



Sandy Shores

Concepts

All the abiotic (nonliving) and biotic (living) things that can be found under or above the sand can be broken down into tiny grains of sand. Sand is made up of tiny bits of everything that is found on the beach.

HCPS III Benchmarks

SC 2.1.1

SC 2.1.2

SC 2.5.1

Duration

1 hour

Source Material

MARE Sandy Shores

Vocabulary

Scavenge

Scavenging the Sandy Shore

Summary

Students will also explore the types of things that can be found in or on the sand. They will learn the difference between the abiotic (nonliving) and biotic (living) components of the habitat and be able to correctly identify them. Students will also make basic observations of various kinds of sand and discuss how they are similar or different from one another.

Objectives

- Students will be able to identify the different categories of material that make up the sandy shore environment.
- Students will be able to correctly classify or sort those materials as evidence of either living or nonliving things.
- Students will be able to identify basic differences between different types of sand including color, grain size, and many others.

Materials

Activity 1: Beach Bucket Scavenger Hunt

For the teacher:

4 pieces of large chart paper

(1 for each of plant, animal, human, and non-living categories)

Markers

Masking tape

For each group of students (based on groups of four):

1 plastic tub or sand bucket

Enough sand to fill each tub or bucket half full

Pieces of beach drift and marine debris

(You will need at least 2 from each of four categories: evidence of plants, animals, humans, and non-living material for each group)

4 sheets of white paper labeled for the four categories

Markers

Activity 2: Basic Sand Observations

4 bags of different types of sand

Making Connections

Learning about the different types of materials that can be found on the sandy shore will provide students with a firm understanding of both the living and non-living components that make up the habitat. By observing and touching different types of sand students will begin to understand that not all sand is the same and why some beaches in Hawaii look different than others. This lesson will prepare students



for the sink or float lesson at the end of the unit.

Teacher Prep for Activity

Activity 1: Beach Bucket Scavenger Hunt (based on groups of four)

Make the four beach buckets/tubs with at least 2 items from each of the four categories of material found on the beach buried inside. Set up four stations with one bucket and four category observation sheets (white pieces of paper) per station.

Activity 2: Basic Sand Observations

Collect four sand samples from different beaches such as black, green, pebble, and white sands. Break up the samples into separate baggies being sure to make enough of each different kind for the number of work stations you will have set-up in your classroom.

Background

This lesson is an extension of “Exploring Hawaii’s Beaches” (lesson 1) and a prep for “What is Sand?” (lesson 3). Therefore, no background information is necessary as all relevant information and topics will be covered within the background for the next lesson.

Procedure

Activity 1: Beach Bucket Scavenger Hunt (This should take ~ 25 minutes)

1. Read, define, and write the new vocabulary word on your sandy shores vocabulary list.
2. Tell the students they will now have the chance to explore their very own beach right in their classroom.
2. Tell them they can work as a group (**Hint:** remind them about good group work behavior) to find and identify all the items that are buried in their bucket. Assign each student in the group the responsibility of completing one of the four category sheets for their group. Tell them to feel the sand and pick up pieces of drift and debris to look at more closely. They should keep all the sand in the tub so the classroom will stay clean.
3. After they have made some observations, ask the students to sort or group the items into each of the four categories (plant, animal, human, and non-living).
4. Explain that we must be patient and look closely to find evidence of living things.
5. Move around the classroom and visit each group to make sure they are properly sorting the items into categories.
6. After they have sorted the items into the four groups, ask the students to record the names of the items on each of their sheets.
7. When each group has finished sorting and recording, tape the four large pieces of chart paper on the board and ask the students to name items from their bucket for each of the four categories until all the items have been named.

Activity 2: Basic Sand Observations (This should take ~35 minutes)

1. Divide the students into groups of four (more if necessary) and have them move to a work station.
2. Explain that they will now have the opportunity to observe different types of sand from different beaches in Hawaii.



3. Have each of the four students in a group pick one bag of sand on the table. Tell them that for now they should not open the bag. They should make observations by feeling and looking through the bag.
Ask probing questions such as:
 - a. How big are the sand grains?
 - b. Can you tell what they are made of?
 - c. What colors can you see?
 - d. What do the tiny grains of sand look like?
4. As a class, discuss the results of their observations. How are the samples similar? How are the different?
5. Next, have each group compare their four samples. Have them discuss how the four samples are the same and different.
6. Questions & Answer session
Ask the students to imagine a cowry shell buried in the sand on the beach.
Question: How might it end up as sand?
Answer: The waves break it up into tiny pieces. It gets smaller and smaller and mixes in the waves with other pieces of broken material like rocks and plants.
Ask the students to imagine a rock on the top of Mauna Kea.
Question: How might it become sand?
Answer: Its breaks off and a river carries it to the ocean.
Ask the students to imagine a piece of coral.
Question: How might it become sand?
Answer: Waves wear it down after the coral dies and waves and currents carry it to the shore. Parrotfish might also bite off a piece of the coral and crunch it into small bits.
Summary Question: Why might there be so many different colors of sand?
Answer: Different colors indicate that the sand is made of different things such as rocks, shells, coral, glass, and many others.
7. At the end of the session, ask the students to make sure they have cleaned up around their workstations and review the key concept from the lesson.

Sand is made up of tiny bits of everything that is found on the beach.

Assessments

Worksheets completed

Observations made