SNORKELING SAFARI EDUCATIONAL OBJECTIVES

Sunshine State Standards following grades 5-8

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.

SS.912.A.1.3 Utilize timelines to identify the time sequence of historical data.

- understand how Native Americans were able to utilize Florida's unique barrier island systems throughout their history and discover how their use of certain plants and trees made a significant cultural contribution to the students' own lives

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.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.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 the concept that the presence of certain trees are an indication of events that are occurring, noting that they have adaptations that allow them to live in certain areas, with a focus on the salt-water adaptations of the mangroves

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.

- understand the predictability and logistics behind the KLOE system, with a focus on the Everglades as a natural and interrupted ecosystem

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

SC.912.L.17.19 Describe how different natural resources are produced and how their rates of use and renewal limit availability.

SC.912.L.17.20 Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

SS.912.G.5.6 Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.

SC.912.L.17.20 Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

- understand the significance of human actions, including their own, in the protection of natural resources such as water and its pollution and redirection in the Everglades area and how this relates to life in the mangrove estuary and ocean ecosystems, focusing on the interconnectedness of these ecosystems

SS.5.C.2.5 Identify ways good citizens go beyond basic civic and political responsibilities to improve government and society.

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

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

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.

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

SC.912.L.17.12 Discuss the political, social, and environmental consequences of sustainable use of land.

SC.912.L.17.13 Discuss the need for adequate monitoring of environmental parameters when making policy decisions.

SC.912.L.17.15 Discuss the effects of technology on environmental quality.

SC.912.L.17.16 Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.

SC.912.L.17.18 Describe how human population size and resource use relate to environmental quality.

SC.912.N.4.2 Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental.

- identify and understand basic marine organisms and their unique structures and functions and how these are related to environmental adaptations, with a focus on the coral reef

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.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.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.15.7 Discuss distinguishing characteristics of vertebrate and representative invertebrate phyla, and chordate classes using typical examples.

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

SC.912.L.17.7 Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems.

- understand that leaf litter in mangrove estuary decomposes to release nutrients vital to the growth of the juvenile marine creatures living there

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.

- understand the impact individuals, cultures and group organizations have had on the preservation of natural areas through discussion of John Pennekamp and the greater history of the Florida Keys

SS.5.C.2.5 Identify ways good citizens go beyond basic civic and political responsibilities to improve government and society.

SS.912.C.2.2 Evaluate the importance of political participation and civic participation.

KEY LARGO KAYAKING ADVENTURE EDUCATIONAL OBJECTIVES

Sunshine State Standards following grades 5-8

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.

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SS.912.A.1.3 Utilize timelines to identify the time sequence of historical data.

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