Save Our Seas: NAMEPA's Parent Survival Series - Week 5

For many families, this was supposed to be Spring break. Somehow "sheltering in place" in Connecticut doesn't remotely resemble the beaches of Jamaica! Nevertheless, this week you can have a "staycation" and intentionally enjoy being with them and expanding their worlds with fun activities! (Psssttt-- you don't even have to tell them they are learning at the same time! It can be our secret!)

Take some time this week to relax and enjoy! Maybe you can blow up a swimming pool and work on why a boat floats? Maybe you can make a beach and populate it with marine mammals? Or maybe you can play our NAMEPA Food Web Tag!!

Have a great Spring Break!!!

Best always,

Carleen

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Parent Survival Series

Lesson Plan Week 5

Ocean Literacy Principle 5 – *The ocean supports a great diversity of life and ecosystems*

Specific Learning Outcome

After Week 5, your child will understand the importance of ocean food webs and the flow of energy. In addition, they'll learn the importance of water quality and specifically the impact on the most diverse environment in the ocean, coral reefs.

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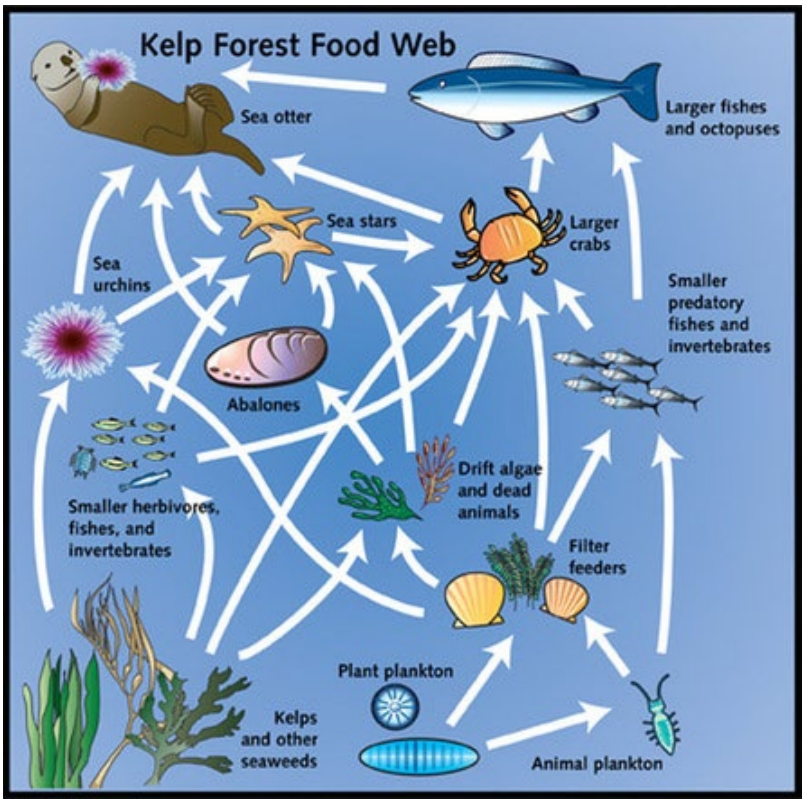
Day 1:

Read to your child: Ocean life ranges in size from the smallest living things, microbes, to the largest animal that lives on Earth, blue whales. Most of the organisms and biomass in the ocean are microbes and phytoplankton, which are the basis of all ocean food webs. Microbes are the most important primary producers in the ocean. They have extremely fast growth rates and life cycles and produce a huge amount of the carbon and oxygen on Earth.



"Food Web." - *National Geographic Education*. N.p., n.d. Web. 06 Feb. 2015.

Organisms in an ocean ecosystem are linked by what they eat and who eats them! The food web above is just once example of how intricate a food web can be!

Ask your child what they know about:

Primary producers are organisms that produces its own food like plants, algae phytoplankton

Consumers are organisms that consume other organisms to obtain energy

Apex predators are predators at the top of the food chain that help keep the ecosystem balanced

Herbivores are organisms that eat only plants

Carnivores are organisms that eat only animals

Omnivores eat both plants and animals

Decomposer are very important in the food web breaking down the remains of dead plants and animals and recycling nutrients.

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Activity: Create Your Own Food Web!

Principle 6: *The ocean supports a great diversity of life and ecosystems*

Visit www.NAMEPA.net/education to create your own food web! In our *Educator's Guide to the Marine Environment*
Lesson 1: Building a Food Web

Use the provided food web organism cards and design your own food web! Start with the sun in the center - all produces need sunlight to create food through photosynthesis - and using string or rope connect the cards based on who they are, what they eat and what eats them! Remember a food web goes in many different directions and is not a straight line!

Follow up questions:

1. What does it mean if a species is listed as threatened or endangered?
2. How might the decrease in numbers of an endangered species affect the food web?
3. What is the importance of biodiversity in an ecosystem?
4. What impact do humans have on the marine food web? Which activities are harmful? What can we do to reduce our impact on the ocean food web?

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Day 2

Read with your child:

Most of the major groups that exist on Earth are found exclusively in the ocean and the diversity of major groups of organisms is much greater in the ocean than on land. Ocean ecosystems are defined by environmental factors and the community of organisms living there. Ocean life is not evenly distributed through time or space due to differences in abiotic factors such as oxygen, salinity, temperature, pH, light, nutrients, pressure, substrate and circulation. A few regions of the ocean support the most abundant life on Earth, while most of the ocean does not support much life.

Ask your student what they know about:

1) **Biodiversity:** the variety of life in the world or in a particular habitat or ecosystem
2) **Abiotic factors**: the nonliving components of an ecosystem such as oxygen, salinity, temperature
3) **Biotic factors**: the living components of an ecosystem such as fish, bacteria, shrimp, crabs.
4) **Symbiosis**: an interaction between organisms living in close physical association.

Tropical coral reefs are the most diverse and structurally complex of all marine communities. They provide habitat for thousands of fish and other organisms. Many of these species have symbiotic relationships that can either be beneficial to both organisms (mutualism), beneficial to one and neither beneficial nor harmful to the other (commensalism) or beneficial to one and harmful to the other (parasitism). Corals need warm, clear and shallow water to grow and although they grow slow one of the largest coral reef in the world, the Great Barrier Reef, stretches over 200 km, that is over 120 miles!

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Activity: National Geographic: The Great Barrier Reef Exploration!

Principle 6: *The ocean supports a great diversity of life and ecosystems*

Watch the National Geographic video, The Great Barrier Reef, Exploring Oceans. https://www.youtube.com/watch?v=wbNeIn3vVKM
then visit www.NAMEPA.net/education and learn about the different types of symbiotic relationships that exist in our ocean.

Follow up questions:

1. Can you name 3 different species (animals or plants) you saw in the video?

2. Are corals living animals or plants?

3. What type of symbiotic relationship do corals and zooxanthellae have?

3. Can you list three or four uses for Brown algae?

4. What type of Algae would you most likely find on the Great Barrier Reef?

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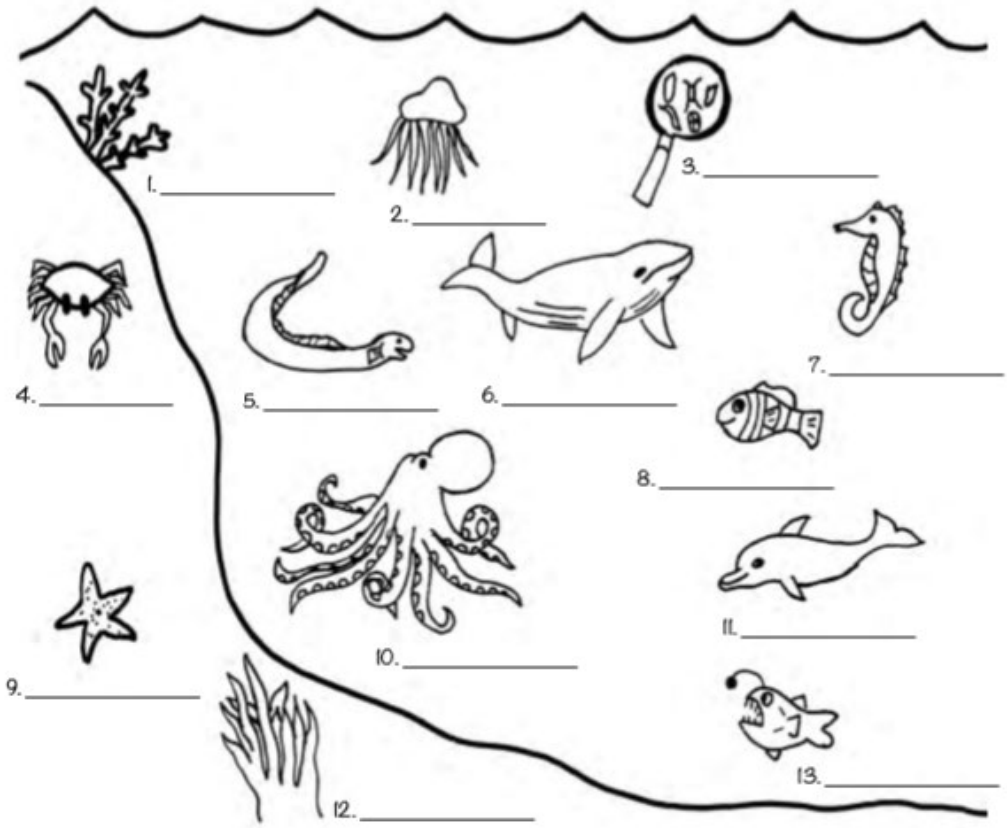
Want more?? Can you correctly identify these ocean organisms?

What Ocean Organism Am I?

Can you correctly identify these ocean organisms?



Did You Know? The ocean contains 99% of the living space on the planet, and supports nearly half of all species on Earth!

Anglerfish	Eel	Seahorse
Clownfish	Jellyfish	Starfish
Coral	Octopus	Whale
Crab	Plankton	
Dolphin	Seaweed	

From our *Exploring the Marine Environment Activities & Games for Kids of All Ages*

For more free resources, visit www.NAMEPA.net/Education or email education@namepa.net