

# RIGHT WHALES

Unit designed by:  
Kristine Price  
& Deborah Will

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## **Introduction and Culmination of the Unit**

This unit has been developed for grades 3 - 6. Younger and older grades could be taught this information with some adjustments to expectations. The unit's focus is on exploring the right whale. Lesson #1 begins instruction in a broad way, by at first understanding the different facts about the right whale. Lesson #2 goes on to incorporate a lesson for the subject area of History or Social Studies and explores the rights whale's history of being hunted. Lesson #3 is a math-based lesson that explores the length of whales including the length of the right whale. Lesson # 4 is a science lesson where the students will perform an experiment exploring how the whale maintains body heat. Lesson #5 is the culmination of the unit and is a compilation of the student's work to date by creating a portfolio or book based on right whale facts learned throughout the unit.

There are many activities planned as part of this unit, which are not expensive and easy to implement within your classroom. The activities are planned as a way for students to be actively involved in each of the lessons. Student's participation will help to ensure that they understand the concepts that are introduced.

Supplementary Resources are listed at the end of the unit lesson plans.

Items such as the story of Metompkin, and anything else needed for instruction will be linked to this unit.

# **Lesson # 1**

## **Right Whale Introduction (Introduction/Research)**

**Objectives:** Students will research information on the right whale and gain understanding about right whale facts. The following information will be researched about the right whale:

1. General description
2. Skin, shape and fins
3. Social groups
4. Spouting - breathing
5. Anatomy
6. Size
7. Diet
8. Habitat
9. Reproduction
10. Life span
11. Population count

### **Materials:**

- Writing tools
- Science journals
- Right whale literature
- Flip chart/writing materials

### **Procedure:**

1. Students will come to the community learning area in front of the flip chart.
2. Students will brain storm ideas as a group about what they know and think that they know about the right whale. These ideas will be recorded on the flip chart, and displayed for all of the students to see.
3. Explain to the class that they will be split into groups and work as a team with right whale literature to generate whale facts that will be posted for all of the class to record in their science journals.

4. Split the class into groups and assign each group a topic to research. The categories will be:
  - General description
  - Skin, shape and fins
  - Social groups
  - Spouting - breathing
  - Anatomy
  - Size
  - Diet
  - Habitat
  - Reproduction
  - Life span
  - Population count
5. Each group will have a poster board that a recorder will write the facts that they have learned within the group and will present the information to the class.
6. This information that the groups present and make a poster board for will be displayed within the class for the duration of the right whale teaching unit for reference.
7. Instruct each student to record all of the facts about the right whale that each group researched within their science journals.

**Follow Up Activities:**

1. If time permits, the story The Right Whale named Metompkin: Her Story of Survival can be read <http://whale.wheelock.edu/books/MetompkinStory/>. Another suggestion is to read a chapter of this story each day that the right whale is being taught as an opening to the lesson.

**Homework/Assessment:**

Assess each member of the group by observing their research skills when gathering information about their assigned topic. Evaluate the quality and accuracy of each group's poster with right whale information and facts. Observe each student's science journal to ensure that they have correct information and all facts that are needed about the right whale.

## Lesson # 2

### Products from Right Whales (History/Social Studies)

#### **Objectives:**

Students will read about whale uses and answer comprehension questions.  
Students will apply what they have read to list right whale products.

#### **Materials:**

Products from Whales worksheet  
Writing tools  
Chart paper

#### **Teacher Background:**

This lesson has been developed to help teachers explain to their students how whales were used as resources of living for hunters of the 1800's. Teachers should encourage critical thinking in their students as they discuss right whales and how and why they were hunted.

#### **Procedure:**

1. Discuss how hunting wiped out a large portion of the right whale population. Tell students how right whale got its name. Explain to students how the hunters sold parts of the whale to make money. Ask the students how they think hunters could make money from the whale parts. Why did the hunters sell whale parts to make money?
2. Brainstorm students ideas of what resources hunters may have used right whales for in the past. Write brainstorm on chart paper and add students ideas as they give them. Ask students how they think hunters used the different parts of the whale and have students explain their thinking.
3. Read story on worksheet with class. Briefly discuss uses listed in story. Have students work as you wish (independently/groups) to answer the

questions about the story. Initiate a whole group discussion to discuss student's answers.

4. Encourage critical thinking by asking students if they think hunting so many whales was necessary to live. Were hunters wasting the whales, or were they using the whale parts wisely and living off of nature?

**Follow up Activities:**

Have students go home and share what they have learned with a family member or someone that they live know and is older than them. Encourage students to have a discussion about right whale hunting at home. Carry discussion about whale uses over to next social studies/history class session by having students share ideas from their at home discussions.

**Homework/ Assessment:**

Have students complete diagram of whale showing how parts of whale were used. Have students list products hunters got from whales.

Have students write or draw a picture about their thoughts about whale hunting. Give trigger questions such as: Did hunters hunt these whales so that they could live off the whales? Was it fair for the hunters to use whales in these ways?

Discuss assignment in next class. Have students share their thoughts and ideas about right whale hunting.

Name \_\_\_\_\_ Date \_\_\_\_\_

## Products from Whales

Read the story and answer the questions below.

Whales have been hunted for hundreds of years. People probably first hunted whales for food. But soon, many uses were found for the different parts of the whale. In the 1700's and 1800's, the whale's blubber was boiled down for oil. The oil was used for fuel for lamps, cooking, leather tanning, and making soap and paint. Baleen or whale bone was used to stiffen collars and ladies' corsets, fishing rods, umbrella ribs, and whips.

People used the bones from whales to produce beautifully carved objects known as scrimshaw. Scrimshaw was made by first smoothing and polishing an object, such as a whale's bone. Then a design or picture was scratched into the bone's surface with a sharp edge. Finally, colored inks were used to fill in the engraved lines.

Sailors in the 1800's made scrimshaw to pass the time. They engraved scenes of activities at sea, or copied pictures from books. Scrimshaw was used to decorate useful objects such as knife and tool handles, or just as souvenirs of travels to far off lands. Today it has survived as a folk art, with most scrimshaw being made for jewelry and decoration.

1. What is the main idea for the first paragraph?

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2. Name at least 3 products once made from whale parts.

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3. What is scrimshaw?

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4. How is scrimshaw made?

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## Name Answer Key Products from Whales

Read the story and answer the questions below.

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Sailors in the 1800's made scrimshaw to pass the time. They engraved scenes of activities at sea, or copied pictures from books. Scrimshaw was used to decorate useful objects such as knife and tool handles, or just as souvenirs of travels to far off lands. Today it has survived as a folk art, with most scrimshaw being made for jewelry and decoration.

1. What is the main idea for the first paragraph?

The main idea for the first paragraph is that the various parts of the whale were used to make different products.

2. Name at least 3 products once made from whale parts.

Lamp oil, soap, paint, fishing rods, umbrella ribs, whips, stiffening materials for collars and corsets, food, cooking oil, and tanned leather.

3. What is scrimshaw?

Scrimshaw is an engraved picture or design made on the bones of whales.

4. How is scrimshaw made?

Scrimshaw is made by first polishing and smoothing the surface of the bone, then scratching a design in the bone's surface, and finally filling in the engraved lines with colored inks.

## **Lesson #3**

### **How Long Are Whales? (Math)**

#### **Objectives:**

The students will collect different whale lengths and be able to compare these lengths using rope measurements.

#### **Materials:**

- Rope/string 100 ft long
- Index cards
- Tape measure
- Tape
- List of whale lengths
- Markers
- Large amount of space: hallway or gym

#### **Procedure:**

##### **Activity 1:**

1. Divide students into groups of 2 - 4 depending on class size.
2. Have students research different whale lengths using the library/computer or a whale lengths handout.
3. Use markers to label the index cards for each whale to be measured.
4. Using the tape measure, students mark off each whale length on the rope.
5. Use tape to attach the index card representing that whale's length.

### Activity 2:

1. Teacher can create the whale rope with only the measurements marked.
2. Divide the class into enough groups to represent each whale marked.
3. Take the group outside/hallway/gym to unroll the whale length rope.
4. Each group could prepare a paragraph describing their whale to be read to the class.

### Activity 3:

1. Whale rope may be displayed in gym/hallway with each groups paragraph below the index cards.
2. Each group could draw a picture of their whale and display with the rope.
3. Group may present an oral report on their whale.

### Assessment:

Students will successfully show that they understand the different whale lengths by using rope to depict whale size.

<http://whale.wheelock.edu/whalenet-stuff/LucyPage.html>

## Whale Lengths

Type of Whale	Average Lengths
<b>Baleen Whales</b>	
Pygmy Whale	20 feet
Gray Whale	40 feet
Humpback Whale	50 feet
Right Whale	55 feet
Sei Whales	60 feet
Fin Whale	85 feet
Blue Whale	100 feet
<b>Toothed Whales</b>	
Bottlenose Dolphin	10 feet
Beluga (White) Whale	16 feet
Killer Whale	30 feet
Sperm Whale	55 feet

## **Lesson # 4**

### **Maintaining Body Heat (Science )**

#### **Objectives:**

Students will observe and compare heat loss in different objects with surface area-to-volume ratios (see Teacher Background for more information). Students will be able to transfer this comparison to the physical characteristics of animals in their environment.

#### **Materials:**

- Hot and cold water from tap
- Large Styrofoam cup with lid
- 2 plastic Ziploc sandwich bags
- Bucket, large bowl, or dishpan
- 1 rubber disposable glove
- Timer or watch

#### **Teacher Background:**

The glove is similar to mammals with long legs, lots of surface area but little volume. Consider what would happen if a whale had legs. It would lose its body heat like the glove, and quickly cool in the ocean. The plain sandwich bag proves that having no legs helps sea mammals maintain the warm body temperature. But the warmest bag from inside the cup proves what good insulation (like blubber) can do for ocean mammals. The bag inside the cup is the whale with no legs, and the Styrofoam cup is the whale's insulating blubber layer.

But what about those mammals that live in relatively warm oceans? Or don't whales ever get hot? Ask your students when they get hot while sleeping at night what they do. Some may answer they stick one foot out of the covers. Why? Because the temperature of the foot will cool because the surrounding temperature is cooler than under the covers. Whale flippers do almost the same thing, but this is not why they flip them above the water. There is less blubber on the whale's flipper, and it can conduct body heat to the

surrounding cooler ocean better than the rest of its body. Thereby, cooling off.

**Procedure:**

1. Divide the class into groups of four. Each group needs to have all of the above materials.
2. Assign each student a role.
  - Materials - to collect and maintain materials needed for lab.
  - Recorder - to record information from lab on the Lab Worksheet.
  - Technician - to perform maneuvering of lab work.
  - Maintenance - to clean up the lab station and be prepared for spills (can be combined with materials as one role for odd numbered groups).
3. Fill bucket half-full of cold water. This will be used to represent the ocean.
4. Put hot water in the glove, filling the fingers and in both sandwich bags, trying to put the same amount of water in each. Tie off the glove and close the Ziploc bags.
5. Feel each bag and glove, have students record observations in question 1 of the Lab Worksheet. They should feel the same.
6. Put one of the Ziploc bags into the Styrofoam cup, and place the lid on it.
7. Place the glove, bag, and Styrofoam cup with bag into the bucket of cold water.
8. After 5 minutes, remove the glove, bag, and Styrofoam cup with bag from the bucket. Feel all three again, have students record observations in question 3 of the Lab Worksheet. The glove is the coolest and the bag from the cup is the warmest.
9. Choose one member from each group to share their results with the class. Use the background information for class discussion.

**Assessment:**

Students will successfully complete the activity. Students will verbally and hand write answers to questions asked regarding the activity.

## Questions:

1. How do the bags feel before they are placed into the cold "ocean"?
2. What do you think the temperatures of the glove and bags will be like after 5 minutes in the cold "ocean"? Why?
3. What did the glove and two bags feel like after they were taken out of the "ocean"?
4. Why do you think the three bags felt different?
5. Which one represented a whale? Why?

## **Lesson # 5**

### **Whale Portfolio (Culminating/Language Arts)**

#### **Objectives:**

- Students will illustrate facts learned about the right whale by designing a portfolio.
- Students will combine all that they have learned from this unit to create an informational portfolio about the right whale.
- Students will write about the right whale knowledge they have obtained and make it into a resource for others.

#### **Materials:**

Materials from the unit

Writing tools

Art supplies (depending on what your students ideas are)

Large construction paper

Chart paper

#### **Teacher Background:**

This lesson can be adapted in many ways. You can give your students the freedom to express what they have learned in any way, or you can guide your students by giving them options of what they can do. For example, you could have your students make a portfolio using large construction paper, or you could have them use folders or binders. The goal of the portfolio is for students to express what they have learned from this unit, and you can adapt this as you wish.

#### **Procedure:**

1. Have a large group discussion with students explaining the culminating activity of the right whale unit.
2. Have students brainstorm what they have learned from this unit and record their ideas on chart paper. Keep this up where students can see it.

3. Have students work individually to make their own list of information they would like to include in their portfolio. They can web or make a list.
4. Have students map out how they are going to express their information in the portfolio. Assist students when they need guidance in narrowing ideas to include.
5. Have supplies out and accessible to students. Approve student's ideas before they begin construction.
6. Assist students as necessary in constructing their portfolios. Display the portfolios in the classroom when complete.

**Assessment:**

This portfolio is not only a culminating activity, but it is also a complete assessment of what your students have learned from this unit. By reading each student's portfolio you will be able to evaluate what they have learned and you can assess their expression of ideas from the unit as well.

## Supplementary Resources

### Websites:

<http://oceanlink.island.net>

<http://www.CLEARVUE.com>

<http://www.allaboutwhales.com/subjects/whales/species/Rightwhale.shtml>

<http://whale.wheelock.edu>

<http://www.education-world.com>

### Books:

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Wolpert, T. Whales for Kids. Minocqua, Wisconsin: Northwood Press, Inc. 1990.

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[http://whale.wheelock.edu/whalenet-stuff/rw\\_bib.html](http://whale.wheelock.edu/whalenet-stuff/rw_bib.html)