

Curriculum for
SCI 2A

***Second Grade Science,
First Semester***

v.2.0

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Outreach & Distance Education (ODE) K-12 courses are developed by state-certified instructors to comply with the Texas Essential Knowledge and Skills (TEKS), Title 19 TAC Part II, Chapters 110-128, as administered by the Texas Education Agency (TEA). Students are encouraged to visit <http://www.tea.state.tx.us/teks/> to review the TEKS used by these state-certified instructors to develop ODE K-12 courses.

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Books and Materials for Science This Semester

Textbooks:

- Jones, Robert M., et al., *Harcourt Science* (Harcourt School Publishers, 2000), ISBN 0153112050
- *Harcourt Science Workbook* (Harcourt School Publishers, 2000), ISBN 0153131799

Books for Novel Study:

- Bourgeois, *Franklin Plants a Tree* (Scholastic, 2001), ISBN 0439203821
- Brett, *The Umbrella* (Penguin Putnam Books for Young Readers, 2004), ISBN 0399242155
- Cole, *The Magic School Bus in the Time of the Dinosaurs* (Scholastic, 1995), ISBN 0590446894

Optional Books

Unit 1—

- *Nature in Your Backyard* by Susan Lang
- *The Lotus Seed* by Sherry Garland
- *How Does a Plant Grow?* by Lawrence F Lowery
- *From Seed to Plant* by Gail Gibbons
- *Crinkleroot's Guide to Knowing the Trees* by Jim Arnosky
- *The Life and Times of the Apple* by Charles Micucci
- *Do You Know the Difference?* by Andrea Bischhoff-Miersch
- *Who is the Beast?* by Keith Baker
- *Amazing Animal Babies* by Christopher Maynard
- *Crinkleroot's Guide to Knowing the Birds* by Jim Arnosky
- *Cousin Ruth's Tooth* by Amy MacDonald
- *Little Bear Brushes His Teeth* by Jutta Langreuter
- *Bones (Step-Into-Reading, Step 2)* by Stephen Krensky
- *Bones: Our Skeletal System* by Seymour Simon
- *Blood and Guts: A Working Guide to Your Own Insides* by Linda Allison

- *Half a Moon and One Whole Star* by Crescent Dragonwagon
- *Good Enough to Eat: A Kid's Guide to Food and Nutrition* by Lizzy Rockwell
- *Eating* by Anna Sandeman

Unit 2—

- *Nearer Nature* by Jim Arnosky
- *The Gift of the Tree* by Alvin Tresselt
- *Raven and River* by Nancy White Carlstrom
- *Life in the Rainforest: Plants, Animals, and People* by Melvin Berger
- *Around the Pond: Who's Been Here?* by Lindsay Barrett George
- *Animals of the Oceans* by Stephen Savage
- *Who Eats What? Food Chains and Food Webs (Let's-Read-and-Find-Out Science, Stage 2)* by Patricia Lauber
- *Crinkleroot's Guide to Knowing Animal Habitats* by Jim Arnosky
- *The Desert Is Theirs* by Byrd Baylor
- *The Summer Sands* by Sherry Garland
- *Come a Tide* by George Ella Lyon
- *Just a Dream* by Chris Van Allsburg
- *The Great Trash Bash* by Loreen Leedy
- *Recycle: A Handbook for Kids* by Gail Gibbons
- *Galimoto* by Karen Lynn Williams

Unit 3—

- *Jack's Garden* by Henry Cole
- *Rocks and Soil (Our World Series)* by Neil Morris
- *I Am Water* by Jean Marzollo
- *Water, Water Everywhere* by Mark J. Rauzon
- *Super-Science Readers—Follow a Raindrop: The Water Cycle* by Elsie Ward
- *A Tree is Growing* by Arthur Dorros
- *Timber!* by William Jaspersohn
- *Discovering Dinosaurs With a Fossil Hunter (I Like Science)* by Judith Williams
- *I Met a Dinosaur* by Jan Wahl
- *Digging Up Dinosaurs* by Alike
- *If You Are a Hunter of Fossils* by Byrd Baylor

- *A Dinosaur Named After Me* by Bernard Most
- *The Littlest Dinosaurs* by Bernard Most

Materials:

- animal books (non-fiction)
- animal pictures
- balloon
- bean seeds, 1 package
- berries
- birdseed
- blender
- books about dinosaurs
- bottle cap
- bowls, 2
- brown sugar
- bucket
- cheese cloth
- chenille sticks
- clay, modeling
- coffee filters
- coloring books (optional)
- containers or bags, plastic, 3
- containers, clear, 2
- cotton balls
- cotton t-shirt or cloth, white
- cracker
- crayons
- dirt
- dishwashing soap
- encyclopedia
- fishing line
- fishing weight

- food coloring: red, green
- funnels
- glue
- gravel
- hand lens
- ice cube tray
- index cards, 3" × 5", 10
- jar, glass, 1-gallon
- labels or paper and tape
- lettuce leaves, 2
- magazines with pictures of food
- markers
- meal
- mealworms
- measuring cup
- milk carton
- mirror
- nature materials from outdoors such as grass clippings, leaves, sticks, string, pine needles, dead weeds, dirt, fur from the student's dog or cat, etc.
- old magazines
- old newspapers
- paint (optional)
- paint brushes
- paper cup
- paper dots
- paper plates, 3
- paper towel tubes, 2
- paper towels
- paper: construction, drawing, plain white, scrap, writing
- pencils
- pictures of dinosaurs, plants, and other animals that lived in dinosaur times
- plant parts

- plants, 2
- plastic animals
- plastic bags, resealable, 5 (2 quart-sized)
- plastic cups, clear, 6
- play dough
- poster boards, 2
- reference books, magazines, and/or Internet access
- rubber bands, 3
- salt
- sand
- scissors
- screen, window
- seeds
- shoe box or cereal box, empty
- shovel
- small objects
- soil samples, 3 (topsoil, clay soil, and sand)
- spiral notebook for Science Journal
- sponge
- spoon
- spray bottle
- stapler
- string
- syrup
- tape
- tissue paper, blue
- toothpicks
- used things (bottles, aluminum cans, cardboard, etc.)
- water
- wire screen or net squares about 6" square, 6 (wire screen can be found at a hardware store; net can be found at a fabric store)

Grading Procedures and Unit Assignment Checklists

Grades are calculated for Unit 1, Unit 2, and Unit 3. The semester grade is an average of the three unit grades. The unit grades will include a test and a project for each unit. The unit test will be worth 75% of the total grade and the unit project will be worth 25% of the total grade. The unit tests and unit projects can be located in Appendix C of this lesson plan manual.

The unit test and the unit projects will be mailed to Texas Tech University Elementary School to be graded. Please use one of the envelopes that are provided to send the unit test and project. Place the appropriate bar code in the rectangle on the envelope. If you are sending the Unit 1 test and project, use the "Lesson 1" barcode. If you are sending the Unit 2 test and project, use the "Lesson 2" barcode. If you are sending the Unit 3 test and project, use the "Final Exam 'EX'" barcode. If the unit project is too large to fit in the envelope, please send a picture, an e-mail, or a video.

The tests and projects usually are delivered by our U.S. post office; however, sometimes the mail is lost or destroyed. Therefore, please make a copy of the tests and projects that you send in case they are lost or destroyed.

Schedule for tests and projects

Unit 1:

- _____ Day 24 Complete the Unit 1 Project*
 - _____ Day 25 Administer the Unit 1 Test* and send the test and project to Texas Tech University Elementary School
- * in Appendix C of this lesson plan manual*

Unit 2:

- _____ Day 49 Complete the Unit 2 Project*
 - _____ Day 50 Administer the Unit 2 Test* and send the test and project to Texas Tech University Elementary School
- * in Appendix C*

Unit 3:

_____ Day 74 Complete the Unit 3 Project*

_____ Day 75 Administer the Unit 3 Test* and send the test and project to Texas
Tech University Elementary School

** in Appendix C*

Unit Projects

Your student must complete a project for each unit. The student has the option of creating his or her own project or choosing one of the three listed in Appendix C. If the student chooses his or her own topic, he or she must choose a topic based on the information presented in the unit, and it must be approved by Texas Tech University Elementary School. Your student must also fill in the "Topic Browsing Planner" and "Resident Expert Planner" sheets found in Appendix C. Please submit these to Texas Tech University Elementary School no later than one week after your student begins the unit. Submit these forms to:

Texas Tech University Elementary School
Box 42191
Lubbock, Texas 79409-2191
Attn: (your teacher's name)

Texas Tech University Elementary School will notify your student whether or not his or her project has been approved.

Unit 1

Living Things Grow and Change

Overview

This Life Science unit lets the student discover the differences between living and nonliving things and learn how plants and animals grow and change. Unit A of your textbook, *Harcourt Science*, will discuss classification of animals. Unit A will also address what living things need to survive. It also explains how plants and animals work together.

At the end of this unit, the student should be able to:

- demonstrate safe practices during classroom and field investigations;
- ask questions about organisms, objects, and events;
- compare results of investigations with what scientists know about the world;
- gather information using simple equipment and tools to extend the senses;
- construct reasonable explanations and draw conclusions using information and prior knowledge;
- communicate explanations about investigations;
- make decisions using information;
- discuss and justify the merits of decisions;
- explain a problem in his or her own words and identify a task and solution related to the problem;

- collect information using tools including rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances;
- measure and compare organisms and objects and parts of organisms and objects using standard and non-standard units;
- classify and sequence organisms, objects, and events based on properties and patterns;
- identify, predict, replicate, and create patterns including those seen in charts, graphs, and numbers;
- observe and record the functions of plant parts;
- observe and record the functions of animal parts;
- identify characteristics of living organisms;
- identify characteristics of nonliving objects;
- identify the external characteristics of different kinds of plants and animal that allow their needs to be met.

Materials needed for Science:

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- *Harcourt Science Workbook* (Harcourt School Publishers, 2000), ISBN 0153131799
- Bourgeois, *Franklin Plants a Tree* (Scholastic, 2001), ISBN 0439203821
- animal books (non-fiction)
- balloon
- bean seeds, 1 package
- bottle cap
- coloring books (optional)
- cracker
- crayons
- encyclopedia
- glue

- hand lens
- index cards, 3" × 5", 10
- magazines with pictures of food
- markers
- meal
- mealworms
- mirror
- old magazines
- paper cup
- paper plate or paper circle, 8"
- paper towel tubes, 2
- paper towels
- paper: drawing, plain white, writing
- pencils
- plants, 2
- poster boards, 2
- plastic bags, resealable, quart-size, 2
- rubber bands, 3
- scissors
- spiral notebook for Science Journal
- stapler
- string
- tape
- water

Optional Books:

- *Nature in Your Backyard* by Susan Lang
- *The Lotus Seed* by Sherry Garland
- *How Does a Plant Grow?* by Lawrence F Lowery

- *From Seed to Plant* by Gail Gibbons
- *Crinkleroot's Guide to Knowing the Trees* by Jim Arnosky
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Day 1

SCIENCE

Harcourt Science, Unit A, "Living Things Grow and Change,"

Chapter 1, "Plants Grow and Change,"

Lesson 1, "What Are Living and Nonliving Things?"

Harcourt Science Workbook, page 1

spiral notebook with four sections

pencil

Read pages A2-A7 in *Harcourt Science* with your student.

Give your student a wide-ruled spiral notebook with four sections to use as a Science Journal. Have the student designate the following four sections in his or her Science Journal:

- Vocabulary
- Investigations
- Think About It
- I Wonder

Tell your student to write the following words and their definitions in the vocabulary section of his or her Science Journal.

- **living**—things that need food, water, and air to live and grow
- **nonliving**—things that do not need food, water, and air and do not grow
- **nutrients**—minerals from the soil
- **seed coat**—covering that protects a seed
- **germinate**—begin to grow, as seeds do
- **seedling**—young plant that grows from a seed
- **cactus**—desert plant that can store water in its stems

Have your student complete *Harcourt Science* Workbook page 1. Check the student's work with the answer key provided in Appendix B of this lesson plan manual.

Unit 1 Project Preparation

The assessments for Unit 1 include a test on Day 25 as well as a project on Day 24. Please refer to the project choices for Day 24 to help your student plan his or her Unit 1 project. They can be found on pages A70-A71 of *Harcourt Science* or in Appendix C of this lesson plan manual. This project will need to be completed and sent to Texas Tech University Elementary School with the completed Unit 1 test.