Introduction

Curriculum Overview

Congratulations on choosing an outstanding 3rd-grade curriculum! Using this curriculum, you and your student will be engaged in conducting experiments, reading fiction and nonfiction selections, making investigations, observing our changing environment, recording and evaluating data, sequencing events, and a plethora of other activities. One of the advantages in selecting Texas Tech University K-12 curriculum is that you will have an all-encompassing curriculum similar to what you would find in some of the most outstanding teacher's classrooms in our nation.

This course is completed online in Blackboard using the PDF **Unit Lessons** and **Worksheets** documents.

3rd Grade Science

Science 3B is composed of three units. The course begins in Unit 4 with a study of the water cycle and the role the sun plays in supplying the energy to keep the cycle going. The Earth's atmosphere and the weather in it are the next topics of study. From the atmosphere, our focus expands to include the Earth in space as a member of the Solar System. Unit 5 centers around a study of matter and its forms and changes. Unit 6 is a study of heat and light as forms of energy. The student is introduced to the concept of force and how force affects the motion of objects. In addition, the student is encouraged to think and act like a scientist through a variety of hands-on activities. Students will practice skills such as forming hypotheses, observing, measuring, collecting and displaying data, and drawing conclusions.

At the end of each unit, the student will take a **Unit Test**. In addition, your student is expected to do one of the **Unit Projects** listed in the unit folder. Each unit has three projects from which to choose. For each Unit Test, the student will download and complete PDF test pages, then scan or take digital photographs of the completed pages showing his or her work. Completed Unit Projects must also be scanned or photographed. Combine the images for each assignment into a single PDF (see **Requirements for Creating PDFs** on the course home page) and upload the file for grading as instructed in the assignment.

A project grading rubric is included in the **Resources** section of this course to help you understand the important aspects of the project. We suggest that you and your student look over the project list before you begin each unit so that the student will finish the project at about the same time he or she is coming to the end of the unit.

As in the first semester of Science, Grade 3, it is strongly recommended that your student keep a 3-ring binder for written work throughout this course. It is also suggested that the student create

a vocabulary file on index cards and add to the file as the course progresses. Both binder and vocabulary cards will be a valuable tool to build concepts and develop understanding. On days when your student moves quickly through the suggested activities, the binder and vocabulary cards will be on hand for study and review.

Course Objectives

This curriculum meets all the Texas Essential Knowledge and Skills (TEKS) objectives. At the end of the second semester, the student should be able to do the following:

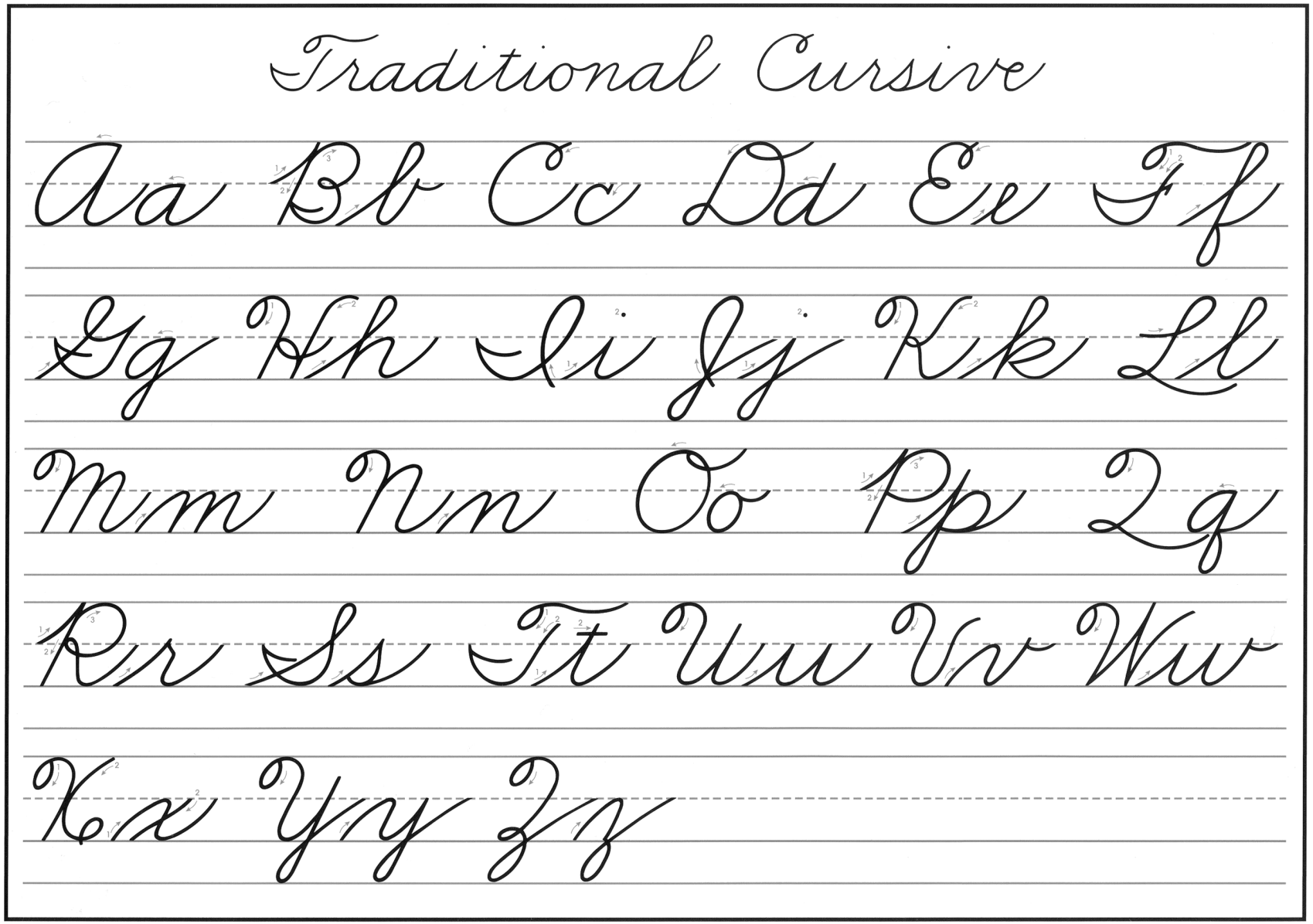
- **Scientific processes:**
  - ◊ demonstrate safe practices during field and laboratory investigations;
  - ◊ make wise choices in the use and conservation of resources and the disposal or recycling of materials;
  - ◊ plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;
  - ◊ collect information by observing and measuring;
  - ◊ analyze and interpret information to construct reasonable explanations from direct and indirect evidence;
  - ◊ communicate valid conclusions;
  - ◊ construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information;
  - ◊ analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;
  - ◊ draw inferences based on information related to promotional materials for products and services;
  - ◊ represent the natural world using models and identify their limitations;
  - ◊ evaluate the impact of research on scientific thought, society, and the environment;
  - ◊ connect Grade 3 science concepts with the history of science and contributions of scientists;
  - ◊ collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses;
  - ◊ demonstrate that repeated investigations may increase the reliability of results;
- **Science concepts:**
  - ◊ observe and identify simple systems such as a sprouted seed and a wooden toy car;

- ◊ observe a simple system and describe the role of various parts such as a yo-yo and string;
- ◊ measure and record changes in the position and direction of the motion of an object to which a force such as a push or pull has been applied;
- ◊ identify that the surface of the Earth can be changed by forces such as earthquakes and glaciers;
- ◊ gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter;
- ◊ identify matter as liquids, solids, and gases;
- ◊ observe and describe the habitats of organisms within an ecosystem;
- ◊ observe and identify organisms with similar needs that compete with one another for resources such as oxygen, water, food, or space;
- ◊ describe environmental changes in which some organisms would thrive, become ill, or perish;
- ◊ describe how living organisms modify their physical environment to meet their needs, such as beavers building a dam or humans building a home;
- ◊ observe and identify characteristics among species that allow each to survive and reproduce;
- ◊ analyze how adaptive characteristics help individuals within a species to survive and reproduce;
- ◊ identify some inherited traits of plants;
- ◊ identify some inherited traits of animals;
- ◊ identify and describe the importance of earth materials including rocks, soil, water, and gases of the atmosphere in the local area and classify them as renewable, nonrenewable, or inexhaustible resources;
- ◊ identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants;
- ◊ identify the planets in our solar system and their position in relation to the Sun;
- ◊ describe the characteristics of the Sun.

Handwriting

Handwriting is taught in the Language Arts course; however, good handwriting skills are necessary in all subjects including science. In Kindergarten, Grade 1, and Grade 2, manuscript is the preferred technique; in Grades 3, 4, and 5, cursive is preferred. When teaching your child handwriting, please consider the appropriate letter and number formation and spacing. Please refer to the cursive chart included on the next page to assist you in appropriately teaching your child handwriting. Please reinforce the importance of good handwriting in all subject areas.

Traditional Cursive



Books and Materials for SCI 3 This Semester

Textbooks

- Frank, Marjorie Slavick, et al., *Harcourt Science*, Grade 3 (Harcourt, Inc., 2000), ISBN 0-15-311206-9

Materials

- aluminum foil
- baking soda
- balance
- batteries: 4 C-cell, 4 D-cell
- binoculars
- blocks, wooden, 2
- board, wooden (about 1 meter long)
- books, 2, one large
- button, metal
- candy, peppermint
- cardboard or file folder
- chair
- chalk or dry erase markers
- chalkboard or dry erase board
- clay
- clock with second hand
- coffee can with tight lid
- containers, clear plastic, 3 different sizes
- cookie sheet
- cotton balls
- crayon or chalk, white
- crayons, color
- cups with handles: metal, plastic
- cups: 15 clear plastic, 3 foam

- dictionary
- dime
- eye dropper or pipette
- flashlight
- funnel
- glass bowls: large and medium-size
- glass, clear
- globe, plastic inflatable
- glue, white
- graduated cylinder, 500-mL
- hair dryer
- hat (e.g., baseball cap)
- ice
- index cards: 1 large (6” × 4”), 75 regular (3” × 5”)
- jar lids, 2
- jars: 1 large plastic or glass, 4 identical
- key
- lamp, small, short, without lampshade
- laundry starch, liquid
- macaroni, uncooked
- magnet
- marbles, 7
- markers: black, red, 1 black with narrow tip
- masking tape
- measuring cup, clear
- measuring spoons
- meterstick
- metric ruler
- mirror, small, rectangular or square
- mugs, ceramic, 2
- newspaper
- nickel
- oil

- paper clips, steel, #1 size, box of 100
- paper plate, large
- paper towels
- paper: 8½" × 11" construction (black, green, white), drawing (large) , graph, 8½" × 11" unlined
- pencils
- penny
- peppercorns
- plastic bag
- powdered drink mix, 1 package
- rice
- rubber bands, 3, varying thicknesses
- ruler
- safety goggles
- salt
- sand
- scale (optional)
- science notebook (from SCI 3A)
- scissors
- shoe with laces
- small coffee can with plastic lid
- small objects (rocks, nuts, bolts, etc.)
- socks, wool, 2
- softball
- spoons: metal, plastic, wood
- spring scale
- stapler
- stars, gummed
- straight pin
- string
- tape, transparent
- thermometer, lab, long (may substitute household thermometer)
- thermometer: 3 Celsius, at least one with both Fahrenheit and Celsius markings

- tomato sauce, 8-ounce can
- toy car
- twist tie
- vinegar: red and white
- watch or wall-mounted clock
- water
- water bottle, clear plastic, empty, with tight cap
- wax paper, several squares about 6cm × 6cm
- wooden craft or ice cream stick
- wool, small piece

Grading Procedures and Unit Assignment Checklists

Grades are calculated for Unit 4, Unit 5, and Unit 6. 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 4 and Unit 5 Tests and Projects are located in their respective Unit folders in this online course; the Unit 6 Test and Project are the Final Exam folder.

The Unit Tests and Unit Projects will be submitted **separately** to Texas Tech University K-12 to be graded. After the student has finished the Unit Test, scan or take a digital photograph of the assigned pages, showing his or her work. Combine the images into a ***single* PDF** (see "Requirements for Creating PDFs" on the course home page).

Scan or photograph each Unit Project. (For audio or video projects, see "Audio Help" and "Video Help" on the course home page for information about saving these formats for upload.) Combine multiple images into a ***single* PDF**.

When you save your documents, use the naming convention given for each Unit Test or Unit Project as the name of your file. Upload the file according to the instructions given in the assignment.

Schedule for tests and projects

Unit 4:

- Day 99: Chapter Review
- Day 100: Complete and submit the Unit 4 Project
  Administer the Unit 4 Test

Unit 5:

- Day 124: Chapter Review
- Day 125: Complete and submit the Unit 5 Project
  Administer the Unit 5 Test

Unit 6:

- Day 148: Chapter Review
- Day 149: Complete the Unit 6 Project
- Day 150: Administer the Unit 6 Test
  Submit the Unit 6 Project

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 those listed in **Suggested Projects** in this course. If the student chooses a 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 K-12. The student must also complete a **Unit Topic Planner**. Please submit these to Texas Tech University K-12 no later than one week after your student begins the unit.

The student's teacher will send feedback regarding whether or not your project has been approved. You will find it in the **My Grades** area of this course.