



## Hawaii's Rocky Shore

### Concepts

Students will be introduced to the rocky shoreline habitat, its physical properties and an overview of its flora-fauna. They will inquire with one another about what they know and would like to know about the unique rocky shore habitat.

### HCPS III Benchmarks

SC.1.2.2

SC.1.6.1

### Duration

45 minutes

### Source Material

MARE Rocky

Seashores

[www.coast-nopp.org](http://www.coast-nopp.org)

PRISM

### Vocabulary

Desiccation

Habitat

Living (Biotic)

Non-living (Abiotic)

Salinity

Shoreline

Tidepool

Tides

## What is the Rocky Shoreline?

### Summary

Students will first talk about what they already know about the rocky shore from their collective experiences. They will next talk about what they want to learn about the rocky shore. Students will then be introduced to the rocky shore environment through new vocabulary and images.

### Objectives

- Students will discuss what they already know about the rocky shore/line.
- Students will form questions about what they want to know about the rocky shore.
- Students will be introduced to some organisms that live on the rocky shore.
- Students will learn how the changing tide makes the rocky shore a habitat that is always in flux.

### Materials

Bucket

Copied free-association words and cut into strips

Large photos of rocky shores and tide pools to show to the class (laminated if possible)

### Making Connections

Students have probably seen the rocky shore and explored its tidepools during trips to the beach in Hawai'i. They will discuss this familiar environment through new vocabulary and physical science.

### Teacher Prep for Activity

Prepare a "Rocky Shores Vocabulary List" on chart paper. Print and laminate photographs of the rocky shore. Print free-association words and cut into strips.

### Background

The rocky shoreline (A.K.A. intertidal zone) **habitat** is comprised of rocks and boulders and can be found in coastal states such as Hawaii. There are four zones of life in a rocky **shoreline**: the upper intertidal, mid-intertidal, lower intertidal, and subtidal zones. When the **tide** recedes during low tide, depressions between rocks may retain water. These areas are known as **tidepools**. Tidepools contain a variety of **living** organisms such as crabs, small fish, snails, and many types of algae or *limu*. The organisms that reside in a tidepool may be subjected to drastic salinity changes because of evaporation or precipitation, and changes in temperature from sunlight or



precipitation, as well as **desiccation** (drying out) when the available water evaporates or tide recedes. This process results in frequent, large changes in **salinity**. The organisms found in tidepools are, therefore, are uniquely adapted to survive under the constantly changing conditions of this habitat.



From: [www.enchantedlearning.com](http://www.enchantedlearning.com)

## Procedure

1. Give the students the Pre-assessment (if you have chosen to give the Pre-assessment) and provide enough time for each student to complete it (15 minutes).
2. Introduce new vocabulary to the class and write each word on a piece of chart paper. Keep this piece of chart paper as an ongoing vocabulary list for the Rocky Shores unit.

### Activity 1: KWL partner on parade

3. Tell the students that they will be talking to each other about the rocky shore today. Split the class in two and have each group form a line (Line 1 and Line 2). Have students face one another. Remind students that it is important to be a good listener in order to learn. Allow 30 seconds to talk each time a question is posed.
4. Have students in Line 1 look across from them and tell their first partner in Line 2 **when they have been to the rocky shore**.
5. Shift both lines so every student moves to their left. If a student reaches the front of the line, have them move to the other end. Have student in Line 2 tell their new partner in Line 1 **when they have been to the rocky shore**.
6. Have both lines shift to the left again. Have the Line 1 person tell their new partner in Line 2 **what they know about the rocky shore**.
7. Have both lines shift to the left again. Have the Line 2 person tell their new partner in Line 1 **what they know about the rocky shore**.
8. Have both lines shift left again. Have the Line 1 person tell their new partner in Line 2 **what they want to know about the rocky shore**.



9. Have both lines shift left again. Have the Line 2 person tell their new partner **what they want to know about the rocky shore**.

TIP: Walk around and make notes about what students know and what they want to know about the rocky shore for your own future reference.

10. Have students sit in their two lines facing you and call on a few students to summarize where/when their partner has been to the rocky shore, what they know about this habitat, and what they want to know about this habitat by raising their hands. Go over each topic, one at a time.

### Activity 2: Free-Association Rocky Shore Words:

1. Have students face their last partner in their lines. Bring around the bucket with word strips in it. HINT: Feel free to add words listed on strips to the Vocabulary List chart paper.
2. Have one partner from one of the pairs pick a word from the bucket.
3. Say the word out loud (i.e. "TIDES!"). Allow 5 seconds for one partner to say what he/she first thinks of upon hearing this word. The other partner practices being a good listener. Ring a bell or clap to let students know that time is up.
4. Repeat this procedure for the other partner. Talk about each word (without shifting the lines to the left) until every pair has chosen a word.
5. Introduce new vocabulary and show pictures, maps, and props that will help facilitate learning of the new words and concepts. Some of the vocabulary may overlap with the free-association words and students may want to then share their thoughts about the word when you go over vocabulary.
6. If time allows, read an introductory book on the rocky shore. Choose a title from the Literature Connections section.

### Assessments

Pre-assessments completed

Group discussion

### Resources

MARE Rocky Seashores

Arkive.org for photos

[www.coast-nopp.org](http://www.coast-nopp.org)

[www.enchantedlearning.com](http://www.enchantedlearning.com)

### Literature Connections

*Going to the Tide Pools in Hawaii Nei* by Joy S. Au:

A pop-up book that describes many of the common critters found along the rocky shoreline in Hawai'i. This book is great because it is Hawaii-specific and the students get excited about the 3-dimensional pop-up illustrations. It also provides an introduction to tides and the tidepool habitat.

*One Small Place by the Sea* by Barbara Brenner

This book describes tidepool organisms via a fictional story about a visit to tidepools. One caveat is that this book is based on mainland (probably Pacific coast) organisms.



**TIDES**

**CURRENTS**

**SHORELINE**

**TIDE POOL**

**STAR FISH**

**HERMIT CRAB**

**LIMU (algae)**



**SNAILS**

**WAVES**

**WANA (sea urchin)**

**CRAB**

**OPIHI**

**LIVING**

**NON-LIVING**