

Teachers Lesson Plan: Welcome to the Dolphin Project



Essential Question:

Why are we studying the local bottlenose dolphin population?

Learning Objectives:

- Gaining understanding of the project
- Understanding how to identify individual dolphin
- Why we do what we do

Lesson Overview:

This lesson introduces and explains the project. It will introduce the members of the survey team and discuss how to identify dolphins. By understanding the number of dolphins in our survey area and their social structure, we can monitor the health of the ecosystem. If the number of dolphin decreases then we can search for reasons in the ecosystem. For example, if an oil spill or like event happened in the area, we can monitor changes in dolphin numbers and social structure to determine the intensity and effect on the local environment.



Classroom Activities:	Background for Teachers:
<p>Teachers have choice of using any of the below that best serves their classroom experience:</p> <ul style="list-style-type: none"> • Watching the live broadcast • Watching the videos for the lesson • Viewing the Prezi presentation with photos and vocabulary that go along with the topic • “Name that Dolphin” Photo-identification Class Activity • Asking Review Questions 	<p>In this lesson, Students will get an introduction to the Project and its purpose from one of our Survey Team members live from one of our survey vessels. Students will learn about the following:</p> <p><u>What-</u> The 10,000 Islands Dolphin Project is an ongoing field survey of local coastal bottlenose dolphins. Launched in February 2006, the project has sighted and cataloged approximately 300 bottlenose dolphins collecting data on their social structure, behavior, location and movements.</p> <p><u>Where-</u> Our survey area is a 50 mile stretch along the Southwest coast of Florida, from Bonita to Everglades City. While we work in five different areas along the coast, our major focus is on the area north of Marco Island.</p> <p><u>Who-</u> The Survey Team you will be working with are Chris Desmond, Kent Morse, James Livaccari and Kristen Froehlich. They have worked together for many years.</p> <p>Captain Chris "skippers" the Dolphin Explorer. His job is to position the Explorer so that dolphins can be sighted, photographed and data collected.</p> <p>Kent and James look for and take photographs of dolphins sighted. Using our dolphin photo-identification catalogs, they compare the photos to the catalog thus identifying the individual dolphin. They then enter its name and all related data into our on-board data system. Kristen helps sight dolphins and also enters data; she takes videos of the surrounding wildlife to share with students.</p> <p>At the end of our trips, our Survey Team looks through the photos to determine if any are new dolphins and if there are new markings on dorsal fins.</p> <p><u>Why-</u> We do our work for two reasons. The main reason is research. The project helps us to learn about the coastal bottlenose dolphin population, so that if in the event something harmed the environment, we would know how it has affected their population and find out the amount of damage. We also look out for injured or entangled dolphins that may need help. The other reason is to educate. Environmental education is very important. People from all over the world come on the boat to learn about dolphins and their habitat. By raising awareness, people can help us protect dolphins and the environment.</p>

Student Materials:

- Word Search Puzzle
- Reading & Question worksheet
- Dolphin Survey Data Sheet
- The Research Catalogue
- “Name that Dolphin” Activity Sheets

How- The research is done by using a technique called photo-identification. We can tell the dolphins apart by their dorsal fin. It is like their "fingerprint". When calves are born, the fin is very smooth. As time goes on, they start to get little nicks and scratches around the edge of the dorsal fin creating their own very unique identity. The Survey Team will get a close up photo of the dorsal fin during each sighting so we know who they are and can record the data. (View survey data sheet)

Future Lesson Plans: Students will be able to join us where we work by watching “live” video from their classroom, and through additional videos that have been filmed of the dolphins, wildlife and habitat we live and work in. Each lesson also has materials and additional resources to support the topic.

Themes:	Vocabulary:
<p>Each lesson will relate to one or more of the five themes...</p> <ul style="list-style-type: none"> • Conservation • Relationships in the ecosystem • Science and Research • Water Properties • Habitat <p>Resources and Further Reading:</p> <ul style="list-style-type: none"> • www.Dolphinstudy.com • Suggested Reading: <i>Dolphins by Sylvia M. James</i> (ages 6-8); <i>Into the Blue (Dolphin Diaries #1) by Ben M. Baglio</i> (ages 9-10) • Dolphin Chronicles Blog 	<p><u>Photo-Identification</u>- Taking a photo of each dolphin’s dorsal fin to identify them by the unique marks and nicks on their fin.</p> <p><u>Research</u>- To investigate a subject in order to discover facts or theories.</p> <p><u>Ecosystems</u> - A community of plants and animals that work together in a particular location.</p>

NGSSS:**NGSSS Focus:**

- Third Grade
SC.3.N.1.1
SC.3.N.1.4
SC.3.N.1.5
- Fourth Grade
SC.4.N.1.3
SC.4.N.1.6
SC.4.E.6.5
- Sixth Grade
SC.6.N.2.3

Third Grade

Dolphin Explorer survey team works together exploring and investigating the dolphin population to better understand and explain to others their health and social structure. Students will explore nature with the survey team through the live broadcast and are encouraged to ask questions. The students can also work in small groups as their own “survey team”; while watching the “Name that Dolphin” video of real sightings with a copy of the dolphin catalog and an answer sheet, they can record which dolphins they think are in each sighting. This is an excellent way to have them experience the Dolphin Project’s research using photo-identification.

Survey team works together preparing sightings, data, photos and discussing ideas. The survey team communicates with each other about their observations in order to get different perspectives. By doing this the survey team has a better understanding of their research. It is also important because it keeps the research accurate.

Fourth Grade

Dolphin project is survey based research that depends on observing nature and drawing conclusions. The scientific method is a structured process testing a hypothesis by experimenting. With the survey based research evidence and hypothesis are determined strictly by the sightings we observe and record.

Actual observations are recorded at every sighting such as water temp., tide, GPS coordinates, depth, numbers and behaviors of dolphin. Photos of the dolphin’s dorsal fins are taken and collected to identify the individuals. Ideas and inferences about the observation are recorded separately as comments. Examples: The data states 1 dolphin and 1 calf together from sighting an adult female and a calf. The survey team infers from previous sightings that it isn’t the mom it is another dolphin “babysitting” the calf for mom; they then make comment of that. Students can use the original data sheet from the research to partially record sightings from the dolphin video.

Many tools are used in the daily survey work for observation. The binoculars help see further away from the boat to find any dolphin fins breaking the water's surface.

The refractometer is a device used to measure how much salt is in the water by placing a small drop on the lens. The cameras are used to take close up photos of the dorsal fins at each sighting to identify the dolphins. The hydrophone gives humans the ability to listen to the dolphins vocalizations under water. Video cameras and internet allows the survey team to share their experiences with the classroom whether big or small!

Sixth Grade

In the dolphin project's survey team alone, each member studied something different in college. For example James majored in Marine Biology and Kristen majored in Environmental Studies. Kent and James are excellent at taking photos of dorsal fins for the dolphin survey catalog. Kristen is talented at filming the sightings and creating videos of their behaviors.

Some scientists are interested in just plants, some just animals. Some are interested in studying one specific animal like a dolphin or a rare bird or an endangered species. Scientists may be interested in studying the planets and outer space. They may have a goal of finding a way to travel to a new planet or discover something about how our planet works. They may be interested in what the future of Earth may be, for example scientists with the goal to learn more about global warming. The variety is endless!