



BEING DOLPHIN 4D

DREAM DIVE DISCOVER



SimExwerks
ENTERTAINMENT

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Learning Resource Guide

Grades K-3

Name: _____

Date: _____

MY DAY AS A DOLPHIN



In ***Being Dolphin 4D: Dream Dive Discover***, the narrator talks about what it would be like to be a dolphin. What if you could transform and actually spend a day as a dolphin? Tell a story about what you might experience. Describe how you would feel before, during and after your transformation. Highlight what you would see, hear and feel during your day as a dolphin. Illustrate your story in the space provided.



ATLANTIC BOTTLENOSE DOLPHIN

Atlantic bottlenose dolphins are named “bottlenose” after their short, stubby rostrums, or beaks. Bottlenose dolphins have 86 to 100 sharp, cone-shaped teeth which help to catch slippery prey.

The diet of these dolphins includes fish, squid and crustaceans. Bottlenose dolphins exhibit a range of feeding strategies, including cooperative hunting (often herding fish into tight circles), feeding in association with fishing boats, digging in the sand to uncover food and chasing fish onto mud banks.

Adults reach six to 12 feet in length and weigh 400 to 800 pounds. Males are slightly larger than females.

Bottlenose dolphins are found worldwide in tropical and temperate waters, often along coastlines or in bays, harbors or estuaries.

Bottlenose dolphins are top ocean predators with few predators of their own. Sharks and killer whales occasionally prey upon dolphins. Humans represent a major threat to bottlenose dolphins that are accidentally caught in fishing gear (gill nets, purse seines and shrimp trawls) or entangled in discarded gear and monofilament line. Dolphins are still hunted in some parts of the world.



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COMMON DOLPHIN

Common dolphin species are medium-sized. Adults range between 6.2 and 8.2 feet in length, and can weigh between 176 and 518 pounds. Males are generally longer and heavier. The color pattern on the body is unusual. The back is dark and the belly is white, while on each side is an hourglass pattern colored light grey, yellow, or gold in front and light grey in back.

Common dolphins live in both warm-temperate and tropical waters. Common dolphins can live in groups of hundreds or even thousands of dolphins. Common dolphins have a varied diet consisting of many species of fish and squid.



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ATLANTIC SPOTTED DOLPHIN

The Atlantic spotted dolphin is a dolphin found in the Gulf Stream of the North Atlantic Ocean.

The coloring of the Atlantic spotted dolphin varies enormously as it grows, and is usually classified into age-dependent phases known as two-tone, speckled, mottled, and fused. As the animal matures, the spots become denser and spread until the body appears black with white spots as an adult.

In comparison to other dolphin species, the Atlantic spotted dolphin is medium-sized. Male adults can reach a length 7 feet. 5 inches and a weight of 310 pounds, and females can reach 7 feet 6 inches and 290 pounds.

The species exhibits a range of about ten different vocalizations, including whistles, buzzes, squawks and barks, each corresponding with different behaviors.

The diet of an Atlantic spotted dolphin consists of many species of small schooling fish and squid.

The Atlantic spotted dolphin is a social creature. It is a fast swimmer and prone to acrobatic aerial displays.

Name: _____

Date: _____

MY DAY AS A DOLPHIN



Based on what you have learned about dolphins, decide whether each statement is a **Fact (+)** or **Fiction (-)**.

- _____ 1. Dolphins are mammals.
- _____ 2. Dolphins live in groups called pods.
- _____ 3. Dolphins are herbivores (plant eaters).
- _____ 4. Dolphins use echolocation for hunting.
- _____ 5. Dolphins are fish.
- _____ 6. Dolphins have gills and can breathe underwater.
- _____ 7. Dolphins are highly intelligent.
- _____ 8. Dolphins never hunt with other dolphins, they only hunt alone.
- _____ 9. Dolphins eat mainly fish and squid.
- _____ 10. Dolphins are related to whales.

Name: _____

Date: _____

DOLPHIN OR SHARK?



Compare and Contrast:

Standing on the beach, you spot a dorsal fin cutting through the water—but is it a dolphin or a shark? Although shark and dolphin fins share some characteristics, a closer look reveals which type of animal actually is swimming nearby.

Straight trailing edge = shark fin

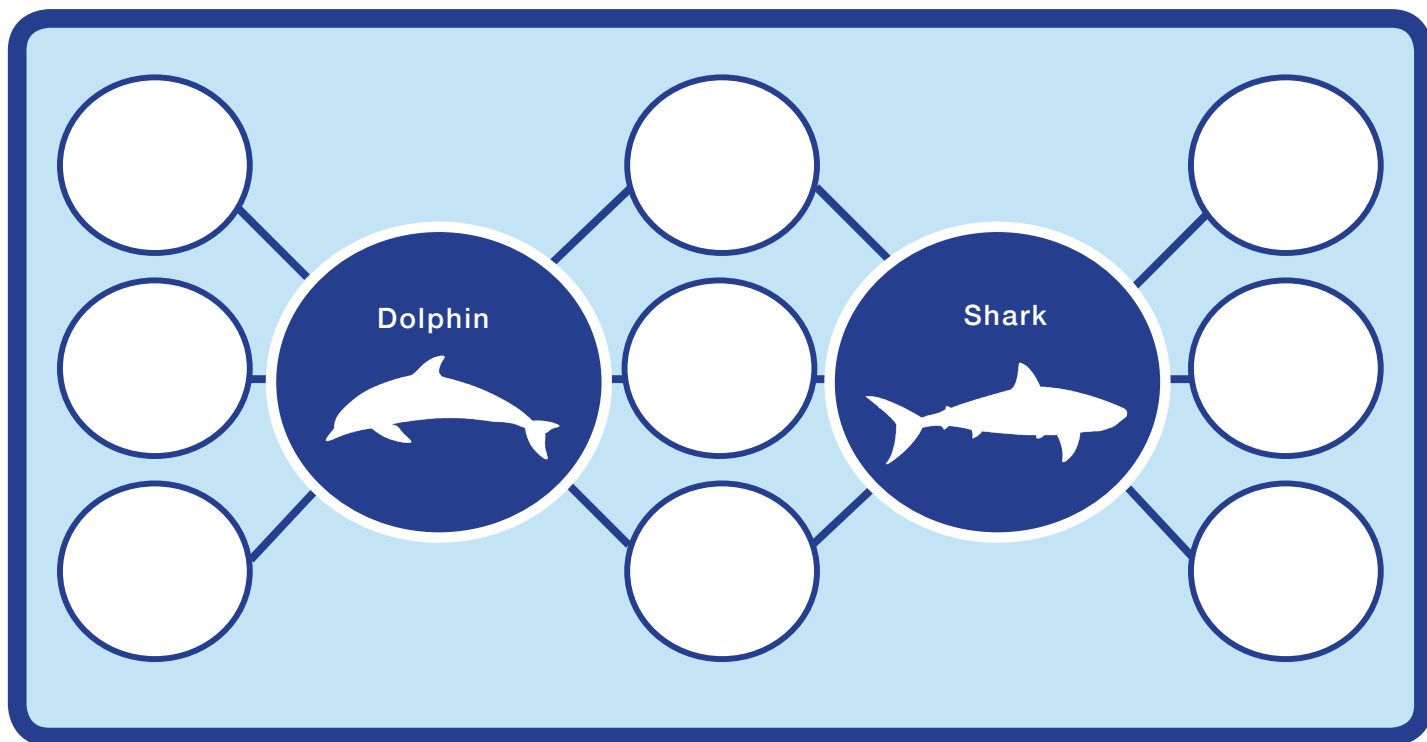


curved trailing edge = dolphin fin



What are some other similarities and differences between dolphins and sharks? Cut out each statement circle on the next page and paste it in the correct location below to compare and contrast dolphins and sharks.

REMEMBER—Place similarities in the middle circles, and differences in the outside circles.



DOLPHIN OR SHARK?



Warm-
blooded

Cold-
blooded

Mammal

Fish

Found in all
the oceans of
the world

Carnivores

Breath air
through
blowhole

Torpedo-
shaped
body

Breath
underwater
through gills

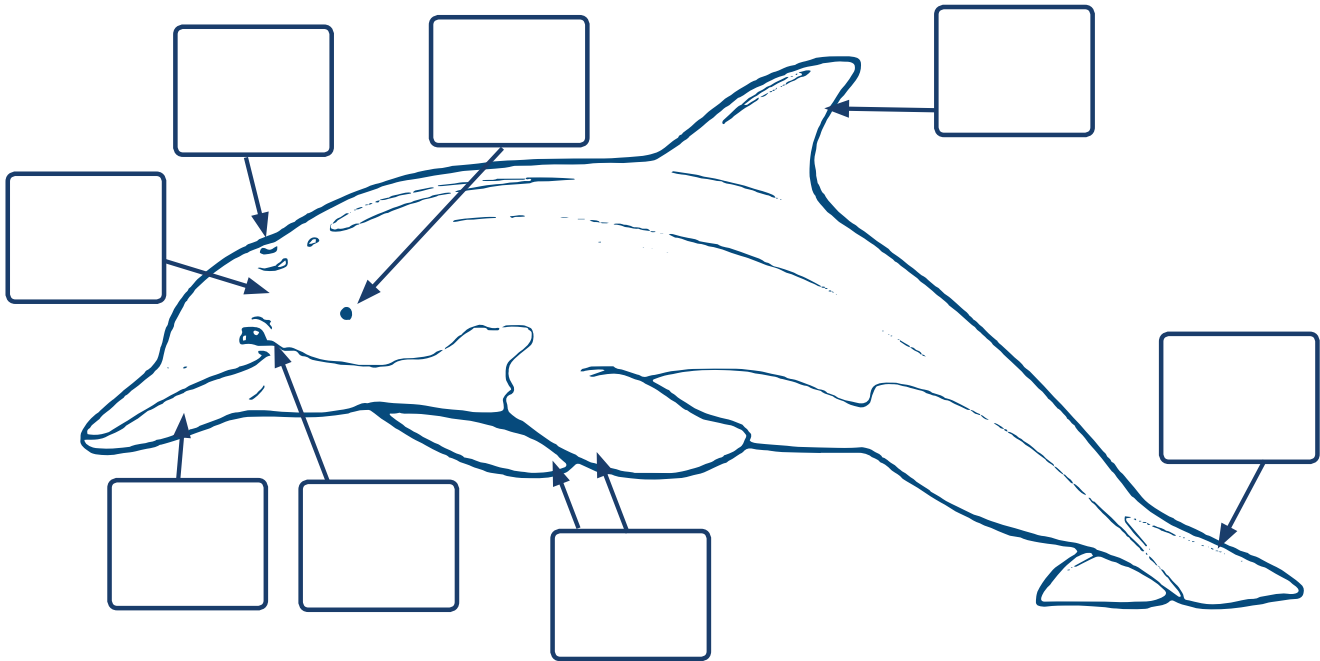
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Date: _____

BOTTLENOSE DOLPHIN ANATOMY



Read the information about the anatomy of a bottlenose dolphin. Use the wordbank to label the picture below.



WORD BANK:

melon	dorsal fin	beak	flukes
blowhole	pectoral fin	ear	eye

BOTTLENOSE DOLPHIN ANATOMY:

1. **Beak:** a dolphin's mouth
2. **Blowhole:** the hole on top of the dolphin's head used for breathing
3. **Dorsal fin:** helps to provide steering and keeps the dolphin upright in the water
4. **Flukes:** the two lobes of a dolphin's tail
5. **Melon:** fatty tissue on the forehead of a dolphin involved in echolocation, acts to produce vocalizations and to focus beams of vibrations
6. **Pectoral fins:** the two paddle-shaped front limbs of dolphins, used for steering and stopping

DOLPHIN COMMUNICATION EXPLORATION



Introduction:

Dolphins live together in groups called pods. Pods vary in size from just a few dolphins to more than 1,000. Scientists think that these mammals have a complicated language system. They communicate with each other using whistles, clicks, and cries. This lets them recognize, locate and help each other. They respond to each other's whistles and calls and make noises when playing or hunting, or when predators are near. When dolphins recognize a distress call, they will follow it in search of a lost friend or relative. Every dolphin has its own unique whistle, which other dolphins recognize.


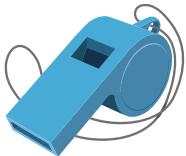


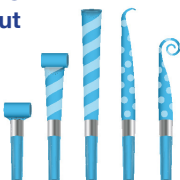

Materials: (for teacher use, teacher should demonstrate each of the sounds produced):

- Balloon*
- Whistle
- Kazoo
- Guiro (or similar instrument)
- Blow-out noise maker or party horn
- Noise maker

*inflate, but don't tie—let air out slowly while pinching the neck to produce a squeak/whistle.

Activity 1: The Name Game

Every dolphin has its own unique whistle, which other dolphins recognize. Have students give themselves dolphin names using a combination of the materials cards (they should choose no more than 3). Students then create a nameplate table tent for their "dolphin name". Try using the dolphin names for the day.

Balloon 	Whistle 	Kazoo 
Guiro 	Party Horns or Blow Out Noise Makers 	Noise Maker 



Name: _____

Date: _____

DOLPHIN COMMUNICATION EXPLORATION



Activity 2: Four Corners

Before the activity, you will want to create four large signs, each with a different action on it (Hunt, Flee, Rescue, Play). Post each sign in one of the four corners of your room.

As a class, assign a sound or combination of sounds for the following:

- Shark
- Food/Fish
- Help
- Let's Play
- I'm Lost
- Boat
- Family
- Friend
- Net

Four Corners Activity - Student Sheet

Make the assigned sound for one of the situations on the list. Tell students to go to the corner of the room labeled with the action that matches what their first response would be if they were a dolphin. Once all students are settled into a corner, invite them to share some of the reasons they went to that corner.

Situation	Sound
Shark	
Food/Fish	
Help	
Let's Play	
I'm Lost	
Boat	
Family	
Friend	
Net	

ECHOLOCATION GAME



Objective:

Similar to Four Corners, this game will get kids moving and communicating like dolphins!

Materials:

- Blindfold or scarf

Directions:

1. Explain to students that bottlenose dolphins are very intelligent marine mammals and researchers believe much of the dolphin's brain is used for communication or "echolocation." Using echolocation, or sonar, dolphins send out frequencies by clicking. The clicking sounds bounce off objects and the returning sound waves are picked up by the dolphin's forehead and lower jaw and interpreted as distance, size and shape of object.
2. Explain to students that they will be playing a game that will show how echolocation works.
3. Choose one student to be the "dolphin." Seat that student in the center of the space (suggested spaces include a gymnasium, cafeteria or outdoor blacktop area) and blindfold them.
4. Other students will be the "fish" swimming clockwise around the edge of the space. When the teacher says "STOP," all "fish" go to the corner of the space closest to them.
5. The "dolphin" claps twice to represent sending an echo. "Fish" clap twice to represent the echo returning to the "dolphin."
6. The "dolphin" points to the corner of the space where he or she thinks the most fish are. All "fish" in the selected corner are "eaten" by the dolphin and sit near the "dolphin." Teacher says "swim" and game continues.
7. Last surviving "fish" becomes the next "dolphin".



DIVING DOLPHINS CRAFT



Materials:

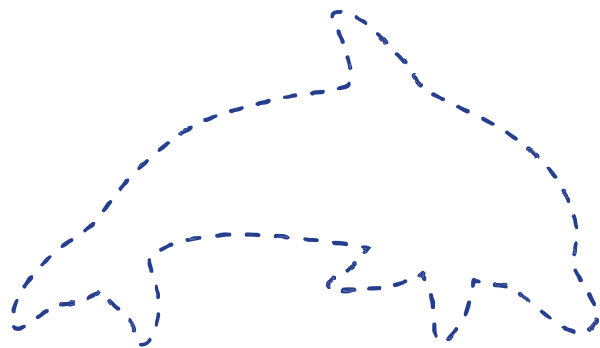
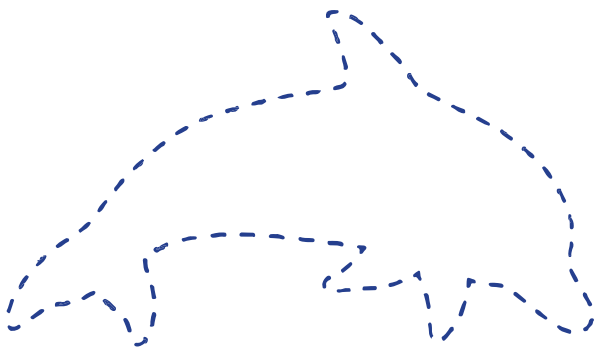
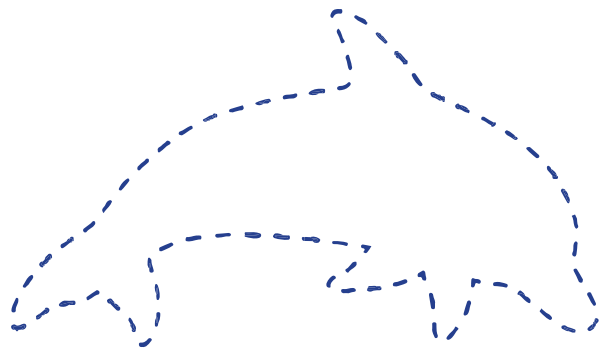
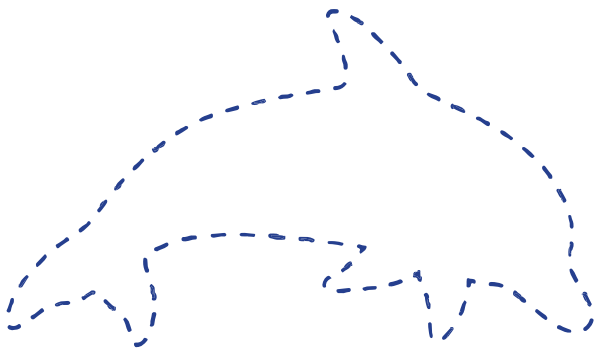
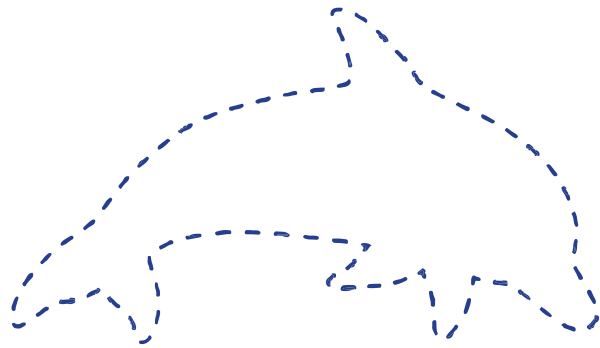
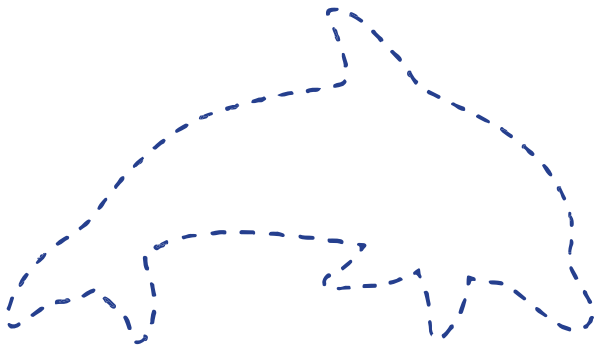
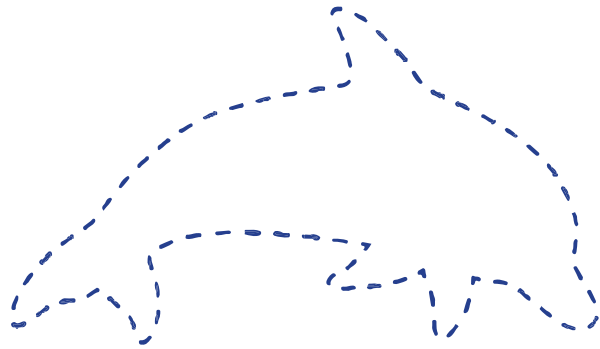
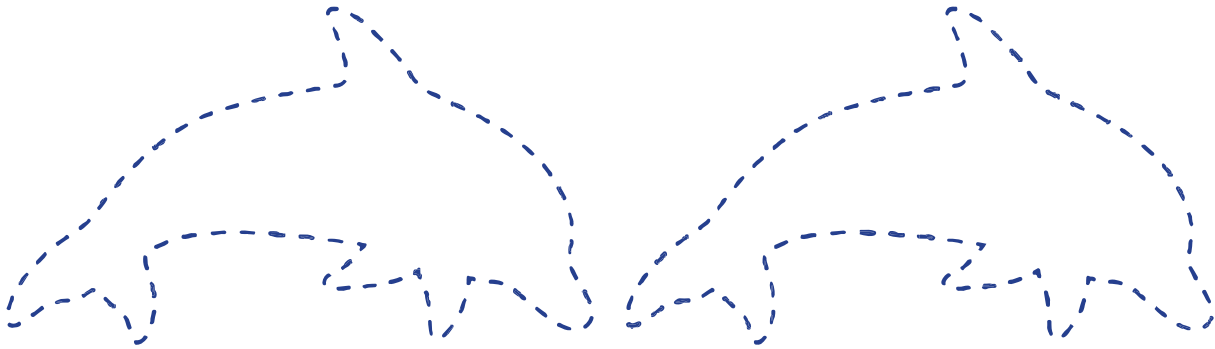
- Paper Plates (2 per student)
- Tempera paint (turquoise and blue)
- Dolphin templates (1/2 sheet per student)
- Crayons or markers
- Glue sticks
- Brass fasteners (brads)
- Scissors

Directions:

1. Give each student two paper plates.
2. Have students paint one of their plates turquoise and the other dark blue.
3. While the paint on the plates is drying, give each student a half sheet of dolphin templates (4 dolphins each). Have students color and decorate the dolphins with crayons or markers, then cut them out.
4. Help students glue the dolphins around the edges of the turquoise plates about an inch from the rim so that they all face the same direction.
5. Encourage each student to cut crescent shapes out from the top of the dark blue plate to create a surface of ocean waves, ensuring that they do not cut past the center of the plate. (For younger students, you may want to either complete this step for them or draw cut-lines onto their plates for them to follow.)
6. Have students overlay their dark blue plates onto the turquoise plates, arranging the plates so that their bottom edges align.
7. Help each student poke a brass fastener through the center of the two plates and then loosely secure the fastener through the back of the turquoise plate.
8. Show students how to hold the top plate and gently spin the turquoise plate behind it to make the dolphins “dive” in and out of the water!



DOLPHIN TEMPLATE



BLUBBER LAB



One question that frequently gets asked about dolphins, especially those that live in cold water environments, is how do dolphins stay warm?

Though they are mammals, dolphins have very little hair—they lose most of it before they reach maturity. This means that to stay warm in the ocean, they rely heavily on their **blubber** for insulation. Depending on the species of dolphin, the thickness of a dolphin's blubber can vary considerably.

Materials:

- 1-2 gallon bucket
- Ice
- Water
- Vegetable shortening
- Zip lock bags (quart size works best)
- Timer
- Thermometers
- Duct Tape

Directions:

1. Fill a one or two gallon bucket half full with cold water. Add 1-2 cups of ice. This ice bath will be a great representation of the dolphin's cold water environment.
2. Since you aren't a dolphin, you don't have blubber. You need to find a suitable blubber substitute. Fill a zip lock bag (make sure the bag is big enough to fit your whole hand inside) with shortening, enough to form a thick layer in the bag. The fat molecules in shortening make them act a little like blubber.
3. Put your hand inside a second zipper lock bag of the same size and push it into the shortening-filled zipper lock bag. Spread the shortening around the zipper lock bags until the inner bag is covered.



4. Fold the top of the inner zipper lock bag over the top of the outer zipper lock bag, keeping the shortening between the two. Duct tape the fold in place so that the shortening doesn't come out.

5. Make a "control" glove by putting the other two zip lock bags inside each other. This will give you the same amount of plastic, but with no insulating "blubber" layer.

6. Put your hand in the control glove and stick it in the ice water. Time how long you can keep it there before it gets too cold for you.

Control Glove Time: _____

7. Now put your hand in the glove with the blubber in between the bags and submerge it in the water. Time how long you can keep it there. Can you hold your hand in the water longer?

Blubber Glove Time: _____

8. Was this longer? Yes No

9. Put a thermometer in the control glove and put the end in the water. Wait 1 minute. Record the temperature.

Control Glove Temperature After 1 Minute: _____

10. Do the same thing with the blubber glove.

Blubber Glove Temperature After 1 Minute: _____

11. What is the difference between the two temperatures? _____

Blubber helps keep animals warm because it acts as an insulator. An insulator slows down the transfer of heat, keeping the animal's body heat from escaping and protecting it from the cold.

* **Extension Activity:** Try using other materials in the same fashion to find out which insulator works best. (Ex: Cotton balls, packing peanuts, dirt or sand...pretty much anything that you can fit between two zip lock bags!).

THE OCEAN AND YOU



Introduction:

People use the ocean for transportation, as a source of food and minerals, and for recreation. All water eventually reaches the ocean, so the things we do on land also affect the oceans. Coastal animals, such as bottlenose dolphins, and ocean habitats are likely to be affected by pollution, habitat destruction, heavy boat traffic, and global climate change. Conservation means taking care of our environment by wisely managing its resources. We do this by interacting with the ecosystem in responsible ways. You are conserving when you turn off lights in an empty room, when you recycle, and when you turn off water while you are brushing your teeth.

Action:

1. As a class, discuss how humans interact with the ocean ecosystem both negatively and positively. Introduce the terms pollution and conservation.
2. Complete “The Ocean & You” activity as a class. This can be completed on an overhead projector, document camera or chart paper.
3. As an extension, create a class bar graph of the results.
4. Discuss how much you use the ocean and its resources. Discuss ways to help conserve ocean resources and resources worldwide. Students write and illustrate one way they will help to conserve resources and protect the environment. Examples include: “I will remember to shut off lights when I leave a room.” “I will bring a reusable lunch bag to school instead of a paper or plastic bag.” “I will recycle aluminum cans and plastic bottles at home.”

THE OCEAN AND YOU



Ask students if they have ever used the ocean for the activities listed below (determine if students should raise hands, stand, give a “thumbs up”, etc). The teacher will tally the results for each. Do the same for the conservation questions.

How do we use the ocean?	
Boating	
Fishing	
Visiting the Beach	
Surfing	
Swimming	
Eating Seafood	
Snorkeling	
Tubing	
Other	
How do we conserve?	
Recycling	
Turning Off Lights	
Cleaning Up Litter	
Conserving Water	
Other	

Name: _____

Date: _____

THE OCEAN AND YOU



HOW DO WE USE THE OCEAN? CLASS GRAPH

Boating

Fishing

Visiting Beach

Surfing

Swimming

Eating Seafood

Snorkeling

Tubing

Other

Name: _____

Date: _____

THE OCEAN AND YOU



HOW DO WE USE THE OCEAN? CLASS GRAPH

Recycling

Turning off lights

Cleaning up litter

Conserving water

Other

Name: _____

Date: _____

THE OCEAN AND YOU



To help conserve resources and protect our oceans and the environment, I pledge to:



Name: _____

Date: _____

DOLPHIN LENGTH GRAPHING ACTIVITY



Using the following data (information), graph the lengths of the dolphins on the graphing worksheet. Determine an appropriate scale for your graph. Label each column with the name of one of the dolphins from the table. For each dolphin, color the correct number of boxes to show how long it is. Give your graph an appropriate title.

Average Length of Adult Dolphins by Species	
Short-Beaked Common Dolphin	9 feet
Rough-Toothed Dolphin	9 feet
Atlantic Bottlenose Dolphin	12 feet
White-Beaked Dolphin	10 feet
Dusky Dolphin	7 feet
Fraser's Dolphin	9 feet
Long-Beaked Common Dolphin	8 feet
Spinner Dolphin	8 feet
Hourglass Dolphin	6 feet
Risso's Dolphin	13 feet

- 1) Which dolphin is the longest? _____
- 2) Which dolphin is the shortest? _____
- 3) Which two dolphins have the same length as a Fraser's Dolphin? _____
- 4) Which dolphin has the same length as a Spinner Dolphin? _____
- 5) Which dolphin is longer, a White-Beaked Dolphin or a Spinner Dolphin? _____
- 6) Which dolphin is shorter, an Hourglass Dolphin or a Dusky Dolphin? _____
- 7) How much longer is a Risso's Dolphin than a Short-Beaked Common Dolphin? _____
- 8) How much shorter is an Hourglass Dolphin than an Atlantic Bottlenose Dolphin? _____



Name: _____

Date: _____

17										
16										
15										
14										
13										
12										
11										
10										
9										
8										
7										
6										
5										
4										
3										
2										
1										
	Short-Beaked Common Dolphin	Rough-Toothed Dolphin	Atlantic Bottlenose Dolphin	White-Beaked Dolphin	Dusky Dolphin	Fraser's Dolphin	Long-Beaked Common Dolphin	Spinner Dolphin	Hourglass Dolphin	Risso's Dolphin

ANSWER KEY

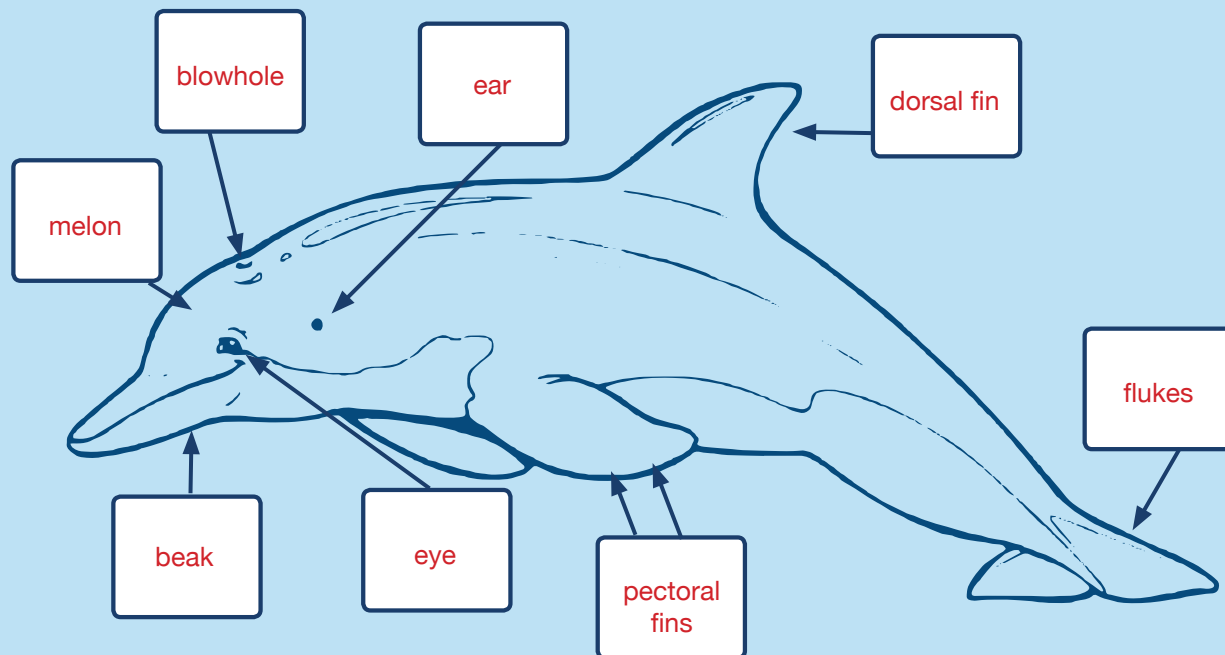
DOLPHIN OR SHARK? COMPARE AND CONTRAST

Dolphin: Breathe air through a blowhole; mammal; warm-blooded

Shark: Breathe underwater through gills; fish; cold-blooded

Both: Torpedo-shaped body; found in all the oceans of the world; carnivores.

BOTTLENOSE DOLPHIN ANATOMY



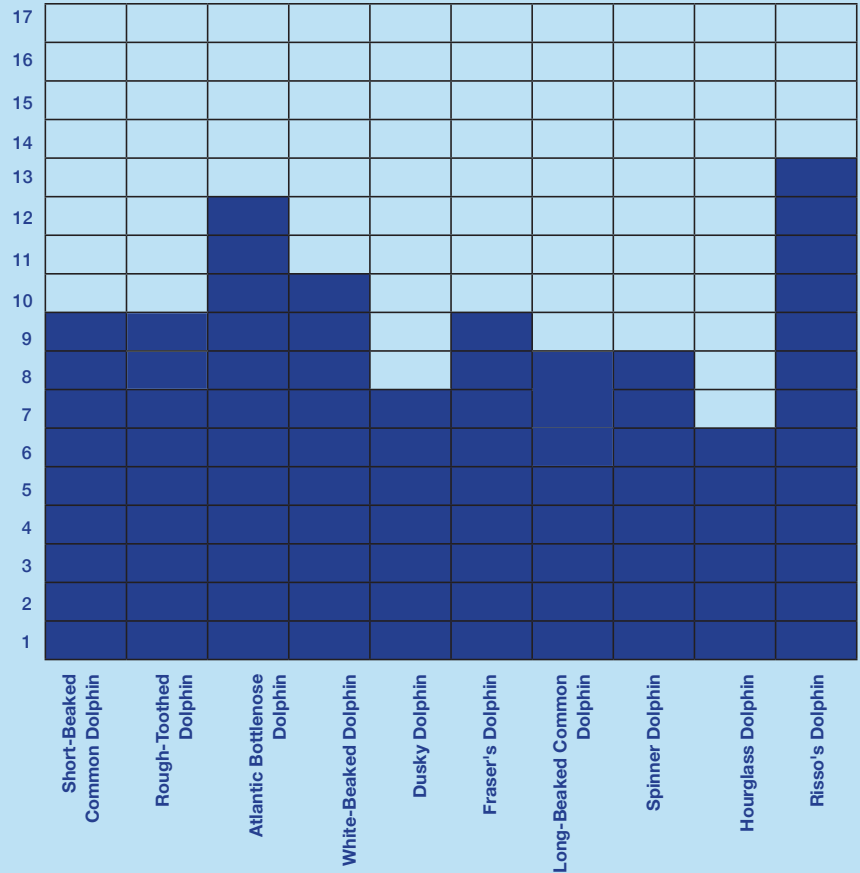
Dolphin Length Graphing

1. Risso's dolphin
2. Hourglass dolphin
3. Short-Beaked Common Dolphin and Rough-Toothed Dolphin
4. Long-Beaked Common Dolphin
5. White-Beaked Dolphin
6. Hourglass Dolphin
7. 4 feet longer
8. 6 feet longer

ANSWER KEY

Dolphin Length Graphing

1. Risso's dolphin
2. Hourglass dolphin
3. Short-Beaked Common Dolphin and Rough-Toothed Dolphin
4. Long-Beaked Common Dolphin
5. White-Beaked Dolphin
6. Hourglass Dolphin
7. 4 feet longer
8. 6 feet longer



Fintastic Fact or Fiction?

1. +
2. +
3. -
4. +
5. -
6. -
7. +
8. -
9. +
10. +

SOURCES

ECHOLOCATION GAME

Adapted from:

<http://www.scholastic.com/browse/lessonplan.jsp?id=1301>

BLUBBER ACTIVITY

Adapted from:

<http://www.hometrainingtools.com/a/whale-blubber-project>

<http://www.stevespanglerscience.com/lab/experiments/blubber-gloves>

THE OCEAN AND YOU

Adapted from:

http://c0026106.cdn1.cloudfiles.rackspacecloud.com/1fd140b1d1784addb724545ae5168794_science-activity-k-4.pdf



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