

Our Ocean Discovery field trip program helps to meet multiple Florida Standards. Please see Table of Contents for specific standards.

Ocean Discovery 2nd Grade Activities

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Pre Field Trip Activities

Dining with Sydney

<u>Mathematics</u> (Adding and Subtracting within 20, Picture/Bar Graphs, Why Addition and Subtraction Work, Making Sense of Problems and Persevere in Solving)

Standards: MAFS.2.MD.4.10, MAFS.2.NBT.2.9, MAFS.2.OA.2.2, MAFS.K12.MP.1.1

- Using the provided data, students answer questions about a shark's diet over the course of three weeks and solve basic equations about the information.

Whale and Shark

English Language Arts (Vocabulary Acquisition, Word Meaning, Spelling)/<u>Science</u> (Basic Needs and Adaptations)

Standards: LAFS.2.L.3.6, LAFS.2.RF.3.3, LAFS.K12.L.1.2, LAFS.K12.L.3.4, SC.2.L.17.1

- Using the provided word bank, students will identify various body parts on a shark and a killer whale image.

What About Whales?

English Language Arts (Grammar, Sentence Structure, Punctuation)/Science (Habitats, Basic Needs)

Standards: LAFS.2.L.1.1, LAFS.2.L.1.2, LAFS.2.L.2.3, LAFS.2.L.3.4, LAFS.2.L.3.6, LAFS.2.RF.4.4, LAFS.2.RI.4.10, LAFS.2.W.1.2,

- For the first activity, using the provided information and illustrations, students will learn about four species of whales. They are asked to write a short paragraph about each whale containing at least three facts about the species. For the second activity, they are asked to choose two species of whales to compare and contrast.

Field Trip Activities

A Park Full of Birds

Science (Habitats, Basic Needs, Adaptations)

Standards: SC.2.L.17.1, SC.2.L.17.2

- Using the provided information, students will learn more about the basic habitats and needs of several species of birds found at SeaWorld Orlando. This information can also be used in conjunction with the Birds of a Feather post activity.

Pacific Point Preserve[®]: Which One is Which?

English Language Arts (Vocabulary Acquisition)/Science (Habitats, Basic Needs)

Standards: SC.2.L.17.1, SC.2.L.17.2, SC.2.N.1.6

- First page provides information on taxonomy and classification of seals and sea lions. Second page helps to identify differences between seals and sea lions at Pacific Point Preserve as well as instructions of a fun activity to help build the students understanding of classification of animals.

Shark Encounter[®]: Food for Thought

English Language Arts (Vocabulary Acquisition)/Science (Basic Needs, Habitats, Scientific Inquiry)

Standards: LAFS.2.L.3.6, SC.2.L.17.1, SC.2.L.17.2

- Teachers and chaperones will share the provided information and definitions about predators and prey with the students while at Shark Encounter.

Shark Encounter®: Count and Identify the Sharks

Science (Data Collection and Comparison)

Standards: SC.2.L.17.1, SC.2.L.17.2, SC.2.N.1.1, SC.2.N.1.2, SC.2.N.1.4

- Working in teams and using the provided illustrations, students will identify, count and record the number of different types of sharks they see while walking through the tunnel inside the Shark Encounter.

Turtle Trek[®]: Manatees and Sea Turtles

English Language Arts (Vocabulary Acquisition)/Science (Basic Needs, Habitats, Scientific Inquiry)

Standards: LAFS.2.L.3.6, SC.2.L.17.1, SC.2.L.17.2

- Teachers and chaperones will share the provided information and definitions about manatees and sea turtles with the students while at TurtleTrek. This information can also be used in conjunction with the Life Cycle of a Sea Turtle post activity.

Whales and Sharks: At the Park

English Language Arts (Vocabulary Acquisition) /Science (Reproduction, Basic Needs)

Standards: LAFS.2.L.3.6, SC.2.L.16.1, SC.2.L.17.1, SC.2.L.17.2,

- Using the provided information and observations at Shamu[®] Stadium and Shark Encounter, students will be able to determine the similarities and differences between whales and sharks.

Wild Arctic[®]: Arctic Animals

Science (Body Parts, Habitats)

Standards: SC.2.17.1, SC.2.17.2

- Teachers and chaperones will share the provided information on arctic animals and the adaptations they have to survive in such a harsh environment.

Post Field Trip Activities

Arctic Artist

Visual Arts (Connecting Art with Other Non-art Content Areas, Skill Development, Sequential Procedures)

Standards: VA.2.H.3.1, VA.2.S.2.1, VA.2.S.2.2

- Students replicate a drawing of a beluga whale using the provided image and grids.

Birds of a Feather

Science (Habitats, Basic Needs)

Standards: SC.2.L.17.1, SC.2.L.17.2

- Using the provided information and what they learned during their visit to SeaWorld[®], students will match the bird to the proper habitat in which it belongs.

Life Cycle of a Sea Turtle

Science (Life Cycles and Habitats)/Visual Arts (Sequential Procedures and Skill Development)

Standards: SC.2.L.16.1, SC.2.L.17.2, VA.2.S.2.1, VA.2.S.2.2

- Students will color in the provided images of the life cycle of a sea turtle. They will then cut out and arrange the pages into sequential order to create a book. The back cover will provide information on conservation efforts students can do to protect sea turtles.



Name:

Sharks are predators. Sharks eat other animals to survive. Sharks will eat sea turtles, fish and crabs. Look to see how many sea turtles, fish or crabs Sydney Shark ate each week.



Directions: Use the numbers on each animal to help you find your answers.

1. How many total animals did the shark eat during week 1?



Whale and Shark

Name:_____

Directions: Use the word banks to complete each word and label the animals.

Whale

Word Bank: Blowhole, Dorsal Fin, Eye, Flippers and Tail



Shark

Word Bank: Dorsal Fin, Eye, Gill Slits, Pectoral Fin and Tail



What About Whales?

Name: ____

Around the world, there are over 80 types of whales. Some are big and some are smaller than most people. All whales have some things that are the same and some things that are different.

Directions: Read about the whales below. Write 3 facts about each whale in the space given. Be sure to use complete sentences and proper grammar.

Killer Whale (Orcinus orca)

- Females about 15 feet long.
- Males about 25 feet long.
- Live in all of the oceans around the world.
- Eat fish, marine mammals, sharks and squids.
- Fun Fact Males are bigger but females lead the group or "pod".



Beluga Whale (Delphinapterus leucas)

- Beluga whales about 10 feet long.
- Males usually longer.
- Only live in the ocean around the North Pole.
- Eat fish, squid and crabs.
- Fun Fact Have a dorsal ridge instead of a dorsal fin.



What About Whales?

Name:

Humpback Whale (Megaptera novaeangliae)

- Grow up to 50 feet long.
- Females usually bigger.
- Live in all oceans around the world.
- Eat small shrimp and very small fish.
- Fun Fact Sing to each other with special sounds.

Bottlenose Dolphins (*Tursiops truncatus*)

- Grow up to 8 feet long.
- Males usually bigger than females.
- Live in warm waters around the world.
- Usually eat fish and squid.
- Fun Fact Jump up to 16 feet in the air.





A Park Full of Birds

Objectives: Students will learn about the variety of habitats that birds can inhabit both at SeaWorld and in the natural world.

Teacher and Chaperone Corner: You and your students are likely to encounter many birds throughout SeaWorld. Some of these birds are wild birds that have found the park to be a comfortable place to live, others are rescued birds that have been deemed non-releasable by the federal or state government and some are birds that are here as ambassadors to their species to help us learn more about them. You can see ambassador birds at the Flamingo habitat near the front of the park, Pelican Point across from Manta and Antarctica: Empire of the Penguin. SeaWorld[®] Educators are located at Antarctica: Empire of the Penguin to answer questions and provide more information.

Share this information with your students.

- There are nearly 10,000 bird species worldwide. Over 500 types of birds live in Florida. Many more birds may pass through as part of their migration route as they go from their summer to winter homes and back again.
- Flamingos are native to South America, the Caribbean, Africa and the Middle East. Flamingos used to be seen frequently in southern Florida but are very rarely seen now due to loss of habitat.
- Flamingo coloration varies from species to species but is believed to be caused by the carotenoid pigments found in their food. Caribbean flamingos are the brightest flamingo species. Flamingo parents who are in the process of raising a chick are usually lighter in color than their flock mates due to the fact that they are sharing their food with their young.
- There are two main species of pelican found around Florida: Eastern brown pelican and American white pelican.
- Pelicans can hold up to 3 gallons of water in the pouch under their bill. The pouch and the air sacs along the pelican's chest allow it to dive at high speeds into the water and scoop up unsuspecting fish.
- There are 18 species of penguins found in the world. Surprisingly, there are more species of penguins found in New Zealand (6 species) than in Antarctica (4 species). Penguins can be found on the Galapagos Islands, South America, South Africa, Australia, New Zealand and Antarctica. But you will NOT find penguins at the North Pole!
- The largest living species of penguin is the emperor penguin which can reach 48" tall and about 90lbs. The smallest species is the little blue or fairy penguin which is no more than 18" tall and about 2lbs! Antarctica: Empire of the Penguin is home to the second largest penguin species, the king penguin (about 36" tall and around 35lbs).
- SeaWorld has rescued over 20,000 birds as part of our Rescue and Rehabilitation program, more than any other type of animal! The goal is to rehabilitate (or help them get better) and return them to their natural environment. If the government says they are non-releasable, SeaWorld will find them a permanent home either at our park or with another accredited facility.

Pacific Point Preserve[®]: Which One is Which?

Objectives: Students will be introduced to the methods scientists use to classify animals. They will also learn ways to identify a harbor seal and a California sea lion.

Teacher and Chaperone Corner: Pacific Point Preserve is home to numerous harbor seals and sea lions. Seals, sea lions and walruses are in the Pinniped order. Pinnipeds are characterized by feather shaped flippers, vibrissae or whiskers, and a semiaquatic lifestyle. Despite these similarities, there are many distinct differences physically, socially and behaviorally that separate the pinnipeds into three distinct families: otariidae (eared seals), phocidae (true seals) and odobenidae (walruses). Students are welcome to purchase fish at the feeder booth to feed the seals and sea lions in this habitat. **SeaWorld® Educators are located at Pacific Point Preserve if you would like additional information.**

Share this information with your students.

- Seals, sea lions and walruses are all related. They belong to the scientific order of Pinnipedia.
- A scientist named Karl von Linne created the scientific system of classifying animals known as **taxonomy**. Classifying animals with Latin names means that no matter what language a scientist speaks or what they call that animal in their hometown, they can still tell another scientist what that animal is by its scientific name.
- Animals that are similar but have many differences are placed in special groups call **orders**. Animals that are almost the same with just a few differences are further separated into **families**. Finally, animals that are basically the same are separated into **genus** and **species**.
- Pinniped actually means "feather-footed" and refers to the shape of the animal's flippers. In Latin, "pin" means feather and "ped" means foot.
- Seals, sea lions and walruses are similar in that they all have four flippers, **vibrissae** (whiskers) and a layer of fat called **blubber**.
- Seals have short flippers that they cannot use for walking. Instead, they move on land by sliding on their bellies. They have ears but do not have earflaps (**ear pinnae**). They are usually very quiet.
- Sea lions have long flippers in the front and shorter flippers in the back that they can use to walk and climb. They have earflaps (**ear pinnae**) on the sides of their heads. They usually are very loud and can bark, howl and growl.
- Walruses are very large and have two long tusks protruding from their mouths. They can walk around on all four flippers (like a sea lion) but swim using the back flippers (like a seal). They are vocal and can whistle, knock, grunt and bellow.

Pacific Point Preserve: Which One is Which?



Terrific Taxonomy

Scientists divide animals into different groups based on the characteristics or features they have in common. Animals like seals, sea lions and walruses all belong to one order, based on the characteristics they share. However, they also belong to separate families based on adaptations unique to each group such as flipper size and shape, external ear flaps and tusks.

For this activity, divide the students into different groups based on what they have in common.

- 1. All students who go to: state the name of your school.
- 2. All students who belong to: state the teacher's name class.
- 3. All students who are wearing sneakers.
- 4. All students who are carrying a backpack.
- 5. All students who are wearing a hat.
- 6. All students who are wearing a red shirt.

Feel free to experiment and have the students come up with their own characteristics. Also, have the students list all of the characteristics they have in common with each other.

Shark Encounter[®]: Food for Thought

Objective: Students will discover the important role that the predators play in the environment.

Teacher and Chaperone Corner: At Shark Encounter, students will encounter some of the most mysterious and misunderstood animals of the sea. Barracuda and sharks all have frightening reputations. However, it's important to remember that every animal plays an important role in the ecosystem.

The Shark Shallows, located near the front of the building, is an excellent place to observe sharks and other species. This area also provides a convenient meeting spot for your group for further discussion or instruction.

Share this information with your students.

- Animals that eat other animals are called **predators**. Animals that are eaten by predators are called **prey**. Some animals, like stingrays, can be both a predator and prey.
- Most predators feed on weak, injured or ill animals that can be easily caught and are less likely to fight back.
- Sharks very rarely attack people. In fact, hippos and cows are more dangerous to people than sharks. Yet, people hurt and destroy over 100 million sharks every year.
- A **food web** is an organizational chart that depicts which prey animals are eaten by which predator animals. If part of the food web is taken away, the entire web collapses. This means that both predators and prey are important to the survival of the other.
- Predators are often thought of as "bad animals", but they play an important role. They help keep overall populations of animals healthy, prevent one type of animal from out numbering the others (**overpopulation**) and maintain the health and balance of the natural environment.
- Human activities such as pollution, overhunting and overfishing can harm predators either directly or by hurting the animals they rely on for food.
- Most predators have a good sense of smell that allows them to smell food from miles away. For example, some sharks can smell a concentration of one part of blood per billion parts of water.

Shark Encounter®: Count and Identify the Sharks

Scientists study animal populations to find out how many animals are present in an environment. As you move through the Shark Tunnel, choose one species of shark and count how many of that species you see. Divide into teams, with each member counting a different species of shark.

How many of each type of shark can you find?

Nurse Shark (Ginglymostoma cirratum)

Nurse sharks have a flat body with two whisker-like barbels located to the sides of the mouth. They are often found resting along the bottom of the ocean (or the bottom of the aquarium).

Directions: Make a tally mark for each nurse shark you see. Count the number of tally marks and record the number in the total box.

Tally Marks

= Total number of nurse sharks

Sand Tiger Shark (Carcharias taurus)

Sand tiger sharks have thick bodies with two dorsal fins of approximately the same size and 2 to 5 rows of teeth can be seen protruding from the mouth.

Directions: Make a tally mark for each sand tiger shark you see. Count the number of tally marks and record the number in the total box.

Tally Marks



Deeper Depths

Use a separate sheet of paper to answer the questions below.

What other animals did you see in the aquarium? How did you tell them apart?





TurtleTrek®: Manatees and Sea Turtles

Objective: Students will learn more about the manatees and sea turtles at TurtleTrek.

Teacher and Chaperone Corner: TurtleTrek is home to many animals that came to SeaWorld[®] as part of the Rescue and Rehabilitation program. Students can learn more about manatees and sea turtles at the underwater viewing area and experience life through the eyes of a sea turtle in the optional seven minute 3D TurtleTrek experience. **SeaWorld Educators are located inside TurtleTrek and at the above water viewing area if you would like additional information.**

Manatees:

- Despite their large size and fat deposits, manatees do not have any **blubber** (a type of fat to keep them warm) and cannot live in cold water for very long.
- Manatees are **herbivores**; this means they primarily eat plants. Depending on their size, some manatees can eat over 100lbs of plants in a day. They have flat teeth in the back of the mouth that are called **marching molars**. Marching molars are replaced throughout the manatee's life as they get worn out.
- Manatees have large lungs that help them float at the surface of waterways. They can use their front **pectoral flippers** to walk along the bottom of the rivers and springs they live in as they graze on plants.
- Manatees are a **threatened species**, which means there are not many of them left. They have no natural predators, one of the few things that can hurt them is human activities such as boating and pollution. It's important to make sure that we keep waterways clean and safe for manatees.

Sea Turtles:

- There are seven **species** and one **subspecies** of sea turtles found around the world. Of those, five species nest on Florida beaches. While most sea turtle species are **carnivores** eating animals like fish, squid and jellyfish, the green sea turtle is primarily an **herbivore** (plant eater).
- Female sea turtles can lay anywhere from 50 to over 200 eggs in a nest and may build multiple nest in one season. The temperature of the nest decides if the baby sea turtles (**hatchlings**) will be boys or girls. The warmer the nest, the more female turtles will hatch and the cooler the nest the more male turtles will hatch.
- Hatchlings may spend 25 years out at sea before the females come back to shore to nest. Scientists believe that hatchlings spend some of that time in a floating sea grass area known as the **Sargassum Sea**. Male sea turtles may never return to shore during their life time.
- Sea turtles need clean, safe and quiet beaches to lay their eggs. Bright lights or loud noises can cause the mothers to be scared back into the water and could confuse the hatchlings and lead them into danger.
- Cold temperatures, illness and predators are all natural threats that can harm sea turtles. Only 1% (or 1 out of every 100) hatchlings live to be an adult.
- All species of sea turtles are either **threatened** or **endangered**. Garbage at the beach is very dangerous to adult sea turtles and hatchlings. It's important to make sure that sea turtle nests are not bothered so the hatchlings can develop safely.

Whales and Sharks: At the Park

Objective: Students will discover the differences and similarities between killer whales and sharks.

Teacher and Chaperone Corner: Sharks and killer whales are both top predators that live in the ocean, but they are more different than they are the same. This information will provide you with some key differences between the two types of animals. SeaWorld[®] Educators are located at Shamu[®] Up Close underwater viewing if you would like additional information.

Share this information with your students.

Killer Whales:

- Killer whales, like many marine animals, have a type of coloration pattern known as **countershading** that helps them with camouflage. This means that the top of the animals' body is darker than the underside.
- Killer whales have false eye spots on the sides of their head to confuse other animals. Their eyes are actually located in front of and below that eye spot.
- Killer whales are **mammals** which means they breathe air, have hair at some time in their life, are **endothermic** (warm-blooded), give birth to live young and nurse their young with milk.
- Female killer whales are pregnant for about 17 months. At birth, **killer whale calves** can weigh around 350 lbs and be nearly 7 feet in length.
- Killer whales are found in every ocean around the world. Next to people, this makes them the second most widely distributed mammal on the planet.
- While some **ecotypes** or varieties of killer whales may migrate long distances to follow food, some killer whales will stay in the same area for their whole life.
- Killer whales can live in so many different places because they can eat a wide variety of foods including fish, sharks, seals and even other whales. Because they can eat so many types of animals, they are known as an **apex predator**.

Sharks:

- Sharks have different types of camouflage depending on where they live. For example: great white sharks are **countershaded**, like killer whales. Sharks that live in reefs may be blotched or spotted, while sharks that live in sandy areas are usually smooth and brown.
- Some sharks and other fishes have eye spots on the back or by the tail to confuse predators.
- Sharks are fish with a cartilaginous skeleton. They have gills, are covered in scales, and are **ectothermic** (cold-blooded).
- Sharks can either lay eggs, have an egg that the mother keeps inside of her body until it hatches, or give birth to live young. When baby sharks are born, they are called **pups** and will vary in size depending on what type of shark they are.
- There are over 400 different types of sharks that can be found almost everywhere in the ocean, except around Antarctica.
- While people usually think of sharks as predators, some sharks can also be prey.

Wild Arctic[®]: Arctic Animals

Objectives: Students will learn about the adaptations of Arctic animals.

Teacher and Chaperone Corner: Entry to Wild Arctic maybe gained in one of two ways. Students over 42 inches (106.68cm) in height may ride White Thunder, a state of the art flight simulator, for an exciting journey to Base Station Wild Arctic. Students that are uncomfortable or unable to experience the ride may enter the attraction via the walking experience. **SeaWorld® Educators are available in the upper level of the Research Station if you would like additional information.**

Share this information with your students.

Beluga Whales:

- Beluga whale babies, called **calves**, are born dark grey to help them hide in their mother's shadow. They lighten in color as they age.
- Belugas have a thick layer of insulating fat called **blubber** that helps them stay warm. This blubber also helps them float along with the ice flows. Their white coloration, as an adult, helps them blend in with the ice.
- Belugas are the only species of whale that can swim backwards. They are also one of the few species that can turn their head from side to side.
- Belugas and other toothed whales use a special type of sonar called **echolocation** to help them find food and navigate in their environment. Echolocation begins when the whale produces sound from around the blowhole and focuses it out of the **melon** or forehead. The sound bounces off objects in front of the whale. By listening to the returning sounds (echos), the whale may be able to determine where objects, such as fish, are in the area.

Harbor Seals:

- Harbor seals have spots that help them to hide underwater. They spend most of their time in or underwater since they don't move easily on land.
- Harbor seals use their vibrissae (whiskers) to help them find food and to navigate.

Walruses:

- Walruses have pinkish-brown skin that helps them blend in with the rocky beach.
- Walruses swim with a side-to-side motion of the hind flippers, while the front flippers are used for steering. On land, the walrus slides across the ice or walks using its front and hind flippers.
- Both male and female walruses have tusks. **Tusks** are long, pointed teeth that the walruses use to help them climb out of the water and onto the slippery ice. Male walruses also display their tusks to other walruses to determine who is dominant.
- Walruses have thick whiskers (**vibrissae**), which are used for touching and feeling objects. These vibrissae are especially useful for finding a walruses favorite foods, clams and shellfish, on the sandy ocean floor.

Arctic Artist

Name:

Scientist often sketch or photograph the animals they are studying. A grid is a tool that helps scientists break down an image into a series of lines that are easily reproduced. Use the grids below to reproduce the picture of the beluga whales.







Birds of a Feather

Name:

Birds live all over the world. They have adaptations to help them live in their habitat. Penguins and puffins live and find food where it is cold. Puffins fly. They are found nesting and fishing along rocky coasts. Penguins swim. They find their food in the icy areas around the South Pole. Eagles and owls fly quietly. They catch their food by surprise. Eagles nest

in tall trees or on the sides of mountains. Owls will hunt near forests. Pelicans live near shallow water and can often be found around fishing docks. They have a big pouch on their beak. This pouch helps them scoop up fish from the water. Flamingos are found in tropical areas. Flamingos use a long curved beak to filter food out of shallow water.

Directions: Use the word bank to label each of the birds below. Using clues from the paragraph, try to match the bird to where it would live by drawing a line from the bird to the picture of its habitat. Choose one bird per habitat.

Word bank: Eagle Flamingo Penguin Pelican Puffin Owl



Deeper Depths

Are there similarities or differences in habitats between any of the birds? Choose two birds and either compare or contrast their habitats and adaptations.

Life Cycle of a Sea Turtle

Name:

Directions: Color in the provided images of the life cycle of a sea turtle. Then cut out and arrange the pages into sequential order to create a book. The back cover provides information on what you can do to protect sea turtles.



Answer Key



Life Cycle of a Sea Turtle

Directions: Color in the provided images of the life cycle of a sea turtle. Then cut out and arrange the pages into sequential order to create a book. The back cover provides information on what you can do to protect sea turtles.

Name:







Check out:

SeaWorld.org for more information

SeaWorldOrlando.com/Teachers for additional resources just for teachers

