

Treasure Boxes

Grades K-1-2-3

National Science Education Standards

SCIENCE AS INQUIRY STANDARDS

LEVELS K-4

Abilities necessary to do scientific inquiry

Understanding about scientific inquiry

PHYSICAL SCIENCE STANDARDS

LEVELS K-4

Properties of objects and materials

Texas Essential Knowledge and Skills

Kindergarten Science

(a) Introduction.

(1) In Kindergarten, science introduces the use of simple classroom and fieldwork investigations to help students develop the skills of asking questions, gathering information, communicating findings, and making informed decisions. Using their own senses and common tools such as a hand lens, students make observations and collect information. Students also use computers and information technology tools to support their investigations.

(b) Knowledge and skills

(K.1) **Scientific processes.** The student conduct laboratory investigations and fieldwork using safe, environmentally appropriate, and ethical practices.

The student is expected to:

(A) demonstrate safe practices during laboratory investigations and fieldwork.

(K.2) **Scientific processes.** The student develops abilities necessary to do science inquiry in both the field and the classroom.

The student is expected to:
(A) ask questions about objects and events;
(B) plan and conduct simple investigations;
(C) gather information using simple equipment and tools to extend the senses;
(D) construct reasonable explanations using information; and
(E) communicate findings about simple investigations.

(K.3) **Scientific processes.** The student knows that information and critical thinking are used in making decisions.

The student is expected to:
(A) make decisions using information,
(B) discuss and justify the merits of decisions; and
(C) explain a problem in his/her own words.

(K.4) **Scientific processes.** The student uses age-appropriate tools and models to verify that objects and parts of objects can be observed, described, and measured.

The student is expected to:
(A) make observations using tools including hand lenses, balances, cups, and bowls, and
(B) identify senses as tools of observation.

(K.5) **Science concepts.** The student knows that objects have properties and patterns.

The student is expected to:
(A) compare and describe the properties of objects,
(B) observe and identify patterns including seasons, growth and day and night and predict what happens next, and
(C) recognize and copy patterns seen in charts and graphs.

Grade 1 Science

(a) Introduction.

(1) In Grade 1, science introduces the use of simple investigations and fieldwork to help students develop the skills of asking questions, gathering information, making measurements using non-standard units, using tools such as a thermometer, to extend their senses, constructing explanations, and drawing conclusions.

(b) Knowledge and skills

(1.1) **Scientific processes.** The student conduct laboratory investigations and fieldwork using safe, environmentally appropriate, and ethical practices.

The student is expected to:
(A) demonstrate safe practices during laboratory investigations and fieldwork.

(1.2) **Scientific processes.** The student develops abilities necessary to do science inquiry in both the field and the classroom.

The student is expected to:
(A) ask questions about objects and events;
(B) plan and conduct simple investigations;
(C) gather information using simple equipment and tools to extend the senses;
(D) construct reasonable explanations and draw conclusions; and
(E) communicate findings about simple investigations.

(1.3) **Scientific processes.** The student knows that information and critical thinking are used in making decisions.

The student is expected to:
(A) make decisions using information, and
(B) discuss and justify the merits of decisions
(C) explain a problem in his/her own words and identify a task and solution related to a problem.

(1.4) **Scientific processes.** The student uses age-appropriate tools and models to verify that objects and parts of objects can be observed, described, and measured.

The student is expected to:
(A) collect information using tools including hand lenses, clocks, computers, thermometers, and balances;
(B) record and compare collected information.

(1.6) **Science concepts.** The student knows that systems have parts and are composed of organisms and objects.

The student is expected to:
(A) sort organisms and objects according to their parts and characteristics,

Grade 2 Science

(a) Introduction.

(1) In Grade 2, science introduces the use of simple investigations and fieldwork to help students develop the skills of making measurements using standard and non-standard units, using tools such as rulers and clocks to collect information, classifying and sequencing objects and events, and identifying patterns.

(b) Knowledge and skills

(2.1) **Scientific processes.** The student conduct laboratory investigations and fieldwork using safe, environmentally appropriate, and ethical practices.

The student is expected to:
(A) demonstrate safe practices during laboratory investigations and fieldwork; and

- (2.2) **Scientific processes.** The student develops abilities necessary to do science inquiry in both the field and the classroom. The student is expected to:
- (A) ask questions about objects and events;
 - (B) plan and conduct simple investigations
 - (C) compare results of investigations with what students and scientists know about the world;
 - (D) gather information using simple equipment and tools to extend the senses;
 - (E) construct reasonable explanations and draw conclusions using information and prior knowledge; and
 - (F) communicate findings about simple investigations.
- (2.3) **Scientific processes.** The student knows that information and critical thinking are used in making decisions. The student is expected to:
- (A) make decisions using information,
 - (B) discuss and justify the merits of decisions, and
 - (C) explain a problem in his/her own words and identify a task and solution related to the problem.
- (2.4) **Scientific processes.** The student uses age-appropriate tools and models to verify that objects and parts of objects can be observed, described, and measured. The student is expected to:
- (A) collect information using tools including rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances.
- (2.5) **Science concepts.** The student knows that objects have properties and patterns. The student is expected to:
- (A) classify and sequence objects and events based on properties and patterns; and
 - (B) identify, predict, replicate, and create patterns including those seen in charts, graphs, and numbers.

Grade 3 Science

(a) Introduction.

- (1) In Grade 3, the study of science includes planning and implementing simple laboratory investigations and fieldwork to develop the skills of collecting information using tools such as a microscope, making inferences, communicating conclusions, and making informed decisions.
-

(b) Knowledge and skills

(3.1) **Scientific processes.** The student conduct laboratory investigations and fieldwork using safe, environmentally appropriate, and ethical practices.

(3.2) **Scientific processes.** The student uses scientific methods during fieldwork and laboratory investigations.

The student is expected to:

(A) demonstrate safe practices during laboratory investigations and fieldwork; and

The student is expected to:

(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;
(B) collect information by observing and measuring in various ways;
(C) organize, analyze, evaluate, make inferences, and predict trends from direct and indirect evidence;
(D) communicate valid conclusions; and
(E) construct simple graphs, tables, and charts to organize, examine and evaluate information.