

# Lesson Plan: Whale Wonders of the Deep

**Subject:** Science (Biology, Oceanography)

**Grade Level:** 5th Grade (Ages 10-12)

**Time Allotment:** 90-120 minutes (can be broken into smaller segments)

## Learning Objectives

By the end of this lesson, you will be able to:

- Describe the key characteristics that define a whale as a mammal.
- Compare and contrast the two main types of whales: baleen and toothed whales.
- Identify at least three different whale species and list two unique facts about each.
- Create a visual representation to understand the massive scale of whales.
- Organize your learning into a study guide to prepare for a test.

## Materials Needed

- Computer or tablet with internet access
- Printer (optional)
- Notebook or binder paper
- Pens, pencils, and colored markers
- Long measuring tape (or string/yarn and a ruler)
- Sidewalk chalk or masking tape
- Scissors and glue/tape
- Optional: Index cards, construction paper, recycled materials (cardboard boxes, bottles, etc.)

## Graphic Whale Resources (For Activities)

Throughout the lesson, you will be looking for pictures of whales. Use safe search engines for kids or these recommended sites:

- National Geographic Kids: Whales
- WWF: Whale Species Information
- NOAA Fisheries: Whales section

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## Lesson Structure

### I. Introduction (15 minutes) - Hook & Objectives

#### Hook: A Riddle and a "Wow" Fact

**Educator says:** "I have a riddle for you! I live in the water, but I'm not a fish. I breathe air, but I don't have gills. I can be as long as three school buses, and my heart is the size of a small car. What am I?"  
(Answer: A Blue Whale)

**Educator says:** "That's right, a whale! Whales are some of the most amazing creatures on Earth. Did you know that the songs of humpback whales can travel for thousands of miles through the ocean?"

Today, we're going to become whale experts. We'll explore what makes them unique, meet some of the most famous species, and even create our own study guide to remember everything we learn. By the end, you'll be ready to ace any test on whales!"

### Review Objectives:

Quickly go over the learning objectives listed above in simple terms. "Today, we're going to figure out: What makes a whale a mammal? What's the difference between a whale with teeth and one without? We'll get to know three cool whales, and we'll make something to show just how HUGE they are!"

## II. Body (60-90 minutes) - Content & Practice ('I Do, We Do, You Do')

This part of the lesson is about building your own Whale Study Guide. Grab your notebook and let's get started!

### Part 1: What is a Whale? (I Do - 15 mins)

**Educator models the process:** "Let's start the first page of our study guide. At the top, write the title: 'Whale Study Guide'. Our first section is 'What Makes a Whale a Mammal?' I'll explain the key points, and you'll write them down. This is how you build a great study guide—by taking big ideas and turning them into short, clear notes."

- **They breathe air:** Unlike fish that use gills, whales have lungs and must come to the surface to breathe through their blowhole. Think of it as their nose being on top of their head!
- **They are warm-blooded:** Their bodies stay at a constant warm temperature, even in icy water. A thick layer of fat called blubber acts like a cozy winter coat.
- **They give birth to live babies:** Whale mothers don't lay eggs. They grow their babies inside them and give birth to live calves.
- **They feed their young milk:** Mother whales produce rich, fatty milk to help their babies grow big and strong, fast.

**Formative Assessment (Quick Check):** "Okay, quickly tell me two reasons why a whale is a mammal, not a fish."

### Part 2: Two Types of Whales (We Do - 20 mins)

**Educator guides the activity:** "Now for the next page in our study guide: 'Two Types of Whales'. There are two main groups. Let's make a two-column chart to compare them. We'll look up the information together."

Toothed Whales (Odontoceti)	Baleen Whales (Mysticeti)
Have teeth for catching prey like fish and squid.	Have baleen plates (like a giant bristle brush) instead of teeth.
They are hunters. Many use echolocation (like sonar) to find food.	They are filter feeders. They gulp huge amounts of water and push it out through the baleen, trapping tiny krill and fish.
Usually smaller than baleen whales (with some exceptions).	Includes the largest animals on Earth.
<b>Examples:</b> Orca (Killer Whale), Dolphin, Sperm Whale.	<b>Examples:</b> Blue Whale, Humpback Whale, Gray Whale.

**Interactive Element:** "Let's look up a video of a baleen whale feeding. Notice how it takes in that huge mouthful of water! Now let's find a video of an orca hunting. How is their strategy different?"

### Part 3: Species Spotlight & Activities (You Do - 40 mins)

**Educator explains the independent tasks:** "Now it's your turn to be the lead researcher! You are going to complete the next section of your study guide called 'Species Spotlight'. You will also complete two fun activities. I'm here to help if you get stuck."

#### TASK 1: Species Spotlight Cards (You Do)

**Instructions:** Choose **one toothed whale** (like an Orca or Sperm Whale) and **one baleen whale** (like a Humpback or Blue Whale). For each one, create a "Spotlight Card" in your notebook or on an index card. Find a picture of each whale using the approved websites.

Your card should include:

- **Name of Whale:**
- **Type:** (Toothed or Baleen)
- **Average Size:** (e.g., about as long as a school bus)
- **What it Eats:**
- **Two "Wow" Facts:** (e.g., Sperm whales have the largest brain of any animal; Humpback whales work together to create 'bubble nets' to catch fish.)

**Success Criteria:** A successful spotlight card will have all five sections filled out correctly for two different types of whales.

#### TASK 2: Activity Choice - Pick ONE of the following (You Do)

##### Option A: Whale Scale Drawing (Kinesthetic/Visual)

- **Goal:** To understand the true size of a whale.
- **Instructions:** Go outside with your measuring tape and sidewalk chalk (or stay inside with yarn/tape). Look up the length of a Blue Whale (about 90 feet or 27 meters). Measure this distance out and draw the outline of the whale. Lie down inside your drawing to see how small you are in comparison!
- **Study Guide Entry:** Take a picture of your drawing or write a few sentences in your study guide describing how it felt to see how big a whale really is.

##### Option B: Create a Whale Model (Creative/Hands-on)

- **Goal:** To apply knowledge of whale anatomy.
- **Instructions:** Choose one of the whales you researched. Using recycled materials (bottles for the body, cardboard for fins, etc.), build a model of that whale. Pay attention to its key features: the location of its blowhole, the shape of its fins, and whether it has teeth or baleen.
- **Study Guide Entry:** In your study guide, draw a sketch of your model and label three important body parts (e.g., fluke, dorsal fin, blowhole).

#### Differentiation

- **For Support:** Provide a pre-printed template for the "Species Spotlight Cards" with sentence starters. Offer a specific list of 3-4 websites for research.
- **For Extension:** Research a third whale and compare all three. Or, write a short story from the perspective of a whale calf. Investigate a conservation issue facing whales, like ocean noise or plastic pollution, and add a section to the study guide about how people can help.

### III. Conclusion (15 minutes) - Closure & Recap

#### Learner Recap

**Educator asks:** "Let's look back at our amazing study guide. Tell me what you learned. What was the most surprising fact you discovered today? If you had to explain the difference between a toothed and a baleen whale to a friend, what would you say?"

#### Summary of Key Points

**Educator summarizes:** "Great job! Today we confirmed that whales are air-breathing, warm-blooded mammals. We learned how to tell the difference between filter-feeding baleen giants and toothy hunters. And through your awesome activities, you got a real sense of their massive size and unique features. Your study guide is now a powerful tool to help you remember all of this for your test!"

### Summative Assessment

The student's learning can be assessed through:

1. **The Completed Whale Study Guide:** Check for accuracy in the sections on mammal characteristics, the two whale types, and the species spotlight cards. The guide itself is the primary evidence of learning.
2. **Activity Output:** Review the whale scale drawing/description or the labeled sketch of the whale model to assess their understanding of whale anatomy and scale.
3. **Verbal Quiz:** Ask the student 3-5 questions from the study guide, such as "Is an Orca a toothed or baleen whale?" or "Name two things that make a whale a mammal."