

NOAA Teacher at Sea Program

Melanie Lyte, Aboard Ship Gordon Gunter, May 20-May 32, 2013

Let's Compare and Contrast Whales

Activity Title:

Let's Compare and Contrast Whales

Subject (Focus/Topic):

Compare and contrast whales

Grade Level

First Grade

Average Learning Time

7- 35-45 minute class periods

Lesson Summary (Overview/Purpose):

Students will choose a whale to research. They will research their whale and then work with a partner who has researched a different whale to compare and contrast the whales using a Venn diagram. After completing the Venn diagram, students will create an informational poster using their research. Students will share their work with peers from another class.

Overall Concept (Big Idea/Essential Question):

This lesson is designed to help students compare and contrast different whales using physical characteristics and diet.

Specific Concepts: (Key Concepts):

- Every whale has characteristics which make it unique
- Whales are classified into two categories: Baleen Whales and Toothed Whales
- Whales can be classified by whether they have a dorsal fin or not

Focus Questions (Specific Questions):

- How can we identify different kinds of whales?
- Are all whales about the same length?
- What are baleen whales?
- What are toothed whales?
- What do whales eat?
- Which whales have a dorsal fins and which do not?

Objectives (Learning Goals):

- Students will be able to research whales using appropriate grade level materials.
- Students will be able to complete a Venn diagram comparing two whales.
- Students will be able to complete an informational poster about the 2 whales.
- Students will be able to share their poster with a peer.

Background Information:

Whales can be categorized into two groups: baleen whales and toothed whales. Whether a whale has baleen or teeth determines what the whale eats.

Whales can also be categorized by whether or not they have a dorsal fin.

Whales differ in their size, color, diet, and physical characteristics.

Many whales are endangered, but some are not.

Various whales have defining physical characteristics. The right whale can be identified by the callosities on their heads and backs. Orca whales are known for their obvious black body with white chin, neck, and stomach. The bowhead whale is identified by its bow-shaped mouth. Sperm whales are identified by their giant head.

Common Misconceptions/Preconceptions

All whales are gigantic.

All whales have the same diet.

All whales look similar

Materials:

- Books about whales (some at the appropriate reading level for all students)
- List of possible whales to research
- Web-based resources at the appropriate reading level (Ex. Pebble Go Database)
- Research Notebooks
- Poster board

Technical Requirements:

SMART Board and/or access to the internet for student resources

Teacher Preparation:

- Research various whales and what makes them unique.
- Access pictures from the internet, personal collection, and library books to show the class.
- Prepare research notebooks and Venn diagrams for student use.

Keywords:

Right Whale, Sperm Whale, Bowhead Whale, Humpback Whale, Orca Whale, Blue Whale, Fin Whale, Sei Whale, baleen, toothed, dorsal fin, diet, callosities.

Pre-assessment Strategy/Anticipatory Set**Whale Fact Frenzy****Day 1**

Students sit in circle on the rug. Teacher has a pile of whale related books and hands them out to the students. Students then engage in a “whale a fact frenzy”. When teacher says go the students do a picture walk through the book in their laps. When the teacher says, “switch” students pass the books to their right and begin a picture walk through the next book. This continues for six-seven rounds. When the teacher says stop students are encouraged to turn and tell (and Show) the person next to them an “Aha!” fact they found in their book. At the end of the introduction the teacher collects books.

Lesson Procedure:**Day 2**

1. Teacher explains that the “whale frenzy” was a way to get them warmed up for some really great research they will be doing about whales.
2. Teacher presents pictures of whales on the SMART board that have some of the characteristics that make various whales unique. As the class discusses the whales, the teacher makes a list of characteristics on whiteboard.

Size

Toothed or baleen whale

Diet

Color

Dorsal fin or no dorsal fin

Unique physical characteristics (callosities, giant head, bow shaped mouth, etc).

Endangered or not.

3. Teacher explains to students that these are the things they are going to research about their whale using a research notebook that will help them organize their research findings.

4. Students write their top 3 choices of whales they would like to research. Teacher collects student papers and assigns each student a whale to research. (This is a very important step. You want to make sure you assign students a variety of different whales with differing characteristics so that when they work with a partner to complete the Venn diagram they have similarities and differences in their whales).

Day 3 & 4

5. Students work to complete their research notebook using the available books and internet resources.

6. Students have time at the end of each session to share a fact they learned in their research with their research partner.

Day 5

Teacher gathers students on the rug and demonstrates how to use their research to complete a Venn diagram comparing and contrasting the whale they researched with their partner's whale. Partners work together to complete a Venn diagram comparing and contrasting their whales.

Day 6

Partners work together to create an informational poster about their two whales.

Day 7

Students invite another class to a Whale "Symposium" complete with goldfish crackers for snack.

Evaluation: Students' finished products will be evaluated for accuracy of information; depth of information; and overall appearance using the rubric below.

Whale Research Rubric

	4	3	2	1
Information is accurate	All information is accurate and clear	Most of the information is accurate and clear	Student has misinformation and/or is unclear	Several unclear or erroneous facts
Information shows knowledge of topic	Information shows excellent understanding of the likes and differences	Information shows good understanding of likes and differences	Information does not show depth of understanding and doesn't accurately compare and contrast	Information doesn't compare and contrast
Mechanics	Spelling and punctuation is accurate	Most spelling and punctuation is accurate	Several spelling and punctuation mistakes	Many spelling and punctuation mistakes
Presentation	Very neat handwriting and illustrations	Neat handwriting and illustrations	Some effort shown, but messy handwriting and illustrations	Doesn't show time and effort in handwriting and illustrations

Standards:

National Science Education Standards Addressed:

Content Standard A- Scientific Inquiry

Content Standard C- Life Science:

- Populations and Ecosystems
- Diversity and adaptations of organisms

Ocean Literacy Principles Addressed:

Ocean Principle 5: The ocean supports a great diversity of life and ecosystems.

a. Ocean life ranges in size from the smallest virus to the largest animal that has lived on Earth, the Blue Whale.

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NYS Standards addressed:

First grade science standards:

Standard 2.1 Information technology is used to retrieve, process, and communicate information and as a tool to enhance learning.

- use computer technology, traditional paper-based resources, and interpersonal discussions to learn, do, and share science in the classroom
- select appropriate hardware and software that aids in word processing, creating databases, telecommunications, graphing, data display, and other tasks
- use information technology to link the classroom to world events

Standard 6.2 Models are simplified representations of objects, structures, or systems, used in analysis, explanation, or design.

- analyze, construct, and operate models in order to discover attributes of the real thing
- discover that a model of something is different from the real thing but can be used to study the real thing
- use different types of models, such as graphs, sketches, diagrams, and maps, to represent various aspects of the real world

Standard 6.3 The grouping of magnitudes of size, time, frequency, and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect behavior and design of systems.

- observe that things in nature and things that people make have very different sizes, weights, and ages
- recognize that almost anything has limits on how big or small it can be.

NYS First grade Reading Standards:

RI 1.3 Describe a connection between two individuals, events, ideas, or pieces of information in a text

RI 1.5 Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in text.

RI 1.6 Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

RI 1.7

Use illustrations and details in a text to describe its key details.

RI 1.10 With prompting and support, read informational texts appropriately complex for grade one.

NYS First Grade Writing Standards:

2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

7. Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions

Additional Resources: Venn diagram to print at <http://www.lburkhart.com/elem/clarist/venn.gif>
Pebble Go Data Base, NOAA website, Whale Notebook (see below)

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My Whale Research Notebook

Name _____

Whale I am researching: _____

Size: _____

Color: _____

Dorsal fin? _____

Baleen or teeth? _____

Diet _____

Endangered or threatened? _____

Unique physical characteristics:

Other interesting facts

Diagram of a _____ whale

