

## Feeling Crabby School Program

<p><b>Grade:</b> K-1</p> <p><b>Subject:</b> Science</p> <p><b>Skills:</b> description discussion exploration investigation observation</p> <p><b>Duration:</b> 1 hour</p> <p><b>Setting:</b> Seashore (sandy beach intertidal zone)</p> <p><b>Keywords:</b> barnacle crab crustacean exoskeleton habitat hermit crab pincers predator scavenger</p>	<p><b>Aims:</b></p> <p>This program is designed to:</p> <ul style="list-style-type: none"> <li>▪ Foster an appreciation of the changing seashore environment and the homes it provides for many creatures.</li> <li>▪ Introduce children to crabs and their relatives, pointing out the characteristics that distinguish them from other creatures and the adaptations they have for their environment.</li> <li>▪ Encourage students to think of the seashore and its inhabitants as a community with needs similar to our own.</li> <li>▪ Encourage children to understand that all living things are important in the web of life.</li> <li>▪ Encourage respect for and gentle treatment of the seashore and its inhabitants.</li> </ul> <p><b>Learning Outcomes</b></p> <p>The child will be able to:</p> <ul style="list-style-type: none"> <li>▪ Identify two characteristics common to most crustaceans.</li> <li>▪ Recognize two different kinds of crabs.</li> <li>▪ Recognize at least one crab relative.</li> <li>▪ Identify two different kinds of homes for crabs.</li> <li>▪ Demonstrate good beach explorer etiquette (e.g., replacing rocks, returning creatures to their habitats, etc.)</li> </ul>
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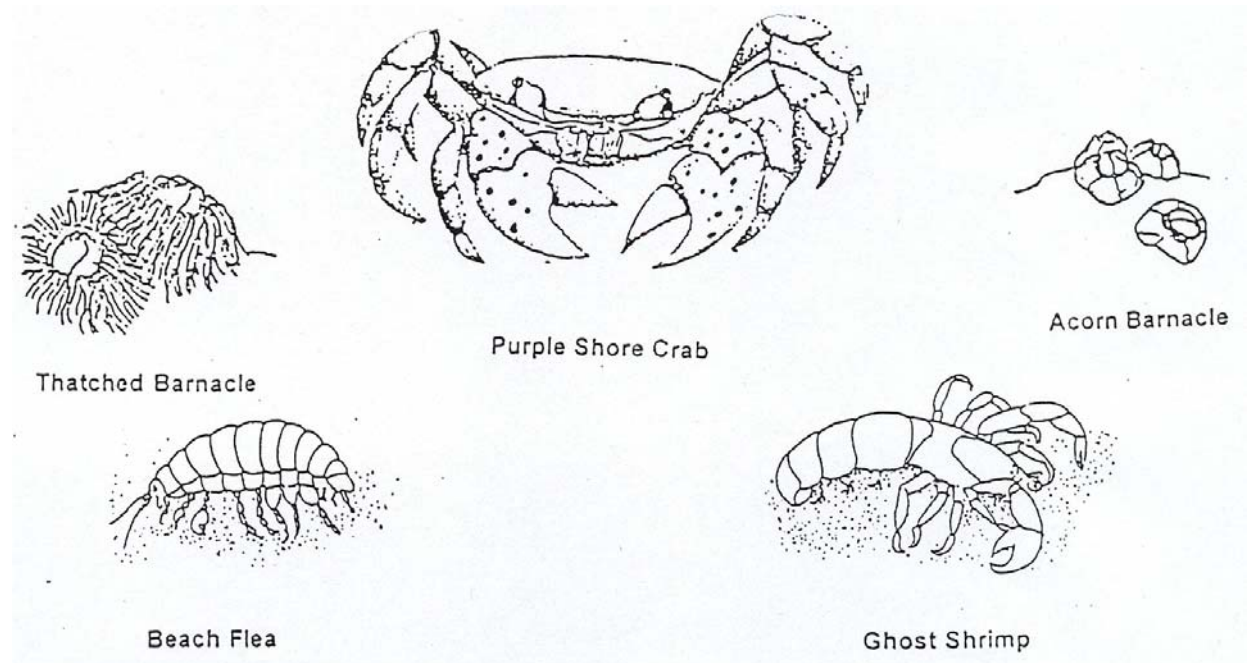
## Background Information for Teachers

Of all the creatures found at the beach, crabs are the ones that seem to generate the most excitement amongst children exploring the intertidal zone. They are, as a result, one of the intertidal animals most at risk of harm through mishandling or removal from their natural environment. In this program, children will have an opportunity to search for and handle these exciting little creatures, and some of their close relatives. They will also learn more about their structure and lifestyles. Through play and exploration, coupled with education, they will be taught to handle crabs properly, and to treat these animals and their homes with care and respect.

Crabs belong to a class of organisms called Crustaceans. Crustaceans are a group of animals that have hard outer shells, jointed appendages, and live in water. This class includes crabs, barnacles, shrimp and their relatives. All crustaceans belong to the phylum Arthropoda (which means, "jointed foot"). This phylum also includes such animals as insects and spiders.

Many different types of crabs live in the waters off the pacific coastline. In this program we will focus on the more accessible shore crabs found under rocks, and hermit crabs found in shallow tide pools along the shore. We will also examine some of their crusty relatives, such as shrimp, barnacles and beach fleas.

Crabs, like all other organisms, play vital roles in the ecology of our oceans. Crabs are scavengers and help to clean up unwanted waste materials from the seashore, much like slugs do in our forest environment. Crabs are an essential link in the food chain and contribute to the overall health of our oceans.



## KEY WORD DEFINITIONS

**barnacle** - any of several species of small crustaceans with thin, cone-shaped shells. The larvae cement themselves permanently to rocks, wharves and the bottoms of ships.

**crab** - a crustacean with a flattened body, small abdomen, and five pairs of legs (one pair of which is modified to form grasping claws).

**crustacean** - an animal with a hard outside shell, antennae, mandibles, and compound eyes, which lives in water and breathes by means of gills or similar structures (e.g. lobsters, crabs, shrimp, amphipods and barnacles).

**exoskeleton** - an external skeleton (characteristic of creatures such as insects, spiders and crustaceans). In order to grow, an animal must moult the exoskeleton.

**habitat** - an arrangement of food, water, shelter or cover, and space suitable to animals; needs. It must include food and water, as well as escape cover, winter cover, cover to rear young, and even cover in which to play.

**hermit crab** - a crab whose lower abdomen is soft and curled; it uses the shells of univalves (e.g. snails) to protect itself. The animal uses hook-like appendages at the end of the tail to grip the shell.

**pincers** - a modified pair of legs adapted for grasping food; also used as a defensive mechanism.

**predator** - an animal that kills and eats other animals.

**scavenger** - an organism that habitually feeds on the remains and wastes of other animals and plants.

## SUGGESTED PRE-TRIP ACTIVITIES

- Read stories in class about crabs.
- Show photographs of shore crabs, hermit crabs, shrimp, barnacles, etc.
- On the classroom bulletin board, have students draw pictures of the field trip topic or write predictions about what they might see.

## **SUGGESTED FOLLOW-UP ACTIVITIES**

- Return to the class bulletin board to make changes in their drawings or predictions based on their new knowledge gained from the field trip.
- Trace food chains and webs involving crabs and/or their relatives (e.g. algae - crab - seagull).
- Discuss how crabs bodies are different from human bodies. What role does each body part play in helping the crab survive? How is the crab especially well adapted for a mud flat/rocky-shoreline environment? What might happen if a crab's body were soft (or if it were unable to regenerate limbs, moult, etc.)? Have students think of ways their bodies would have to change before they could survive underwater or on land.

The Park Interpreters always welcome student letters, comments and drawings relating to the field trip.

## TEACHER REFERENCES

Snively, Gloria. **Exploring the Seashore in British Columbia, Washington and Oregon. A Guide to Shorebirds and Intertidal Plants and Animals**, Vancouver: Gordon Soules Book Publishers, 1978 (*this is an excellent and invaluable reference book; very accessible information, highly recommended by us*).

Coulombe, D. **The Seaside Naturalist**. New York: Prentice-Hall Press, 1984.

Fox, William T. **At The Sea's Edge**, New York: Prentice-Hall Press, 1983.

Arntzen, H. and D. Macnaughten, B. Penn and G. **Snively. Salish Sea: A Handbook for Educators**. Parks Canada 2001. *For information about this resource please contact Madelin Emery at Parks Canada. Phone: (250) 363-3511, 2<sup>nd</sup> Floor, 711 Broughton Street, Victoria BC, V8W 1E. E-mail: madelin.emery@pc.gc.ca*

Lewis, Paul O. **Grasper**. Vancouver: Whitecap Books, 1993. (*children's story book*)

## STUDENT REFERENCES

Johnson, Sylvia A. **Crabs**, Minneapolis: Lerner Publications, 1982.

Kumin, Maxine W. **The Beach Before Breakfast**. New York: G.P.Putnam Son, 1961.

McDonald, Megan. **Is This a House for a Hermit Crab?** New York: Orchard Books, 1990

Tyler, Jenny. **The Children's Book of the Seas**. London: Usborne Publishing, 1978.