

# DOLPHIN RESEARCH CENTER

## Distance Learning: Elementary Energy for Everyone

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### Energy for Everyone

**Grade Levels:** 1-5

### Concepts Addressed:

- Explanation of what energy is.
- Describe some of the common forms of energy.
- Discuss some of the ways in which dolphins use energy.
  - Sunlight as part of the food chain.
  - Sound production and echolocation.
- Discussion on some of the ways in which people use energy.
- Investigate how technology uses energy.
- Discuss sources of energy.
- Examine conservation issues facing marine animals.
  - Sound from shipping and drilling
  - Oil Spills
- Discuss ways in which individuals can make a difference in protecting and saving marine life.
  - 3 R's
  - Energy Conservation

### Standards:

#### *Florida*

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

- **SC.1.L.17.1** Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.
- **SC.2.P.10.1** Discuss that people use electricity or other forms of energy to cook their food, cool or warm their homes, and power their cars.
- **SC.2.L.17.1** Compare and contrast the basic needs that all living things, including humans, have for survival.
- **SC.3.P.10.1** Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical.
- **SC.3.L.17.2** Recognize that plants use energy from the Sun, air, and water to make their own food.
- **SC.4.P.10.1** Observe and describe some basic forms of energy, including light, heat, sound, electrical, and the energy of motion.



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- **SC.4.P.10.3** Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates.
- **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.
- **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.P.10.1** Investigate and describe some basic forms of energy, including light, heat, sound, electrical, chemical, and mechanical.

### 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.
- **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



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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.

### National

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

- **K-LS1-1.** Use observations to describe patterns of what plants and animals (including humans) need to survive.
- **K-ESS3-3.** Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
- **1-PS4-1.** Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
- **4-PS3-2.** Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
- **4-ESS3-1.** Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
- **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-ESS3-1.** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

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

- **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



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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.

### 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 chemistry (ocean acidification), and physical modifications (changes to



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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*

