

Build-A-Field Trip

A DIVISION OF FLORIDA SAFARI ADVENTURES

1 DAY TRIP - DAY AT DICKINSON

4th - 12th Grade **Comparative Ecosystems and Marine Ecology**

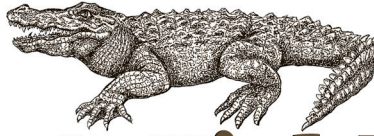


- **Comparing Ecosystems**
- **Recording Data and Water Testing**
- **Canoeing the Loxahatchee River**
- **Observe a Coastal Hammock**
- **Explore Blowing Rocks**
- **Visit a Sea Turtle Hospital**



CALL **954-772-7800** or E-MAIL info@BuildAFieldtrip.com

1925 NE 45th Street, Ste. 132, Fort Lauderdale, FL 33308



Build-A-Field Trip

A DIVISION OF FLORIDA SAFARI ADVENTURES

1 DAY TRIP - DAY AT DICKINSON

4th - 12th Grade **Comparative Ecosystems and Marine Ecology**

Visit the area where legendary Quaker leader Jonathan Dickinson lived and where his shipwrecked party struggled to survive! Students voyage past the Jupiter Lighthouse to Hobe Mound, where they discover the endangered plants and animals of the Florida scrub, the first of many ecosystems we'll visit on our journey. Traveling through Jonathan Dickinson State Park, we'll see scrub give way to pine flatwoods. Gopher tortoises wander through the saw palmettos as we reach the canoe dock. After a brief lesson, we'll canoe the scenic Loxahatchee River, looking out for ospreys and viewing the effects of saltwater intrusion as we weave along the edge of the mangroves and study the bare spires of ancient cypress trees. We'll also learn all about Trapper Nelson: his unusual lifestyle, mysterious death and hidden treasure!

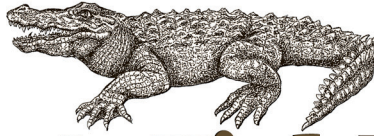
Next, we're off to one of the most unusual geologic formations on the coast: Blowing Rocks Preserve. Students will gaze into the tidal pools and blowholes carved by the roaring surf and observe the intertidal marine life of the coastal ecosystem. At high tide, we'll listen as the whooshing sound of water precedes the geyser-like spout...then continue searching along the coast for treasures washed ashore! Before heading home, we'll stop at the Marinelife Center on Juno Beach for an in-depth study of sea turtles on their way to recovery. What an incredible opportunity to observe these elusive marine animals.

PRICING:

- **\$70.00 per student**
- **Based on a minimum of 36 students and a maximum of 48 students**
- **Based on broward county departure.**
- **Includes coach transportation, instruction, equipment and meals**

CALL **954-772-7800** or E-MAIL info@BuildAFieldtrip.com

1925 NE 45th Street, Ste. 132, Fort Lauderdale, FL 33308



Build-A-Field Trip

A DIVISION OF FLORIDA SAFARI ADVENTURES

1 DAY TRIP - DAY AT DICKINSON

EDUCATIONAL OBJECTIVES

Sunshine State Standards following Grades 4-12

Students will:

- learn the importance of recording data in a field journal, with an emphasis on the value of each person's contribution to the total body of scientific observations and the effort to compare and contrast their findings with those of other students

SC.5.N.1.1 Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.5.N.1.6 Recognize and explain the difference between personal opinion/interpretation and verified observation.

SC.5.N.2.1 Recognize and explain that science is grounded in empirical observations that are testable; explanation must always be linked with evidence.

SC.6.N.1.1 Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.6.N.1.4 Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation.

SC.7.N.1.1 Define a problem from the seventh grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.7.N.1.6 Explain that empirical evidence is the cumulative body of observations of a natural phenomenon on which scientific explanations are based.

SC.8.N.1.1 Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.8.N.1.6 Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.

SS.8.G.6.2 Illustrate places and events in U.S. history through the use of narratives and graphic representations.

SC.912.N.1.3 Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented.

SC.912.N.1.6 Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.

SC.912.N.2.4 Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability.

- learn the importance of conducting water testing, understand density, salinity, temperature, turbidity and pH and how these are measured and compare, and interpret the results of their investigations

SC.5.N.1.3 Recognize and explain the need for repeated experimental trials.

SC.5.E.7.2 Recognize that the ocean is an integral part of the water cycle and is connected to all of Earth's water reservoirs via evaporation and precipitation processes.

SC.8.E.5.10 Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information.

SC.8.N.1.3 Use phrases such as "results support" or "fail to support" in science, understanding that science does not offer conclusive 'proof' of a knowledge claim.

SC.8.N.1.4 Explain how hypotheses are valuable if they lead to further investigations, even if they turn out not to be supported by the data.

SC.8.P.8.8 Identify basic examples of and compare and classify the properties of compounds, including acids, bases, and salts.

SC.8.P.9.2 Differentiate between physical changes and chemical changes.

- understand how events and personalities in Florida's history, from Native Americans to Trapper Nelson and the Kitching family, have made multiple impacts (environmental, economic, etc.) on the area surrounding the Loxahatchee river

SS.5.A.2.2 Identify Native American tribes from different geographic regions of North America (cliff dwellers and Pueblo people of the desert Southwest, coastal tribes of the Pacific Northwest, nomadic nations of the Great Plains, woodland tribes east of the Mississippi River).

SS.6.E.1.3 Describe the following economic concepts as they relate to early civilization: scarcity, opportunity cost, supply and demand, barter, trade, productive resources (land, labor, capital, entrepreneurship).

SS.8.G.2.1 Identify the physical elements and the human elements that define and differentiate regions as relevant to American history.

-learn how Europeans arriving by boat affected Native American populations living in this part of Florida and how both groups used their knowledge to shape each other and the land

SC.6.N.2.3 Recognize that scientists who make contributions to scientific knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals.

SC.8.N.4.2 Explain how political, social, and economic concerns can affect science, and vice versa.

SS.5.A.2.3 Compare cultural aspects of Native American tribes from different geographic regions of North America including but not limited to clothing, shelter, food, major beliefs and practices, music, art, and interactions with the environment.

SS.5.A.3.2 Investigate (nationality, sponsoring country, motives, dates and routes of travel, accomplishments) the European explorers.

SS.5.A.3.3 Describe interactions among Native Americans, Africans, English, French, Dutch, and Spanish for control of North America.

SS.5.A.4.1 Identify the economic, political and socio-cultural motivation for colonial settlement.

SS.5.E.2.1 Recognize the positive and negative effects of voluntary trade among Native Americans, European explorers, and colonists.

SS.6.G.2.6 Explain the concept of cultural diffusion, and identify the influences of different ancient cultures on one another.

SS.6.G.4.1 Explain how family and ethnic relationships influenced ancient cultures.

SS.7.G.2.3 Explain how major physical characteristics, natural resources, climate, and absolute and relative location have influenced settlement, economies, and inter-governmental relations in North America.

SS.8.A.2.5 Discuss the impact of colonial settlement on Native American populations.

- understand that characteristics of flora and fauna observed in the scrub habitat enable the organisms to survive in this ancient and inhospitable place and these specific adaptations have been genetically inherited over many generations for millions of years

SC.7.L.16.1 Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that heredity is the passage of these instructions from one generation to another.

SC.912.L.15.13 Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success.

- understand the importance of mangroves as the base of the food web and how they are able to become dominant in areas of increased salt in the water because of a lack of competition for the resources in these areas

SC.7.L.17.1 Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.7.L.17.2 Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.

SC.8.L.18.1 Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.

SC.912.L.14.8 Explain alternation of generations in plants.

SC.912.L.14.10 Discuss the relationship between the evolution of land plants and their anatomy.

SC.912.L.17.2 Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.

SC.912.L.17.9 Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.

- learn about the history and importance of cypress trees and that dead trees are an indication of an increase in salinity in this changing ecosystem and draw conclusions about the permanent impact of this increase

SC.5.L.15.1 Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

SC.5.N.2.1 Recognize and explain that science is grounded in empirical observations that are testable; explanation must always be linked with evidence.

SC.7.L.17.3 Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SC.7.N.2.1 Identify an instance from the history of science in which scientific knowledge has changed when new evidence or new interpretations are encountered.

SS.5.G.3.1 Describe the impact that past natural events have had on human and physical environments in the United States through 1850.

SS.6.G.3.2 Analyze the impact of human populations on the ancient world's ecosystems.

SC.912.L.17.4 Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

SC.912.L.17.8 Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

- understand the link between increased salinity in the river and human consumption of fresh water, realizing that many decisions, from those of early settlers to politicians to their own, have led to the current situation

SC.7.E.6.6 Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, changing the flow of water.

SC.8.N.4.1 Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.

SS.8.G.5.1 Describe human dependence on the physical environment and natural resources to satisfy basic needs in local environments in the United States.

SS.8.G.5.2 Describe the impact of human modifications on the physical environment and ecosystems of the United States throughout history.

SC.912.E.7.8 Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively.

SC.912.L.17.11 Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.

- learn that organisms living in an intertidal zone have a variety of specific adaptations that allow them thrive in an area of variable temperature, salinity, stability, etc.

SC.5.L.14.2 Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support -- some with internal skeletons others with exoskeletons -- while some plants have stems for support.

SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.6.L.15.1 Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

SC.7.L.15.2 Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.

SC.7.L.15.3 Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.

SC.912.L.17.3 Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms.

SC.912.L.17.6 Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

-understand how erosion and weathering led to the landforms observed at Blowing Rocks

SC.6.E.6.1 Describe and give examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition.

SC.6.E.6.2 Recognize that there are a variety of different landforms on Earth's surface such as coastlines, dunes, rivers, mountains, glaciers, deltas, and lakes and relate these landforms as they apply to Florida.

SC.7.E.6.2 Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion) and sub-surface events (plate tectonics and mountain building).

SC.7.L.15.1 Recognize that fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species.

SC.912.E.6.2 Connect surface features to surface processes that are responsible for their formation.

SC.912.E.6.4 Analyze how specific geologic processes and features are expressed in Florida and elsewhere.

-recognize that the Earth's magnetic force operates a compass and learn the basics of compass use

SC.6.P.13.1 Investigate and describe types of forces including contact forces and forces acting at a distance, such as electrical, magnetic, and gravitational.

SS.5.A.3.1 Describe technological developments that shaped European exploration.

SS.5.G.1.1 Interpret current and historical information using a variety of geographic tools.

SS.5.G.1.2 Use latitude and longitude to locate places.

SS.6.G.1.1 Use latitude and longitude coordinates to understand the relationship between people and places on the Earth.

SS.6.G.1.4 Utilize tools geographers use to study the world.

CALL **954-772-7800** or E-MAIL **info@BuildAFieldtrip.com**

1925 NE 45th Street, Ste. 132, Fort Lauderdale, FL 33308