

Grades K-2
Next Generation Science Standards
2-LS4-1

www.MaineAgintheClassroom.org



Exploring Marine Science and Aquaculture Grades K-2

Maine Tide Pools

Developed by the University of Maine Cooperative Extension
Revised and formatted by Maine Agriculture in the Classroom

Activity Description:

Students learn how tide pools are formed and to identify many of the creatures living in the tide pool environment.

Learning Objectives:

Students will:

- Become familiar with the tidal pool zone
- Identify many of the organisms that live there

Essential Questions:

- What is a tidal pool?
- What types of plants and animals live there?

Background Information:

Ocean tides rise and fall. When the tide retreats, seawater trapped in depressions in the rocks forms tide pools. These shallow pools are often teeming with different animals and plants, which must adapt to environmental extremes to survive. For example, you might see starfish, anemones, urchins, barnacles, crabs, kelp and other seaweeds in a tide pool.

Vocabulary List:

Tide Pools: Tide pools, or rock pools, are rocky pools on the seashore that are filled with seawater.

Materials:

- “Can you guess my name?” clue cards
- Colored pencils
- Whiteboard or Newsprint
- Blue paper plates
- Glue sticks
- Tide Pool Matching Page
- Sand
- Internet connection



Procedure:

Engage

1. Play this catchy song as the students enter the room. The song is only 35 seconds, so play it on repeat and try to get the students to join in. https://www.youtube.com/watch?v=n4e6O_nKTOI
2. Follow up with another song that includes hand movements (4:24 minutes):
<https://www.youtube.com/watch?v=c8aZ08DMC1c>
 - a. *Now let's hear a song with hand movements!*
 - b. *Everyone follow along!*
3. Access the students prior knowledge about tide pools:
 - a. *Has anyone been to the beach when the tide is high? What about when the tide is low? How is it different at high tide and low tide? (Explain that tides are high and low every six hours).*
 - b. *In places where there are rocks (like the coast of Maine), the ocean water covers them at high tide and eaves some water in rocky holes when it goes back at low tide. These areas with water are called "tidal pools" and many creatures live there.*
4. Next, play the video (2:39 minutes): <https://www.youtube.com/watch?v=JW9BJY3uEmk>
 - a. *Let's take a trip with a scientist to a real tide pool.*
5. Ask participants to work with a partner for the next challenge. Give each pair 3 minutes to name some things that they might find in a tidal pool.
6. When time is up, ask students to name some of their creatures and create a "What We See in a Tide Pool" list on the whiteboard/newsprint as they name the creatures.

Explore

7. For younger students: PBS has an interactive site adapted from the National Park Service where participants are able to identify things found in a tidal pool:
<https://mpbn.pbslearningmedia.org/resource/lps07.sci.life.oate.tidepools/exploring-tidepools/en/-WTALpevyuM8>
8. For older students: Read the book "Ocean Soup: Tide-Pool Poems" by Stephen R. Swinburne with illustrations by Mary Peterson. It is also available as a read aloud video by Mrs. Cutillo <https://www.youtube.com/watch?v=6DsGMYYnRns> (10:56 minutes)
9. After interacting with the website, and/or reading the poems, correct or add to the "What We See in a Tidal Pool" list.

Explain

10. Tell the students that they will now play a game called "Can You Guess My Name"? Note: you can set this up so the students are playing in pairs, larger groups, or on their own.
 - a. *I will read and act out the clues on the card, and your job is to try to guess my name.*
11. For use with older students, an alternative version of this game could be played: Give participants the name of a creature, and direct them to come up with their own set of clues for others to then guess. Verbal clues may be accompanied with body movements.

Elaborate

12. Distribute blue paper plates and colored pencils to each participant.
 - a. *Now you are ready to make your own tidal pool!*
 - b. *This blue paper plate represents your tide pool. It is the water caught in the rocks when the tide goes out.*
13. Direct the students to draw and color the creatures found in the tide pool.



14. While they are drawing, walk around and apply glue around the rim of the plate and cover with beach sand.
15. Continue playing the tide pool songs while they are drawing for continued engagement and fun.
16. Allow time for each participant to share his or her tide pool community with others.

Evaluate

17. Take a simulated field trip to a tidal pool at low tide by showing this video of a young man leading a trip to a tidal pool in Maine (5:50 minutes):
https://www.youtube.com/watch?v=m9H_VwTICIE
18. Distribute the Tide Pool matching page, where they must match photos of tide pool creatures with the correct name.

Extension Ideas:

- Culminate this activity with a field trip to a tide pool at low tide.

Additional Resources:

- *Between the Tides* by Fran Hodgins
- *At Home in the Tide Pool* by Alexandra Wright
- *In One Tidepool – Crabs, Snails, and Salty Tails* by Anthony D. Frederick
- *One Small Place by the Sea* by Barbara Brenner

The University of Maine does not discriminate on the grounds of race, color, religion, sex, sexual orientation, including transgender status and gender expression, national origin, citizenship status, age, disability, genetic information or veteran status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding nondiscrimination policies: Director, Office of Equal Opportunity, 101 North Stevens Hall, 207.581.1226. eoinfo@umit.maine.edu



This activity is supported by National Science Foundation award #1355457 to Maine EPSCoR at the University of Maine.



Pose with legs spread apart and arms stretched out.

Say: "I am an animal that lives in the ocean with suckers on my arms that help me stick to rocks as the tide goes in and out. If I lose an arm I can grow another one."

I am a **Starfish**

Pose with arms making a circle around the front of your body.

Say: "I am an animal that lives in the ocean with spines on my back and a mouth on my underside that has sharp teeth."

I am a **Sea Urchin**

Pose with arms out and moving at your sides.

Say: "I am an animal that lives in the ocean with suction cups on all eight of my limbs."

I am an **Octopus**

Pose with hands together on top of your head (like a fin).

Say: "I am an animal that lives in the ocean with rows of razor sharp teeth."

I am a **Shark**

Pose with hands on belly. Take a big breathe and puff out belly and cheeks.

Say: "I am an animal that lives in the ocean and I have spines all over my body. I am also incredibly poisonous."

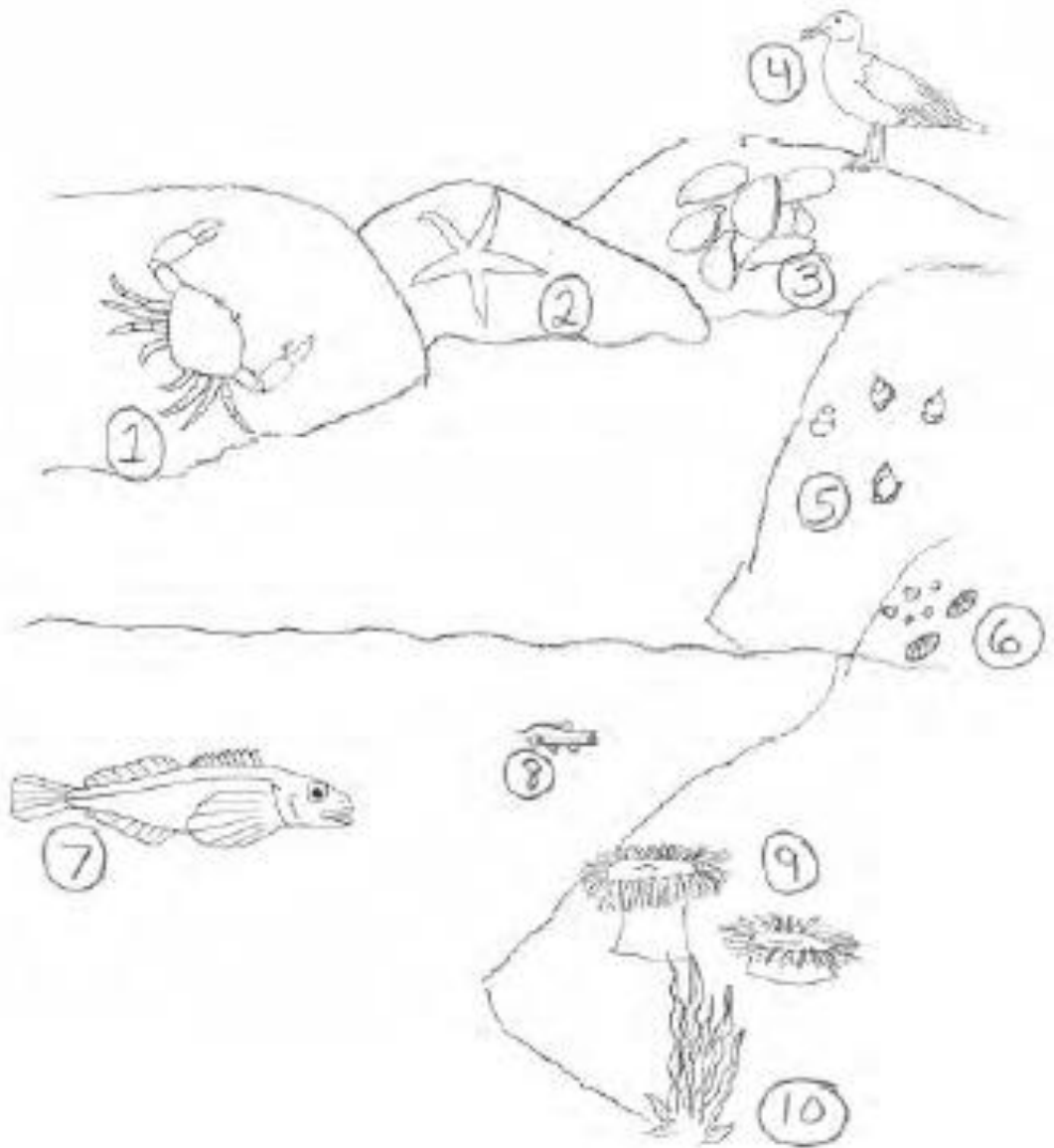
I am a **Puffer Fish**



T
i
d
e

P
o
o
l

L
i
f
e



Match the name to its number:

- | | |
|-----------------------------|-----------------------------|
| _____ A Starfish | _____ F Crab |
| _____ B Mussels | _____ G Big Fish (Sculpin) |
| _____ C Sea Anemone | _____ H Small Fish (Minnow) |
| _____ D Barnacles & Limpets | _____ I Seaweed |
| _____ E Seagull | _____ J Periwinkle |

