CLASSROOM ACTIVITIES - Grade 7

With an octopus in the centre create a food web that contains the following organisms – an adult octopus, crab, shrimp, seaweed, seal, killer whale, salmon, herring, plankton, clam, jellyfish and bacteria.

- What do you think would be the effect of removing the octopus from the food web?

Octopuses hatch from eggs as miniatures of their parents and spend several months swimming and feeding near the surface of the ocean before they settle to the bottom and take up a benthic (bottom-dwelling) life style.

- How do you think the above food web would change if the octopus was a newly hatched individual?

What do you think the result would be if one of the organisms was removed? Split into groups and pick an organism from the above food web. Discuss the effect of removing that organism from the food web. Which organisms in the food web would be affected? How would they be affected?

Reproduction Growth and Change

- Why does the mother octopus stay in the den?
- How does she make sure the eggs get enough oxygen?
- How does the life-style of the octopus change as it grows?

Octopuses can grow very large even though they only live a few years. An octopus is the size of a grain of rice and weighs approximately 0.03 grams when it is born. They can weigh as much as 270 kilograms when it reaches adult size in its third year and have an arm span of 10 metres.

- On average, how much weight does an octopus gain each month if it lives to be three years old and weighs 50 kg? (see activity sheet)
- How much weight would it gain each day?

Octopus Communication

Octopuses are thought to communicate by changing the colours of their skin. The following activity will demonstrate how animals can give messages to one another using only changing colours.

You will need

- A number of cards in three different colour - the number depends on the size of your class.
- A picture of a crab, shrimp, clam or other octopus prey
- Pictures of octopus predators (seals, salmon, ling cod, rockfish, etc.).

Divide your class into groups and give each group a set of three different coloured cards. Ask each group to develop a system of communication using only the coloured cards that will allow one group leader to guide other group members around the room. Once they have developed their systems, choose one group to go first. While only the group leader remains in the room, hide the prey animal and several predator animals throughout in the room. Then ask the group members to search for the hidden prey animal, guided by instructions from the leader using only the coloured cards,. None of the students involved in the search should speak. Their goal is to find the prey without accidentally stumbling upon one of the predators. A student who gets "killed" by a predator, has to stop looking. If one member finds the prey animal, the search is over. Repeat the search with each group, timing them to see which one is the quickest in finding the prey animal with the fewest losses. When the activity is complete, lead a discussion about the various colour languages that the students developed. Which were most efficient? How could they have been more effective? What innovative strategies did they use?