

DOLPHIN RESEARCH CENTER

A Whale of a Jump!

Grade Level: 3rd-5th

Objective: Students will be able to compare and contrast the various lengths of examples of marine life in an active way and identify the need to protect them.

Florida Sunshine State Standards:

Mathematics

MA.A.3.2.2 The student selects the appropriate operation to solve specific problems involving addition, subtraction, and multiplication of whole numbers, decimals, and fractions, and division of whole numbers.

MA.B.2.2.1: The student uses direct and indirect measures to calculate and compare measurable characteristics.

Science

SC.G.1.2.1 The student knows ways that plants, animals, and protists interact.

SC.G.1.2.2 The student knows that living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment.

Social Studies

SS.B.2.2.3 The student understands how human activity affects the physical environment.

National Science Education Standards:

Content Standard A (K-4, 5-8) Understandings about Scientific Inquiry:

Mathematics is important in all aspects of scientific inquiry.

Content Standard C (K-4) - Characteristics of Organisms: Each plant or animal has different structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.

Content Standard F (K-4) - Changes in Environments: Changes in environments can be natural or influenced by humans. Some changes are good, some are bad, and some are neither good nor bad. Pollution is a change in the environment that can influence the health, survival, or activities of organisms, including humans.

Content Standard F (5-8) - Natural hazards: Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal. Such activities can accelerate many natural changes.

Background: Students should have some background experience with length measurement in feet. An important message to give to students is that many species of whales and dolphins and other forms of marine life are affected by marine debris. **Marine debris** is anything from a discarded sandwich bag to a lost fishing net. Every ocean in the world is littered with some form of debris, which resembles food for marine life. Many animals accidentally eat marine debris causing internal injury, intestinal blockage and starvation. The smallest forms of pollution affect some of the largest mammals on earth. Sandwich bags can

DOLPHIN RESEARCH CENTER

A Whale of a Jump!

be mistaken for yummy jellyfish, while cigarette butts can look like tasty shrimp. Whales and dolphins can ingest our garbage and become terribly ill. Marine debris could potentially kill these amazing marine mammals.

About 25% of all marine life depends on coral reefs for survival despite the fact that the reefs only make up a small part of the ocean floor. **Coral reefs** are also known as the rainforests of the sea and are home to a large variety of marine life. Some coral reefs are hundreds of miles long and are the largest living structures on Earth. Coral reefs look like rocks or plants, but really they are structures made by tiny animals the size of a thumbtack! The Florida Keys are home to the third longest coral reef in the world! It is important to keep our reefs healthy, not only for the marine life that live there, but also for people because the reefs are a vital source of food (fish, etc), medicines, and even protection from erosion.

Unfortunately, due to **human impact**, most of the world's coral reefs have been severely damaged. We must protect this precious ecosystem and the food chains they nurture through **conservation**. To learn more about coral reefs and what you can do to help protect them, please visit

www.coral.org

Materials:

- Masking tape.
- Copies of the hand out.
- Marine animal labels to mark the increments.
- ***Jump into Science: Coral Reefs*** by Sylvia A. Earle, Bonnie Matthews
- ***Hello, Fish : Visiting The Coral Reef*** by Sylvia Earle
- ***Sea Critters*** by Sylvia Earle
- ***Wild Ocean*** by Sylvia Earle
- ***Dive (My Adventures)*** by Sylvia Earle
- ***Sea Change : A Message of the Oceans*** by Sylvia Earle
- ***Somewhere in the Ocean*** by Jennifer Ward

Teacher Prep Notes: Designate an area where students can jump! Outside, in the hallway, or a large area of your classroom free from obstacles are good choices. (Depending upon

Key Terms

Coral reef: A colorful, massive structure made of limestone that is deposited by living things. Coral reefs are tropical ecosystems home to 25% of all plants and animals that live in the ocean.

Marine debris: Anything from a discarded sandwich bag to a lost fishing net. Every ocean in the world is littered with some form of debris, which resembles food for marine life. Many animals accidentally eat marine debris causing internal injury, intestinal blockage, and starvation.

Human impact: The effect of human presence on an area or environment.

Conservation: The official care and protection of natural resources.



DOLPHIN RESEARCH CENTER

A Whale of a Jump!

your students, this activity may get noisy!) Mark off 0 to 13 feet in one-foot increments on the floor with masking tape. Copy and laminate labels of the various length equivalents. Affix the animal labels at the proper increment mark. Check out some of the books provided in the list to enable students to visualize the marine life on the labels.

Procedure:

1. Read aloud one of the picture books listed in Materials.
2. Ask students what types of marine life they would find at a coral reef. Ask them what is a coral reef?
3. Share some of the info from the Background section about coral reefs. (Maybe write the definition on the board and list some of the things they would see from the book and discussion.)
4. Ask students if they think coral reefs and marine animals and plants need to be protected. Why? Protected from what? (Give examples: marine debris, over fishing, pollution, over population, noise pollution, human activity, etc.)
5. Tell students that they will find out later what they can do, but first...
6. Take students to designated area of classroom, outside, hallway, or wherever you chose. Line them up and pass out a copy of the hand out.
7. Ask the students to jump from a standing start (at 0 feet) to see how far they can go. The animal closest to their jump is the animal they represent on their hand out.
8. Repeat the exercise, but allow the students a running start.
9. Next, ask the students how many of their animals, depending on how far they jumped, would need to be lined up end-to-end in order to make an orca, or killer whale (30 feet), a humpback whale (50 feet), a sperm whale (70 feet), or a blue whale (100 feet). Have them try it by measuring 30, 50, 70, 100 feet and having the students jump from the start (the head) to the finish (the tail).

Wrap Up: Share results and show pictures of each animal they represented, provided by the books you checked out, or other available sources. Invite students to learn more about coral reefs and what they can do to help protect them by visiting www.coral.org A great way to end the lesson is to conduct a beach, street, or river cleanup and discuss the students' findings and feelings. Emphasize the three R's: Reduce, Reuse, & Recycle! We can make a difference! For more info, see **Personal Solutions** and **Threats to Dolphins** information files.

Taking it Further:

- As an additional math lesson, have students convert measurements from feet into inches, meters and centimeters.
- Tie in a research project. Have each student research a particular animal and eventually create an underwater collage! Have students share their research with each other.

