

Ocean Shoreline Habitat

Read the passage below.

Marine life, or plants and animals of the ocean can be found at all depths of the ocean. Most fish and all marine mammals live in the shallow and well-lit parts of the marine environment. Plankton is the most **abundant** life form and food source in the ocean. Plankton are plants that make use of **photosynthesis** near the surface of the sea. They change the energy of the sun into food for the fish life they support. Fish become the primary food source for larger **carnivorous** fish and marine mammals. These larger fish and mammals then provide nutrients for larger **predators**, or creatures along the ocean shorelines that hunt and eat other animals. Large predators eventually get old and die. Their **carcasses** nourish many life forms of the marine shoreline habitat, both great and small. They feed off the animal remains. This cycle, where each life form has a role to play in the survival of other living things, continues. This is the **food chain**.

The oceans do not support the same amounts of life everywhere. Most marine life exists near the surface and closer to the coastlines. This **habitat** is where the water is most rich in nutrients. Much of the open seas are like watery deserts, with very little life. Strong ocean currents, or flows of water, are formed by cold water that comes from Antarctica. This **dense**, icy cold water falls to the ocean floor and travels northward. This northward moving water is replaced by warmer water, which in turn travels south. An **upwelling** of nutrients, created by the opposing flows helps the growth of plankton and supports life in this marine environment.

Many creatures come to the sunlit, shoreline habitat of the ocean. Great quantities of plankton attract many animals, some of which eat the plankton and others that feed on the animals attracted by plankton. Sharks, seals, sea lions, whales, squids, sea turtles and **crustaceans** all look for food along the ocean shoreline.

Animals that live along the shoreline must **adapt** to special challenges of this habitat. Every day the shore is affected by tides, or the rise and fall of the ocean. At high tide the shoreline is covered in water. At low tide this land is open to wind, sun and waves. Creatures that live in this habitat must adjust quickly to these changes in order to survive. Tidal pools or large puddles of water left behind by the falling tide are full of diverse life forms. These creatures attract different predators that feed on them.

Under the sunlit surface of the coastline waters there is nowhere for animals to hide. Many have adapted simply because they are difficult to see by predators. Many fish have scales that reflect the sun and make them appear as sparkles of sunlight in the water. Marine predators such as sharks and dolphins have dark backs and brighter coloured bellies. To unsuspecting **prey**, these hunters blend into the darkness below or nearly disappear into the brightness of the sun above. All species of whales spend a good deal of time near the surface of the ocean, since they need air to breathe.

Marine animals all need **oxygen** as well as food to survive. Marine animals get the oxygen they need in different ways. Creatures such as fish and crustaceans use gills to get their oxygen from the water. Marine mammals, birds, amphibians and reptiles have lungs like us, and must breathe air to get oxygen.

Marine animals must move through the water to find food and escape predators. Water is thicker than air and more difficult to move through than air. The bodies of marine animals have adapted to moving through water. Whales, dolphins, seals and sea lions all have smooth skin. This body surface reduces **friction** and allows the mammal to glide freely through water. These mammals have sleek shapes and powerful fins and tails that propel them quickly through the depths of the ocean. Whales and dolphins have blowholes on top of their heads. These openings replace noses and allow these marine mammals to breathe while remaining in the water. A whale can hold its breath under water for several minutes.

Not all marine animals escape their predators by swimming. Some crustaceans and octopuses propel themselves from danger by shooting out jets of water. Some creatures like shellfish use camouflage to hide from their predators by blending into their surroundings. Some species of fish swim together in **schools** or large groups. From a distance a school of fish could confuse a predator by appearing to be one large creature. This might work to scare off the hunter.

All marine life adapts in order to survive the challenges of the ocean coastline habitat. All life in the ocean is connected and dependent upon each other. Each creature performs a role in their habitat that affects the survival of all other creatures in their environment. The careful balance and **preservation** of a habitat makes its existence possible, for many years to come.

Word Bank: Abundant, Photosynthesis, Carnivorous, Predators, Carcasses, Food Chain, Habitat, Upwelling, Crustaceans, Adapt, Prey, Oxygen, Friction, Preservation

Ocean Shoreline Habitat Activity

Using the “Ocean Shoreline Habitat” to answer the following questions.

1. The passage “Ocean Shoreline Habitat” is an example of which form of writing?
 - a. biography
 - b. fiction
 - c. procedure
 - d. non-fiction

2. Most fish and marine animals live
 - a. along the bottom of the ocean
 - b. in the dark waters
 - c. in the shallow and well-lit parts of the ocean
 - d. on the beaches and rocks of the shoreline

3. Read this sentence: “Animals that live along the shoreline must **adapt** to special challenges of this habitat” (line 25). In this sentence, the word “adapt” means.
 - a. adjust
 - b. hide
 - c. swim
 - d. Stay away

4. The author likely wrote this passage to
- a. describe why fish swim in schools
 - b. tell readers about what species of life exist in the ocean
 - c. show readers how to become veterinarians
 - d. tell readers about the ocean habitat

5. Which word is a compound word?
- a. shoreline
 - b. surface
 - c. allow
 - d. propel

6. Read the sentence below.

“Strong ocean currents, or flows of water, are formed by cold water that comes from Antarctica.” (lines 16 to 17) Two adjectives used in this sentence are

- a. currents, water
- b. formed, comes
- c. strong, cold
- d. are, from

7. Read the sentence below.

“A whale can hold its breath under water for several minutes.” (line 53)

In this sentence, the word “hold” is

- a. a verb
- b. an adjective
- c. a noun
- d. an adverb

8. Which word has the same number of syllables as “predators”?

- a. adapt
- b. creatures
- c. escape
- d. habitat

9. Read the sentence below.

“This body surface reduces **friction** and allows the mammal to glide freely through water” (lines 48 to 49). What is a synonym for the word “glide”?

- a. feed
- b. hunt
- c. float
- d. shift

1. Read the sentence below.

“Animals that live along the shoreline must **adapt** to special challenges of this habitat.” (line 24)

Describe how two different living things have adapted the ocean shoreline habitat. Use information from the passage to support your answer.

2. Explain what the “food chain” is and how it works. Use information from the passage and your own ideas to support your answers.

3. Organisms within a food chain can be classified as producers or consumers. These two important roles create the interdependence of all life in the food chain. A producer is a life form that makes food from energy. A consumer is a creature that eats food to get its energy.

Give an example of a producer and consumer that live in the ocean shoreline habitat.

Producer: _____

Consumer: _____

Language: Expectations from the Grade 4 Ontario Curriculum

Reading

1. Reading for Meaning

- 1.4 Demonstrate understanding of a variety of texts by summarizing important ideas and citing supporting details.
- 1.6 Extend understanding of texts by connecting the ideas in them to their own knowledge, experience, and insights, to other familiar texts, and to the world around them.
- 1.7 Analyze texts and explain how specific elements in them contribute to meaning.

3. Reading with Fluency

- 3.1 Reading familiar words
- 3.2 Reading unfamiliar words

Writing

1. Developing and Organizing Content

- 1.3 Gather information to support ideas for writing using a variety of strategies and oral, print, and electronic sources.

Science: Expectations from the Grade 4 Ontario Curriculum

Understanding Life Systems

2. Developing Investigation and Communication Skills

- 2.2 Build food chains consisting of different plants and animals, including humans
- 2.5 Use appropriate science and technology vocabulary, including habitat, population, community, adaptation, and food chain, in oral and written communication.

3. Understanding Basic Concepts

- 3.3 Identify factors that affect the ability of plants and animals to survive in a specific habitat.
- 3.5 Classify organisms, including humans, according to their role in a food chain (e.g., producer, consumer, decomposer).
- 3.7 Describe structural adaptations that allow plants and animals to survive in specific habitats.