TEKS for Ancestors Lecture

Kindergarten

(K.5) **Science concepts.** The student knows that organisms, objects, and events have properties and patterns. The student is expected to:

(A) describe properties of objects and characteristics of organisms; and

(C) recognize and copy patterns seen in charts and graphs.

(K.7) **Science concepts.** The student knows that many types of change occur. The student is expected to:

(D) observe and record stages in the life cycle of organisms in their natural environment.

(K.8) **Science concepts.** The student knows the difference between living organisms and nonliving objects. The student is expected to:

(A) identify a particular organism or object as living or nonliving; and

(B) group organisms and objects as living or nonliving.

(K.9) **Science concepts.** The student knows that living organisms have basic needs. The student is expected to:

(A) identify basic needs of living organisms;

(B) give examples of how living organisms depend on each other; and

(C) identify ways that the Earth can provide resources for life.

1st Grade

(1.5) **Science concepts.** The student knows that organisms, objects, and events have properties and patterns. The student is expected to:

(A) sort objects and events based on properties and patterns; and

(B) identify, predict, and create patterns including those seen in charts, graphs, and numbers.

(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.

(1.7) **Science concepts.** The student knows that many types of change occur. The student is expected to:

(D) observe and record changes in the life cycle of organisms.

(1.8) **Science concepts.** The student distinguishes between living organisms and nonliving objects. The student is expected to:

(A) group living organisms and nonliving objects; and

(B) compare living organisms and nonliving objects.

(1.9) **Science concepts.** The student knows that living organisms have basic needs. The student is expected to:

(A) identify characteristics of living organisms that allow their basic needs to be met; and

(B) compare and give examples of the ways living organisms depend on each other for their basic needs.

Second Grade

(2.5) **Science concepts.** The student knows that organisms, objects, and events have properties and patterns. The student is expected to:

(A) classify and sequence organisms, objects, and events based on properties and patterns; and

(B) identify, predict, replicate, and create patterns including those seen in charts, graphs, and numbers.

(2.8) **Science concepts.** The student distinguishes between living organisms and nonliving objects. The student is expected to:

(A) identify characteristics of living organisms; and

(B) identify characteristics of nonliving objects.

(2.9) **Science concepts.** The student knows that living organisms have basic needs. The student is expected to:

(A) identify the external characteristics of different kinds of plants and animals that allow their needs to be met; and

(B) compare and give examples of the ways living organisms depend on each other and on their environments.

Third Grade

(3.3) **Scientific processes.** The student knows that information, critical thinking, and scientific problem solving are used in making decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information.

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 3 science concepts with the history of science and contributions of scientists.

(3.8) **Science concepts.** The student knows that living organisms need food, water, light, air, a way to dispose of waste, and an environment in which to live. The student is expected to:

(A) observe and describe the habitats of organisms within an ecosystem;

(B) observe and identify organisms with similar needs that compete with one another for resources such as oxygen, water, food, or space;

(C) describe environmental changes in which some organisms would thrive, become ill, or perish; and

(D) describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home.

(3.9) **Science concepts.** The student knows that species have different adaptations that help them survive and reproduce in their environment. The student is expected to:

(A) observe and identify characteristics among species that allow each to survive and reproduce; and

(B) analyze how adaptive characteristics help individuals within a species to survive and reproduce.

(3.10) **Science concepts.** The student knows that many likenesses between offspring and parents are inherited from the parents. The student is expected to:

(B) identify some inherited traits of animals.

Fourth Grade

(4.3) **Scientific processes.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 4 science concepts with the history of science and contributions of scientists.

(4.6) **Science concepts.** The student knows that change can create recognizable patterns. The student is expected to:

(A) identify patterns of change such as in weather, metamorphosis, and objects in the sky.

(4.8) **Science concepts.** The student knows that adaptations may increase the survival of members of a species. The student is expected to:

(A) identify characteristics that allow members within a species to survive and reproduce;

(B) compare adaptive characteristics of various species; and

(C) identify the kinds of species that lived in the past and compare them to existing species.

(4.9) **Science concepts.** The student knows that many likenesses between offspring and parents are inherited or learned. The student is expected to:

(A) distinguish between inherited traits and learned characteristics; and

(B) identify and provide examples of inherited traits and learned characteristics.

Fifth Grade

(5.3) **Scientific processes.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 5 science concepts with the history of science and contributions of scientists.

(5.9) **Science concepts.** The student knows that adaptations may increase the survival of members of a species. The student is expected to:

(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem;

(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and

(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.

(5.10) **Science concepts.** The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to:

(A) identify traits that are inherited from parent to offspring in plants and animals; and

(B) give examples of learned characteristics that result from the influence of the environment.

Sixth Grade

(6.3) **Scientific processes.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 6 science concepts with the history of science and contributions of scientists.

(6.10) **Science concepts.** The student knows the relationship between structure and function in living systems. The student is expected to:

(A) differentiate between structure and function;

(B) determine that all organisms are composed of cells that carry on functions to sustain life; and

(C) identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations.

(6.11) **Science concepts.** The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to:

(A) identify some changes in traits that can occur over several generations through natural occurrence and selective breeding;

(B) identify cells as structures containing genetic material; and

(C) interpret the role of genes in inheritance.

(6.12) **Science concepts.** The student knows that the responses of organisms are caused by internal or external stimuli. The student is expected to:

(C) identify components of an ecosystem to which organisms may respond.

Seventh Grade

(7.3) **Scientific processes.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 7 science concepts with the history of science and contributions of scientists.

(7.5) **Science concepts.** The student knows that an equilibrium of a system may change. The student is expected to:

(B) observe and describe the role of ecological succession in maintaining an equilibrium in an ecosystem.

(7.9) **Science concepts.** The student knows the relationship between structure and function in living systems. The student is expected to:

(A) identify the systems of the human organism and describe their functions; and

(B) describe how organisms maintain stable internal conditions while living in changing external environments.

(7.10) **Science concepts.** The student knows that species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to:

(B) compare traits of organisms of different species that enhance their survival and reproduction.

(7.12) **Science concepts.** The student knows that there is a relationship between organisms and the environment. The student is expected to:

(A) identify components of an ecosystem; and

(C) describe how different environments support different varieties of organisms.

Eighth Grade

(8.3) **Scientific processes.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(C) represent the natural world using models and identify their limitations;

(D) evaluate the impact of research on scientific thought, society, and the environment; and

(E) connect Grade 8 science concepts with the history of science and contributions of scientists.

(8.6) **Science concepts.** The student knows that interdependence occurs among living systems. The student is expected to:

(A) describe interactions among systems in the human organism; and

(C) describe interactions within ecosystems.

(8.11) **Science concepts.** The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to:

(A) identify that change in environmental conditions can affect the survival of individuals and of species;

(B) distinguish between inherited traits and other characteristics that result from interactions with the environment; and

(C) make predictions about possible outcomes of various genetic combinations of inherited characteristics.

Biology

(3) **Scientific processes.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information; and

(C) evaluate the impact of research on scientific thought, society, and the environment.

(5) **Science concepts.** The student knows how an organism grows and how specialized cells, tissues, and organs develop. The student is expected to:

(B) identify cell differentiation in the development of organisms; and

(C) sequence the levels of organization in multi-cellular organisms to relate the parts to each other and to the whole.

(7) **Science concepts.** The student knows the theory of biological evolution. The student is expected to:

(A) identify evidence of change in species using fossils, DNA sequences, anatomical similarities, physiological similarities, and embryology; and

(B) illustrate the results of natural selection in speciation, diversity, phylogeny, adaptation, behavior, and extinction.

(8) **Science concepts.** The student knows applications of taxonomy and can identify its limitations. The student is expected to:

(A) collect and classify organisms at several taxonomic levels such as species, phylum, and kingdom using dichotomous keys; and

(B) analyze relationships among organisms and develop a model of a hierarchical classification system based on similarities and differences using taxonomic nomenclature.

(12) **Science concepts.** The student knows that interdependence and interactions occur within an ecosystem. The student is expected to:

(C) compare variations, tolerances, and adaptations of plants and animals in different biomes;

(D) identify and illustrate that long-term survival of species is dependent on a resource base that may be limited; and

(E) investigate and explain the interactions in an ecosystem including food chains, food webs, and food pyramids.