Introduction

Curriculum Overview

Congratulations on choosing an outstanding second-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 true advantages in selecting Texas Tech University K-12 is that you will have an all-encompassing curriculum similar to what you would find in some of the most outstanding teachers' classrooms in our nation.

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

Unit assessments in this course consist of two parts, the **Unit Test** and the **Unit Project**. For each Unit Test, the student will download and complete PDF test pages, then scan or take a digital photograph 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.

2nd Grade Science

The Earth Science unit focuses on the sun, the moon, the stars, and planets, as well as the different kinds of weather. The student will learn about what causes night and day, what causes the seasons, the phases of the moon, and what is seen at night in the sky.

Everything is made of matter. Matter can be observed and can usually be found in three forms: solid, liquid or gas. Matter can be changed physically or chemically. The student will learn about matter and investigate the different properties of solids, liquids, and gases. The student will observe and complete experiments and investigations that explain the properties of matter.

The final unit is filled with investigations discovering the properties of motion, sound, and light. It is set up to develop the scientific skills used in discovering facts about energy. In Chapter 1, the student will learn about forces and motion. Gravity and magnetism along with pulls and pushes are included. In Chapter 2, sound is studied and the student will learn what sound is, how it travels, and what makes sounds different. Thomas Alva Edison is studied through a book study and additional lessons on sound will be completed through a study of the book *Sounds All Around* by Wendy Pfeffer.

continued →

Course Objectives

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

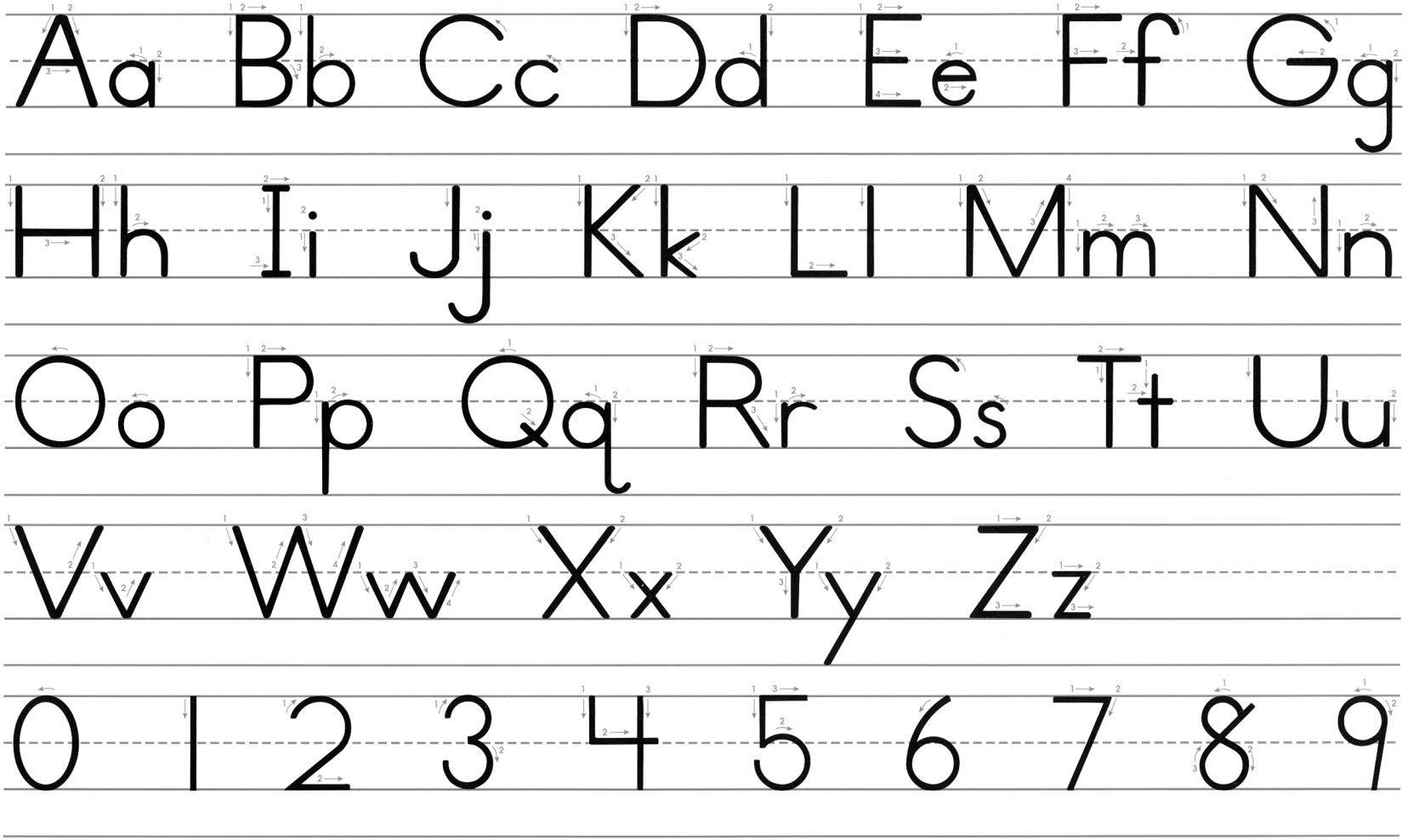
- identify the characteristics of the sun, the moon and the stars;
- compare night and day;
- describe how the Earth orbits the Sun;
- identify the causes of seasons on Earth;
- demonstrate how the reflection of the sun's light enables us to see the moon;
- explain how sunlight and the moon's orbit around the Earth make the moon appear to change shapes;
- identify the characteristics of the Sun;
- identify and compare the stars and the planets;
- identify a group of stars as a constellation;
- identify ways the weather can change from day to day;
- recognize how the weather changes from season to season;
- explain how water gets into the air;
- describe the water cycle;
- identify tools used to measure weather conditions;
- predict the weather using different kinds of clouds as indicators;
- identify and follow safe procedures during severe weather conditions;
- identify and describe properties of matter;
- identify three forms of matter—solids, liquids, and gases;
- compare the three forms of matter;
- identify ways to measure solids, liquids, and gases;
- recognize the properties of solids, liquids, and gases;
- observe how cutting, shaping, and mixing matter can change matter;
- describe what happens when matter is cut or mixed;
- recognize that water can be all three states of matter;
- describe how water can be made to change from one state to another;
- identify some changes in matter that are reversible and irreversible;
- recognize that a force is something that pushes or pulls on an object to make it move;
- recognize that weight, friction, and distance affect the force needed to move objects;

- explain how to measure motion;
- determine how much force is needed to move an object;
- explain what makes sound;
- identify the body parts people use to make and hear sound;
- identify sounds as being either loud or soft;
- identify sounds as being either high or low;
- recognize that sound travels through the three forms of matter—gases, liquids, and solids;
- describe ways to change the pitch of sound;
- explain what causes the loudness of a sound to change;
- explain what is needed to make a sound echo;
- make a musical instrument;
- research Thomas Edison and his inventions.

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. When teaching your child handwriting, please consider the appropriate letter and number formation and spacing. Please refer to the manuscript 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 Manuscript



Books and Materials for SCI 2 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

Other Books:

- Vogt, *Solar System* (Scholastic, Inc., 2000), ISBN 0439382475
- Murphy, *Always Inventing: The True Story of Thomas Alva Edison* (Scholastic, 2002), ISBN 0439322383
- Pfeffer, *Sounds All Around* (HarperTrophy, 1999), ISBN 0064451771

Materials:

- alarm clock
- apple
- balance scale
- ball, 2” Styrofoam
- balloon, round 10” blue
- balls: golf, tennis, table tennis
- book about stars
- books, 6
- boot
- bottles, 2 different shaped
- bowl, small
- box lid
- brad
- bread
- chalk or white crayon
- clay
- cloth
- cocoa, dry mix

- colored pencils (optional)
- containers, plastic, 3 different shapes (e.g., bowl, jar, cup)
- cornstarch
- cotton balls, 8
- crayons
- cups, clear plastic, 7 (2 the same size)
- cups, paper, 3 (1 small)
- dried fruit
- drinking glasses, 8
- flashlight
- flour
- flour sifter
- foil
- food coloring, 3 colors
- fork or knife, metal
- glasses, 3
- glue
- ice cubes
- index cards, 10
- Internet access (optional)
- knife, plastic
- lamp with bulb
- magazines, old
- marbles
- margarine
- markers
- measuring cups
- measuring spoons
- measuring tape
- meter stick
- milk
- nuts
- oatmeal, instant

- objects small enough to fit into the bowls of a balance (e.g., small metal car, small ball, tennis ball, ball of clay), 4
- paint, gray tempera
- paper plates, large, 2
- paper sack, brown
- paper towel
- paper: card stock (optional), construction, plain white
- peanut butter
- pencils
- pennies, 200
- pie pan, aluminum
- plastic wrap, clear
- plates, plastic, 2
- ribbon or streamers, iridescent curling
- rocks, small
- roll of calculator paper, 55” long
- rubber bands
- rubber scraper
- ruler
- salt
- saucepan, large
- scissors
- seeds
- shoe box
- spiral notebook with four sections for Science Journal
- spoons: metal, wooden
- spring scale
- stapler
- star stickers, small
- string, cotton, 4’
- sugar
- tape: masking, transparent
- tennis shoe

- thermometer
- toy truck
- tweezers
- vanilla
- water
- wax paper
- wooden board, 2’
- wrapping paper tubes (24 inches long), empty, 2
- yardstick or tape measure
- yo-yo
- zip-close bags, 3

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: Review for the Unit 4 Test;
  Complete the Unit 4 Project
- Day 100: Administer the Unit 4 Test;
  Submit the Unit 4 Project

Unit 5:

- Day 124: Review for the Unit 4 Test;
  Complete the Unit 4 Project
- Day 125: Administer the Unit 4 Test;
  Submit the Unit 4 Project

Unit 6:

- Day 149: Review for the Unit 4 Test;
  Complete the Unit 4 Project
- Day 150: Administer the Unit 4 Test;
  Submit the Unit 4 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.