

# DOLPHIN RESEARCH CENTER

## Distance Learning: Diving Into Dolphin Diets

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Diving Into Dolphin Diets allows students to see how math is an integral part of caring for dolphins. Students utilize addition, subtraction, multiplication and division.

**Grade Levels:** 3-5

### **Program Description:**

Students will participate in an interactive studio based program with Dolphin Research Center Staff to learn about what it takes to care for dolphins and how caretakers use math to develop their diets with Talon, a common bottlenose dolphin. At the end, students have the opportunity to ask a dolphin expert questions about dolphins while also learning how they can lessen their impact on the marine environment. All webinars include a live instructor interaction with video clips from all around our beautiful Florida Keys facility.

### **Concepts Addressed:**

- Students will:
  - Be able to explain the different manners in which math may be used by marine mammal professionals.
  - Complete basic calculations in regards to diet and size for marine mammals using basic operations such as addition, subtraction, multiplication and division.

### **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.
- The program will begin with introduction of the instructor and an explanation of where Dolphin Research Center is located.
- We will provide a brief overview of the Dolphin Research Center family (dolphins and sea lions)
- Students share the ways in which they use math, and then discuss with the instructor the ways in which marine mammal professionals use math.
- Instructor discusses how much dolphins weigh and how much they eat.
- Students work with the instructor to complete mathematical calculations related to dolphin diets.
- Instructor discusses what dolphins eat and how professionals prepare their food for them.
- Instructor discusses conservation issues facing marine mammals and what students can do to make a difference.

### **Program Logistics**

**Program Length:** 45-60 minutes



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**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.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.

**Language Arts Florida Standards met or supported:**

- **LAFS.1.SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. C. Ask questions.



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- **LAFS.2.SL.1.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by linking their comments to the remarks of others. C. Ask for clarification and further explanation as needed about the topics and texts under discussion.
- **LAFS.3.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 *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 (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). C. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. D. Explain their own ideas and understanding in light of the discussion.
- **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.

### Mathematics Florida Standards met or supported:

- **MAFS.2.MD.1.3** Estimate lengths using units of inches, feet, yards, centimeters, and meters.
- **MAFS.3.OA.3.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div$



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5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

- **MAFS.3.OA.4.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- **MAFS.3.NF.1.1** Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .
- **MAFS.4.OA.1.3** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- **MAFS.4.NBT.2.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **MAFS.4.NBT.2.6** Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **MAFS.5.NBT.2.5** Fluently multiply multi-digit whole numbers using the standard algorithm
- **MAFS.5.NBT.2.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

### *National*

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

- NA

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



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- **CCSS.ELA-Literacy.SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. C. Ask questions to clear up any confusion about the topics and texts under discussion.
- **CCSS.ELA-Literacy.SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). B. Build on others' talk in conversations by linking their comments to the remarks of others. C. Ask for clarification and further explanation as needed about the topics and texts under discussion.
- **CCSS.ELA-Literacy.SL.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 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 (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). C. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. D. 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.

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

- **CCSS.MATH.CONTENT.2.MD.A.3** Estimate lengths using units of inches, feet, yards, centimeters, and meters.
- **CCSS.MATH.CONTENT.3.OA.C.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one



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knows  $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

- **CCSS.MATH.CONTENT.3.OA.D.8** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- **CCSS.MATH.CONTENT.3.NF.A.1** Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ .
- **CCSS.MATH.CONTENT.4.OA.A.3** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- **CCSS.MATH.CONTENT.4.NBT.B.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **CCSS.MATH.CONTENT.4.NBT.B.6** Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **CCSS.MATH.CONTENT.5.NBT.B.5** Fluently multiply multi-digit whole numbers using the standard algorithm
- **CCSS.MATH.CONTENT.5.NBT.B.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

### 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

- Pencils and provided handout or dry erase boards and markers

