

Hands On! Discovery Center

Paleo Tour Standard Alignment

KINDERGARTEN

K.LS1.2: Recognize differences between living organisms and non-living materials and sort them into groups by observable physical attributes

K.LS1.3: Explain how humans use their five senses in making scientific findings

K.ESS3.1: Use a model to represent the relationship between the basic needs (shelter, food, water) of different plants and animals (including humans) and the places they live.

FIRST GRADE

1.LS2.2: Obtain and communicate information to classify plants by where they grow (water, land) and the plant's physical characteristics.

1.ETS2.1: Use appropriate tools (magnifying glass, basic balance scale) to make observations and answer testable scientific questions.

SECOND GRADE

2.LS1.1: Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air.

2.LS1.2: Obtain and communicate information to classify animals (vertebrates-mammals, birds, amphibians, reptiles, fish, invertebrates-insects) based on their physical characteristics.

2.LS1.3: Use simple graphical representations to show that species have unique and diverse life cycles.

2.LS2.1: Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live.

2.LS2.2: Predict what happens to animals when the environment changes (temperature, cutting down trees, wildfires, pollution, salinity, drought, land preservation).

2.LS3.1: Use evidence to explain that living things have physical traits inherited from parents and that variations of these traits exist in groups of similar organisms.

2.ETS1.1: Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change.

2.ETS1.3: Recognize that to solve a problem, one may need to break the problem into parts, address each part, and then bring the parts back together.

THIRD GRADE

3.LS1.1: Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.

3.LS2.1: Construct an argument to explain why some animals benefit from forming groups.

3.LS4.1: Explain the cause and effect relationship between a naturally changing environment and an organism's ability to survive.

3.LS4.2: Infer that plant and animal adaptations help them survive in land and aquatic biomes.

3.ESS3.1: Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.

3.ETS2.1: Identify and demonstrate how technology can be used for different purposes.

FOURTH GRADE

4.LS2.2: Develop models of terrestrial and aquatic food chains to describe the movement of energy among producers, herbivores, carnivores, omnivores, and decomposers.

4.LS2.3: Using information about the roles of organisms (producers, consumers, decomposers), evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.

4.LS2.5: Analyze and interpret data about changes (land characteristics, water distribution, temperature, food, and other organisms) in the environment and describe what mechanisms organisms can use to affect their ability to survive and reproduce.

4.LS4.1: Obtain information about what a fossil is and ways a fossil can provide information about the past.

4.ESS1.1: Generate and support a claim with evidence that over long periods of time, erosion (weathering and transportation) and deposition have changed landscapes and created new landforms.

4.ESS2.1: Collect and analyze data from observations to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering (frost wedging, abrasion, tree root wedging) and are transported by water, ice, wind, gravity, and vegetation.

FIFTH GRADE

5.LS3.2: Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms.

5.LS4.1: Analyze and interpret data from fossils to describe types of organisms and their environments that existed long ago. Compare similarities and differences of those to living organisms and their environments. Recognize that most kinds of animals (and plants) that once lived on Earth are now extinct.

5.LS4.2: Use evidence to construct an explanation for how variations in characteristics among individuals within the same species may provide advantages to these individuals in their survival and reproduction.

5.ESS1.7: Use evidence from the presence and location of fossils to determine the order in which rock strata were formed.

SIXTH GRADE

6.LS2.1: Evaluate and communicate the impact of environmental variables on population size.

6.LS2.2: Determine the impact of competitive, symbiotic, and predatory interactions in an ecosystem.

6.LS2.4: Using evidence from climate data, draw conclusions about the patterns of abiotic and biotic factors in different biomes, specifically the tundra, taiga, deciduous forest, desert, grasslands, rainforest, marine, and freshwater ecosystems.

6.LS2.6: Research the ways in which an ecosystem has changed over time in response to changes in physical conditions, population balances, human interactions, and natural catastrophes.

6.LS4.1: Explain how changes in biodiversity would impact ecosystem stability and natural resources.

SEVENTH GRADE

LS1.6: Develop an argument based on empirical evidence and scientific reasoning to explain how behavioral and structural adaptations in animals and plants affect the probability of survival and reproductive success.

EIGHTH GRADE

8.LS4.1: Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change in life forms throughout Earth's history.

8.LS4.2: Construct an explanation addressing similarities and differences of the anatomical structures and generic information between extinct and extant organisms using evidence of common ancestry and patterns between taxa.

8.LS4.3: Analyze evidence from geology, paleontology, and comparative anatomy to support that specific phenotypes within a population can increase the probability of survival of that species and lead to adaptation.

8.LS4.4: Develop a scientific explanation of how natural selection plays a role in determining the survival of a species in a changing environment.

8.ESS2.1: Analyze and interpret data to support the assertion that rapid or gradual geographic changes lead to drastic population changes and extinction events.

8.ESS2.5- Construct a scientific explanation using data that explains the gradual process of plate tectonics accounting for A) the distribution of fossils on different continents, B) the occurrence of earthquakes, and C) continental and ocean floor features (including mountains, volcanoes, faults, and trenches).

8.ESS3.1: Interpret data to explain that Earth's mineral, fossil fuel, and groundwater resources are unevenly distributed as a result of geologic processes.