

## Ocean Habitats

**WebQuest Description:** Students will explore ocean zones, coral reefs, kelp forests, and identify ways that ocean pollution affects these habitats. This web quest addresses the following South Carolina science standards: 3-1.1,3-1.4,3-1.6,3-1.8,3-3.2,3-3.3, and 3-3.4

**Grade Level:** 3-5

**Curriculum:** Science

**Keywords:**

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### Introduction

How many habitats does the ocean have? You just might be surprised to learn that there are many different habitats in the ocean, and that the plants and animals that live there are perfectly adapted for survival there. What happens to animals when their habitats change? Is there anything that we can do to help protect these habitats?

### Tasks

How many habitats does the ocean have? You just might be surprised to learn that there are many different habitats in the ocean, and that the plants and animals that live there are perfectly adapted for survival there. What happens to animals when their habitats change? Is there anything that we can do to help protect these habitats? You are going to create a project about the ocean! It's going to be a lot of fun, but first you have to learn about ocean habitats, ocean organisms, and how people can pollute ocean habitats. You will go through steps 1-4 exploring awesome ocean websites. Then you will have the knowledge you need to make your project.

### Process

**Step 1: Learn about the zones of the ocean!** Today you are going to investigate the three ocean zones: the sunlight (or sunlit) zone, the twilight zone, and the midnight zone. Watch the BrainPop, Jr. Video (click on link #1 in resources) and then take the online easy quiz. If you get 4 or 5 correct, you are ready to investigate further. Next, complete the Ocean Zones Worksheet. Your teacher will give it to you.

Which zone is most interesting to you? Learn more about the animals of each zone by visiting animals in each of the zones. You can find them in links #2, #3, and #4 in resources. **Step 2: Learn about two habitats in the sunlit zone!** Today you are going to compare two different ocean habitats in the sunlit zone, a kelp forest and a coral reef. Your teacher will provide you with an organizer. Take notes while you complete steps 2, 3, and 4. Read about a coral reef (link #5) and a kelp forest (link #6). Watch the videos. Study the coral reef and kelp forest posters posted on the smartboard. Your teacher will send you the link. Complete the organizer! **Step 3: Learn about life in the twilight and midnight zones!** Today you are going to examine the creatures that live in the darker parts of the ocean. What adaptations allow them to survive there? Visit the Creatures of the Deep Sea website (Link #9 in resources). Look at some of the interesting animals that live there. What is bio-luminescence? Discuss your idea with at least two other classmates. Visit Resources #3 and #4 again. Using black or blue construction paper and poster crayons, create an illustration of your favorite deep sea creature. Write two interesting facts about the creature on white paper and glue it to your illustration. **Step 4: Learn how humans have changed the oceans.** Today you are going to explain how humans have changed life in the oceans. How can an oil spill affect ocean habitats? Conduct an oil spill investigation using water, oil, a napkin and a feather. Your teacher will provide the materials and the worksheet. What is marine debris? Learn more about ocean pollution by visiting link #10. **Step 5: Create an original piece of work that brings it all together.** Today you are going to apply what you have learned by making a poster. Answer the questions below. The responses you give will provide you with the words you need to make your poster! You should use laptop so you can copy and paste later, and please use complete sentences. More about kelp forest animals are on link #11. More about coral reef animals are on link #12. If you like the animals of the darker zones of the ocean, go back to link #9. Use wordle or glogster to create a virtual poster of your reflection, or make a poster on paper! Wordle is link #13. My favorite ocean habitat is...because...(Name of Habitat) are ocean habitats that...(describe habitat) Some interesting organisms that survive in (name of habitat) are...because Some new words I learned about ocean habitats are.....which means..... and Humans change ocean habitats when they...I can help ocean habitats stay healthy by...

#### **Step 1: Learn about the zones of the ocean.**

The ocean is not just one habitat, it is many habitats. Some ocean habitats get lots of sun and some get none! We can classify ocean habitats by the amount of sunlight that they get: we call them ocean zones. Today you are going to investigate the three ocean zones: the sunlight (or sunlit) zone, the twilight zone, and the midnight zone. You will also see that some scientists divide the ocean into five zones! Watch the BrainPop, Jr. Video on the link below and then take the online easy quiz. If you get 4 or 5 correct, you are ready to investigate further. Next, complete the Ocean Zones Worksheet. Your teacher will give it to you. Which

zone is most interesting to you? Learn more about by visiting the zones. If you want, you can make a model of the ocean zones at home.

### **Step 2: Learn about 2 habitats in the sunlight zone.**

Most familiar ocean habitats are in the sunlit zone. When you walk from the beach into the ocean, you are walking into a sunlit ocean habitat. Depending on where you are in the world, a sunlit ocean habitat can be so shallow you can stand in it, or deep enough to need scuba gear to explore. It can be cold or warm, and the water can be murky or clear. The waves and currents could be fast moving or the water can be tranquil and quiet. Today you are going to compare two different ocean habitats in the sunlight zone: a kelp forest and a coral reef. Each one has unique plants and animals. Your teacher will provide you with an organizer. Take notes while you complete steps 2, 3, and 4. Read about coral reefs and a kelp forests. Watch the videos. Complete the organizer!

### **Step 3: Learn about life in the twilight and midnight zones.**

Today you are going to examine the creatures that live in the darker parts of the ocean. What adaptations allow them to survive there? Explore the websites and view the photos and videos. What does bio-luminescent mean? Find the definition and tell at least two other classmates. Using black or blue construction paper and poster crayons, create an illustration of your favorite deep sea creature. Write two interesting facts about the creature on white paper and glue it to your illustration. Learn how glow sticks can teach us more about deep sea creatures.

### **Step 4: Learn how humans have changed the oceans.**

Today you are going to explain how humans have affected life in the oceans. How can an oil spill affect ocean habitats and marine life? Conduct an oil spill investigation using water, oil, a napkin and a feather. Your teacher will provide the materials and the worksheet (from Brain Pop, Jr.). What is marine debris? Learn more about ocean pollution by visiting this website and completing the worksheet. Visit the game room on the website when you are done.

### **Step 5: Make a poster!**

You will make a project based on your favorite ocean habitat. Choose an ocean habitat: coral reef, kelp forest, or the deep sea. Answer the questions below. The responses you give will provide you with the words you need to make your project! You should use a laptop so you can copy and paste later, and please use complete sentences. Look back at your favorite sites to make sure you have your facts straight and check out the links below. Use Prezi to create a story about the habitat, or make a poster on paper! My favorite ocean habitat is...because... Description of (name of habitat): Some interesting organisms that survive in (name of habitat) are... An adaptation an animal needs to live in (name of habitat) is... Some new words I when I learned about (name of habitat) are... Humans change ocean habitats when they... I can help ocean habitats stay healthy by...

Let's make a museum! 1. Bring in items related to ocean habitats. Make sure that they are clearly labeled with your name. 2. Together we will identify items. We also need to decide how to classify them. 3. We will label and display our items on a table based on how we have sorted them.

## Conclusion

Congratulations upon finishing your web quest. Now you can explore other marine habitats - and there are certainly more. The links below will take you there. Your teacher has a scavenger hunt for you to complete as you visit these marine habitats. Good luck! Use your amazing research skills to solve the coded message.

Your job is to read a nonfiction book about the ocean. It can be about ocean geography, ocean life, or ocean habitats. It can even be about one particular plant or animal that lives in an ocean habitat. Tell about the book using the attached Google Form. You will need to have the book in front of you when you as you complete it.

### **Video of amazing animal camouflage and other adaptations**

Watch this amazing video about camouflage on the link below. This is camouflage like you've never seen it before.

## Evaluation

Your final project will be graded. Of course we want it to be creative and colorful and neat so that others will enjoy seeing it, but your

grade is based on how you answered the questions.

Category and Score	Beginning 70%	Developing 80%	Very Good 90%	Exemplary 100%	Score
Completion of Ocean Zone Worksheet	Did not interpret diagram correctly. Did not infer correctly based on information given.	Interpreted diagram correctly but incompletely. Inferred correctly but incompletely based on information given. Few errors.	Interpreted diagram correctly and completely. Inferred correctly and completely based on information given. Few errors.	Interpreted diagram correctly and completely. Inferred correctly and completely based on information given. No errors.	100
Completion of Coral Reef and Kelp Forest Organizer	Did not classify properties of habitats correctly.	Classified properties of habitats correctly but incompletely. Few errors.	Classified properties of habitats correctly and completely. Few errors.	Classified properties of habitats correctly and completely. No errors.	100
Completion of Pollution Activity	Did not follow instructions for the investigation. Did not make correct conclusions based on observations.	Followed instructions for the investigation. Did not make correct conclusions based on observations.	Followed instructions for the investigation. Made correct but incomplete conclusions based on observations.	Followed instructions for the investigation. Made correct and complete conclusions based on observations.	100
Completion of Ocean Poster	With many misconceptions, attempted to identify the characteristics of an ocean habitat, organisms that live there, and adaptations that help them survive. Attempted to explain steps that can be taken to lessen ocean pollution.	With some success, attempted to identify the characteristics of an ocean habitat, organisms that live there, and adaptations that help them survive. Attempted to explain steps that can be taken to lessen ocean pollution.	With few misconceptions, identified the characteristics of an ocean habitat, organisms that live there, and adaptations that help them survive. Explained steps that can be taken to lessen ocean pollution.	Clearly identified the characteristics of an ocean habitat, organisms that live there, and adaptations that help them survive. Explained steps that can be taken to lessen ocean pollution.	200
Total Score					500

## Teacher Page

The sources below are to be printed in order for students to complete the webquest.

### Standards

### Credits

### Other

### Photographic Sources

The links below will take you to great ocean photographs that you can use in your project. Be sure to credit the source (and the photographer if available)