

# Dolphin Research Center

*Distance Learning: Marvelous Manatees*

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**Meander through the aquatic habitat of a manatee to learn more about them, the challenges they face in the wild, and what people are doing to help. See video clips from actual manatee rescues!**

**Grade Levels:** 4-12

**Other Audiences:** Adult Learners

## **Program Description:**

Students will participate in an interactive studio based program with Dolphin Research Center Staff to learn about manatees and the threats that they face. See what actual manatee rescues and releases look like (and catch a glimpse of the famous manatee twins, Millennium and Falcon). At the end, students have the opportunity to ask a marine mammal expert questions about marine mammals while also learning how they can lessen their impact on the marine environment. All studio based distance learnings include a live instructor interaction with video clips from all around our beautiful Florida Keys facility.

## **Concepts Addressed:**

- Discover what a manatee is and how it is adapted for life in the aquatic environment
- Identify threats to manatees
- Outline the manatee rescue, rehabilitation and release process
- Discuss ocean conservation and what you can do to make a difference
- Participate in a question and answer session at the end to get at those “always wanted to know” questions.

## **Program Format:**

- This is a studio based program. Students will be able to interact with an educator in our studio as well as see pre-recorded video from around our facility.
- This program begins with an overview of what Dolphin Research Center is and an introduction to our dolphin and sea lion family.
- We then discuss what a manatee is, how they are adapted to life in the aquatic environment, and what they do
- Discussion then shifts to the threats that manatees face in the wild with Bonnie, Dually, Pilgrim, Millennium and Falcon
- See videos from actual manatee rescues and releases (including famous manatee twins Millennium and Falcon)
- The instructor and students discuss some of the challenges facing manatees and what we can do to help them.



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- Time is allowed for questions and answers.

## Program Logistics

**Program Length:** 45-60 minutes

**Minimum # of participants:** 1

**Maximum # of participants:** For groups over 100 please contact us

**Program Cost:** \$95.00 (CILC premium members: \$85)

- Discounts may be available for bulk programming

**Program Fee Notes:** Payment of associated fees must be received 72 hours before the program date. If payment is not received by this time the program is subject to cancellation.

**Cancellation Policy:** We will not charge for programs canceled due to nature i.e. snow days. The full fee will be charged to sites which cancel with less than 48 hours notice. Payment is due 72 hours before the program. If payment is not received by this time the program is subject to cancellation. Dolphin Research Center reserves the right to cancel programs at anytime. If Dolphin Research Center cancels a program than it will contact the requester to discuss rescheduling options. If a program does not occur because of an error in communication between the requester and Dolphin Research Center, requesters will still be charged the full price of the programs. Sites need to participate in a tech run with Dolphin Research Center staff members. This will be scheduled to occur prior to your program date. If the tech run does not occur the full fee will be charged to sites that cannot connect at program time.

**Program Delivery Mode:** Google Hangouts, ZOOM, CILC One-Click-Connect (for H323)

**Recording of any type during a Dolphin Research Center distance learning program is prohibited.**

## Standards

### *Florida*

**Florida Next Generation Science Standards met or supported:**

- **SC.4.L.16.2** Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment.
- **SC.4.L.17.2** Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.



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- **SC.4.L.17.3** Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers.
- **SC.4.L.17.4** Recognize ways plants and animals, including humans, can impact the environment.
- **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.7.L.17.1** Explain and illustrate the roles of and relationships among producers consumers, and decomposers in the process of energy transfer in the food web.
- **SC.912.L.15.5** Explain the reasons for changes in how organisms are classified.
- **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.17.3** Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms.
- **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.
- **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.

## Language Arts Florida Standards met or supported:

- **LAFS.4.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. B. Follow agreed-upon rules for discussions and carry out assigned roles. C. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. D. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **LAFS.5.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. B. Follow agreed-upon rules for discussions and carry out assigned roles. C. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. D. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
- **LAFS.6.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 6 topics, texts, and issues*, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or studied required



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material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

- **LAFS.7.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. D. Acknowledge new information expressed by others and, when warranted, modify their own views.
- **LAFS.8.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed. C. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. D. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.
- **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



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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.

- **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***

### **Next Generation Science Standards met or supported:**

- **5-PS3-1.** Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.
- **5-LS2-1.** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- **5-ESS3-1.** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
- **MS-LS1-4.** Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.
- **MS-LS-2-1.** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- **MS-LS2-4.** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- **MS-LS2-5.** Evaluate competing design solutions for maintaining biodiversity and ecosystem services
- **MS-ESS3-3.** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
- **MS-ESS3-4.** Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
- **HS-LS4-6.** Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.
- **HS-LS2-7.** Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.



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## Common Core for English Language Arts met or supported:

- **CCSS.ELA-Literacy.SL.4.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. B. Follow agreed-upon rules for discussions and carry out assigned roles. C. Pose and respond to specific questions clarify or follow up on information and make comments that contribute to the discussion and link to the remarks of others. D. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
- **CCSS.ELA-Literacy.SL.5.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. B. Follow agreed-upon rules for discussions and carry out assigned roles. C. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. D. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
- **CCSS.ELA-Literacy.SL.6.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
- **CCSS.ELA-Literacy.SL.7.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. C. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. D. Acknowledge new information expressed by others and, when warranted, modify their own views.
- **CCSS.ELA-Literacy.SL.8.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. A. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as



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needed. C. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. D. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.

- **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 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

- **5A** Ocean life ranges in size from the smallest living things, microbes, to the largest animal on Earth, blue whales.



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- **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.
- **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.

## **Recommended Materials and Preparation**



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