Making a difference...together

Feeling Crabby

Educators Guide

Program at a Glance

This program fosters curiosity and a sense of wonder about the changing seashore environment and the homes it provides for many creatures. Through dress up, we will introduce the children to crabs and their relatives, pointing out the characteristics that distinguish them from other creatures and the adaptations they have to survive in their environment. Following the introduction, the class will be divided into two groups to further enhance their beach experience.

Through activities and exploration students will learn that all living things are interconnected in the web of life. Respectful treatment of seashore creatures and their habitat will be demonstrated and children will be encouraged to think of the seashore and its inhabitants as a community with needs similar to our own. To complete the program, students will join together to sing the "Crabby Song".

Theme: The seashore is an important home for crabs, which should be treated with gentle care and respect. Crabs have unique features and behaviours that help them survive.

This program will: (Communication, Thinking, Personal & Social)

- Introduce students to crabs and their relatives, pointing out the characteristics that distinguish them from other creatures and the adaptations they have for their environment. (C, T)
- Foster an appreciation for the changing seashore environment and the homes it provides for many creatures. (C, T, PS)
- Help students to realize that the seashore and its inhabitants are a community with needs similar to our own. (C, T, PS)
- Encourage respect for and gentle treatment of the seashore and its inhabitants. (PS)

Curriculum Connections (Science, Grades1-3)

Big Ideas:

- Living things have features and behaviours that help them survive in their environment (Grade 1)
- Observable patterns and cycles occur in the local sky and landscape (Grade 1)
- Living things have life cycles adapted to their environment (Grade 2)
- Living things are diverse, can be grouped, and interact in their ecosystems (Grade 3)

Curricular Competencies

Questioning and Predicting

- Demonstrate curiosity and a sense of wonder about the world
- Observe objects and events in familiar contexts
- Ask questions about familiar objects and events
- Make predictions about familiar objects and events

Planning and Conducting

- Make exploratory observations using their senses
- Safely manipulate materials
- Make simple measurements using non-standard units or informal methods

Processing and Analyzing Data and Information

- Experience and interpret the local environment
- Discuss observations
- Compare observations with predictions through discussion
- Identify simple patterns and connections

Applying and Innovating

- Transfer and apply learning to new situations

Evaluating

- Consider some environmental consequences of their actions

Communicating

- Share observations and ideas orally and in role-play
- Express and reflect on personal experiences of place

Content

- The classification of living and non-living things (Grade 1)
- Names of local plants and animals (Grade 1)
- Structural features of living things in the local environment (Grade 1)
- Behavioral adaptations of animals in the local environment (Grade1)
- Metamorphic and non-metamorphic life cycles of different organisms (Grade 2)
- Similarities and differences between offspring and parent (Grade2)
- Biodiversity in the local environment (Grade 3)
- Energy is needed for life (Grade 3)

Background Information for Teachers

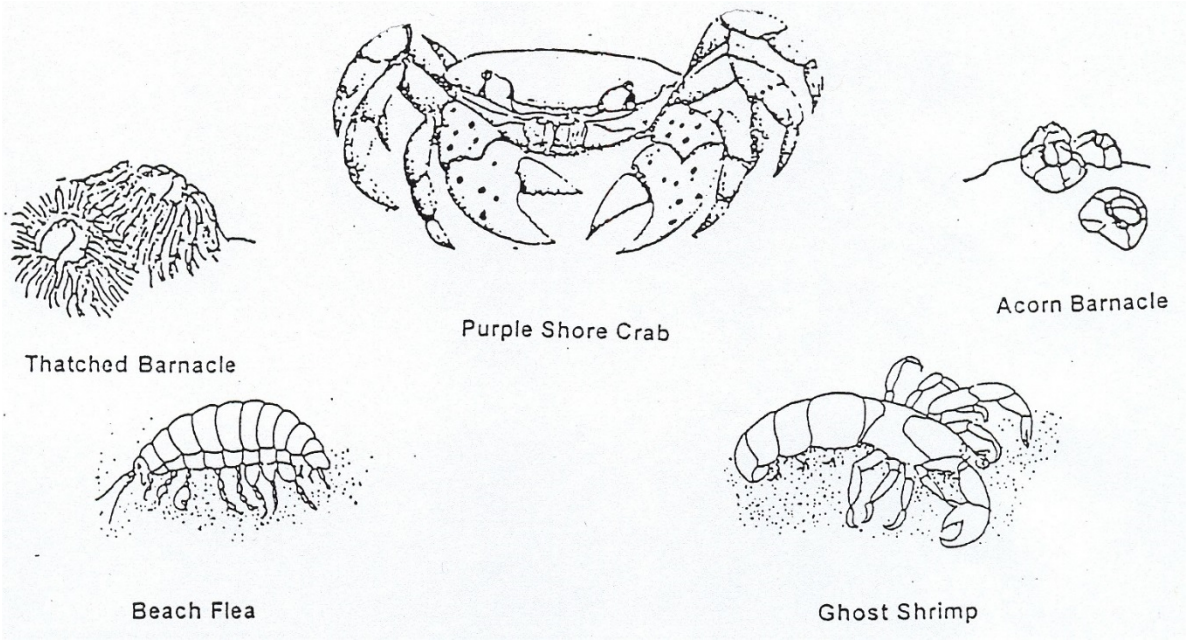
Of all the creatures found at the beach, crabs are the ones that often generate the most excitement among children exploring the intertidal zone. They are, as a result, one of the intertidal animals most at risk of harm through mishandling or removal from their natural environment. In this program, children will have an opportunity to search for these exciting creatures and some of their relatives. Students will also learn more about their structure and lifestyles. Through play and exploration, students will be taught to explore respectfully 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 mostly aquatic animals that have hard outer shells and jointed appendages. This class includes crabs, barnacles, shrimp and their relatives. Wood bugs, commonly found under rocks and in moist soils, are a type of terrestrial crustacean. 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 our Vancouver Island coastline. In this program we will focus on the common and abundant shore crabs found under rocks, and hermit crabs found in shallow tide pools along the shore. We will also examine some of their relatives, such as barnacles and beach hoppers.

Crabs have a role to play in the ecology of the ocean. Crabs are scavengers that help to break down or clean up waste materials from the seashore, much like slugs do in the forest environment. Crabs are an essential link in the food chain and contribute to the overall health of the ocean.

Some Crustaceans: Crabs and their Relatives



Key Word Definitions

barnacle – a type of marine crustacean with feathery appendages used for gathering food. Barnacle larvae are free-swimming but as adults they have cone-shaped shells that they permanently cement onto rocks, wharves, boat hulls or even the bodies of whales.

camouflage - markings or colouration that make an animal or object blend in and make it difficult to distinguish from its surroundings.

crab - a crustacean with a flattened body, small abdomen, eyes on stalks, and five pairs of legs, one pair of which is modified to form grasping claws, called pincers.

crustacean - an animal with a hard outer shell, antennae, mandibles (mouthparts), and compound eyes. Most crustaceans live in water and they breathe using gills or similar structures. Lobsters, crabs, shrimp, amphipods and barnacles are some examples of crustaceans. Wood bugs are terrestrial crustaceans found in the soil or under rocks.

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

habitat – The natural home or environment of a plant, animal or other organism. It includes all that the organism needs to survive, including food, water, shelter, and space, arranged in a particular configuration.

hermit crab - a crab whose lower abdomen is soft and curled; it uses the empty shells of snails to protect itself. Hermit crabs have hook-like appendages at the tip of their abdomen to grip the shell. As hermit crabs grow, they must find larger shells to live in.

pincers - a modified pair of legs adapted for grasping food and also used in defence.

predator - an animal that kills and eats other animals.

scavenger - an organism that feeds on dead or decaying matter.

Suggested Pre-Trip Activities

- On the classroom bulletin board have students draw pictures on the field trip topic or write predictions about what they might see.
- Create a K-W-L chart (what I know, what I want to know, and what I learned) for crabs, and fill out the first two categories.
  Show photographs of some of Vancouver Island's local crustaceans, such as shore crabs, hermit crabs, shrimp, and barnacles.
- Read stories in class about crabs.
- Have a sharing circle to talk about how the students feel about crabs and what they know or may have heard about them.

Suggested Follow-Up Activities

- Have students return to the class bulletin board to make changes in their drawings or predictions based on their new knowledge gained from the field trip.
- Revisit the K-W-L chart and fill in the "L" (What I learned).
- Draw food chains and webs involving crabs 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 to live at the seashore? Have students think of ways their bodies would have to change before they could survive in a crab's environment.
- In P.E. have crab walk races.
- CRD Regional Park Interpreters always welcome student letters, comments and drawings relating to the field trip.

Teacher References

Some useful field guides to our local marine environments include:

Harbo, Rick M. Whelks to Whales: Coastal Marine Life of the Pacific Northwest. Harbour Publishing, 2011.

Sept, Duane J. The Beachcomber's Guide to Seashore Life in the Pacific Northwest. Harbour Publishing, Revised Edition 2009.

Sheldon, Ian. Seashore of British Columbia. Lone Pine Publishing, 1998.

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, 2003.

Coulombe, Deborah A. The Seaside Naturalist. Touchstone Press, 1990.

Kingfisher Press, based out of Sooke, BC, produces recommended marine education resources for teachers. http://www.kingfisherpress.ca/index.html

Student References and Storybooks

Carle, Eric. A House for Hermit Crab. Aladdin Publications, 2002.

Coombs, Kate. Water Sings Blue: Ocean Poems. San Francisco: Chronicle Books, 2012.

Earhart, Kristin. The Magic School Bus Gets Crabby. Scholastic, 2006.

Lewis, Paul O. Grasper: A Young Crab's Discovery. Vancouver: Whitecap Books, 1993.

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

McFarlane, Sheryl. Moonsnail Song. Victoria: Orca Book Publishers, 1994.

Sayre, April Pulley and Sayre, Jeff. One is a Snail, Ten is a Crab: A Counting by Feet Book. Candlewick Press, 2006.