



# Hunger Games

## Teacher Guide

### Grades 3<sup>rd</sup>-5<sup>th</sup>

**Program Description:** All animals must eat to survive: who will eat and who will get eaten? Join us as we examine life in a variety of ecosystems to explore predator-prey interactions and unique feeding adaptations that animals need to survive. We will end our journey with a discussion about the ecological impact of the predators at the top of the food chain: us!

#### **Enduring Understandings:**

- ◆ Humans have a major impact on the environment, and I can be a part of the solution through minor changes in my daily routine.
- ◆ Interactions between animals in a community show the flow of energy through a food web/food chain.
- ◆ Animals are divided into separate classes based on physical characteristics.

#### **Objectives:**

- ◆ Students will be able to investigate how humans have both negative and positive impacts on the environment. Students will also be able to organize materials into trash, compost and recyclable groups.
- ◆ Students will be able to manipulate a food web, identifying consumers, producers, and decomposers as well as discuss how energy flows through an ecosystem.
- ◆ Students will be able to compare and contrast cartilaginous and bony fish and vertebrates and invertebrates.

#### **Georgia Performance Standards Addressed:**

##### Third Grade

**S3CS1. Students will be aware of the importance of curiosity, honesty, openness and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.**

- b. Offer reasons for findings and consider reasons suggested by others.
- c. Take responsibility for understanding the importance of being safety conscious.

**S3L2. Students will recognize the effects of pollution and humans on the environment.**

- a. Explain the effects of pollution (such as littering) to the habitats of plants and animals.
- b. Identify ways to protect the environment.
  - Conservation of resources
  - Recycling of materials

### **Fourth Grade**

**S4CS6. Students will question scientific claims and arguments effectively.**

- b. Identify when comparisons might not be fair because some conditions are different.

**S4L1: Students will describe the roles of organisms and the flow of energy within an ecosystem.**

- a. Identify the roles of producers, consumers and decomposers in a community.
- b. Demonstrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers and decomposers.
- c. Predict how changes in the environment would affect a community (ecosystem) of organisms.
- d. Predict effects on a population if some of the plants or animals in the community are scarce or if there are too many.

### **Fifth Grade**

**S5CS4: Students will use ideas of system, model, change and scale in exploring scientific and technological matters.**

- a. Observe and describe how parts influence one another in things with many parts.

**S5L1: Students will classify organisms into groups and relate how they determined the groups with how and why scientists use classification.**

- a. Demonstrate how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird and mammal).
- b. Demonstrate how plants are sorted into groups.

### **Pre-visit Activities:**

1. Water address

### **Post-visit Activity:**

1. Vocabulary Bingo
2. Food Web
3. Animal Classification

## **Water Address** (Pre-Visit Activity)

Adapted from the Project WET K-12 Curriculum & Activity Guide.

**Grade:** 3<sup>rd</sup> - 5<sup>th</sup>

**Objective:** Students will identify aquatic animals and their habitats by analyzing clues that describe the animals' adaptations.

**Duration:** 50 minutes

**Vocabulary:** adaptation, camouflage, coral reef, fish, mammal, freshwater, saltwater, predator and prey

### **Materials:**

10 sets of "Adaptation Cards" for each group of students

Pencils and paper for scorekeeping

10 sets of animal picture cards (optional)

10 sets of habitat cards (optional)

Globe or world map (optional)

**Background:** Three-quarters of Earth's surface is covered with water. There are many different types of aquatic habitats such as the open ocean, coral reefs, lakes, rivers, marshes and swamps. To survive in these different environments, animals have special features, or adaptations. These adaptations have developed over time and serve several important purposes. They can help an organism get food, protect themselves from enemies and survive in many different conditions.

There are many ways in which animals have adapted to survive in aquatic habitats. Fish have streamlined bodies and fins to help them move through the water quickly. Their coloration helps them to hide from predators or helps predators sneak up on their prey. Some fish have added protections such as spines and spots on the back half of their bodies to confuse their predators. Fish also have gills so that they are able to filter the oxygen out of the water to breathe. Some aquatic birds have webbed feet for swimming as well as glands that produce waxy oil for waterproofing their feathers.

Aquatic animals also have adaptations to allow them to survive in severe temperatures. For example, animals like belugas and sea lions have blubber (a thick layer of fat beneath their skin) to protect them from cold water. Sea otters do not have blubber, but they have very thick fur that serves the same function.

## Procedure:

1. Discuss how Earth's surface is covered with approximately 71% water and demonstrate this using a globe or map. Aquatic habitats are home to thousands of species of animals. Tell the students that today they are going to learn about different aquatic habitats, some of the animals that live there and the adaptations that allow them to survive in their habitat.
2. Make a list on the board with the students of all the aquatic habitats they can think of. Make sure to include both freshwater and saltwater habitats. (Discuss the difference between these two terms if necessary.)
3. Tell the students that each one of these habitats includes animals that have adapted to the specific conditions of that habitat to be able to survive there. Have the students define the word adaptation. Give an example such as fish adapting to live in water by having gills.
4. Tell the students they are going to play a riddle game in which they must guess an organism's identity and "water address" (or habitat) based on the clues on the adaptation card.
5. Have students form groups of three or four.
6. Hand out a set of the "Adaptation Cards," "Animal Cards" and "Habitat Cards" to each group (last two sets are optional depending on your group). Instruct students to spread out the animal and habitat cards on their desks or floor.
7. Explain that each card lists four adaptations of a certain animal. Based on the clues, students will match the animal and the habitat to the adaptations on the card.
8. Each student in the group should take turns being the "reader." The reader starts the game by picking an "Adaptation Card" and reading the clues one at a time until another student in the group correctly identifies the animal and the habitat (using the pictures for help). Answers are listed at the bottom of each card.
9. The student who correctly guesses both the name of the organism and its water address (habitat) receives points for the group (a scorekeeper should keep track of the group's points). Keep track of the score as follows:
  - a. One clue read = four points
  - b. Two clues read = three points
  - c. Three clues read = two points
  - d. Four clues read = one point
10. Have the students continue playing the game and keeping track of the group's score until all the adaptation cards have been used. The group then tallies up their score and when all groups have finished, they can compare their score with other groups to determine a winner!

11. To wrap up, make a list with the students of all the different water-related adaptations they learned about while playing the game.

### **Assessment:**

1. Walk around the room while students are playing the game to ensure all are participating.
2. Have students make a list of other animals that live in the aquatic habitats provided on the cards.
3. Have students do a written reflection about what they learned during the activity.

### **Extension:**

Students can create their own aquatic animal in a fictional water environment. Have them imagine special features or behaviors the animal would need to live in their environment. The students should draw a picture of the habitat and the animal as well as write a description. The students should tell how the animal gets its food, how it protects itself as well as other ways it is able to survive successfully in its habitat. They can evaluate each other's work and offer suggestions.

### **Resources:**

Goodman, S. E., & Doolittle, M. J. (2001). *Claws, coats and camouflage: the ways animals fit into their world*. Brookfield, Conn.: Millbrook Press.

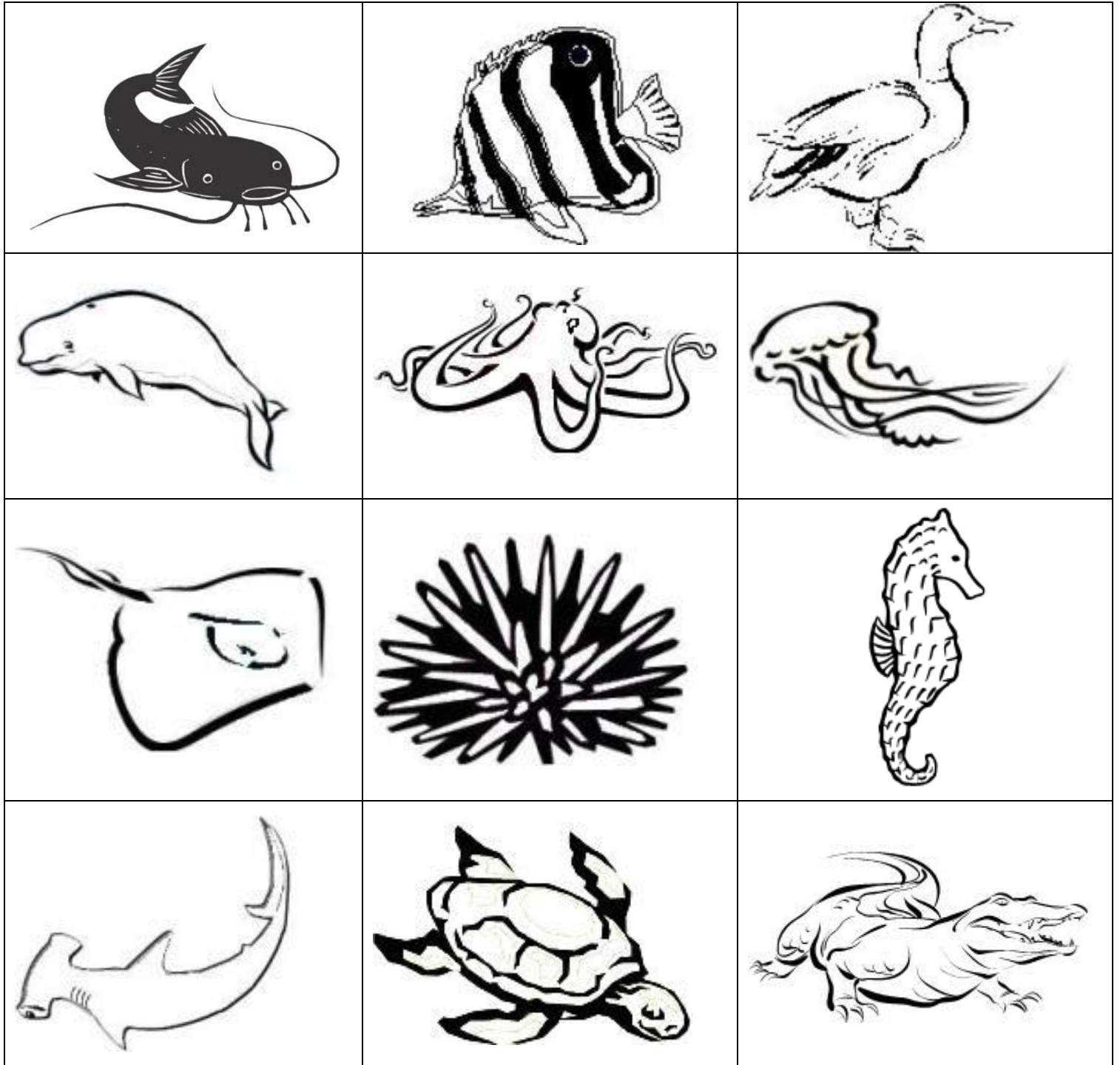
Hewitt, S. (1999). *All kinds of habitats*. New York: Children's Press.

Project WET (Water Education for Teachers). (2006). <http://www.projectwet.org>.

<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I am able to change the color of my skin to camouflage.</li> <li>- I have no bones so I am able to squeeze into small spaces.</li> <li>- The only hard part of my body is my beak which I use to eat and defend myself.</li> <li>- I have strong suction cups which I use to grasp and hold on to things.</li> </ul> <p><i>Answer: Octopus- lives in the coral reef</i></p>	<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I am grey or brown to blend in with my habitat.</li> <li>- I breathe using gills, which take oxygen from the water.</li> <li>- My mouth is located in the front of my body so I can catch other fish easily.</li> <li>- I have a beard or “barbels” that help me to sense where my food is in the murky water.</li> </ul> <p><i>Answer: Catfish- lives in the river</i></p>
<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I have no teeth but powerful jaws to crush food.</li> <li>- My flippers help me to swim gracefully in the ocean.</li> <li>- I cannot pull my head and flippers into my shell.</li> <li>- I like to rest underneath rock ledges (which also protects me).</li> </ul> <p><i>Answer: Sea turtle – open ocean, coral reef</i></p>	<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- My color often depends on the color of the water.</li> <li>- I like to build a nest of mud or sand near brackish water.</li> <li>- I am cold-blooded so I can live in a wide range of temperatures.</li> <li>- I do not feed during the cooler months.</li> </ul> <p><i>Answer: Crocodile- swamp</i></p>
<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- My body is covered in smooth scales so I can swim gracefully through the water.</li> <li>- I am brightly colored so that I can blend in with my habitat.</li> <li>- When I am scared, I will hide in small nooks and crannies.</li> </ul> <p><i>Answer: Tropical fish- lives in coral reef</i></p>	<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- My underside is light so that I can camouflage while swimming.</li> <li>- I have gills on the underside of my body as well as holes on top of my head so I can breathe when lying on the ocean floor.</li> <li>- I have tooth plates to crush things that live on the bottom of the ocean such as crabs.</li> <li>- I use my fins to cover myself with sand to hide from predators.</li> </ul> <p><i>Answer- Cownose ray- lives in the open ocean</i></p>

<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I have webbed feet.</li> <li>- I have glands that produce waxy oil that waterproofs my feathers.</li> <li>- I have a wide, flat beak adapted for scraping the bottom of my habitat for food.</li> <li>- I migrate to warmer areas in the winter for food and shelter.</li> </ul> <p><i>Answer: Duck- marsh, river</i></p>	<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I move with the movement of the waves.</li> <li>- I have stinging tentacles that help me catch my food.</li> <li>- Being clear makes it hard for predators to see me.</li> <li>- I have special "arms" that bring my food up to my "mouth."</li> </ul> <p><i>Answer: Jelly- open ocean and/or coral reef</i></p>
<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I move using hundreds of tiny tube feet all over my body.</li> <li>- I have spines all over my body for protection.</li> <li>- My color helps me to camouflage in my environment.</li> <li>- I also use my spines to dig into stones to hide.</li> </ul> <p><i>Answer: Sea urchin- coral reef</i></p>	<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- My light color helps me to camouflage in my habitat.</li> <li>- Blubber helps keep me warm in cold water.</li> <li>- My teeth and flexible lips help me to eat animals off the ocean bottom.</li> <li>- I can hold my breath for up to 25 minutes!</li> </ul> <p><i>Answer: Beluga whale- in the arctic (ocean)</i></p>
<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I am a fish that breathes with gills.</li> <li>- I use my long snout to suck up tiny shrimp.</li> <li>- I have fins for swimming located on my lower body and my head</li> <li>- I give live birth from a pouch (males only!).</li> </ul> <p><i>Answer: Seahorse- coral reef</i></p>	<p>Adaptation Card</p> <ul style="list-style-type: none"> <li>- I have gill slits that I use for breathing.</li> <li>- I use my sharp teeth for catching and eating stingrays and other fish.</li> <li>- The strange shape of my head helps me to maneuver through the water.</li> <li>- My skin is made of tiny teeth that make me streamlined in the water.</li> </ul> <p><i>Answer: Hammerhead shark- open ocean, coral reef</i></p>

# ANIMAL CARDS





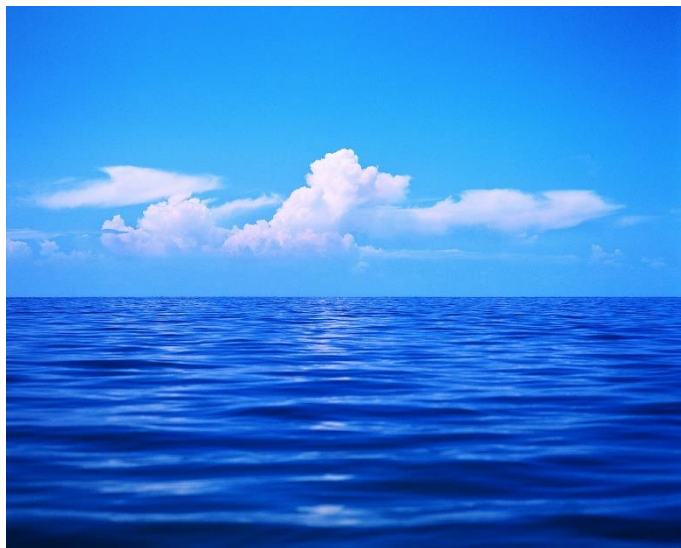
# HABITAT CARDS



**CORAL REEF**



**RIVER**



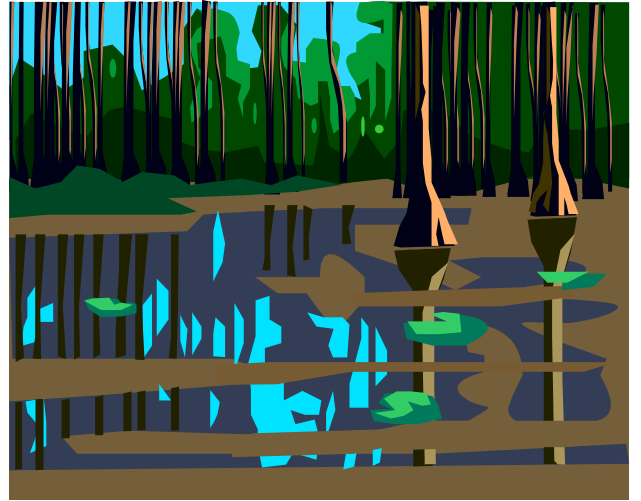
**OPEN OCEAN**



**ARCTIC**



**MARSH**



**SWAMP**

# Hunger Games Bingo (Post-visit Activity)

**Grade:** 3<sup>rd</sup> – 5<sup>th</sup> Grade

**Objective:** To reinforce terminology and key concepts discussed during field trip.

**Duration:** 15-30 minutes

## Materials:

Bingo cards – one for each student

Vocabulary list

Markers or bingo chips

## Procedure:

1. Explain to students they will be playing Adaptation Bingo to review key vocabulary terms from their field trip.
2. Give every student a bingo card and bingo chips.
3. Explain that you will read the definition of the word. The student is to then identify the correct vocabulary word on their bingo card and mark it.
4. Call out the definition to class.
5. Students must then identify the word on their bingo card that matches the definition given and cover the space.
6. If a student has all words covered diagonally, across a row or vertically in a column, they should call BINGO.
7. If a student claims they have BINGO and they are incorrect, continue playing.
8. Game can be played multiple times to ensure comprehension.

## **BINGO CLUES**

ADAPTATION - A trait that allows an organism to survive in its environment.

ALGAE - Simple plant that has no leaves or stems that grows in or near water.

AMPHIBIAN - An animal that has moist skin and no scales that can live both on land and in water.

BONY - An animal that has a calcium-based skeletal structure.

CAMOUFLAGE - An animal's color or pattern that allows it to blend in with its habitat.

CARNIVORE - An animal that eats meat.

CARTILAGINOUS - Having a skeleton made of a strong, but flexible material, not bones.

CHARACTERISTIC - A feature or trait of a person, thing or group.

CLASSIFICATION - A way of grouping items using a set of rules.

COMMUNITY - All of the plants and animals occupying a particular area.

CONSUMER - A living thing that eats other living things for energy.

DECOMPOSER - A living things that feeds on the wastes of plants and animals or on their remains after they end their life cycle.

ECOSYSTEM - Community of living organisms and the nonliving components (air, water and soil), and how they interact as a system.

ENERGY - The ability of something to be active or do work.

FISH - A cold-blooded animal that lives in water, breathes through gills, and usually has fins.

FOOD WEB - A diagram that shows how food chains connect and overlap.

FRESH WATER - Water that is not salty.

HABITAT - A place where an organism lives.

HERBIVORE - An animal that only eats plants.

INVERTEBRATE - An animal without a backbone.

MAMMAL - A warm blooded animal that has hair and produces milk for their young.

OMNIVORE - An animal that eats both plants and other animals.

ORGANISM - A living thing.

OXYGEN - An element that is found in the air, that has no color, taste or smell, that is necessary for life.

PARASITE - An animal or plant that lives in or on another animal or plant and gets nutrients from it at the host's expense.

POLLUTION - Introduction of contaminants into the natural environment that has harmful effects.

POPULATION - A group of the same species living in the same space at the same time.

PREY - An animal that is hunted by another animal for food.

PREDATOR - An animal that hunts another animal for food.

PRODUCER - A living thing, such as a plant, that makes its own food.

RECYCLE - To make something new from something that has been used before.

REPTILE - A cold blooded animal that has dry, scaly skin.

RIVER - A large natural flow of water.

SUN - The star that the Earth moves around that gives the Earth heat and light.

VERTEBRATE - An animal with a backbone.

## Ocean Bingo

RECYCLE	INVERTEBRATE	PREDATOR	OXYGEN	COMMUNITY
MAMMAL	SUN	FOOD WEB	ECOSYSTEM	ADAPTATION
PREY	HABITAT	Free Space	POLLUTION	PARASITE
ALGAE	OMNIVORE	CAMOUFLAGE	PRODUCER	ENERGY
RIVER	CARNIVORE	CLASSIFICATION	POPULATION	REPTILE

## Ocean Bingo

POLLUTION	OMNIVORE	HERBIVORE	AMPHIBIAN	ECOSYSTEM
BONY	FISH	FOOD WEB	SUN	PRODUCER
PARASITE	RECYCLE	<b>Free Space</b>	OXYGEN	MAMMAL
PREDATOR	DECOMPOSER	ALGAE	CARNIVORE	COMMUNITY
VERTEBRATE	ENERGY	CARTILAGINOUS	POPULATION	CLASSIFICATION

## Ocean Bingo

RECYCLE	ECOSYSTEM	CONSUMER	HERBIVORE	OXYGEN
FISH	PREY	ORGANISM	PARASITE	PRODUCER
FRESH WATER	OMNIVORE	Free Space	MAMMAL	ADAPTATION
ALGAE	ENERGY	CAMOUFLAGE	CHARACTERISTIC	CARTILAGINOUS
VERTEBRATE	DECOMPOSER	PREDATOR	RIVER	CLASSIFICATION



## Ocean Bingo

ORGANISM	CONSUMER	POPULATION	PREDATOR	BONY
ADAPTATION	SUN	COMMUNITY	CAMOUFLAGE	RECYCLE
FRESH WATER	OMNIVORE	<b>Free Space</b>	CLASSIFICATION	PARASITE
FISH	CARTILAGINOUS	AMPHIBIAN	INVERTEBRATE	RIVER
CARNIVORE	ALGAE	VERTEBRATE	HABITAT	MAMMAL

## Ocean Bingo

OMNIVORE	HERBIVORE	VERTEBRATE	SUN	CLASSIFICATION
RECYCLE	ALGAE	RIVER	HABITAT	AMPHIBIAN
PARASITE	ENERGY	Free Space	PREY	CHARACTERISTIC
PREDATOR	DECOMPOSER	PRODUCER	INVERTEBRATE	CARTILAGINOUS
CAMOUFLAGE	ADAPTATION	FISH	CARNIVORE	POLLUTION

## Ocean Bingo

OXYGEN	CARNIVORE	AMPHIBIAN	PRODUCER	DECOMPOSER
POPULATION	PREY	ALGAE	ORGANISM	POLLUTION
VERTEBRATE	FISH	Free Space	CARTILAGINOUS	CHARACTERISTIC
MAMMAL	HABITAT	RECYCLE	ECOSYSTEM	PARASITE
CAMOUFLAGE	COMMUNITY	SUN	OMNIVORE	BONY

## Ocean Bingo

CARNIVORE	PARASITE	PREDATOR	CONSUMER	PRODUCER
DECOMPOSER	VERTEBRATE	ORGANISM	FISH	COMMUNITY
CARTILAGINOUS	OMNIVORE	<b>Free Space</b>	CAMOUFLAGE	FOOD WEB
RECYCLE	ADAPTATION	BONY	HERBIVORE	AMPHIBIAN
INVERTEBRATE	RIVER	PREY	POPULATION	CHARACTERISTIC

## Ocean Bingo

PREY	ECOSYSTEM	PARASITE	BONY	CHARACTERISTIC
ENERGY	CAMOUFLAGE	FRESH WATER	CARNIVORE	CLASSIFICATION
POLLUTION	POPULATION	<b>Free Space</b>	HABITAT	ALGAE
FISH	RIVER	COMMUNITY	CARTILAGINOUS	AMPHIBIAN
FOOD WEB	SUN	PRODUCER	VERTEBRATE	CONSUMER

## Ocean Bingo

ECOSYSTEM	CONSUMER	ENERGY	OXYGEN	FRESH WATER
CARNIVORE	PRODUCER	FISH	PREDATOR	VERTEBRATE
CAMOUFLAGE	AMPHIBIAN	Free Space	HABITAT	CHARACTERISTIC
RIVER	CARTILAGINOUS	INVERTEBRATE	FOOD WEB	MAMMAL
PARASITE	PREY	HERBIVORE	REPTILE	BONY

## Ocean Bingo

FRESH WATER	HERBIVORE	FISH	CHARACTERISTIC	CONSUMER
ADAPTATION	CARTILAGINOUS	PRODUCER	FOOD WEB	COMMUNITY
BONY	MAMMAL	Free Space	ECOSYSTEM	RIVER
CAMOUFLAGE	REPTILE	SUN	ALGAE	INVERTEBRATE
PREDATOR	OXYGEN	CLASSIFICATION	POLLUTION	HABITAT

## Ocean Bingo

CONSUMER	ADAPTATION	CAMOUFLAGE	CHARACTERISTIC	FOOD WEB
PRODUCER	HABITAT	INVERTEBRATE	RECYCLE	SUN
CLASSIFICATION	AMPHIBIAN	<b>Free Space</b>	PREDATOR	ENERGY
CARTILAGINOUS	PARASITE	PREY	BONY	ECOSYSTEM
COMMUNITY	HERBIVORE	MAMMAL	POPULATION	RIVER



## Ocean Bingo

OMNIVORE	MAMMAL	CARTILAGINOUS	CARNIVORE	CAMOUFLAGE
ALGAE	PRODUCER	FISH	POPULATION	INVERTEBRATE
BONY	PREDATOR	Free Space	DECOMPOSER	REPTILE
HABITAT	RECYCLE	ADAPTATION	ECOSYSTEM	ENERGY
OXYGEN	PREY	CLASSIFICATION	AMPHIBIAN	RIVER

## Ocean Bingo

HABITAT	CARNIVORE	ORGANISM	ENERGY	PREY
OXYGEN	BONY	ADAPTATION	FOOD WEB	RIVER
POLLUTION	COMMUNITY	Free Space	OMNIVORE	ALGAE
ECOSYSTEM	CHARACTERISTIC	INVERTEBRATE	CARTILAGINOUS	PREDATOR
DECOMPOSER	PARASITE	FRESH WATER	PRODUCER	RECYCLE

## Ocean Bingo

DECOMPOSER	OXYGEN	PARASITE	POPULATION	POLLUTION
CARNIVORE	CHARACTERISTIC	VERTEBRATE	PRODUCER	FOOD WEB
PREDATOR	ADAPTATION	Free Space	ENERGY	FRESH WATER
MAMMAL	ECOSYSTEM	RIVER	RECYCLE	REPTILE
HERBIVORE	SUN	HABITAT	CONSUMER	ORGANISM

## Ocean Bingo

AMPHIBIAN	OMNIVORE	PRODUCER	POLLUTION	BONY
CAMOUFLAGE	HERBIVORE	PREDATOR	COMMUNITY	CHARACTERISTIC
OXYGEN	CARTILAGINOUS	<b>Free Space</b>	FOOD WEB	RECYCLE
ALGAE	POPULATION	ADAPTATION	ORGANISM	PREY
DECOMPOSER	PARASITE	CONSUMER	CARNIVORE	VERTEBRATE

## Ocean Bingo

INVERTEBRATE	OXYGEN	HABITAT	REPTILE	AMPHIBIAN
CLASSIFICATION	SUN	CARNIVORE	ENERGY	FISH
MAMMAL	COMMUNITY	Free Space	PARASITE	ADAPTATION
BONY	PREY	CARTILAGINOUS	CONSUMER	ALGAE
FRESH WATER	DECOMPOSER	PRODUCER	HERBIVORE	OMNIVORE

## Ocean Bingo

ORGANISM	FOOD WEB	PARASITE	MAMMAL	PREY
PREDATOR	RIVER	HERBIVORE	POPULATION	REPTILE
CARTILAGINOUS	PRODUCER	Free Space	INVERTEBRATE	DECOMPOSER
FRESH WATER	CAMOUFLAGE	CHARACTERISTIC	SUN	CARNIVORE
ADAPTATION	BONY	OMNIVORE	COMMUNITY	ALGAE

## Ocean Bingo

PREY	MAMMAL	REPTILE	SUN	RECYCLE
CONSUMER	FOOD WEB	HABITAT	FISH	ALGAE
POPULATION	PRODUCER	Free Space	ORGANISM	CHARACTERISTIC
CARTILAGINOUS	FRESH WATER	OMNIVORE	ENERGY	CARNIVORE
CLASSIFICATION	PARASITE	POLLUTION	ADAPTATION	ECOSYSTEM

## Ocean Bingo

VERTEBRATE	SUN	CLASSIFICATION	AMPHIBIAN	ALGAE
HABITAT	OMNIVORE	HERBIVORE	PREDATOR	ORGANISM
CAMOUFLAGE	INVERTEBRATE	<b>Free Space</b>	PRODUCER	PREY
DECOMPOSER	ECOSYSTEM	POPULATION	OXYGEN	RECYCLE
MAMMAL	COMMUNITY	BONY	CHARACTERISTIC	ENERGY



## Ocean Bingo

FOOD WEB	RIVER	OMNIVORE	ORGANISM	OXYGEN
MAMMAL	ALGAE	CARNIVORE	AMPHIBIAN	SUN
CONSUMER	BONY	Free Space	CLASSIFICATION	CAMOUFLAGE
PREDATOR	CHARACTERISTIC	PRODUCER	POPULATION	PARASITE
RECYCLE	FRESH WATER	PREY	HABITAT	VERTEBRATE

## Ocean Bingo

FISH	PREY	ORGANISM	CLASSIFICATION	COMMUNITY
INVERTEBRATE	RECYCLE	PRODUCER	CAMOUFLAGE	CARNIVORE
SUN	FRESH WATER	Free Space	MAMMAL	CONSUMER
CHARACTERISTIC	HABITAT	CARTILAGINOUS	OXYGEN	BONY
POLLUTION	FOOD WEB	DECOMPOSER	ADAPTATION	HERBIVORE

## Ocean Bingo

POLLUTION	OXYGEN	RIVER	OMNIVORE	FRESH WATER
CLASSIFICATION	CONSUMER	VERTEBRATE	ENERGY	HERBIVORE
FISH	MAMMAL	Free Space	CARNIVORE	RECYCLE
PARASITE	COMMUNITY	POPULATION	ORGANISM	ADAPTATION
CHARACTERISTIC	PREY	ALGAE	BONY	CAMOUFLAGE

## Ocean Bingo

POPULATION	CARNIVORE	FOOD WEB	MAMMAL	RECYCLE
POLLUTION	FRESH WATER	ECOSYSTEM	ENERGY	CHARACTERISTIC
INVERTEBRATE	OMNIVORE	Free Space	AMPHIBIAN	PARASITE
ADAPTATION	PREY	PRODUCER	COMMUNITY	RIVER
VERTEBRATE	FISH	CARTILAGINOUS	DECOMPOSER	OXYGEN

## Ocean Bingo

CARTILAGINOUS	OMNIVORE	ALGAE	PARASITE	PREY
BONY	POLLUTION	REPTILE	ENERGY	FISH
VERTEBRATE	MAMMAL	<b>Free Space</b>	PRODUCER	CARNIVORE
ADAPTATION	FOOD WEB	RECYCLE	POPULATION	HERBIVORE
COMMUNITY	CHARACTERISTIC	SUN	OXYGEN	ECOSYSTEM

## Ocean Bingo

SUN	COMMUNITY	VERTEBRATE	PREY	AMPHIBIAN
CONSUMER	POPULATION	OXYGEN	ORGANISM	HABITAT
FISH	POLLUTION	Free Space	PRODUCER	FRESH WATER
DECOMPOSER	CHARACTERISTIC	ALGAE	HERBIVORE	MAMMAL
PREDATOR	PARASITE	RECYCLE	CARTILAGINOUS	ECOSYSTEM

## Ocean Bingo

ECOSYSTEM	ENERGY	CAMOUFLAGE	PRODUCER	AMPHIBIAN
COMMUNITY	PREDATOR	PARASITE	POPULATION	FOOD WEB
HERBIVORE	VERTEBRATE	<b>Free Space</b>	RECYCLE	CONSUMER
PREY	CLASSIFICATION	CARNIVORE	CHARACTERISTIC	INVERTEBRATE
ADAPTATION	SUN	BONY	CARTILAGINOUS	ORGANISM

## Ocean Bingo

ORGANISM	MAMMAL	CLASSIFICATION	POPULATION	CARTILAGINOUS
COMMUNITY	ADAPTATION	OXYGEN	FRESH WATER	BONY
RIVER	PREY	Free Space	REPTILE	ENERGY
AMPHIBIAN	PRODUCER	CONSUMER	INVERTEBRATE	OMNIVORE
HABITAT	CAMOUFLAGE	SUN	FOOD WEB	PARASITE



## Ocean Bingo

REPTILE	DECOMPOSER	PREY	FOOD WEB	CHARACTERISTIC
RECYCLE	POPULATION	PREDATOR	COMMUNITY	PRODUCER
ECOSYSTEM	CARTILAGINOUS	Free Space	CARNIVORE	AMPHIBIAN
FRESH WATER	BONY	CONSUMER	MAMMAL	CAMOUFLAGE
CLASSIFICATION	ORGANISM	INVERTEBRATE	HABITAT	ADAPTATION

## Ocean Bingo

CHARACTERISTIC	FRESH WATER	ORGANISM	ENERGY	HERBIVORE
POLLUTION	CAMOUFLAGE	COMMUNITY	ADAPTATION	CARTILAGINOUS
ECOSYSTEM	RECYCLE	Free Space	OXYGEN	HABITAT
CLASSIFICATION	RIVER	OMNIVORE	INVERTEBRATE	PARASITE
CARNIVORE	FISH	MAMMAL	PREDATOR	AMPHIBIAN

## Food Web Activity (Post-visit Activity)

**Grade Level:** 3<sup>rd</sup>-5<sup>th</sup>

**Objective:** Students will create a food web identifying the consumers and producers based on the animals listed below.

**Duration:** 30 minutes

**Vocabulary:** producers, consumers, herbivores, carnivore, omnivores, decomposers, phytoplankton and kelp

### Materials:

Colored pictures of organisms

Scissors

Single hole punch

Yarn

Rope or yarn

**Background:** Food chains come in all shapes and sizes. Some are very complex with many components and others are quite basic. The ocean is made up of numerous food webs depending on where you are and the plant and animal species present. But they all have something in common – the web starts with the sun. Sunlight shines on the earth giving energy to plants. Plants use this solar energy to make their own food. Since plants can sustain themselves on solar energy they are called *producers*. Animals that only eat plants for energy are called primary *consumers*, they can also be referred to as herbivores. Animals that eat primary consumers are called secondary consumers, and if they only eat other animals they are also known as carnivores. Some animals that eat both plants and animals are called *omnivores*. *Decomposers* are organisms, usually bacteria or fungi that break down the cells of dead plants and animals into simpler substances.

### Procedures:

#### Prior to Activity:

1. Cut out pictures of organisms. (Laminating is optional.)
2. Punch two holes at the top side of each picture.
3. Tie the yarn through to make a necklace with each animal.

#### Activity

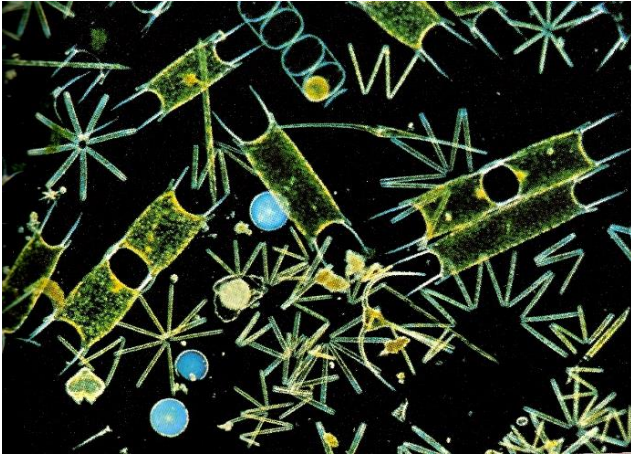
1. Explain to the students that they will be making a food web – ask someone to explain what that means.
2. Depending on the number of students have them form 2 circles.

3. Review or define producer, consumer and decomposer.
4. Hand out an organism necklace to each student to put around their neck (*note: one organism per student*). Make sure there is one student without an organism. This student will manipulate the rope. With help from their classmates, the extra student will guide the rope from the sun, to producers, to consumers, then finally decomposers creating the web. Afterward it should resemble an actual web.
5. Ask students to identify all of the consumers and producers. Which organisms are omnivores, herbivores and carnivores?

**Assessment:**

Ask students to share or explain how they made the connections in their food web. Next ask what would happen to the web if one animal disappeared.

Name of Organism	Description/Eating Habits
Phytoplankton	Microscopic mixture of small plants floating in the sea
Kelp	A type of plant that grows in the sea
Mussel	A shellfish found on rocks that eats plankton
Sea urchin	A shellfish found on rocks that eats kelp
Harbor seal	Eats fish, lobsters and crabs
Japanese spider crab	A shellfish that eats mussels and sea urchins
Turban snail	An invertebrate that eats kelp
Yellow tang	A fish that eats seaweed
Grouper	A fish that eats mussels
Blue crab	A crab that eats small fish
Penguin	A bird that eats mussels



Plankton



Kelp



Mussel



Sea Urchin



Harbor Seal



Japanese Spider Crab



Snail



Blue Crab



Penguin



Grouper



Yellow Tang



Sunlight

# Classification Station! (Post-visit Activity)

**Grade Level:** 5<sup>th</sup>

**Objective:** Students will classify animals that they saw at Georgia Aquarium.

**Duration:** 30 minutes

**Vocabulary:** mammal, fish, reptile, arthropod, cnidarian, invertebrate, vertebrate and cartilage

## Materials:

Copy of Classification Title Cards (to be hung on a board)

Copy of the Animal Cards and tape

**Background:** All animals are classified using a scientific system. The system is Kingdom, Phylum, Class, Order, Family, Genus and Species. Scientists use this system to help them understand the anatomy, genetics and relatives of animals. Scientists classify animals according to various characteristics such as skeleton, breathing, coverings, teeth and feet. In the animal world, this includes Mammalian (mammals), Osteichthyes (bony fish), Chondrichthyes (ex. sharks and rays), Reptilian (ex. alligators), Arthropod (ex. crabs), and Cnidarians (ex. coral).

## Procedure:

1. Make a copy of the Classification Title Cards and a copy of the Animal Cards and place tape on the back of each card.
2. Hand out an animal card to each student. (If there are not enough animal cards, you can hold up cards and place them in the category that the students call out.)
3. Hang Classification Title Cards up on a board. Start with Mammal, Fish, Reptile, etc... (You can keep the characteristics attached if you would like or take them off to challenge the students.) Then let students put the animal cards in the correct category.
4. Remove the Mammal, Reptile, etc... cards; then hang up the Invertebrate and Vertebrate Cards and repeat with the animal cards.
5. Remove the Invertebrate and Vertebrate cards; hang up Cartilaginous and Bony Fish Cards and repeat with just the Fish Animal Cards.
6. This activity can be done in small groups or as a whole class; just make a set of Classification Title Cards and Animal Cards for each small group.

**Assessment:**

On a separate piece of a paper, have the students write down 5 more animals (that aren't on the cards) for each category of Mammal, Reptile, Arthropod and Fish. Have the students pick one of the animals from the Animal Cards and write a 1 to 2 page report on that animal, including where the animal lives, what it eats, its adaptations, its conservation status and how they can help protect that animal.

**Resources:**

Gilopin, D. and Parker, S. (2006). *Animal kingdom classification series*. Compass Point Books.



## Classification Title Cards

# Mammal

Warm  
blooded

Vertebrate

Hair or  
fur on  
body

Mother gives milk  
to offspring

# Arthropod

Cold blooded

Invertebrate

Segmented bodies  
with jointed limbs

# Fish

Cold  
blooded

Vertebrate

Scales on  
body

Gills for  
breathing

# Reptile

Cold  
blooded

Vertebrate

Scales on  
body

Lungs for  
breathing

# Cnidarian

Radial  
symmetry

Invertebrate

Stinging cells

# **Vertebrate**

Animal with backbone or spinal column

# **Invertebrate**

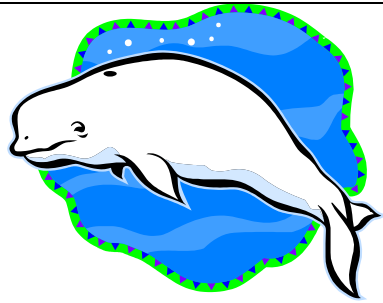
Animal without a backbone or spinal column

# **Bony Fish**

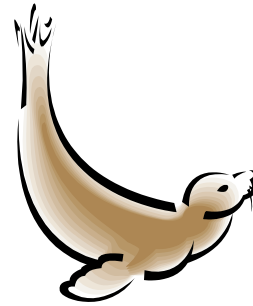
Skeleton composed of bone

# **Cartilaginous Fish**

Skeleton composed of cartilage



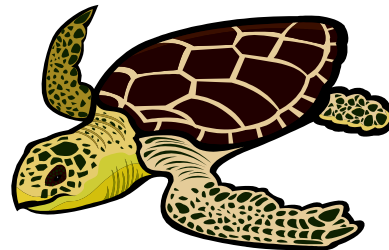
**Beluga Whale**



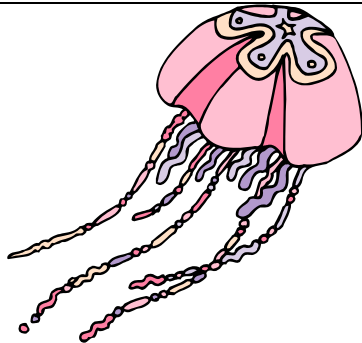
**California Sea Lion**



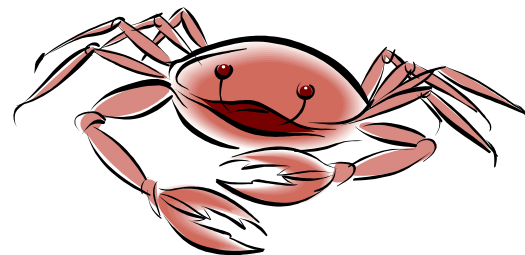
**Asian Small-Clawed Otter**



**Sea Turtle**



**Jelly**



**Japanese Spider Crab**



**Weedy Sea Dragon**



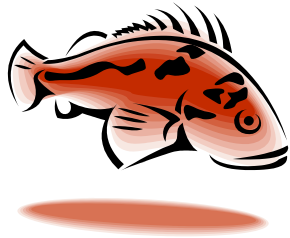
**Coral**



**Moorish Idol**



**Sawfish**



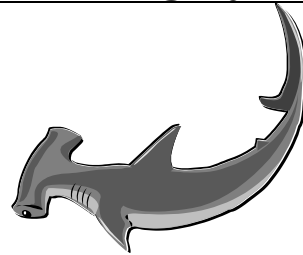
**Grouper**



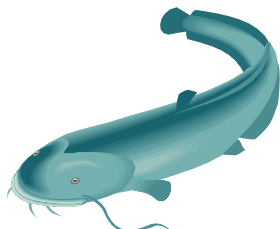
**Stingray**



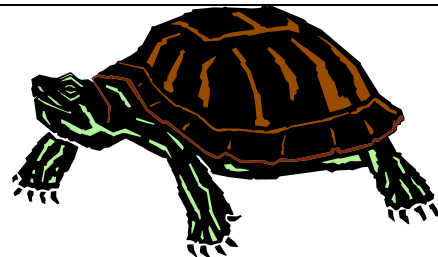
**Zebra Shark**



**Hammerhead Shark**



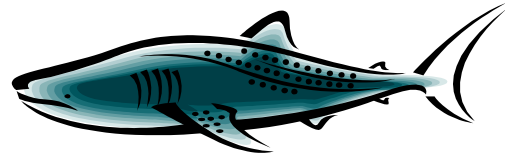
**Catfish**



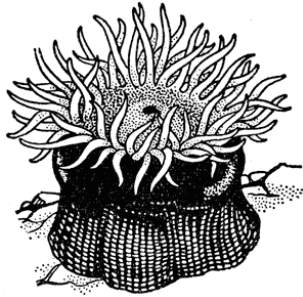
**Turtle**



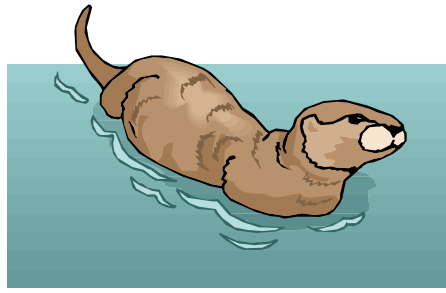
**Alligator Gar**



**Whale Shark**



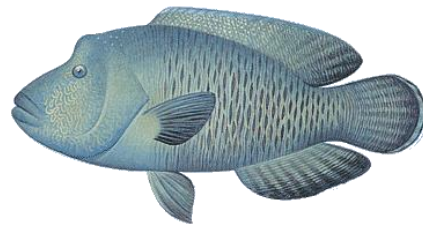
**Sea Anemone**



**Sea Otter**



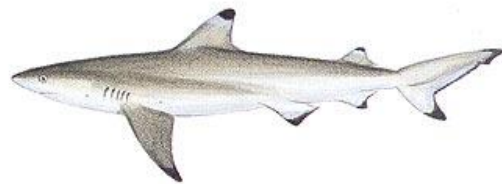
**Horseshoe Crab**



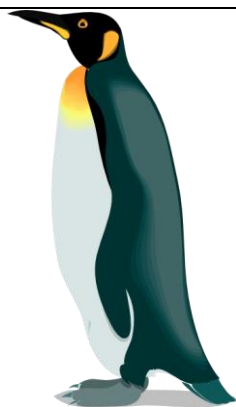
**Humphead Wrasse**



**Guitarfish**



**Black Tip Reef Shark**



**Penguin**



**Puffin**



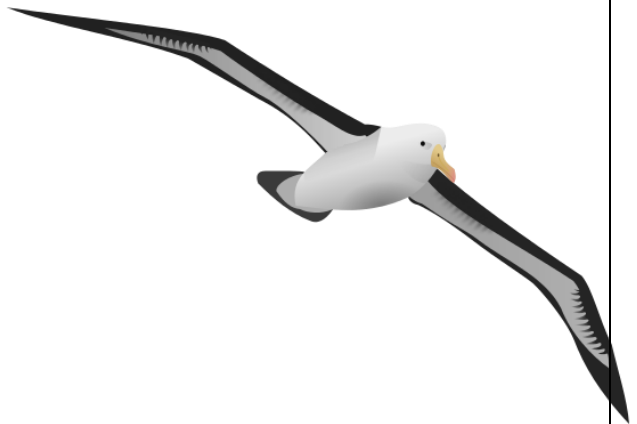
**Salamander**



**Frog**



**Toad**



**Albatross**

## Classification Answer Key

<p>Invertebrate:</p> <ul style="list-style-type: none"> <li>• Japanese Spider Crab</li> <li>• Coral</li> <li>• Jelly</li> <li>• Horseshoe Crab</li> <li>• Sea Anemone</li> </ul>	<p>Vertebrate:</p> <ul style="list-style-type: none"> <li>• Zebra Shark</li> <li>• Whale Shark</li> <li>• Sawfish</li> <li>• Stingray</li> <li>• Grouper</li> <li>• Humphead Wrasse</li> <li>• Weedy Sea Dragon</li> <li>• Black Tip Reef Shark</li> <li>• Catfish</li> <li>• Alligator Gar</li> <li>• Hammerhead Shark</li> <li>• Sea Turtle</li> <li>• Turtle</li> <li>• Guitarfish</li> <li>• Sea Otter</li> <li>• Asian Small Clawed Otter</li> <li>• California Sea Otter</li> <li>• Beluga Whale</li> <li>• Moorish Idol</li> </ul>
<p>Birds:</p> <ul style="list-style-type: none"> <li>• Albatross</li> <li>• Penguin</li> <li>• Puffin</li> </ul>	
<p>Mammal:</p> <ul style="list-style-type: none"> <li>• Beluga Whale</li> <li>• Asian Small Clawed Otter</li> <li>• Sea Otter</li> <li>• California Sea Lion</li> </ul>	<p>Amphibians:</p> <ul style="list-style-type: none"> <li>• Frog</li> <li>• Toad</li> <li>• Salamander</li> </ul>
<p>Fish:</p> <ul style="list-style-type: none"> <li>• Zebra Shark</li> <li>• Whale Shark</li> <li>• Sawfish</li> <li>• Grouper</li> <li>• Stingray</li> <li>• Humphead Wrasse</li> <li>• Guitarfish</li> <li>• Black Tip Reef Shark</li> <li>• Catfish</li> <li>• Hammerhead Shark</li> <li>• Weedy Sea Dragon</li> <li>• Alligator Gar</li> </ul> <p>Moorish Idol</p>	<p>Reptile:</p> <ul style="list-style-type: none"> <li>• Sea Turtle</li> <li>• Turtle</li> </ul>

Cartilaginous Fish:

- Zebra Shark
- Whale Shark
- Sawfish
- Stingray
- Guitarfish
- Black Tip Reef Shark
- Hammerhead Shark

Bony Fish:

- Grouper
- Catfish
- Leafy Sea Dragon
- Humphead Wrasse
- Alligator Gar
- Moorish Idol