



Grade 2 Science YAG Overview

CSCOPE Science

In the state of Texas, the approved curriculum standards provided by the Texas Education Agency (TEA) are the Texas Essential Knowledge and Skills (TEKS). Whereby most conventional curriculum is organized by individual standards with each standard taught in isolation, the CSCOPE Science approach for curriculum organization was to bundle, or group, TEKS into concept clusters that focus on a big idea. These clusters naturally spiral through the grades from Kindergarten through Grade 8 and culminate in the appropriate high school course(s).

Taking into consideration the science TEKS, the unifying concepts (as identified by the National Science Education Standards), and the current research base for curriculum design, CSCOPE created “bundles of instruction,” or units, that form a focused, coherent curriculum that develops science concepts within each grade level and vertically as the concepts spiral through the grades.

In each grade level or subject, the units were mapped throughout the year allowing time for inquiry-based learning and concept development through student-centered discussion. Each unit is guided by one or more performance indicator(s) that provide an assessment of the student’s understanding of the concepts included in each unit of instruction.

Scientific process skills, which include safety, use of tools, making observations, collecting data, and communicating results, are introduced throughout the year where the skill can be practiced and applied to appropriate content.

When mapping the organization of the curriculum for CSCOPE Science, the following components and/or resources were utilized:

- Texas Essential Knowledge and Skills (TEKS) for Science
- National Science Education Standards (2005)
- Benchmarks for Science Literacy, Project 2061 (1993)
- Science for All Americans, Project 2061 (1990)
- Key text and/or research, as well as other key educational researchers, from which the overall design of the CSCOPE curriculum was formed:
 - Robert Marzano – standards in the classroom
 - Fenwick English – deep curriculum alignment
 - Grant Wiggins and Jay McTighe – curriculum, instruction, and assessment design
 - Heidi Hayes Jacobs – curriculum mapping
 - John Crain – design elements including specificity of TEKS, bundles, and vertical alignment documents
 - Biological Sciences Curriculum Study (BSCS) – 5E Instructional Model
 - H. Lynn Erickson – concept –based curriculum and instruction

Incorporation of Unifying Concepts in CSCOPE Science

The Texas Essential Knowledge and Skills (TEKS) for Kindergarten through Grade 8 science are organized using the unifying concepts and concept strands. The unifying concepts include:

- nature of science
- systems
- constancy and change
- properties, patterns and models

Nature of science is found in the first four standards, which are identified as the process TEKS. These standards incorporate safety skills, investigation skills, tools, and communication skills necessary to carry out scientific investigations. The remaining standards in each grade level incorporate the other unifying concepts and are identified as the concept TEKS. *Systems* focuses on the whole in relation to its parts and how every part relates to all other parts in the system to make the whole. *Constancy and Change* focuses on how some things stay

constant, while other things change. This change can be immediate or happen slowly over time. *Properties, Patterns, and Models* focuses on: (a) an understanding of properties of objects and organisms, (b) patterns as they relate to change, order, and organization, and (c) models with a focus on how a model can represent the real world and its limitations. These models can be physical, conceptual, or mathematical as students' understanding moves from the concrete to the abstract.

The unifying concepts are not meant to be taught in isolation; rather, it is recommended that they be taught through concept strands. In CSCOPE, these concepts are integrated in order for students to better understand the relationships and connections between, life, physical, and earth science. The CSCOPE curriculum is bundled in units that are structured to create a depth of knowledge and better understanding of science as a whole.

CSCOPE Grade 2

Young children are naturally curious about themselves and the world around them. The CSCOPE Grade 2 science curriculum bundles the science standards in a way that combines the student's natural curiosity with a focus on learning to communicate the observations that are being made. In addition, the foundation that was started in Grade 1 is built upon during the Grade 2 units.

The overarching themes of Grade 2 focus on the unifying concepts of *patterns* and *change*. The year starts with students investigating the changes in properties and patterns of objects. The flow of the year progresses to investigating changes in force and motion, as well as investigations of patterns of change in weather, seasons, and the natural world. Students continue by investigating natural resources and classifying objects as living or non-living. They conclude the year by connecting the unifying concepts through exploring organisms, the environment, and the diversity of plants and animals. The focus of the last two units is structure, function and interdependence- setting the foundation for the grades that follow.

Grade 2 places great focus on patterns, change, and interdependence- particularly in the natural world. Communication as a process skill in written, pictorial, and oral form is integrated within each unit throughout the year. Science notebooks are implemented in Grade 2. The foundations of safety, use of tools, and the process of investigation are practiced at this level.

First Semester	Second Semester
<p>1st Nine Weeks</p> <p>Unit 01: Patterns and Properties of Objects (12 days) 2.5A</p> <p>Unit 02: Change Occurs (12 days) 2.6AB; 2.7AB</p> <p>Unit 03: Investigating Force and Motion (12 days) 2.7AC</p> <p>Applicable process TEKS are identified on the TEKS Verification document.</p>	<p>3rd Nine Weeks</p> <p>Unit 07: Natural Resources (12 days) 2.7A; 2.10B</p> <p>Unit 08: Living Organisms and Non-Living Objects (12 days) 2.5A; 2.6AB; 2.8AB</p> <p>Unit 09: Plants (12 days) 2.6ABC; 2.7A; 2.9AB</p> <p>Applicable process TEKS are identified on the TEKS Verification document.</p>
<p>2nd Nine Weeks</p> <p>Unit 04: Patterns of Change: Weather (12 days) 2.5AB; 2.7AD</p> <p>Unit 05: Patterns of Change: Seasons (9 days) 2.5AB; 2.7AD</p> <p>Unit 06: Patterns of Change: The Natural World (16 days) 2.5AB; 2.7ABD; 2.10A</p> <p>Applicable process TEKS are identified on the TEKS Verification document.</p>	<p>4th Nine Weeks</p> <p>Unit 09: Plants (12 days) 2.6ABC; 2.7A; 2.9AB</p> <p>Unit 10: Animals (24 days) 2.4B; 2.5A; 2.6D; 2.7A; 2.8A; 2.9AB</p> <p>Applicable process TEKS are identified on the TEKS Verification document.</p>