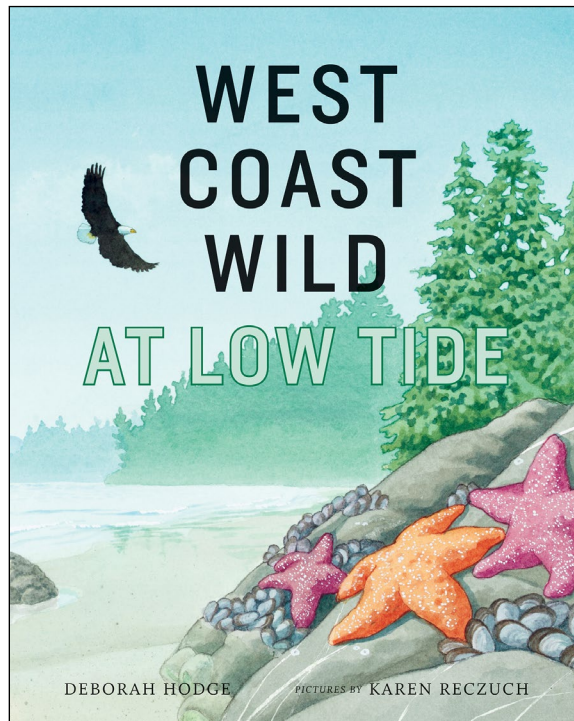




# GROUNDWOOD STUDY GUIDES

## West Coast Wild at Low Tide

*Written by Deborah Hodge  
Illustrated by Karen Reczuch*



**In this third book in the West Coast Wild series,  
explore the intertidal zone — where only the most adaptable  
creatures thrive in the changing tides.**

### **CURRICULUM CONNECTIONS**

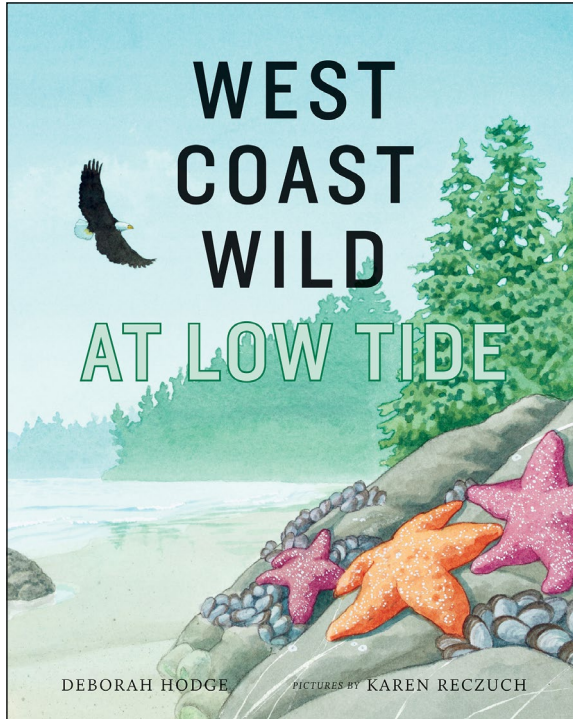
Ages 3 to 6 / Grades PreK to 1

JUVENILE NONFICTION / Science & Nature / Environmental Science & Ecosystems /  
Animals / Marine Life / Science & Nature / Zoology

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## BOOK DESCRIPTION

*West Coast Wild at Low Tide* introduces children to the wild shoreline of the majestic Pacific west coast and features a spectacular array of colorful creatures living between the tides, in a challenging and ever-changing area known as the intertidal zone.

Readers will meet brightly colored sea stars, a giant Pacific octopus, busy hermit crabs, delicate sand dollars, fish that camouflage and other intriguing marine animals that a child might see on a beach walk at low tide.

Designed to encourage an appreciation and understanding of the natural world and its creatures, *West Coast Wild at Low Tide* is a wonderful way to bring a little bit of the outdoors inside.

## ABOUT THIS GUIDE

Take your nature study across the classroom with a range of activities that are designed to encourage the students in your group to think about the ocean and the remarkable creatures that live at the ocean's edge — and how these hardy animals adapt to the rhythm of the tides.

*\*Not everyone lives near the ocean, so feel free to modify the following activities to suit the natural habitat or aquatic environment (pond, lake, river, stream etc.) that is found near you.*

## LANGUAGE ARTS

Invite the students in your group to write a poem about the ocean, seashore or their favorite animal from *West Coast Wild at Low Tide*. Here are several types of poems they might try.

### CINQUAIN

A cinquain is a five-line poem with the lines arranged in the following way (see below). The first line is the subject of the poem and the next four lines describe it.

- one noun (person, place or thing)
- two adjectives (describing words)
- three verbs (-ing action words)
- a four-word phrase about the noun
- one synonym for the noun

Examples:

Anemone  
Green, frilly  
Opening, closing, catching  
Stings and eats prey  
Invertebrate

Ocean  
Big, beautiful  
Ebbing, flowing, moving  
Home to many creatures  
Sea

## ACROSTIC

An acrostic poem is a fun and easy way to write about the ocean and its creatures. The first letter of each line is capitalized and spells out a word. The word is the subject of the poem. Begin by brainstorming ocean words with your students (ocean, sea, tides, waves, fish, sand, shells, octopus etc.). Then have the students choose a word and write the letters vertically, before adding other words or phrases to complete the poem horizontally.

Examples:

Sea stars  
Every beautiful color  
Animals of the ocean

Tides  
In and out  
Day and night  
Endless movement  
Sea goes back and forth

## LUNE

A lune poem has three lines and uses eleven words. The first line has three words, the second line has five words and the last line has three words.

- three words
- five words
- three words

Examples:

Sea lemon hides  
Its body is bright yellow  
Smells like lemon!

Sand is soft  
It covers the big beach  
And my feet

## FIVE SENSES POEM

Invite your students to choose a nature setting such as the seashore (or another place in nature they are familiar with) and describe it using their five senses.

Example:

At the Seashore

I see shells  
I hear waves crashing  
I smell the saltwater  
I feel mist on my face  
I taste my yummy picnic lunch

## ANIMAL RESEARCH PROJECT

Ask the students in your group to choose an ocean animal from *West Coast Wild at Low Tide* to research. Then have them write and illustrate a report or make a presentation to the class describing what they have learned. Here are some questions your group could research:

Appearance: What does your animal look like? How big (or small) is it?

Home: Where does the animal live?

Food: What does it eat? How does it catch its food?

Enemies: Who are the enemies or predators of the animal? How does it protect itself?

Habits: What are some interesting facts about the creature? (Examples: How does it move? How are its babies born? How does it adapt to the changing tides? What makes it special?)

## SCIENCE

### OCEAN TIDES

Invite your students to learn more about what causes ocean tides and how the gravitational effect of the moon and sun cause the ocean to be in constant motion. With your group, peruse a tide chart for the month you are in, noting how the low and high tide times change every day.

### NATURE WALK

Take your group on a nature walk (at the seashore if you are near it). Have them bring along notebooks and sketch or write a list of the plants and animals they see. Can they find examples of ten plants and animals? Have them think about how each plant and animal is suited (adapted) to the place where it lives.

### NATURE MAP

After going on a nature walk, have the students make a map, individually or as a group, of the nature area they explored.

### FIELD GUIDES

There are some excellent first field guides for young children that you can borrow from the library and bring to the classroom. Invite the children to look through the guides to discover the plants and animals that can be found at the seashore. Discuss the qualities and characteristics that make the shoreline habitat unique.

## ADAPTING TO THE TIDES

The creatures of the intertidal zone must constantly adapt to the changing tides. They are sometimes exposed to salty seawater and other times exposed to sun, wind, freshwater rain or freezing temperatures. Ask your students to choose one of the animals from *West Coast Wild at Low Tide* and make an illustrated diagram or give a presentation to the class on how the animal changes its behavior when the tide is low and when the tide is high.

Alternatively, ask your students to draw a picture of a tidepool (or a beach) at high tide and then at low tide.

## AQUARIUM FIELD TRIP

Is there an aquarium near you? Visiting an aquarium is a great way to learn about the ocean and its creatures. Many aquariums also have excellent online resources that you can access virtually from anywhere.

## GEOGRAPHY

### LOCATE THE WEST COAST

On a wall map of North America, have your students point out the Pacific Ocean and the outer west coast (as featured in *West Coast Wild at Low Tide*), stretching as far south as California and as far north as Alaska, and including the west coast of Vancouver Island and the Haida Gwaii archipelago. Have them point out your location, too.

### LEARN MORE

With your group, read out the section titled “On the Pacific West Coast” in the final pages of this book. Ask the children what more they learned about this region. Which animals from this area do they wish they could see in person?

## FINE ARTS

### FAVORITE OCEAN ANIMALS

If you look closely at the art in *West Coast Wild at Low Tide* you will see many detailed close-up paintings of the ocean creatures. Ask the students to select their favorite animal shown in the book. Have them draw or paint their own close-up picture of it. Consider displaying these works of art on a “Pacific west coast” bulletin board.

### CAMOUFLAGE PICTURE

There are several animals in this book that use camouflage to hide from predators when the tide is low. Discover which animals use camouflage and make an illustrated picture or painting of one of them hiding in its habitat.

### CRAYON RESIST PAINTING

Have your group make underwater ocean pictures using a crayon resist technique. Draw any fish, seaweed, marine creature or other form of ocean life with wax crayons. Then have them paint over the drawing with a light blue watercolor wash.

### CLAY MODELING

Invite your group to use modeling clay to form seashore creatures such as crabs, fish, sea stars or shorebirds and so on. Construct a classroom seashore scene on a table.

### SEASHORE NATURE DIORAMA

Individually or in pairs, have your group create a 3-D scene of an ocean habitat inside a shoebox, turned on its side. They may add fish, animals, seaweed etc. cut from cardboard or sculpted from modeling clay. They could suspend fish from the top of the box with string to make it look like they are swimming, they might make water by gluing foil to the bottom of the box, or they might create sand by sprinkling salt or sand on top of glue.



## PANORAMIC PAINTINGS

If you look closely at the art in *West Coast Wild at Low Tide* you will see several beautiful panoramic paintings. Invite the children to create their own panoramic paintings of a wild land or seascape.

## SALT PICTURES

The ocean is a salty place! On colored construction paper, have your students draw designs with white glue and sprinkle salt on top. Have them shake off the excess salt into a plastic washtub or sink, and with a paintbrush, place dots of liquid watercolor paint on sections of the salt. Watch the colors travel!

## TISSUE PAPER FISH

Have your students cut a piece of stiff white paper into a fish shape. Then have them tear or cut colored tissue paper into small squares (about 1 inch or 2.54 cm). Have them use a paintbrush dipped into a mixture of white glue (approx. two parts glue to one part water) to paste the tissue paper onto the fish. When their fish are covered in colorful squares, have them paint over the tissue with the glue/water mixture. (Note: The paper squares can be overlapped to make new colors and interesting designs.) When the fish are dry, hang them from the ceiling for a fun ocean effect.

## SAND PICTURES

If you can get to a sandy beach, suggest that the students make pictures in the sand by using pebbles, shells, pieces of driftwood, seaweed, feathers or other natural materials they can find. Can they make a face? Or an animal or bird? Or an eye-catching abstract design?

## MATH

### MEASURE AN OCTOPUS

The giant Pacific octopus is the largest octopus in the world and can have up to a thirty foot (about nine meters) arm span. Invite your students to mark out this measurement by standing side-by-side with arms outstretched in a line.

### COMPARING AND CLASSIFYING

Ask the students in your group to gather a collection of seashells or rocks of varying shapes and sizes. Have them classify the objects into categories based on their properties. For example: compare size, color, shape, texture and so on. How many different categories can they make?

### PEBBLE TOWERS

Gather a collection of beach pebbles and invite the children to make towers by piling and balancing the pebbles on top of one another. How strong can they make their structure? How high can they build it? How can they use different sizes and shapes of pebbles to create a balanced structure?



Blueband Hermit Crab

A hermit crab carries an empty snail shell wherever it goes. This sturdy home protects its soft body. Hermit crabs scurry through tidepools, where water almost always covers them. If a predator's approach, the little crab slips deep inside the shell and blocks the opening with its large claw. It will trade its shell for a bigger one as it grows.

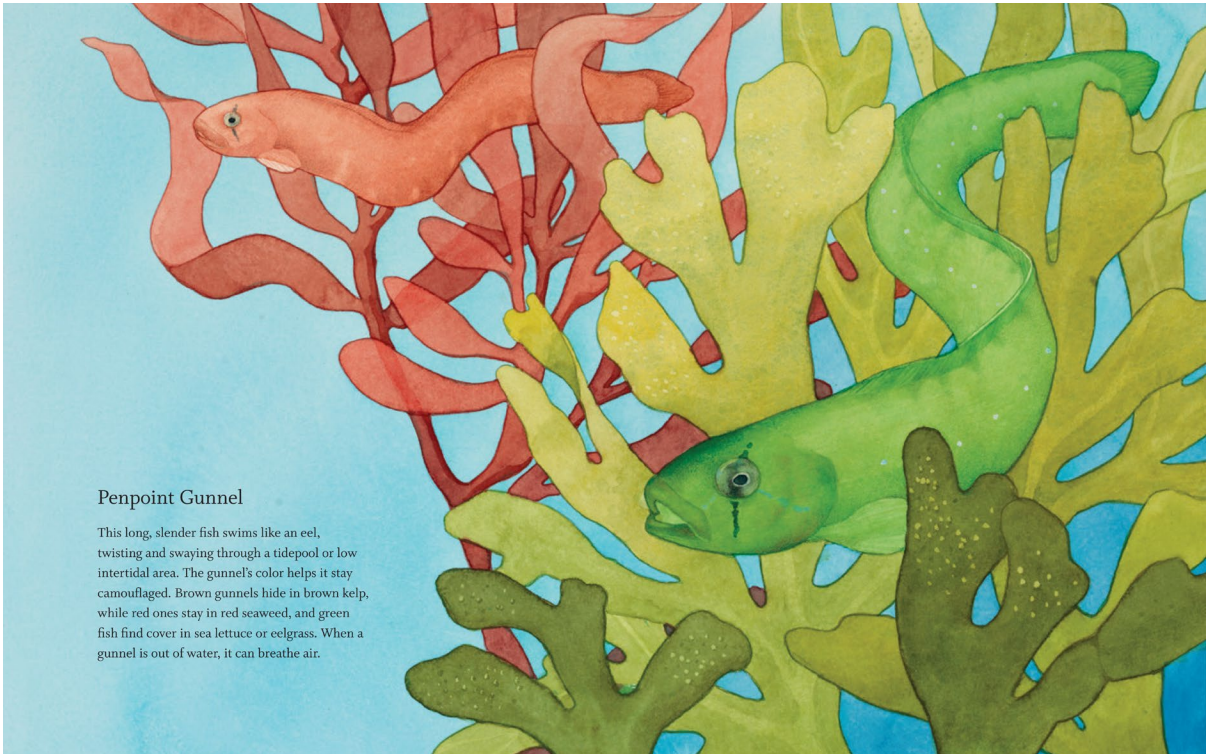
## PHYSICAL EDUCATION

### ANIMALS IN ACTION

Choose a creature from *West Coast Wild at Low Tide*. Ask for action words that describe how it moves. For example: swim, crawl, scurry, fly, twist, sway and so on. Write the suggestions on cards. Once you have a set of verbs for a number of animals, go to the gym or playing field. Select a card and announce an animal movement for the children to act out. Repeat with other verbs.

### MIME AN OCEAN ANIMAL

Ask the children to choose several marine animals from *West Coast Wild at Low Tide* and mime their behavior. For example, have them role-play an anemone folding up its body, then opening it again; or an octopus streaking through the water, then squeezing itself into a rocky crevice; or a hermit crab scurrying through a tidepool, then shrugging off its old shell and slipping into a new one; or a barnacle opening up and waving its feathery little feet, called cirri, to catch its food.



#### Penpoint Gunnel

This long, slender fish swims like an eel, twisting and swaying through a tidepool or low intertidal area. The gunnel's color helps it stay camouflaged. Brown gunnels hide in brown kelp, while red ones stay in red seaweed, and green fish find cover in sea lettuce or eelgrass. When a gunnel is out of water, it can breathe air.

## ADDITIONAL RESOURCES

### WEBSITES

To learn more about the Pacific Rim region featured in *West Coast Wild at Low Tide*, consider the following websites:

#### **Pacific Rim National Park Reserve**

[pc.gc.ca/en/pn-np/bc/pacificrim/](http://pc.gc.ca/en/pn-np/bc/pacificrim/)

Select “Nature and science” to read about the seashore and wild creatures of the region.

#### **Raincoast Education Society**

[raincoasteducation.org](http://raincoasteducation.org)

This organization offers a wealth of west coast educational and interpretive programs for children and youth. It also provides virtual “Field School” lessons that you can access online via YouTube. Among the many selections to choose from are half hour lessons on “The Intertidal Zone” and “Predators and Prey in the Intertidal Zone.”

<https://raincoasteducation.org/what-we-do/online-education/raincoast-field-school-at-home/>

## BOOKS

### *For younger readers*

Brenner, Barbara. *One Small Place by the Sea*. New York: HarperCollins Publishers, 2004.

Cassie, Brian. *National Audubon Society First Field Guide: Shells*. New York: Scholastic, 2000.

Cohen, Fiona and Marni Fylling. *Curious Kids Nature Guide: Explore the Amazing Outdoors of the Pacific Northwest*. Seattle: Little Bigfoot – Sasquatch Books, 2017.

Halfmann, Janet. *Star of the Sea: A Day in the Life of a Starfish*. New York: Henry Holt and Company, 2011.

Hodge, Deborah and Karen Reczuch. *West Coast Wild: A Nature Alphabet*. Toronto: Groundwood Books, 2015.

Goldman, Laurie. *A Walk on the Beach*. New York: Downtown Bookworks, 2013.

### *For older readers*

McAllister, Ian and Nicholas Read. *The Great Bear Sea: Exploring the Marine Life of a Pacific Paradise*. Victoria: Orca Book Publishers, 2013.

Sept, J. Duane. *The New Beachcomber's Guide to the Pacific Northwest*. Madeira Park: Harbour Publishing, 2019.

## WEST COAST AQUARIUMS

There are many excellent aquariums along the Pacific coast. Here are some you can visit, in person or online. Check out their websites for close-up photos and videos of west coast marine creatures. Some also have live web cams. If you are able to go to an aquarium, many have realistic seashore displays, touch pools and programs for children.

### **Aquarium of the Bay (San Francisco)**

[aquariumofthebay.org](http://aquariumofthebay.org)

### **Aquarium of the Pacific (Long Beach, California)**

[aquariumofpacific.org](http://aquariumofpacific.org)

### **Monterey Bay Aquarium**

[montereybayaquarium.org](http://montereybayaquarium.org)

### **Oregon Coast Aquarium (Newport, Oregon)**

[aquarium.org](http://aquarium.org)

### **Seattle Aquarium**

[seattleaquarium.org](http://seattleaquarium.org)

### **Vancouver Aquarium**

[vanaqua.org](http://vanaqua.org)

## AUTHOR & ILLUSTRATOR BIOGRAPHIES



**Deborah Hodge** is a former teacher and curriculum writer as well as the author of more than thirty books for children. Her honors include twice winning the Children’s Literature Roundtables of Canada’s Information Book Award, winning the Green Prize for Sustainable Literature, and receiving the honor book distinction for the National Jewish Book Award for Children’s Literature. Her work has also appeared on such lists as ALA’s Top Ten Best Environmental Books for Youth.



**Karen Reczuch** has illustrated many award-winning children’s books. *Loon* by Susan Vande Griek won the TD Norma Fleck Award for Canadian Children’s Non-fiction, the Ruth and Sylvia Schwartz Children’s Picture Book Award and the Children’s Literature Roundtables of Canada’s Information Book Award. Karen’s other books include *West Coast Wild*, also the winner of the Information Book Award, *West Coast Wild ABC*, and *West Coast Wild Babies*, all by Deborah Hodge.