

Title: SPLASHING AROUND ON ROCKY SHORES
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Author: Environmental Education Team

Grade Level: 3-6

Concepts:	Disciplines:
2. Ecosystem	1.Science
4. Water	2.Languaue Arts
6. Resources	
8. Values/Attitudes	

Objective:

In a pre-post study exercise, student-- will be able to categorize words and terms appropriate to the rocky shore environment of the Virgin Islands.

Rationale:

Diversity in shoreline environments is important, this "quickie" activity will be an interesting supplement to any traditional unit of appropriate study - taking a look at the detail sometimes overlooked.

Directions:

1. Distribute page 1 of the activity and have students do the categorizing.
2. Discuss and/or distribute DCCA Fact Sheet No. 5 for study (10 minutes).
3. Distribute page 2 of activity for students to categorize the list again. Correct both and score.
4. Discuss the overall value of rocky shore areas to local environment. Have students write a paragraph called for in #3.

Resources:

Coastal Habitats: Rocky Shorelines, DCCA Environmental Fact Sheet No. 5.

Name:

School:

SPLASHING AROUND ON ROCKY SHORES

1. Try your hand at categorizing these words or terms by writing them in the appropriate column headings in the illustration below.

- small fishes sea urchins acropora coral exposed bedrock
- coastal bluff algae mollusks salt tolerant plants
- sea whips snails crabs gorgonian coral
- periwinkles rookeries sea grass sea weeds
- promontories sea fans chitons sand layer

Note: There are more line spaces than words or terms.

Number correct first try? _____

ROCKY SHORES

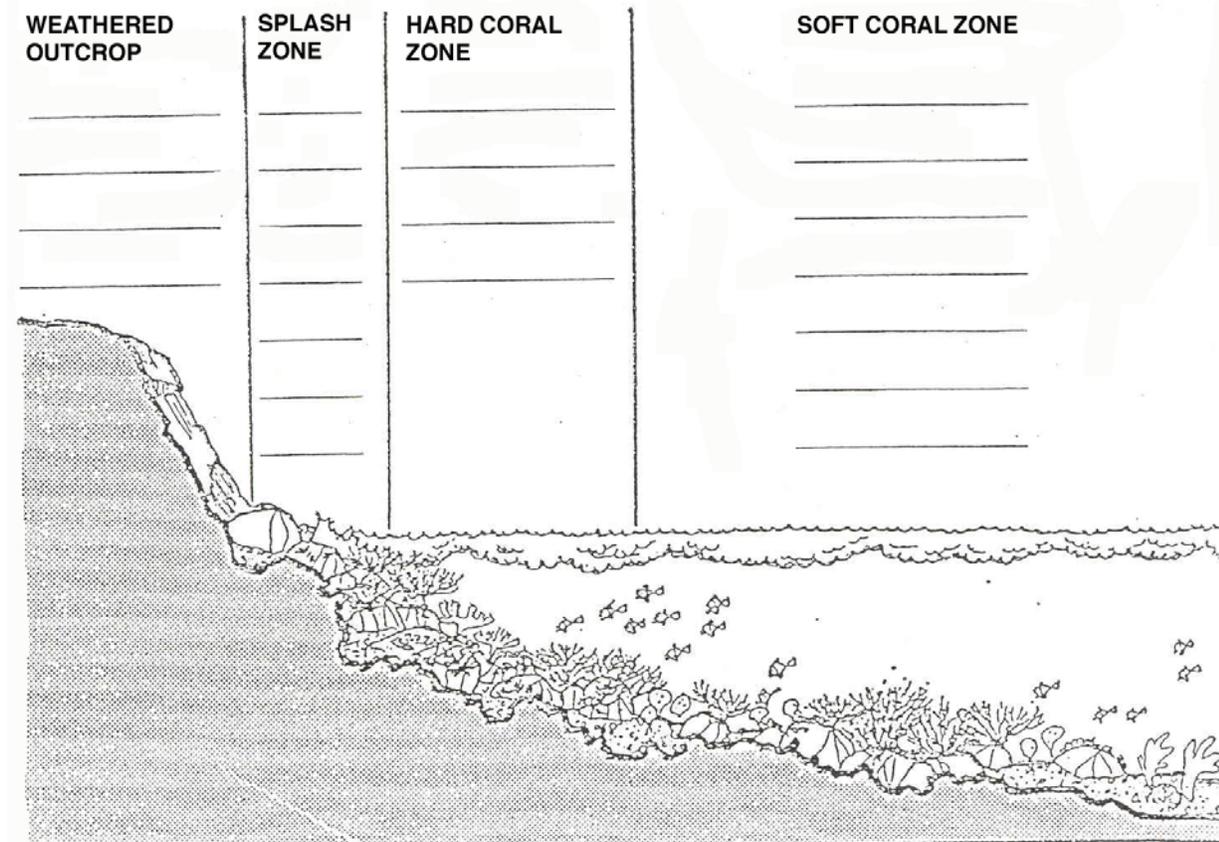
WEATHERED OUTCROP	SPLASH ZONE	HARD CORAL ZONE	SOFT CORAL ZONE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

2. Study DCCA Fack Sheet No. 5 (10 minutes)- Recategorize these same words or terms again.

small fishes sea urchins acropora coral exposed bedrock
coastal bluff algae mollusks salt tolerant plants
sea whips snails crabs gorgonian coral
periwinkles rookeries sea grass sea weeds
promontories sea fans chitons sand layer

Number correct second try?

ROCKY SHORES



3. Write a short paragraph on the value of rocky store areas to Virgin Island environment:

Hardy members of the adjacent terrestrial vegetation may cling to the uppermost rocky area where there are pockets of so or fissures in the rock. On some remote rocky cliffs sea birds, such as pelicans, roost and nest.

Lower down where sea spray occasionally hits the rock, a few hardy marine animals can be found: periwinkles and an occasional crab. Closer to the water, the numbers and kinds of organisms increase. In the splash zone, oysters, small fish, sea urchins, and a wide variety of mullusks can be found, including the edible whelk.

The underwater rocky substrate is perfect for coral attachment, and the shallow, clear, turbulent water ideal for their growth. At the deeper undersea base of the rocky shore, the reef is often composted of sea fans, sea whips, or "soft" corals. Here land-derived boulders and rock may also be found, but, frequently, the shoreline bedrock is exposed or lies under a very thin layer of sand. Both "hard" and "soft" corals require a hard, stable substrate for attachment.

Further off-shore, the sand layer becomes thicker, and beds of sea grasses and algae may develop if the water is not too deep. There is almost always a band of bare sand, one or more meters wide, separating the rock and reef area from the sea grass beds. This sandy strip is maintained by browsing fishes and sea urchins which live on the reef and forage on the edge of the grass areas.

Use Limitations	Major Use
Usually rugged and inaccessible, making construction difficult; erosion and stability are often problems because of exposure, sites face heavy sea and wind damage in storms.	Frequently good spots for hand line fishing. Good spots for snorkeling and SCUBA - often have whelks and
Rock and coral bottom and turbulence Precludes safe boat docking and anchorage.	Provide scenic vistas important May be important rookeries for sea birds. Because of turbulence and water movement, are relatively well suited to receive treated effluents, but outfall must be some distance off-shore.

What Are They?

Rocky shorelines consist of steep coastal bluffs and cliffs. These are formed by weathering and wave action on rock outcrops or promontories. These are distinguished from rocky beaches which have a gentle slope and are covered with loose rock or coral rubble. Rocky shores are rigorous environments, but far from sterile. The area above the water supports a few specialized salt-tolerant plants and related fauna, but below the water, there may be well developed coral growth attached to the bedrock and boulder rubble. Because of the steep slope and the fact that many rocky shorelines occur on headlands and points, these are areas of high wave energy and turbulence. This activity keeps the water well-mixed and aerated and discourages siltation.

ROCKY SHORES

