



Let's Talk About Ocean's Day



Think about this — water connects us. The water that collects in our streams flows to our lakes and rivers, where it then travels to an Ocean. How we treat our water, wherever we live — can affect us all. Many of our members live right beside or very close to an Ocean. They can touch it, play on it, marvel at its vastness, and observe the life that lives on its edge. What about the rest of us who don't live near an Ocean? We live near rivers, streams, and lakes. Learning about how aquatic species live in lakes or nearby streams provides a basis for us to think about all the water we share on this earth.

Why am I bringing this up? Because Oceans Day happens every June 8th. Here are a few activities for colonies and packs to use to celebrate Oceans Day or just for fun.

Make a Sea Star!

A little about sea stars:

- F Sea stars have body parts that help them survive in the ocean: spiny skin protects them from predators; tube feet help them hold on to rocks. If a sea star's ray (arm) is damaged, it can regenerate (grow a new one).
- F Sea stars have special behaviors that help them survive in the ocean. To eat, a sea star ejects its stomach through its mouth, digests and absorbs its prey, then retracts its stomach.
- F There are many different types and sizes of sea stars.
- F Sea stars can only survive in their particular habitat so we need to leave them in their homes.

Materials: Sea star template illustrations*; cardboard for templates; paper plates (2 per sea star); pencils; LEGO® boards and/or sandpaper; crayons; scissors, plastic wrap or netting, tape.

Directions:

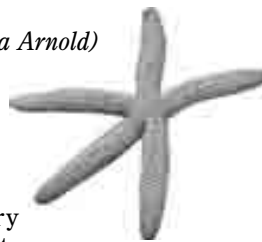
1. Copy the sea star template illustrations onto cardboard. (* Find the sea star template at: www.monterey-bayaquarium.org/lc/teachers_place/activity_popup_illustrations.asp)

2. Cubs trace the templates onto paper plates.
3. Have Cubs place their sea star drawing over a rough surface such as sandpaper or a LEGO® board. Using the side of a crayon, rub over the sea star template firmly to simulate the knobby texture of a sea star's spiny skin. Cut out the sea star.
4. To add a stomach to the sea star model:
 - Cut out a matching sea star from another paper plate to represent the sea star's underside.
 - Draw small tube feet along the underside of the rays (the arms of the sea star).
 - Cut a nickel-sized hole in the center of the second star to represent the sea star's mouth.
 - Tape a piece of plastic wrap or netting to the upper-side of this second sea star, so it can be gently pulled out through the mouth, representing the sea star's stomach.
 - Tape the top and bottom sea star pieces together to make a complete animal.
5. Demonstrate how sea stars eat by gently pulling the plastic or netting through the hole.

Sea Star Song

(Song lyrics: Linda Arnold)

I'm a Sea Star
 Living in the sea
 My tiny tube feet
 Are very sticky
 When I get hungry
 For an ocean treat
 I take my stomach out to eat!



I'm a Sea Star
 With spiny skin
 My arms are called rays
 Pointed and thin
 If I lose an arm
 I can grow it back again
 I'm an invertebrate
 That can regenerate!



Chorus:

Sea Star, Sea Star, Sea Star
 Such a pretty sight
 But what an appetite!



I'm a Sea Star
 Living in the sea
 The mussels and oysters
 Are all afraid of me
 'Cause when I get hungry
 For a little more
 I vacuum, clean up
 The ocean floor!



Chorus:

I'm a Sea Star
 Living in the sea
 When I get hungry
 For an ocean treat
 I take my stomach out to eat!

Sea Otter Puppets

Materials: Otter puppet pieces*; paper lunch bags; crayons; scissors; glue; yarn or pipe cleaners.

Directions:

1. Provide each youth with a copy of otter puppet pieces. (* Find a template for the otter pieces here: www.montereybayaquarium.org/PDF_files/activities/aquarium_otter_puppet.pdf)
2. Have the youth color the templates and cut out the pieces.
3. Glue the otter's head to the bottom of the lunch bag.
4. Use yarn or pipe cleaners to make whiskers by gluing them to the face of the otter. Then glue the tail to the inside edge of the bag and the paws and flippers to the outside of the bag.
5. Use the puppets to act out the following story.

How A Sea Otter Feeds

A sea otter dives to the sea floor, searching for something to eat. Steering with its tail, the otter uses its rear flippers, which are webbed like a duck's feet, to paddle itself along. It spots a clam hidden just under the sand and quickly swims over to it. Wriggling its whiskers, the otter feels for the clam then grabs it with its padded paws. The otter also picks up a small rock, then tucks the rock and clam in a fold of skin under its arm. The otter swims back to the surface and floats on its back. Setting the rock on its chest as if it's a table, the otter

holds the clam and bangs it against the rock to crack open the clam's hard shell. The otter tears at the soft clam body inside the shell with its sharp front teeth, then chews the clam with its strong jaws and flat teeth that are in back of its mouth. Feeling full, the otter rubs its face and chest with its paws, cleaning its fur from any leftovers. Then the otter rests, floating on its back in the warm sun.

Game – Bass to Basics (best for Cub aged youth)

Leader Background:

Through this active simulation game, Cubs will experience the dynamics of population fluctuations within a simple aquatic system. A fish's habitat must provide for the basic needs that must be met if that fish is to survive and reproduce. Any habitat will be able to meet the needs of only so many fish. This carrying capacity is not stable, but will fluctuate based on changes in environmental conditions, the actions and reactions of other organisms, and the actions and reactions of the fish itself. Taken together, these changes lead to fluctuations in the populations of all living things in the habitat. These fluctuations are termed population dynamics.

In this activity, a simplified, three-way interaction introduces the concepts of population dynamics in an active, involving way. Since the Cubs simulate this interaction in a way that cannot be predicted in advance, many outcomes are possible, and the simulation game can be run many times with different results. Some of the more common results:

- n An overabundance of predators will depress the prey population, and lead to eventual starvation and drastic declines (in this simple system) in the predator population. Note: if you run out of prey, be sure to run one more round (with no prey to catch) to drive home the point.
- n Few or no predators will inflate the prey population, with a resultant decrease in food for the prey. A drastic decline in prey may result.
- n A relatively balanced system can be maintained for a remarkably long time, with minor fluctuations in all three populations. Small responses to population shifts can be pointed out.

The interaction used in the simulation is a real one. In recent years, an exotic, the rusty crayfish, has moved into a number of Ontario lakes from the United States. While smallmouth

bass usually eat crayfish, this new species grows very quickly, and soon becomes too large for most smallmouth bass to eat. The crayfish compete with young smallmouthed bass for the aquatic insects that live among the plants, cropping the vegetation off at the base to feed more readily in both the plants and the insects. In a short period of time, the rusty crayfish may destroy the aquatic vegetation that provides shelter for the fish (symbolized in the simulation by making any bass that cannot find a plant start further back), and cause a decline in the bass population.

Materials: chart paper; a marker and an area either indoors or outdoors with enough space for the Cubs to form a large open circle; armbands, coloured elastics for wrists or coloured vests.

How to play:

1. Explain to youth that they are about to become part of a smallmouth bass food chain. They will have to get everything they need to survive from a lake. Review the basic elements fishes need in their habitat: water, food, shelter and space within a suitable distance.
2. Divide the Cubs into three groups of slightly different sizes (bass, plants and crayfish) and hand out identifiers (armbands, vests, etc.) to the crayfish and bass. Plants can simply stand still with one hand in the air. The largest group becomes aquatic plants and forms a large circle. The circle, which is the shallow water at the perimeter of the lake, should have a diameter of at least 10 m.
3. The smallest group is to become the smallmouth bass. Tell them to seek shelter or hide behind the aquatic plant of their choice. The remaining group of Cubs go into the middle of the circle of aquatic plants to become crayfish, a favorite food of smallmouth bass. The crayfish should be instructed to sit on the ground in the middle of the "lake". Point out to Cubs that the area inside the aquatic plants where the smallmouth bass are taking shelter represents the space in which the smallmouth bass will later hunt for crayfish. Record the number of each group on a chart.
4. Round one in the simulation takes three to four minutes. To begin, explain that when you call "splash", the crayfish stand and run to touch an aquatic plant to find shelter before being tagged ("eaten") by a small-

mouth bass (only one crayfish per plant). Each smallmouth bass tries to eat a crayfish by coming out from behind its aquatic plant and tagging a crayfish that has not reached a plant. Remind Cubs that they are responsible for the safety of other Cubs — neither grabbing or tackling is allowed. Give the splash signal to begin.

5. At the end of the round, explain that smallmouth bass that captured a crayfish remain smallmouth bass and crayfish that were eaten become smallmouth bass. Smallmouth bass that were not able to capture a crayfish "die" and now become aquatic plants in the outside circle. Crayfish that were not eaten and that safely reached an aquatic plant remain crayfish, and the plant they reached also becomes a crayfish. Have Cubs take their new positions and record the new populations on the summary chart. If there are more bass than plants, make the "extra" bass start 5 paces back from the original circle, a handicap symbolizing lack of shelter.
6. Have Cubs continue the activity for eight to ten rounds, lasting three to four minutes each. If a Cub remains a plant for two rounds, have them switch with a bass or crayfish.
7. In a group discussion, ask Cubs to summarize some of the things that they have learned from this activity; such as what fishes need to survive, what happens to the number of smallmouth bass when there are large numbers of crayfish, and in what portion of the lake do smallmouth bass spend most of their time.

Evaluation:

Give Cubs several different combinations of smallmouth bass, crayfish and plants, and have them predict the results of one or two rounds of play. Have them defend their prediction and then test the results by playing those rounds again. X

– Thank you to the Monterey Bay Aquarium for their permission to use their resources. You can find other neat ocean related crafts and activities in their *Ocean Searchers Handbook*: http://www.montereybayaquarium.org/lc/teachers_place/resources_seasearchers.asp
– Thank you to the Canadian Wildlife Federation for their use of "Bass to Basics" from their *Fishways program*.

Linking to Strategic Direction #1.