Title: The Oceans

This is the first visit, so before starting the lesson, introduce yourselves and ask the children their names. Talk about why you are there-explain what SEED is. (5 min)

I. Introduction to the Oceans
   A. Ask the class what they know about oceans. Use a map to point things out while they are talking. Main points to discuss:
      1. The oceans occupy 2/3 of the earth's surface and make up 97.2% of all the water on earth (vs. lakes and rivers). Use a globe or other visual aide to demonstrate the amount of water this is.
      2. Unlike lakes and rivers, the oceans are made up of saltwater. That means that many different kinds of animals live in the ocean than in freshwater.
      3. Some parts of the ocean can be up to 2 miles deep. Because the oceans are so deep and big, there is still a lot that people don't know about the oceans and all the different life forms that live there. This is one reason not to pollute the ocean, because we don't know about everything that we are polluting.

II. Diversity of Life in the Oceans
   A. Tell the class that the ocean contains a whole bunch of different habitats inside it, depending on how deep the water is. Briefly tell them what some of the habitats are and how they are different. Bring in a chart of the zones of the ocean to help them visualize what you are talking about.
   ZONES:
      1. Area where the waves come up on the coast and splash on the rocks or the sand.
      2. First layer of ocean where the sun makes the water warmer and a lot of plants live.
3. Middle layer where there isn't as much sunlight and the water is colder. A lot of animals hide here during the day then come up at night to feed on the animals in the upper layer.
4. Deep Sea is always dark and very cold because the sun never reaches to these depths. There are still fish that live this deep!

B. Activity: Bring a set of four pictures of different types of marine life. Each picture should correspond to one of the habitats outlined above. (i.e.: a starfish, kelp, shark, and deep-sea fish) Divide the class into groups, each with a picture of their animal or plant. Have each group try to come up with what part of the ocean their animal would live in, what their animal would eat, what would eat it, etc. Have each group share their ideas with the rest of the class.

III. Conservation of the Oceans

A. For people, the greatest resource of the oceans is fish. People eat fish all around the world. For a long time now, over fishing has been a big problem. People like to eat certain types of fish and they take as many of that type of fish out of the ocean as they want. This can cause there to be so few of that kind of fish in the ocean that it has an effect on the food web. (Remind of what a food web is)

B. Activity: Over fishing.
Choose 3-5 kids to be fishermen; the rest of the kids will be fish. The fishermen stand on the “boat” (one area of room). Allow the fish to swim (walk) around the room.
Round 1: 2 minute time limit. Tell each fisherman to go out and catch as many fish as s/he can and bring them back to the boat, they can keep collecting fish until the time is up. If they are done before 2 minutes, note how long it takes.
Round 2: 2 minute time limit. Each fisherman is only allowed to take one fish at a time. (You may want to add extra restrictions such as only 2 fishermen out at a time.) Keep collecting fish until 2 minutes is up, but try to make it so there will still be some fish left.
Recap: If everyone is able to catch an unlimited number of fish, then that population of fish will get smaller and may become threatened, endangered
or extinct. By regulating the number of fish people catch, more fish are able to survive and reproduce.

Some other ideas for the class that you can do if you have extra time:

1. Sea otters. (bring picture of sea otter) Tell the class the story of the sea otters. The sea otters were once abundant all over the west coast of North America and Alaska. In the 1800s, they were hunted for their furs almost to extinction. It wasn’t until they were protected under the Endangered Species Act and the Marine Mammal Protection Act that they began to recover (this means that no one was allowed to harm them or do damage to their habitat.) Now the population on the southern coast of California is much healthier. The biggest threat to sea otters now is an oil spill, which ruins the insulating quality of their fur, causing hypothermia. They are still protected under the ESA, but there are considerations to remove them from protection.

2. Sharks. How they are becoming an example of over fishing. Thresher sharks are caught just for the meat in their tails, and often used in “sharkfin soup.” The rest of their bodies are discarded. Talk about how sharks are especially vulnerable to over fishing because each shark has very few babies and it takes a long time for sharks to start having babies. The population doesn’t get replenished very fast or well after a certain number of them are fished. Bring in pictures of sharks to show them the variety of sharks that exist.