



Teacher Guidelines

Guidances on teaching *Cetacean Connections* in your classroom

Learning Outcomes:

Students will learn:

- How to collect background information on a marine mammal species
- Make observations about the natural world
- Use tools to study animal behavior
- Practice scientific inquiry

Instruction Overview:

Thank you for your willingness to teach *Cetacean Connections* to your students! This lesson plan can be taught over 3 days or more, and adapted for grades 5-8. We've designed the material to be adjusted for your classroom needs, but have included detailed suggestions below on how to lead the lessons as they've been created.

Every day, students will start the class with a video lesson. The video lessons follow a team of researchers studying dolphins aboard a National Geographic expedition in Hawai'i. Students will get a peek inside the research process, and learn the tools explorers use to answer questions about the natural world. Through the supplemental activities that accompany each video lesson, students will practice their own explorer skills and mindset. We've included the [Explorer Mindset](#) from National Geographic Society in the materials for your reference.

We encourage you to review and discuss the activity with the students before the video, so they understand expectations. After the video, we've included (2) daily activity worksheets based on the information presented that can be done in pairs, small groups, as homework, or as a class.

Day 1 Activities: Adopt a marine mammal

- **Background Research Sheet:** Students will "adopt" a marine mammal to learn more about, based on the species shared in the video lesson. The worksheet is designed for student to gain "research," skills by using the resources available to them: a computer, our [Marine Mammal Field Guide](#), and the video lesson.
- **Species Summary Sheet:** After completing the background research on their marine mammal species of choice, students will summarize the information they found in a written activity. Explorers often have to present their information in different formats, including a data sheet and a written summary.



Day 2 Activities: Explorer Field Log

- **Kilō Activity:** In Hawai'i, the process of kilō builds on the process of observation using our senses. Using the activity worksheet, students will observe a species and their environment and record observations. Students are to be still in the environment, and use all of their senses to gather information about their focus species or ecosystem.
- **Questions & Scientific Inquiry Activity:** After observing their species, students will use this information to ask scientific questions. There are prompts to guide students to start using their inquiry skills to think scientifically.

Day 3 Activities: Ethogram Data Collection

- **Ethogram Worksheet:** Ethograms are how scientists and explorers log behavioral data in wildlife. Using a stopwatch and their worksheet, students will fill out an ethogram and analyze the behavior of a species using 1 of 3 options below. The ethogram must include 3 minutes of recorded observations. We've included a sample ethogram to guide students.
 - Option 1: Dolphin Video Footage - Students can analyze a video of underwater spinner dolphin behavior collected during this expedition, it is included in the supplemental materials.
 - Option 2: Nautilus Deep Sea Species - Nautilus hosts footage of deep sea species on their YouTube Channel, students can analyze a video that is at least 3 minutes long and fill out their ethogram. As the educator, you can choose which videos or allow students to.
 - [Deep sea shark footage playlist](#)
 - [Midwater species playlist](#) (seals, whales, shrimp)
 - [Squid and Octopus playlist](#)
 - Option 3: Their Own Species - Using the species available to them (ie: an at-home or school aquarium, a nearby park, a pet at home, etc) students can fill out an ethogram by observing the behavior of one of these species.
- **Summary Worksheet:** The summary worksheet is designed for students to draw conclusions and reflect on the ethogram data that they collected, and conclude with asking a follow up question based on their scientific inquiry process.