

DOLPHIN RESEARCH CENTER

Distance: Dolphin Reproduction and Maternity

Grade Levels: 9-12

Concepts Addressed:

- Students will learn and understand about the special adaptations that dolphins have to live and reproduce in this environment
- Discover the social structure of bottlenose dolphins and how it relates to reproduction and population stability
- Discover the differing roles that males and females play in a population
- Learn about how the dolphins' unique personalities play a role in calf rearing
- Observe and understand the importance of building strong, trusting relationships why they are so important in maternity pods with the dolphins
- Observe and hear how mothers and calves go from pre pregnancy to independence
- Learn about the care mothers and calves receive at Dolphin Research Center including:
 - Body Inspections/ultra sound
 - Special diets
 - Special training methods
- Learn About Ocean Conservation
 - Why understanding a dolphin's behavior and where they live helps other marine cetaceans
 - Natural & human caused threats in the wild
 - Conservation efforts you can do at home to help dolphins and your environment
- Participate in a question and answer session at the end to get at those “always wanted to know” questions.

Standards:

Florida

Florida Next Generation Sunshine State Standards for Science met or supported:

- **SC.912.L.15.1** Explain how the scientific theory of evolution is supported by the fossil record, comparative anatomy, comparative embryology, biogeography, molecular biology, and observed evolutionary change.
- **SC.912.L.15.4** Describe how and why organisms are hierarchically classified and based on evolutionary relationships.
- **SC.912.L.15.7** Discuss distinguishing characteristics of vertebrate and representative invertebrate phyla, and chordate classes using typical examples.
- **SC.912.L.17.13** Discuss the need for adequate monitoring of environmental parameters when making policy decisions.



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- **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.17.6** Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.
- **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.

Language Arts Florida Standards met or supported:

- **LAFS.910.SL.1.1** Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.
- **LAFS.910.SL.2.6** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.
- **LAFS.1112.SL.1.1** Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible;



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and determine what additional information or research is required to deepen the investigation or complete the task.

- **LAFS.1112.SL.2.6** Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate

National Standards:

Next Generation Science Standards met or supported:

- **HS-LS2-7.** Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.*
- **HS-LS4-1.** Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
- **HS-LS4-4.** Construct an explanation based on evidence for how natural selection leads to adaptation of populations.
- **HS-LS4-6.** Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.*
- **HS-LS2-8.** Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Common Core Standards for English Language Arts met or supported:

- **CCSS.ELA-Literacy.SL.9-10.1** Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. A. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. B. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. C. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. D. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.
- **CCSS.ELA-Literacy.SL.9-10.6** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 9-10 Language standards 1 and 3 here for specific expectations.)
- **CCSS.ELA-Literacy.SL.11-12.1** Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse



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partners on grades 11-12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. A. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. B. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. C. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. D. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

- **CCSS.ELA-Literacy.SL.11-12.6** Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.

Ocean Literacy Principles met:

- **5A** Ocean life ranges in size from the smallest living things, microbes, to the largest animal on Earth, blue whales.
- **5D** Ocean biology provides many unique examples of life cycles, adaptations, and important relationships among organisms (symbiosis, predator-prey dynamics, and energy transfer) that do not occur on land.
- **5E** The ocean provides a vast living space with diverse and unique ecosystems from the surface through the water column and down to, and below, the seafloor. Most of the living space on Earth is in the ocean.
- **6D** Humans affect the ocean in a variety of ways. Laws, regulations, and resource management affect what is taken out and put into the ocean. Human development and activity leads to pollution (point source, nonpoint source, and noise pollution), changes to ocean chemistry (ocean acidification), and physical modifications (changes to beaches, shores, and rivers). In addition, humans have removed most of the large vertebrates from the ocean.
- **6G** Everyone is responsible for caring for the ocean. The ocean sustains life on Earth and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage ocean resources for all.

Other state standards upon request



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