Meeting Kentucky's Teaching Curriculum Through Dinosaur World's Outreach Program

At Dinosaur World, we know it is a challenge for teachers to prepare studies around the *Academic Expectations, Program of Studies, and Core Content for Assessment.* So, we've prepared the below information to help explain how Dinosaur World's Outreach Program can fit into your studies.

There is also a *Teacher's Guide To Dinosaur World,* showing how to incorporate basic subjects such as math, language arts, science and others into a trip to Dinosaur World. The teacher's guide is available on the website at www.dinoworld.net and also via request.

"Dinosaurs: Time, Teeth, Types" – an Outreach Program from Dinosaur World

Science – Primary & Middle Level

Program of Studies

- S-P-PS-1 – Students will understand that properties of materials can be measured and used to describe, separate or sort objects
- S-P-ESS-2 – Students will understand that fossils provide evidence about organisms that lived long ago
- S-P-LS-1 – Students will understand that organisms have basic needs and can only survive when these needs are met
- S-P-LS-3 – Students will understand that organisms have different structures that serve different functions. These structures are used to sort organisms into groups.
- S-P-LS-4 - Students will understand that organisms resemble their parents.
- S-P-LS-6 - Students will understand that organisms' patterns of behavior are related to the nature of organisms' environments. There are many different environments (e.g., deserts, rainforests) on Earth that support different types of organisms.
- S-P-LS-7 - Students will understand that all animals depend on plants for food.
- S-4-ESS-2 - Students will understand that fossils provide evidence about organisms that lived long ago.
- S-4-ESS-8 Students will understand that Earth's surface changes are due to slow (e.g., weathering) and rapid (e.g., volcanic eruptions) processes.
- S-4-LS-1 Students will understand that organisms have basic needs (e.g., air, water, nutrients, light) and can only survive when these needs are met.
- S-4-LS-2 Students will understand that behavior of individual organisms is influenced by stimuli (e.g., touch, hunger)
- S-4-LS-3 Students will understand that organisms have different structures that serve different functions. These structures are used to sort organisms into groups.
- S-4-LS-4 Students will understand that organisms resemble their parents.
- S-4-LS-6 Students will understand that characteristics of organisms are inherited or learned
- S-4-LS-7 Students will understand that organisms' patterns of behavior are related to the nature of organisms' environments. There are many different environments (e.g., deserts, rain forests) on Earth that support different types of organisms.
- S-6-LS-1 Students will investigate how organisms obtain and use resources, grow, reproduce, and maintain stable internal conditions. Examine the regulation of an organism's internal environment.
- S-6-LS-2 Students will analyze internal or environmental stimuli and organisms' behavioral responses. Explore how organisms' behavior changes through adaptation.
- S-6-LS-3 Students will observe populations and determine the functions (e.g., decomposers, producers, consumers) they serve in an ecosystem.
- S-7-ESS-4 Students will examine evidence (e.g., fossils) for changes in life and environmental conditions.
- S-7-LS-3 Students will investigate unity among organisms.
- S-7-LS-4 Students will investigate biological adaptation and extinction.

Core Content For Assessment

- SC-E-1.1 – Objects have many observable properties and the ability to react with other substances. Some properties can be measured using tools.
- SC-E-2.1.3 – Fossils found in Earth materials provide evidence about organisms that lived long ago and the nature of the environment at that time
- SC-E-3.1.2 – Organisms have basic needs. Organisms can survive only in environments which their needs can be met.
- SC-E-3.1.1 – Things in the environment are classified as living, nonliving, and once living. Living things differ from nonliving things. Organisms are classified into groups by using various characteristics (e.g., body coverings, body structures).
- SC-E-3.1.3 - Each plant or animal has structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.
- SC-E-3.3.2 - The world has many different environments. Distinct environments support the lives of different types of organisms. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.
- SC-E-3.3.1 - Plants make their own food. All animals depend on plants. Some animals eat plants for food. Other animals eat animals that eat the plants.
- SC-E-2.1.3 Fossils found in Earth materials provide evidence about organisms that lived long ago and the nature of the environment at that time.
- SC-E-2.3.1 The surface of the Earth changes. Some changes are due to slow processes such as erosion or weathering. Some changes are due to rapid processes such as landslides, volcanic eruptions, and earthquakes
- SC-E-3.1.2 Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.
- SC-E-3.1.1 Things in the environment are classified as living, nonliving, and once living. Living things differ from nonliving things. Organisms are classified into groups by using various characteristics (e.g., body coverings, body structures).
- SC-E-3.1.3 Each plant or animal has structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.
- SC-E-3.3.2 The world has many different environments. Distinct environments support the lives of different types of organisms. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.
- SC-M-3.2.1 All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.
- SC-M-3.2.2 Regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive. Maintaining a stable internal environment is essential for an organism's survival.
- SC-M-3.5.4 The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.
- SC-M-3.2.3 Behavior is one kind of response an organism may make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels including cells, organ systems, and organisms. Behavioral response is a set of actions determined in part by heredity and in part from experience.
- SC-M-3.5.2 Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers because they make their own food. All animals, including humans, are consumers, and obtain their food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.
- SC-M-2.2.2 Fossils provide important evidence of how environmental conditions and life have changed.

- SC-M-3.4.1 Biological change over time accounts for the diversity of species developed through gradual processes over many generations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.
- SC-M-3.4.2 Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. Extinction of species is common; most of the species that have lived on Earth no longer exist.

Academic Expectations

Science P1 – Science P11 – Science P17 – Science P19 – Science P20 – Science P21 – Science P23 – Science P24 – Science 436 – Science 442 – Science 443 – Science 444 – Science 445 – Science 446 – Science 448 – Science 449 – Science 668 – Science 669 – Science 670 – Science 779 – Science 782 – Science 783

- 2.2 – Students identify, analyze and use patters such as cycles and trends to understand past and present events and predict possible future events
- 2.3 – Students identify and analyze systems and the ways their componets work together or affect each other
- 2.4 – Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed
- 2.5 – Students understand that under certain conditions nature tends to remain the same or move toward a balance
- 2.6 – Students understand how living and nonliving things change over time and the factors that influence changes