

**ecoMentors Lesson Plan Template: Helping kids explore the planet! www.ecomentors.ca**

<b>Title: Oceans</b>	<b>Grade Level(s): 3 -4</b>	<b>Time/Date:</b>
<b>School:</b>	<b>Teacher:</b>	
<b>Directions to school, class:</b>		
<b>Contact Info:</b>		
<b>Ontario Curriculum Connection:</b>		
Vocabulary: Words & Concepts your class may be learning, ask students if they can spell them for you!		
<b>Endangered</b> – Species that are threatened with extinction		
<b>By catch</b> - unwanted sea creatures that are caught in the nets while fishing for another species		
<b>Habitat</b> – place where an animal lives		
Materials and Equipment: List these before and while you plan and revise so you're prepared.		
Paper, pencils, pencil crayons or crayons for artwork.		
Glass bottle, water, cooking oil. Make sure the bottle has a cap, and bring a small cork that fits in the bottle.		
Pictures (from magazine or internet) of an oil spill		
What is your class accomplishing?: Learning & Activity Goals, Objectives		
<ul style="list-style-type: none"> <li>• <b>Understand the importance of our oceans</b></li> <li>• <b>Understand the main threats of our oceans and the creatures in our oceans</b></li> <li>• <b>Understand that the students can make a difference</b></li> <li>• <b>Identify different ways to protect our oceans and the sea creatures</b></li> </ul>		

**PROCEDURE**

The Spark: Introductions, Demonstrations, Show and Tell, Topic Intro (Break the ice!) ~5-10min

*Hello everyone! Today we will be talking about our oceans. But first; can you tell me your names and what you like best about the oceans? Have you ever been to an ocean? What do you like about the ocean and the beach? Why is the ocean so important for us? What is the difference between ocean water and water in a lake?*

Brainstorming, Getting ideas, Connecting ideas (assess their knowledge!) ~10-20min

Draw a circle on the black board. *This circle represents the earth's surface. How many of the earth's surface is ocean? 72%* Color the remaining 28 % and explain that this is land. *What kind of creatures do you know that live in or around the oceans?* Draw pictures of whales, dolphins, fish, sea gulls, seals, sharks, sea turtles and some other creatures the students come up with. *What do all these creatures need to live in the oceans?* They all need clean ocean water and food! *Does anyone know what the word habitat means? What is a sea creature's habitat? Does anyone know what the word 'endangered' means? When is an animal endangered? What do we do that endangers sea creatures?* Write the answers of the students on the black board under the heading: **Threats**. Lead the students in the direction of the following things: Oil spills, trash and fishing. Make a table on the black board like this:

<b>Threats</b>	<b>Effects</b>	<b>Solutions</b>
oil spills		
Trash		
Fishing		

Each problem will be discussed with the class in the following activities. Use the table on the black board and write down possible effects and solutions that the class comes up with during or after the activities.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play ~10-30mins

**Fishing**

*How are fish caught in the ocean?* Ask students to draw on the black board different ways how fish are caught (nets, fishing rods, big boats, ...). *What is the difference between fishing with a fishing rod and fishing with a big boat and nets?* The amount of fish that are caught. *What are the damaging effects of fishing with big nets in the ocean? Do you think that all fish that are caught are eaten? What other sea creatures might be trapped in the nets? What happens to the animals caught in the nets? Everyday, millions of marine creatures are accidentally caught in fishing gear that are set for other species. These non-target creatures, called by catch, are mostly unused and thrown back dead or injured.<sup>1</sup> What percent of fish do you think are caught and thrown back in to the ocean? 25% (30 million tonnes) of all fish caught in the world is thrown back dead in the ocean.<sup>1</sup>*

Write in the table, under effects: **by catch; fish and other creatures are caught and thrown back dead.**

With a partner or by themselves, ask students solve one of the following problems (give them 10-15 min.). For convenience write these scenarios on the board. Have students draw and write solutions.

1. Nets with small holes capture too many small fish that we don't use. They are hurt or dead and go back into the ocean. What can we do?
2. Hook fishers drag lines as they travel across the sea. Turtles, dolphins and seals are attracted to the bait on the hook and get caught. Fishermen don't use these sea creatures for food. What can we do?
3. Many people at the supermarket are buying cans of tuna that were caught using nets that killed many dolphins. What can we do?
4. Large ships and machines are used to fish the oceans. Machines doing the work of people. People are starting to lose their jobs. What can we do?
5. Pollution is entering the oceans from factories, houses, cars and farms. The pollution goes into the fish making them sick. People begin eating the fish which also makes the people sick. What can we do?

Focus on the solutions and point out that the students can make a difference by being selective about what fish they buy in the supermarket! Write down some of the solutions in the table on the black board.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

### **Oil spills<sup>2</sup>**

*Does anyone know what an oil spill is? How does oil get into our oceans?* Oil spills from ships, but also from industrial waste and cars! (oil that leaks from cars gets into our storm drains and gets transported to the ocean. Also if fuel is not properly burned, little oil drops are released into the air and rain down into our oceans)

Show pictures of an oil spill to the class.

To demonstrate what happens in an oil spill, fill a glass bottle two-thirds full of water. Pour 1/2-inch or more of cooking oil into the bottle. This is the "oil spill." Ask the class: *Where does the oil go?* (It floats on the surface). Drop the cork in the bottle. *What happens to the cork? Where does the oil go?* (It becomes coated with oil) Put on the cap and shake the bottle vigorously (tell the class this is a storm). *What happens to the oil?* (Some of it mixes with the water) Ask what would happen to organisms that float on the surface (sea birds, ducks, seaweeds) or that need to come to the surface to breathe (whales, seals, sea turtles). (They'd be coated with oil.) Explain that over time the water and oil mix somewhat and that some of the oil (which is heavier than this cooking oil) will sink to the bottom of the ocean. *What would happen to flounders, sea urchins, lobsters, crabs, and other bottom dwellers?*

Write in the table: **Animals cannot breathe, get stuck in oil!**

*What can we as consumers do to prevent oil spills?* (Drive less, use less energy: lower thermostats, use alternative forms of energy, use fewer oil-based products, demand, and be willing to pay for, safer transport mechanisms like double-hulled tankers.) Write some of these solutions down on the black board

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

### **Trash**

*Can you imagine how trash gets into our oceans?* Sewers, dump, floods, ships, ... *What kinds of trash do you think you can find most when you walk on the beach?* Plastics! *How do you think plastic can affect sea creatures?* Sea creatures mistake the trash for food, and swallow it. Their bellies fill up with plastic instead of food, and they starve! Sea creatures can also get caught in trash, like old fish nets or plastic. When plastics fall apart, they can become toxic! Write this down in the table. *What could we do to solve this problem?* Let each student draw a picture of how they could make the oceans cleaner, and let them include some 'happy' sea creatures! Discuss their drawings and write some solutions in the table.

Contingency, Plan B, extra game or activity (Back up plan) ~5-10mins

Think of an activity to do when there is time left

Review, Conclusion and steps towards continued action ~5-10mins

*Sao now we know about the things that threaten sea creatures, but we also know how to solve the problem!* Review the solutions on the black board. *What is it that you yourself can do to protect sea creatures?*

### References

- 1 <http://wwf.ca/HowYouCanHelp/StopTheNet/bycatch.asp>
2. <http://octopus.gma.org/surfing/human/savethebay.html>  
<http://www.vanaqua.org/cleanup/aquatic-garbage.php>  
<http://oceanlink.island.net/>

Great work ecoMentor! After use of Lesson Plan revise, gather ideas and repeat!