

In One Tidepool:
Crabs, Snails
and Salty Tails

**Cool Projects,
Great Activities
and Super Ideas**



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Summary:

In this imaginatively illustrated book, a young girl takes readers into the magical and captivating world of a single tidepool. Together they discover an array of interesting and intriguing creatures including barnacles, anemones, a blood-red sponge, snail, crabs and a knobby sea star. Using a rhythmic verse that invites active reader participation, this book provides youngsters with a scientific and literary “field trip” into this community by the sea. According to one reviewer, “[the] rhyming text of humor and wit are broad-based and so amusing that this title will appeal to a wide range of readers.”

Critical Thinking Questions:

1. What was the most interesting creature in the book?
2. Which of the animals would you like to learn more about?
3. What are some other animals that might be found in a tidepool?
4. How are all the animals able to live together?
5. What did you like best about the book?
6. If you could ask the author one question, what would it be?

Activities:

1. Invite a group of students to brainstorm what a tidepool would be like if there were no creatures living in it. For example, imagine no more sea stars, no more fish, or no more crabs. Invite students to discuss and list the implications of creature-less tidepools.
2. Provide students with an assortment of magazines that contain pictures of small ocean animals – creatures that might be found in a tidepool. These may include (but not be limited to) *Ranger Rick's Nature Magazine*, *National Geographic*, *Discover*, etc. Encourage students to make a class collage by pasting pictures of different creatures on a tidepool graffiti wall.
3. Discuss with students the similarities (or differences) between the community of animals in the tidepool and the community in which they live. Invite students to create an oversize Venn diagram which illustrates those comparisons.
4. Invite students to each select one of the animals mentioned in the book. Invite each child to demonstrate the movement of that animal in a designated area. For example, a sea star moves very slowly over a surface; a crab scampers quickly from one hiding place to another. Provide opportunities for students to describe their movements and why they may be unique for each animal.
5. Students may enjoy reading two other books in this series: *Under One Rock: Bugs, Slugs and Other Ughs* (2001) and *Around One Cactus: Owls, Bats and Leaping Rats* (2003).

6. The book begins with a letter from “Your Five-Armed Buddy” – the Sea Star. Invite students to create other possible introductory letters for the book using one or more of the other featured animals as narrator(s). Provide opportunities for students to share these letters with each other.
7. You may enjoy obtaining some land hermit crabs for your classroom. They can be purchased through Carolina Biological Supply (www.carolina.com) [Check under “Classroom Critters”]. You can also obtain hermit crab food and a land hermit crab habitat from Carolina. Incidentally, hermit crabs make wonderful classroom creatures – easy to care for and fun to observe!
8. Draw and cut out an oversized outline of a sea star body from stiff cardboard or oaktag. Invite students to illustrate the sea star in accordance with the illustrations in the book or with those in informational books in the library. Encourage students to record information on sea stars that can be written inside the sea star outline.
9. Replicate the activity above using cardboard outlines of the other creatures profiled in the tidepool. What are some amazing facts students can locate for each animal – facts that can be listed on each illustrative outline?
10. Cut off the fingers from a pair of inexpensive work gloves. Invite students to use a variety of art materials (crayons, yarn, felt-tip pens, sequins, etc.) to turn each “finger” into a puppet representing one of the creatures in the book. Students can use these puppets as part of a finger play during a retelling of the story. Students may elect to display the puppets in an appropriate “museum” in the classroom.
11. Invite students to create a “world’s record” book of seashore animal measurements. Encourage them to conduct some library research in response to the following and to record their results on an oversized classroom chart:
 - a. World’s largest sea star
 - b. World’s largest crab
 - c. Fastest tidepool animal
 - d. Slowest tidepool animal
 - e. World’s largest sponge
 - f. World’s oldest sponge
 - g. World’s largest seashell
 - h. World’s smallest seashell
12. Invite each student to choose an animal to study. Students can pretend they are writing a newspaper announcement for the birth of their animal. They will need to do some research to collect necessary information. Provide the birth announcement section from the daily newspaper for students to use as a reference.
13. Invite youngsters to keep a journal of the activities, habits, travels, and motions of a single animal. Kids may want to select a house pet or some other animal that can be observed quite regularly throughout the day. Provide youngsters with a field journal – a simple notebook wildlife biologists frequently use to track the activities or one or more wild animals over the course of an extended period of time.
14. Invite youngsters to each take on the role of one of the animals in the book. Encourage them to do the necessary library research on the habits and behaviors of

- their selected animals. Then invite each youngster to write a diary entry – as his or her selected animal might record it – on a day in the life of that species.
15. Before reading this book to students invite them to look at the cover of the book and guess what it is about. Ask students to predict the animals that might be found in a tidepool. What do they know about tidepool animals?
 16. Invite a biologist or zoologist from a local college or university to speak to your students about tidepool animals and the special environment in which those animals live. How does the information shared by the expert compare with the information shared in the book? Any similarities? Any differences/
 17. Invite students to create a sequel to this book, such as one titled “Along the Shore: Critters, Creatures and Other Features.” What other types of animals could the young girl discover – either in another tidepool or along the beach? Invite students to defend their selections.
 18. Invite students to log onto the National Wildlife Federation’s web site “Keep the Wild Alive” (<http://www.nwf.org/keepthewildalive/>). Here students learn about a variety of endangered species from around the world, the challenges they face, and what they can do to help. Invite students to focus on endangered species in the ocean or along the seashores of the world.
 19. Invite students to put together an identification guide for various tidepool animals from around the world. What types of tidepool creatures can be found in Europe, or Africa, or South America? How are tidepool animals on the West Coast of the U.S. similar to, or different from, those on the East Coast?
 20. Provide each student with two paper plates. Invite each student to cut out a circular section from one plate and glue blue cellophane over the inside of the hole to create a water effect. Encourage students to draw illustrations of seaweed, various tidepool creatures from the book, and other underwater items on the face of the uncut paper plate. They may wish to glue birdseed on the “tidepool floor” to simulate sand or to use fish crackers to provide a 3-dimensional effect. Invite students to glue or staple the two plates together (face to face) to create an imaginary “porthole” into a tidepool.
 21. Invite students to contact several of the following groups and ask for information on the work they do and the types of printed materials they have available for students:

American Littoral Society
Sandy Hook
Highlands, NJ 07732
(201-291-0055)

American Oceans Campaign
725 Arizona Ave., Suite 102
Santa Monica, CA 90401
(310-576-6162)

Center for Marine Conservation

1725 DeSales St., NW, Suite 500
Washington, DC 20036
(202-429-5609)

Coastal Conservation Association

4801 Woodway, Suite 220 West
Houston, TX 77056
(713-626-4222)

The Coral Reef Alliance

809 Delaware St.
Berkeley, CA 94710
(510-528-2492)

International Oceanographic Foundation

4600 Rickenbacker Causeway
Virginia Key, Miami, FL 33149
(305-361-4888)

Marine Environmental Research Institute

772 W. End Ave.
New York, NY 10025
(212-864-6285)

Marine Technology Center

1828 L St., NW, Suite 906
Washington, DC 20036-5104
(202-775-5966)

National Coalition for Marine Conservation

3 W. Market St.
Leesburg, VA 20176
(703-777-0037)

National Wildlife Federation

8925 Leesburg Pike
Vienna, VA 22184-0001
(703-790-4000)

Ocean Voice International

P.O. Box 37026
3332 McCarthy Rd.
Ottawa, Ontario, Canada K1V 0W0

22. Invite students to put together a “tidepool newspaper” (in a newspaper format) that presents interesting facts and observations about tidepool creatures. Invite students to use the same sections as the local newspaper (Sports – how fast some tidepool animals can move; fashion – what are the latest “colors” all the fashionable critters are wearing; Food and Health – the different diets of various tidepool animals). Students can use a word processing program to assemble the newspaper and then print it for distribution to other classrooms.
23. Invite students to create their own tidepool song using the music from another song. For example, here is a song that can be sung to the tune of “I’ve Been Working on the Railroad”:

I’ve been watching one small tidepool
All the livelong day
I’ve been watching one small tidepool
Just to watch the creatures play
Can’t you see them hurry, scurry
Across the rocks and flats
Watch the crabs dash and tumble
In their funny hats.
24. In the “Field Notes” section in the back of the book there is a “Fantastic Fact” about Owl Limpets. Share that fact with students and then invite students to create a “Wanted” poster for owl limpets.
25. Provide students with blank maps of the U.S. Invite them to color in the places on both the West and East coast where tidepools would be found. Which coast seems to have the most tidepool areas?
26. Students may enjoy reading or listening to other animal books by the author. These could include the following: *Weird Walkers* (NorthWord Press, 2000), *Surprising Swimmers* (NorthWord Press, 2000), *Elephants for Kids* (NorthWord Press, 1999), and *Clever Camouflagers* (NorthWord Press, 2000).
27. Invite students to imagine that they are one of the creatures in the story. Encourage them to create a poster that says “Save Our Home.” They can include a full-color drawing of the selected creature and write a convincing ad for saving their specific tidepool or tidepools in general.
28. Create a tidepool environment in the classroom. Cover the walls with paper and let students paint the scenes of a tidepool, using vibrant colors. They can paint individual animals directly on the paper or create them out of paper mache or cardboard and suspend them from the ceiling with strings. Make some of the rocks and background details in relief by constructing them out of cardboard and attaching them so they stand out from the wall.
29. **Education Planet** has a variety of resources, books and lesson plans on tidepools. Check out their site for some great teaching tools and learning opportunities.
(<http://www.educationplanet.com/search/Environment/Ecology/Tidepools/>)
30. Talk with students about some of the “fantastic facts” included throughout this book. Which ones did they find most amazing? Why? Why did the author include those facts?

31. Students may wish to observe their own "tidepool critters" in action. Here's an activity that will help them do just that:

Materials:

brine shrimp eggs (available from any pet store)
non-iodized kosher salt (available at most grocery stores)
two-quart pot
water
teaspoon
medicine dropper
hand lens or inexpensive microscope
aged tap water

Procedure:

Fill the pot with two quarts of water and allow it to sit for two days, stirring it occasionally (Most city water has chlorine in it which would kill the shrimp. "Aging" for several days allows the chlorine gas to escape from the water). Mix 5 teaspoons of non-iodized salt with the water until dissolved. Add ½ teaspoon of brine shrimp eggs to the salt water and place the pot in a warm spot. Invite students to use the medicine dropper to remove some eggs from the water and observe them with a hand lens or microscope. They may wish to check a drop of water every day. They also may wish to create a series of drawings or illustrations which record the growth of the brine shrimp.

The brine shrimp eggs will begin to hatch in about two days. They will continue to grow in the water until they reach their adult stage. Students will be able to watch this growth process over a period of many days.

NOTE: Brine shrimp eggs that are purchased at a pet store are the fertilized eggs of very tiny animals - called brine shrimp. The eggs are dried and can be kept for very long periods of time (especially when kept in a dry place). When they are added to the salt water, the eggs "wake up" and begin to grow. Although the shrimp are very small, students can watch them grow for many days. Brine shrimp eggs are sold as fish food for aquariums. Make sure students do not try to eat them.

32. Invite students to create posters or advertisements to attract other students to this book. What information, data, or illustrations should be included? Students may wish to hang their posters or advertisements in the school library.
33. Involve students in a readers theatre adaptation of this book. Readers theatre is an oral interpretation of a piece of literature read in a dramatic style. Students use prepared scripts (no memorization is necessary) to present their own adaptation of a book. For more information consult *Tadpole Tales and Other Totally Terrific Treats for Readers Theatre* by Anthony D. Fredericks (Westport, CT: Teacher Ideas Press, 1997).

34. Invite students to create a wordless picture book using important events from this book. This activity can be done in small groups with each group displaying its book on the bulletin board. What challenges are there in creating a wordless version of this story? What are some of the things an artist must think about in creating a wordless picture book as opposed to a text-driven picture book?
35. Work with the school's music teacher to compile a selection of songs related to the oceans, ocean animals, the seashore or tidepools. Plan opportunities when students can share these songs in class.
36. Invite students to compare the illustrations in this book with photographs in non-fiction books about tidepools? What similarities do they notice? What were some things the artist had to consider in drawing the pictures for this book?
37. Invite students to create a flip book illustrating the sequence of activities that took place in this book. These flip books can be donated to the school library for others to enjoy.
38. Invite students to discuss the similarities between human dwellings and animal homes. What are some of the things that determine where an animal lives? Are those conditions or features similar to the considerations of humans in selecting a living site? Do animals have more options for living spaces than humans?
39. Ask students how they think nature has influenced art over the years. If possible, shows students a selection of paintings that represent things in nature. Obtain books of prints representing artists that traditionally painted nature scenes (for example, Frederic Church, Claude Monet). Are there any artists or paintings that would be representative of a tidepool environment?
40. Invite students to imagine that they are a tidepool creature and are writing to another animal in another tidepool to convince him or her to visit. What features or attractions should be pointed out in the letter? What is it about that specific tidepool environment that would make it appealing for another creature?
41. As an adaptation of the previous activity, invite youngsters to look through the classified section of your local newspaper. Based on examples in the newspaper, challenge students to create an original classified advertisement based on information in the book. For example;

FOR RENT: Rock ledge. Sometimes wet, sometimes splashy. Lots of neighbors. Lots of plants. Good view of ocean. 50 clams per month. Available immediately. Call Sea Star at 123-4567 after high tide.
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42. Invite students to create an alphabet book about tidepools. For example: **A** = Anemone; **B** = Barnacles; **C** = Crab; **D** = Dark colored, etc.
43. Encourage students to write a fictitious letter to the girl in the story. What would they like to say to her? What would they like to know about her adventures with the tidepool in the book?

44. Form a tidepool club. Interested students can create an informational newsletter, watch specially selected videos, take field trips (when possible), construct a special aquarium display or read additional books.
45. Invite students to write and perform a "tidepool" skit. The skit could involve a meeting between two or more creatures who live in a single tidepool. Or, it could be an imaginative scene in which a visitor to the tidepool shows up unexpectedly.
46. Provide students with some modeling clay (available at any hobby store). Work with them to make small models of each of the animals mentioned in the book.
47. Invite students to survey all the other students who have read this book. Ask them to make list of all the creatures in the book and question others about who their favorite one is. The results can be presented in the form of bar graphs.
48. The Surfrider Foundation USA (<http://www.surfrider.org>) is a non-profit organization dedicated to protecting the coastal environment of California beaches. Your students may wish to log on to their web site and obtain information about their preservation efforts.
49. Dr. Stephen Leatherman ("Dr. Beach") of Florida International University has ranked the best beaches in the world. Students may be interested in looking at photographs of his choices (<http://www.petix.com/beaches/index.html>). After observing some of these choices, students may wish to post an oversize map of the world on one wall of the classroom. Encourage them to post index cards with the names of each of these beaches around the map. Pieces of yarn can be strung between each index card and the location of the designated beach on the wall map.
50. Waves constantly pound on the shoreline. This is a process that has been going on for millions of years. As a result, sand is created through continual wave action. Here's a fun activity that demonstrates this process.

Materials: white glue, playground sand, water, small coffee can (with lid), cookie sheet.

Directions:

- a. Mix together six tablespoons of white glue with six tablespoons of sand in a bowl.
- b. Using the tablespoon, place small lumps of the mixture on a cookie sheet.
- c. Place the cookie sheet in a slow oven (250⁰ F) and "bake" them for three to four hours.
- d. Remove the "rocks" and allow them to cool.
- e. Put three or four "rocks" into a coffee can with some water and place the lid securely on top.
- f. Shake for four to five minutes and remove the lid.

The rocks will begin to wear down. Some of the "rocks" will be worn down into sand. The action of the "waves" inside the coffee can causes the "rocks" to wear against each other. As a result, they break down into smaller and smaller pieces. On a beach or shoreline this process takes many years, but the result is the same. Rocks become smaller by being tossed against each other by the action of the waves. Over time rocks wear down into sand-like particles which eventually become part of the beach or shoreline.