

DOLPHIN RESEARCH CENTER

Distance Learning: Lucky Louie & Math

Dive in mathematics and fractions with Louie, a rescued bottlenose dolphin from the BP Oil spill.

Grade Levels: Approximately grades 3-6.

Math standards may vary greatly between states that are not utilizing national standards. Since this is a math program please closely review the concepts addressed in this program to ensure that the content is appropriate for your students.

Program Description:

Students will participate in an interactive studio based program with Dolphin Research Center Staff to learn about the impacts of the BP Oil Spill on dolphins in the Gulf of Mexico. Students will get to hear the story of Louie, a dolphin that was rescued from the oil spill. Mathematical calculations related to fractions are integrated into the discussion. 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 studio based programs include a live instructor interaction with video clips from all around our beautiful Florida Keys facility.

Concepts Addressed:

- Students will:
 - Discover the ecological impacts of oil spills
 - Discuss the magnitude of the BP oil spill and the story of Louie, a dolphin rescued from the BP Oil Spill
 - Create and conduct calculations related to fractions
 - construct a fraction
 - simplify a fraction
 - find an equivalent fraction

Program Format:

- The program begins with an overview of our facility and our dolphin and sea lion families.
- Brief overview of the BP Oil Spill
- Discussion of the impacts of the oil spill on animals like dolphins
- Create fractions that reflect data relevant to the oil spill and its impacts
- Simplify and find equivalent fractions that reflect data relevant to the oil spill and its impacts
- Hear the story of Louie, a dolphin rescued from the BP Oil Spill
- Ask a dolphin expert questions!



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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: 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.E.6.3** Recognize that humans need resources found on Earth and that these are either renewable or nonrenewable.



DOLPHIN RESEARCH CENTER, 58901 Overseas Hwy, Grassy Key, FL 33050
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- **SC.4.L.17.4** Recognize ways plants and animals, including humans, can impact the environment.

Language Arts Florida Standards met or supported:

- **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.
- **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. 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. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. Pose and respond to specific questions with elaboration and detail by making comments that contribute



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to the topic, text, or issue under discussion. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

Mathematics Florida Standards met or supported:

- **MAFS.3.MD.3.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units
- **MAFS.3.MD.3.6** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- **MAFS.3.NF.1.1** Understand a fraction as a number on the number line; represent fractions on a number line diagram. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
- **MAFS.3.NF.1.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.* Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

National

Next Generation Science Standards met or supported:

- **4-ESS3-1** Earth and Human Activity Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.



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- **MS-ESS3-3 Earth and Human Activity** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.*

Common Core for English Language Arts met or supported:

- **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.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 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.
- **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



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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.

Common Core Mathematics met or supported:

- **CCSS.MATH.CONTENT.3.MD.C.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. A. square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. B. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
- **CCSS.MATH.CONTENT.3.MD.C.6** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- **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.3.NF.A.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. A. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. B. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model. C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram. D. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

Ocean Literacy Principles

- **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.
- **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



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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

