



090313

K-16 Education Center

Continuing & Innovative Education

Kindergarten Science

EA/CBE Content Study Guide

This Exam for Acceleration/Credit by Exam Study Guide can help you prepare for the exam by giving you an idea of what you need to study, review, and learn. To succeed, you should be thoroughly familiar with the subject matter before you attempt to take the exam.

Every question that appears on the Exam for Acceleration/Credit by Exam is grounded in the knowledge and skills statements and student expectations within the state-mandated standards, the Texas Essential Knowledge and Skills (TEKS). It should be noted that an exam will not test every student expectation. However, it is important that students study and know the entire scope of the TEKS so that they can develop a complete understanding of the content. The EA/CBEs are a global exam grounded in the TEKS and are not designed to be a final exam. **For a specific listing of the knowledge and skills for this grade level and subject area, please reference the TEKS online at <http://www.tea.state.tx.us/index2.aspx?id=6148>.** Since questions are not taken from any one source, you can prepare by reviewing any of the state-adopted textbooks.

General Introduction

What is the EA/CBE science test based on?

The EA/CBE is based on the state-mandated science standards, the TEKS. All science assessments will be developed using selected knowledge and skills statements and student expectations from the science TEKS. The elementary science tests are based on eligible science TEKS from grades K–5.

How were the TEKS chosen to be on the science test?

The science TEKS statements and student expectations eligible for assessment were determined to be appropriate based on the blueprint for the TAKS test. Although some student expectations within the TEKS are not assessed, educators teach the entire science curriculum so that students can develop a complete understanding of critical science concepts.

How are the TEKS organized within the CBE?

The knowledge and skills statements, with their associated student expectations, are organized under objectives on the CBE. These objectives group the eligible student expectations into categories with similar content. The elementary science test has four objectives.

What is the question format for the science tests?

All items should be in a multiple-choice format with four options. Some multiple-choice items can be written as part of a cluster. A cluster should have a stimulus, which may be a diagram, a brief passage, a chart, or a combination of these, followed by a series of items that should involve the application of knowledge and analysis of the given information.

Can any of the science questions be performance based?

The only direct performance testing on the science tests is using a ruler to measure with precision. Some items should require students to physically use a ruler to measure a drawing of an object in centimeters or millimeters. Although precise measurement is the direct performance-based requirement, many items are based on lab or field activities that students should have experienced. These lab and field experiences should include the use of lab and field equipment.

What about the untested TEKS in the elementary school assessment?

Because of the constraints of a single assessment, not all TEKS can be assessed. While some student expectations are not tested, all the TEKS are critical for students' overall understanding of science. For example, (7.11), "The student knows that the responses of organisms are caused by internal or external stimuli. The student is expected to (A) analyze changes in organisms such as a fever or vomiting that may result from internal stimuli; and (B) identify responses in organisms to external stimuli found in the environment such as the presence or absence of light," is not directly tested, but students must understand this concept in order to successfully answer items testing (8.6), "The student knows that interdependence occurs among living systems. The student is expected to (A) describe interactions among systems in the human organism; (B) identify feedback mechanisms that maintain equilibrium of systems such as body temperature, turgor pressure, and chemical reactions; and (C) describe interactions within ecosystems." The relationship between organisms that are composed of several systems maintaining homeostasis (equilibrium) and their role in the environment is not fully understood until eighth grade, when it is assessed in the middle school test. This concept is then more fully explored in high school through Biology (10), "The student knows that, at all levels of nature, living systems are found within other living systems, each with its own boundary and limits. The student is expected to (A) interpret the functions of systems in organisms including circulatory, digestive, nervous, endocrine, reproductive, integumentary, skeletal, respiratory, muscular, excretory, and immune."

Objective 1

Student demonstrates an understanding of scientific investigation and reasoning.

Students should:

- plan and conduct simple descriptive investigations such as ways objects move.
- 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/her own words.
- make predictions based on observable patterns in nature such as the shapes of leaves.
- explore that scientists investigate different things in the natural world and use tools to help in their investigations.

For a specific listing of the knowledge and skills for this grade level and subject area, please reference the TEKS online at <http://www.tea.state.tx.us/index2.aspx?id=6148>.

Objective 2

Student demonstrates an understanding of organisms and environments.

Students should:

- differentiate between living and nonliving things based upon whether they have basic needs and produce offspring.
- examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.
- sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape.
- identify parts of plants such as roots, stem, and leaves and parts of animals such as head, eyes, and limbs.
- identify ways that young plants resemble the parent plant.
- observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.

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Objective 3

Student demonstrates an understanding of the physical sciences.

Students should:

- observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture; and
- observe, record, and discuss how materials can be changed by heating or cooling.
- 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 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.

For a specific listing of the knowledge and skills for this grade level and subject area, please reference the TEKS online at <http://www.tea.state.tx.us/index2.aspx?id=6148>.

Objective 4

Student demonstrates an understanding of the earth and space.

Students should:

- observe, describe, compare, and sort rocks by size, shape, color, and texture.
- observe and describe physical properties of natural sources of water, including color and clarity.
- give examples of ways rocks, soil, and water are useful.
- observe and describe weather changes from day to day and over seasons.
- identify events that have repeating patterns, including seasons of the year and day and night.

- observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.
- observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.

For a specific listing of the knowledge and skills for this grade level and subject area, please reference the TEKS online at <http://www.tea.state.tx.us/index2.aspx?id=6148>.

About the Exam

The EA/CBE consists of 50 objective questions that are equally weighted. The exam may consist of multiple-choice and true-false questions. Students will be allowed **3 hours** to take the exam and will **NOT** be allowed to use a calculator. Students have the option of taking the exam on paper or online.

Paper Exams

The exams will include an exam booklet and a separate computer graded answer sheet. Student responses **must** be recorded on the computer graded answer sheet.

The Kindergarten exam is administered orally to the students. Students will then indicate their answers to the questions by:

- responding orally to test items,
- pointing towards the selected answer, or
- bubbling in the correct answer themselves.

The test proctor **must** transcribe student responses onto the computer graded answer sheet. Directions for transcribing answers onto the computer graded answer sheet are located in the Test Proctor Manual. **Exam responses cannot be scored unless they appear on the computer graded answer sheet.**

Online Exams

Student responses **must** be recorded in the online exam.

The Kindergarten exam is administered orally to the students. Students will then indicate their answers to the questions by:

- responding orally to test items,
- pointing towards the selected answer, or
- bubbling in the correct answer themselves.

The test proctor **must** transcribe student responses into the online exam. **Exam responses cannot be scored unless they appear on the computer graded answer sheet.**

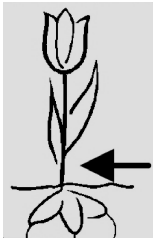
Sample Questions

These sample questions will give you a better idea of the types of questions you can expect on the EA/CBE. These are provided to illustrate the format of the exam. They are not the actual exam. In order to be successful on the exam, you must study the TEKS for this grade level and subject area.

1. Rain comes from the

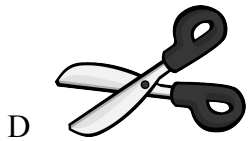
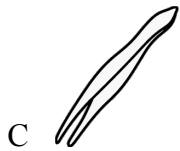
- A sun.
- B trees.
- C ground.
- D clouds.

2. What part of the plant is the arrow pointing to in the picture?



- A The leaf
- B The stem
- C The roots
- D The flower

3. Which object is used for safety when doing a science experiment?



Answer Key

Item Number	Correct Answer
1	D
2	B
3	A