

A Whale's Stomach

REDUCE & RE-USE

To Improve Marine Habitats



Grades: 4-6

Objectives:

Affective:

- Students will demonstrate an understanding of the concept of “cause & effect.”
- Students will learn the connection between our daily actions and wildlife.
- Students will learn how to REDUCE and RE-USE in their own lives

Academic:

- Students will read to acquire information and understanding.
- Students will understand and apply scientific concepts pertaining to the physical setting and living environment.
- Students will understand that human decisions and activities have had a profound impact on the physical and living environment.

Materials:

- Whale's stomach bag: 1 whole plastic one gallon jug and the remnants of another, 1 trawl net float,
- 35 feet of nylon rope, 1 large garbage bag, 1 large blob (5+ lbs) of partially processed rubber, 10 small plastic items.
- Other materials: plastic cups, plates, utensils, soda bottle, additional plastic containers, chart paper, student sheet; (optional) *Dolphins & Orcas* or *Death of a Whale* videos

New Vocabulary:

biodegrade - to break down into smaller parts by the action of living things

Motivation:

- 1) Present the above listed Whale's stomach bag items by dumping them out on the floor or a table where they can be seen by all students.
- 2) Ask students what they think these items all have in common?
- 3) Reveal to the students that a similar collection of items was found in the stomach of a whale who washed up on Wrightsville Beach, NC on December 11, 1992 (see details below).

Procedure:

Mini-Lesson:

- 1) Have students estimate, give a fraction or a percentage to identify what quantity of the contents of the stomach was made from plastic. (the majority of items that were found in the stomach were made of plastic). Record on chart paper.
- 2) Inform students that plastic is one of the top pieces of debris found during coastal cleanups.
- 3) Discuss what plastic is made from (petroleum), how it is not biodegradable (does not decompose), so when these items are not disposed of properly they can be harmful to wildlife.

Small-Group Activity:

- 1) Put students into groups of 5 and handout student sheet.
- 2) Have each group discuss and respond in writing to questions on student sheet.

Summary:

- 1) Have each group report their responses to the whole class.
- 2) Remind students that most of the items found in the whale's stomach were plastic.

REDUCE

- 3) Display plastic cups, plates, and utensils. Ask them if they have ever used any of these items at home or school (i.e., parties).
- 4) Ask students if they always need to use these disposable plastic items. Ask them what they could use instead of these plastic items (i.e., glass cup, ceramic plate). Ask them which is better for the environment?
- 5) Explain to students that one way we can help prevent plastics from getting into the ocean (by accident or on purpose) and hurting wildlife is by not using plastic when we can use something else that is not disposable. We can make choices.

RE-USE

- 6) Ask students what they usually do with these items when they are done using them (Response: throw them away).
- 7) Ask students what else they could do with these plastic items (when it is necessary for them to use plastic items) besides throwing them away (Possibilities are: to wash and re-use again or be creative and use them to make crafts, storage, etc).
- 8) Explain to students that another way we can help prevent plastics from getting into the ocean (by accident or on purpose) and hurting wildlife is by not throwing plastic away, but finding other uses for it.
- 9) Show them the other plastic items and ask them to think of ways to re-use them (i.e., plastic soda bottle can be made into a bird feeder).
- 10) Optional: Show video *Dolphins & Orcas* that includes stunning cinematography of dolphins and whales in their natural habitat. Point out to students that these are the kinds of animals they will be helping by "reducing and reusing" in their own lives. Available from the Talbot Collection at www.talbotcollection.com or 310-732-4217.

Follow-Up Activities:

- 1) Have students save and bring in plastic items from home to make something new out of them (i.e. birdfeeder out of soda bottle)
- 2) Have students make a presentation about what they learned to other classes.
- 3) Have students create a poster or sign to educate others about the connection between our daily actions and wildlife.

Background Information Regarding This Whale:

- She was a 28-foot female Sperm Whale.
- She was found alive in the surf by a walker at 6:30 AM.
- She died at approximately 7:45 AM.
- The Marine Mammal Stranding Team arrived at 8:00 AM.
- The whale appeared emaciated.
- Based on her size and weight, the whale was estimated to be 3-4 years old, and was probably weaned 1 year earlier.
- Veterinarians did a limited necropsy to look at the contents of her stomach.
- A few squid beaks were also in her stomach, indicating that she was doing some successful feeding.
- Veterinarians estimated that none but the smallest pieces of plastic could have passed through the whale's intestinal tract and that the garbage was a large contributing factor, if not the entire reason the whale died.
- It is assumed that whales either mistake the plastic for food, or, perhaps more likely, go after squid that are hiding in and around the garbage, and accidentally swallow the plastic as well.
- Finding plastic in whales is uncommon, but this is not an isolated incident. Most whales who die do so off shore and are not found by people.

Resources:

- Video: *Death of a Whale* – Only recommended for grades 6 and up. Shows actual footage of this sad event including the removal of debris from the whale's stomach and interviews with the marine biologists. Available from Environmental Media at www.envmedia.com or 800-368-3382.
- The Riverhead Foundation for Marine Research and Preservation <http://www.riverheadfoundation.org/>: information on marine mammal stranding/rescue
- The Ocean Conservancy <http://www.oceanconservancy.org/dynamic/home/home.htm>
- Plastics in Our Oceans <http://www.whoi.edu/science/B/people/kamaral/plasticsarticle.html>

New York State Standards Addressed:

ELA Standard 1 – Language for Information and Understanding – Students will read, write, listen, and speak for information and understanding.

Listening and Reading

1. Listening and reading to acquire information and understanding involves collecting data, facts, and ideas; discovering relationships, concepts, and generalizations; and using knowledge from oral, written, and electronic sources.

Speaking and Writing

2. Speaking and writing to acquire and transmit information requires asking probing and clarifying questions, interpreting information in one's own words, applying information from one context to another, and presenting the information and interpretation clearly, concisely, and comprehensibly.

ELA Standard 4 - Language for Social Interaction – Students will read, write, listen, and speak for social interaction.

Listening and Speaking

1. Oral Communication in formal and informal settings require the ability to talk with people of different ages, genders, and cultures, to adapt presentations to different audiences, and to reflect on how talk varies in different situations.

MST Standard 4 – Science – Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

The Living Environment

1. Plants and animals depend on each other and their physical environment.
2. Human decisions and activities have had a profound impact on the physical and living environment.

MST Standard 7 – Interdisciplinary Problem Solving – Students will apply the knowledge and thinking of mathematics, science, and technology to address real-life problems and make informed decisions.

Connections

1. The knowledge and skills of mathematics, science, and technology are used together to make informed decisions and solve problems, especially those relating to issues of science/technology/society, consumer decision making, design, and inquiry into phenomena.



A Whale's Stomach Activity Sheet



Name _____ Date _____

Teacher _____ Group _____

Discuss the following questions with your group. Write the answers below.

1) How do these things get into the ocean in the first place? Explain.

Do you think this happens by accident or on purpose?

2) How might a person who dumps garbage in the ocean feel about the ocean?

3) Do you think it is possible that the people who threw away these items DO care about animals and the environment?

Yes ____ No ____ Explain why you think this.

4) Do we always know what our actions will do to animals and the environment?

Yes ____ No ____ Explain why you think this.

What is the best thing a person can do to make sure that garbage does not end up in the ocean?

*Adapted from Living Earth Learning Project (a program of the New England Anti-Vivisection Society).

Name _____ Date _____

True Price

Product:



1) How does this product (if the package is empty, imagine it still has the product inside) and its packaging affect the following:

The Environment -

Other Species -

Human Health (including your own) -

Other Cultures -

2) Is this product a "Want" or a "Need"?

3) Did this product exist 100 years ago?
If not, what did we use instead?

4) What is an alternative to this product?

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