

Cetaceans 4 Grade Curriculum—Outline¹

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This curriculum provides a series of individual lessons covering cetacean (whale and dolphin) biology and ecology. The curriculum uses charismatic megafauna to engage students and inspire them to want to learn more. Lessons highlight some of the ways that humans impact and can protect cetaceans. They help teachers address science, mathematics, language arts, or visual arts objectives and could be used in place of current lesson plans for many topics. Sunshine State Standards and Common Core correlations are provided.

The first ten lessons address cetaceans in general, while the last eight lessons focus on the North Atlantic right whale. The curriculum has been written at a fourth grade level but can be adapted for older or younger students. A first grade version of the cetacean bingo activity in Lesson 3 and other resources can be found at <https://www.flseagrant.org/cetaceans/>. Lessons were used by the authors (with school groups or summer camp participants) and/or by St. Johns County (Florida) teachers. The lessons are designed to take approximately an hour unless the optional activities are incorporated. Lessons are listed in the suggested order; however, each one is a stand-alone lesson that could be taught independently of the others.

Some lessons include PowerPoint presentations, which can be downloaded or viewed at <https://www.flseagrant.org/education/cetaceans/>. Teacher scripts for all presentations are provided in the lessons, as are answer keys for student worksheets.

Curriculum Outline

Lesson 1: Starting to Learn about Whales

- Students will learn about cetaceans by reading the book, *The Wild Whale Watch*.
- Students will keep a reading journal.

Lesson 2: What Makes a Whale a Whale?

- Students will learn about general whale and dolphin biology and will use their knowledge of new vocabulary to complete a worksheet.
- **Suggested prerequisite:** Lesson 1
- **Area(s) of emphasis:** Language Arts, Literacy

Lesson 3: Researching Individual Whale and Dolphin Species

- Students will play a modified game of bingo to learn about individual cetacean species.
- **Suggested prerequisites:** Lessons 1 and 2
- **Area(s) of emphasis:** Language Arts, Literacy

Lesson 4: How Big Are Cetaceans?

- Students will show the lengths of different cetaceans using a "whale-o-meter." Math activities include creating a life-size drawing of a cetacean and estimating the weight of an orca at different ages.
- **Suggested prerequisite:** Lesson 1
- **Area(s) of emphasis:** Language Arts, Mathematics

Lesson 5: Scientific Names—Understanding Where Those Funny Words Come from

- Students will use Greek and Latin roots to interpret the scientific names of some whales. They will create a hypothetical cetacean and give it an appropriate scientific name.
 - **Suggested prerequisites:** Lessons 1 and 2
 - **Area(s) of emphasis:** Language Arts, Visual Art

Lesson 6: Whale Behaviors

- Students will learn about behaviors that many whales can be seen doing. They will make whale puppets and use them to model different whale behaviors.
- **Suggested prerequisite(s):** Lessons 1 and 2
 - **Area(s) of emphasis:** Science

Lesson 7: How Do Whales Eat?

- Students will learn about the differences between how baleen and toothed whales feed. Students will learn how sound waves are used for echolocation.
- **Suggested prerequisite(s):** Lessons 1 and 2
- **Area(s) of emphasis:** Science

Lesson 8: Food Chains

- Students will learn about food chains and conduct a food chain activity.
- **Suggested prerequisite(s):** Lessons 1, 2, and 7
- **Area(s) of emphasis:** Language Arts, Science

Lesson 9: How Do Whales Stay Warm?

- Students will investigate the roles that insulation (blubber) and body shape play in preventing heat loss in marine mammals.
- **Suggested prerequisite(s):** Lessons 1 and 2
- **Area(s) of emphasis:** Science, Mathematics

Lesson 10: Summarizing What We Know about Cetaceans

- Students will learn about different types of poetry and write poems to express what they know about whales and dolphins.
- **Suggested prerequisite(s):** Lessons 1 and 2
- **Area(s) of emphasis:** Language Arts

Lesson 11: Introduction to Right Whales

- Students will learn about NARW life histories by using resource materials to complete worksheets.
- **Suggested prerequisite(s):** Lessons 1 and 2
- **Area(s) of emphasis:** Language Arts

Lesson 12: Identifying Individual North Atlantic Right Whales

- Students will learn about the New England Aquarium's right whale database and try to match photographs to drawings of individual right whales.
- **Suggested prerequisite(s):** Lessons 1, 2, and 11
- **Area(s) of emphasis:** Science

Lesson 13: North Atlantic Right Whale Migration

- Students will learn about right whale migration and ways that right whales are being studied.
- **Suggested prerequisite(s):** Lessons 1, 2, and 11
- **Area(s) of emphasis:** Science, Mathematics

Lesson 14: How Do Right Whales Communicate?

- Students will learn how baleen whales use sound to communicate and how human-created noises in the ocean may affect them.
- Students will conduct an activity to simulate whale communication and interference by human noise.
- **Suggested prerequisite(s):** Lessons 1, 2, and 11
- **Area(s) of emphasis:** Science

Lesson 15: Technology and North Atlantic Right Whales

- Students will learn about the ways that technology is being used to study North Atlantic right whales.
- **Suggested prerequisite(s):** Lessons 1, 2, and 11
- **Area(s) of emphasis:** Language Arts, Science

Lesson 16: North Atlantic Right Whales and Ship Strikes

- Students will learn why ships are such a threat to North Atlantic right whales and conduct an activity to explore different ship/whale scenarios.
- **Suggested prerequisite(s):** Lessons 1, 2, and 11
- **Area(s) of emphasis:** Science

Lesson 17: How Can We Reduce Threats to North Atlantic Right Whales?

- Students will learn about ways to minimize ship strikes and whale entanglements.
- Students will explore ways that they as individuals can help protect North Atlantic right whales.
- **Suggested prerequisite(s):** Lessons 1, 2, 11, and 16
- **Area(s) of emphasis:** Mathematics, Science

Lesson 18: Bringing It All Together

- Students will write a persuasive essay about the need to protect right whales and give a presentation based on the essay.
- **Suggested prerequisite(s):** Lessons 1, 2, and 11
- **Area(s) of emphasis:** Language Arts

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