, fur, wool) and human-made materials (e.g., plastic, Styrofoam).

Textbook References, Resources and Materials

- Activity card
Poster book
Picture card
Math Manipulatives
- Class library books
- Bathroom scale
- Pictures of animals
Wildlife fact file pictures
- Writing and drawing
Paper
Chart paper
- Writing and drawing paper
Chart paper
- Writing and drawing paper
Chart paper

Grade 2 Science and Technology/Engineering Curriculum Guideline

Suggested Instructional Strategies

Students select a project that they feel would best demonstrate their knowledge of the information learned in this unit. Students could choose from: poster, essay, poem, song, collage, or actually build items using these materials. Students would be expected to orally present their project.

Assessment

Rubric for written work

Rubric for oral presentation

Grade 2 Science and Technology/Engineering Curriculum Guideline

Unit: Technology

Topic:

Student Learning Objectives

Textbook References, Resources and Materials

- 50121** Identify and describe the safe and proper use of tools and materials (glue, scissors, tape, ruler, paper, toothpicks, straws, spools).

Suggested Instructional Strategies

This standard is taught in all 2nd grade science units.

Refer to any items used to create two or three dimensional pieces of artwork, written work, etc. as the "tools" and "materials" that students need to use to complete any assigned project. This will help them become familiar and confident using the terminology. Take the time necessary to demonstrate to students the proper use of tools and materials. Make your expectations well known to the students for the proper use and safety of all tools and materials. Have a consequence for improper use of tools and materials.

Assign simple tasks for students to use new tools or materials. Once skills are developed, add more tools and materials, until student abilities with many different tools and materials is fluid.

Assessment

Performance based. Reteach as necessary until student becomes proficient.

Grade 2 Science and Technology/Engineering Curriculum Guideline

Unit: Weather

Topic:

Student Learning Objectives

50102 Recognize that air is a gas that is all around us and that wind is moving air.

50103 Describe the weather changes from day to day and over the seasons.

Textbook References, Resources and Materials

TM: Weather
TM: Solids, Liquids and Gases

Air is all Around Us

Brown paper bags
Plastic bags
Twist ties
Tooth paste
Water
Paper
Materials for pinwheel, windsocks
Graph paper

Materials for anemometer or wind vane
Air is All Around You

Instruments for weather center
Graph - temperature worksheet for weather
Books from bibliography
Magazines for pictures
Class weather chart
Thermometers

TM: Weathers and Seasons
Trade Books: Bringing the Rain to Kapiti Paini
Emmett's Snowball

Grade 2 Science and Technology/Engineering Curriculum Guideline

50104 Recognize that the sun supplies heat and light to the earth and is necessary for life.

Seeds
Plastic bowls
Soil
Thermometer

TM: Weather and Seasons
TM: Interactions of Living Things
TM: Color and Light

Making Terrarium
- soda bottles
- soil
- rock
- plants
- water
- tape

50105 Identify some events around us that have repeating patterns, including the seasons of the year, day and night.

TM: Wather and Seasons
Classroom computer
Repeating Patterns
- chart paper
- markers
- writing paper
- pencils
- plain white paper
- crayons and/or markers

50111 Recognize changes in appearance that animals and plants go through as the seasons change.

Tree

Bags

Art paper

Grade 2 Science and Technology/Engineering Curriculum Guideline

50102 Recognize that air is a gas that is all around us and that wind is moving air.

TM: Weather
TM: Solids, Liquids and Gases

Air is all Around Us

Brown paper bags
Plastic bags
Twist ties
Tooth paste
Water
Paper
Materials for pinwheel, windsocks
Graph paper

Materials for anemometer or wind vane
Air is All Around You

50103 Describe the weather changes from day to day and over the seasons.

Paper
Instruments for weather center
Graph - temperature worksheet for weather
Books from bibliography
Magazines for pictures
Class weather chart
Thermometers

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