



Kindergarten Science (SCI) KA – Syllabus

Course Name

SCI KA

Kindergarten Science – Semester A

Course Information

SCI KA is the first semester of this two-semester course.

Kindergarten students are naturally curious about the world around them and are constantly interacting with their environment. This 75-day curriculum engages kindergarten students to become scientists as they observe, compare and contrast, ask questions, design experiments, and discover answers about the world around them. We begin our journey by learning to use our five senses to explore and gather information about the world around us. We will use basic science skills such as classifying and sorting as we learn to safely investigate and use technology to perform science experiments. Areas of study include matter, energy, and motion.

Course Delivery Method

Online

Contacting Your Instructor

You may contact your instructor through the Blackboard messaging system. Technical support is available 24/7 at [TTU K-12](#).

Course Objectives

After completing this course, the students should be able to:

- identify and demonstrate safe practices during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;
- discuss the importance of safe practices to keep self and others safe and healthy;

- demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal;
- ask questions about objects and events observed in the natural world;
- plan and conduct simple descriptive investigations;
- collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools;
- record and organize data and observations using pictures, numbers, and words;
- communicate observations with others about simple descriptive investigations;
- identify and explain a problem such as the impact of littering on the playground and propose a solution in his or her own words;
- make predictions based on observable patterns in nature such as the shapes of leaves;
- recognize that scientists investigate different things in the natural world and use tools to help in their investigations;
- collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, and notebooks;
- use senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment;
- use the five senses to explore different forms of energy such as light, heat, and sound;
- explore interactions between magnets and various materials;
- observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture;
- observe, record, and discuss how materials can be changed by heating or cooling;
- observe and describe the location of an object in relation to another such as *above*, *below*, *behind*, *in front of*, and *beside*; and
- observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow.

SCI K addresses the required Texas Essential Knowledge and Skills (TEKS). These can be found at the [Texas Education Agency](http://www.tea.state.tx.us/teks/) website.

Textbook and Materials

Textbook(s)

There is no required textbook for this course.

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Other Required Books

These books can be purchased from any book vendor or borrowed from your public library.

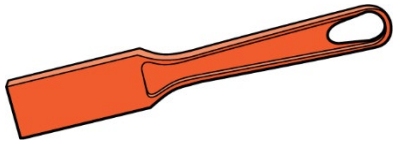
- Aiki, *My Five Senses*
- Awdry, Rev. W., *Fast Train, Slow Train* (Thomas & Friends)
- Berenstain, Stan & Jan, *Bears in the Night*
- Berger, Melvin, *Sound, Heat, and Light: Energy at Work*
- Blevins, Wiley, *You Can Use a Magnifying Glass* (Rookie Read-About Science)
- Boothroyd, Jennifer, *Vibrations Make Sound*
- Bullock, Linda, *You Can Use a Balance* (Rookie Read-About Science)
- Curry, Don L., *What is Matter?* (Rookie Read-About Science)
- Dr. Seuss, *Green Eggs and Ham*
- Fowler, Allan, *What Magnets Can Do* (Rookie Read-About Science)
- Garrett, Ginger, *Scientists Ask Questions* (Rookie Read-About Science)
- Hutchins, Pat, *Rosie's Walk*
- Lindeen, Carol K., *Solids, Liquids, and Gases*
- Martin, Bill Jr., *Up and Down on the Merry-Go-Round*
- Murphy, Patricia, *Push and Pull* (Rookie Read-About Science)
- Reid, Margarette S., *The Button Box*
- Rosinsky, Natalie M., *Light: Shadows, Mirrors, and Rainbows*
- Rosinsky, Natalie M., *Magnets: Pulling Together, Pushing Apart* (Amazing Science)
- Schofield-Morrison, Connie, *I Got The Rhythm*
- Schrier, Allyson, *Fast as a Cheetah, Slow as a Sloth* (Reading Essentials: Discovering Science)
- Showers, Paul, *Where Does the Garbage Go?* (Let's Read and Find Out)
- Stille, Darlene, *Motion: Push and Pull, Fast and Slow* (Amazing Science)
- Trumbauer, Lisa, *All About Heat* (Rookie Read-About Science)
- Trumbauer, Lisa, *What Is a Thermometer?* (Rookie Read-About Science)

Materials

- apple
- balance scale
- balloons, 5-8
- basket
- blocks, flat, 2 (e.g., shape blocks)
- blocks, rectangular, 2, wood or plastic
- bobby pin
- bolts
- bowl
- brick
- bucket, plastic, 2-gallon

- building blocks: wood, plastic, or foam, larger than LEGO® bricks
- butter, 1 tablespoon
- buttons, 25, a variety of colors and styles
- card stock, white
- cardboard boxes of different sizes: empty cereal boxes, shoe boxes, etc.
- chocolate milk, cold
- clay
- coins, 10
- color pictures of a cow, a bear, a deer, a dog, a duck, and an owl from magazine or Internet
- containers for water: one tall and narrow (like a vase), one low and wide (like a food storage container)
- containers, 4 to 6, different-sizes such as 1/4-cup dry measuring cup, empty medicine containers, small storage containers, etc.
- cooking utensils
- cotton balls
- crayons
- cups, clear plastic or paper, 5
- eggs
- erasers
- familiar toy such as a small car or doll
- flashlight
- freezer
- glue or glue stick
- gooseneck lamp
- gum, 1 stick
- hairdryer
- hand lens
- hole punch
- ice cube trays or popsicle molds
- ice cubes
- index cards, 3" × 5"
- jars or clear plastic containers, 1-cup capacity, 2
- juice, 1 bottle
- keys
- kitchen utensils: large cooking spoon, measuring spoons, butter knife, fork
- knife
- leaves, 10, different sizes and shapes
- LEGO® brick
- lip balm, scented
- magazines or Internet graphics (optional)
- magnetic objects, small
- magnetic tape, 3"

- magnets: horseshoe, wand



- marbles, 5
- markers: black, red, and green
- measurement manipulatives: coins, cubes, marshmallows, other small objects
- measuring cup, clear, 1-2 cups with lines to show increments of lesser amounts
- microwave (optional)
- music, Beethoven's *Symphony No. 5*
- nails
- nuts
- orange
- paint-stirring stick
- pans
- paper plates, 4
- paper towels, 2
- paper: chart; 12" × 18" construction, dark red or dark blue; drawing, wide-ruled notebook; plain white
- paperclips, small, 1 box
- paper-towel rolls, empty, 5
- party favor toys (blowout noisemaker, top, clackers, Slinky®, etc.)



- pattern blocks: 25 of different shapes, colors, and sizes
- pencil with new eraser
- pencils
- plastic bee or other small insect
- plastic wrap
- popsicle stick
- printer
- pushpin
- refrigerator
- rhythm sticks, 4
- rocks or cans of food, 2 different sizes
- rubber bands, 10, 4 of varying thicknesses and lengths
- ruler
- sack, paper

- safety pin
- salt, 1 cup
- sand
- sandpaper or Velcro®
- scarf to use as a blindfold
- scissors
- shells (optional)
- shoe box
- shoelace, white cotton, 14" or longer
- small objects, several (toy cars, marbles, dominoes)
- spiral notebook for Science Journal, wide-ruled, approximately 80 pages
- sponge
- sports water bottle (optional)
- stapler
- stick
- stickers and other decorations (optional)
- stove
- string, 20 feet
- stuffed animal
- sugar, 1 cup
- tablespoon
- tape, clear
- thermometers: digital; meat (optional)
- toothpicks, 10
- toy car, small
- toy made of iron or steel, like a small car
- vanilla extract or cinnamon (optional)
- water
- waterproof plate or tray
- whistle
- window with direct sunlight
- yarn, about 1 foot

Technical Requirements

- Internet access – preferably high speed (for accessing Blackboard and online HMH textbook materials)
- Email
- Printing capabilities
- Adobe Reader (download from Adobe.com)
- Audio and video capabilities (for watching/listening to course content)
- PDF app (free options available)
- digital camera or smartphone

Technical Skill Requirements

Be comfortable with the following:

- accessing online learning materials via Blackboard and HMH site
- Internet search engines and browsers
- uploading assignments into Blackboard website (there will be instructions for uploading assignments)
- creating PDFs (see **Requirements for Creating PDFs** on the course Syllabus page)

Course Organization

This course consists of three Units of instruction. Each Unit contains the following:

- Introduction and instructions for parent facilitation
- Learning Objectives and Curriculum Standards
- Five Week folders
- Daily lessons, many of which include online activities
- Unit Assessment

Course Outline

Please note that some assignments will be hidden from students when they start the course. As students move through the lessons and complete assignments, more will unlock.

Modules	Topic	Approximate Time for Completion
Unit 1	Doing Science; Science and Technology	Five weeks
Unit 2	Matter and Energy	Five weeks
Unit 3	Motion	Five weeks

Assignment Schedule

Each of the following must be completed to complete the course.

Unit	Assignments
1	Checkpoint 1 (non-graded) Day 4: Our Five Senses Assessment Day 7 Science Skills Assessment Day 13: Science Tools Assessment

Unit	Assignments
	Day 16: Model Town Project Day 20: Litter Solution Design Day 25: Salt and Sugar Problem-Solving Assessment
2	Day 30: Sorting Matter Assessment Day 33: Heating and Cooling Assessment Day 37: Light Energy Assessment Day 41: Heat Energy Assessment Day 45: Forms of Energy Assessment Day 50: Unit 2 Assessment Flap Books Checkpoint 2 (Non-graded)
3	Day 57: Magnetic Assessment Day 64: Location Summary Assessment Day 75: Unit 3 Assessment Motion Project Checkpoint 3 (Non-graded)

Course Credit

The course grade will be calculated by taking an average of the 15 Daily and Unit Assessments. Each Assessment is worth 100 points, equaling a 1500-point scale for the overall course grade. The final course grade is an average of the 3 Unit grades. Students must make a 70% or above to pass the course.

Students will not have a cumulative course final exam—the Unit 3 Assessment in Week 15 will be treated as the final exam.

Students who score below 70% on the Unit 3 Assessment will be eligible for one re-exam opportunity.

Course Completion and Extensions

- Students may not complete the course in less than 30 days.
- All courses expire six months after the enrollment date.

Academic Integrity

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of

essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

Student/Parent Expectations

You will be expected to log into the Blackboard course regularly to be aware of possible announcements/reminders and to pace your student's progress in the course.

The following are prohibited while using the Blackboard interface:

- spamming;
- hacking; and
- using TTU or Blackboard email for commercial purposes;

Inappropriate behavior shall result in consequences ranging from a request to correct the problem, to removal from the course or even the university, depending on the severity of the behavior. Disciplinary actions will be taken according to the TTU K-12 Student Handbook.

In addition to expectations above, the nature of a 1st Grade class requires that parents/adults are actively involved in their student's instruction. 1st Grade is a time where students are still learning to read, so adults will need to help read the daily instructions to them and assist them in their activities.

Communication

- You can expect a reply from your instructor within 2 business days.
- Use the Blackboard Course Messages tool for sending messages to your instructor.

Submitting Assignments

You will submit all assignments through the Blackboard Assignment Tool, rather than by mail or email.

Technical Difficulties

Getting Help

For student assistance with Blackboard, visit [TTU K-12 Support](#).

Computer Problems

A working computer is necessary for online coursework. Computer problems will not be accepted as a valid reason for failure to complete course activities within the allotted time frame. Identify a second computer, before the course begins, that you can use if you experience computer problems.

Server Problems

When the Blackboard server needs to be taken down for maintenance, the Blackboard administrator will post an announcement in your course informing you of the time and date. If the server experiences unforeseen problems, your course instructor will notify you.

Lost or Corrupted Files

You must keep/save a copy of every project/assignment on an external disk or personal computer. In the event of any kind of technology failure (e.g., Blackboard server crash or virus infection, students' own computer problems, loss of files in cyberspace, etc.) or any disputes, the instructor may request or require you to resubmit the files. In some instances, the instructor may need to open another attempt within Blackboard, so communication with your instructor is critical in these circumstances.