

EQ: How can observations of sand tell me about the forces and materials that make up a beach?



Forces & Interactions:
Wind and Wave Energy

Particle Size: Place a pinch of sand gathered from the wash zone into the tray.

What sized particles did you find in your sample? _____mm

Place a pinch of sand gathered from the wrack line

What sized particles did you find in your second sample? _____mm

Watch the incoming waves. Describe a wave's energy and shape as it hits the beach.

When the wave hits _____

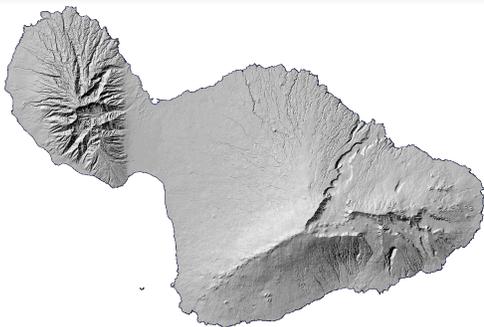
As the wave moves in on the beach, what happens to the wave after it reaches it's highest point up the beach slope?

Which appears to have more energy, incoming waves or retreating waves?

The wrack line is the line on the beach where the waves reach their highest point. Were materials found in the wrack line sample larger or smaller than the other sample? _____

In the egg shell demonstration was more or less energy needed to move larger pieces?

What can you **infer** about the force of the incoming wave as compared with the retreating wave?

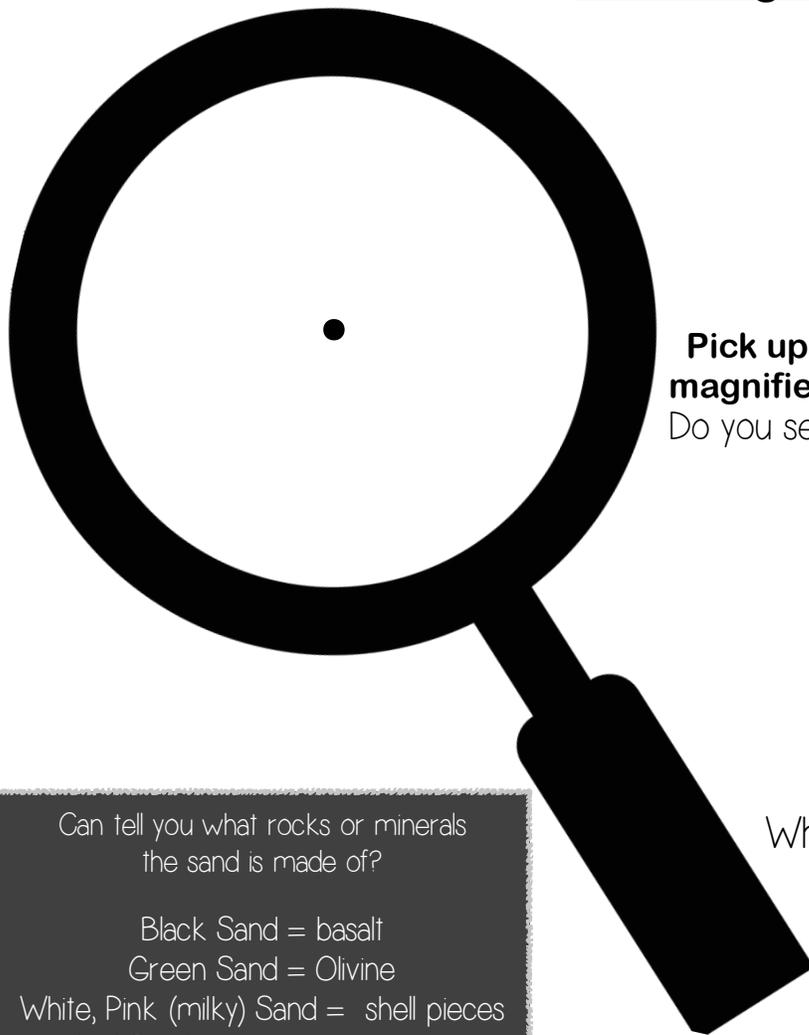


- In the lower left corner. Add a Compass Rose to the map showing the cardinal directions
N, S, E, W
- Draw a box on the map to indicate where the Refuge is located
- Show the wind direction today by drawing an arrow on the map.
- Add any offshore reef you observe to the map

Name: _____ Date: _____

EQ: How can observations of sand tell me about the forecasted materials that make up a beach?

Sand Origin... What materials do you see in this sand?



Pick up a palm full of sand and observe with a magnifier

Do you see any man-made materials? What are they?

Can tell you what rocks or minerals the sand is made of?

Black Sand = basalt

Green Sand = Olivine

White, Pink (milky) Sand = shell pieces

Red Sand = iron/coralline algae

What colors or patterns do you see?

Percent (%) Composition- knowing what materials and how much of each can you tell me about forces acting on this beach?

- 1) Place one capful of sand in the magnifier picture above.
- 2) Use your paint brush to separate the sample according to color and material inside the circle
- 3) Draw a line from the center dot to the outside of the circle to mark the outline of each material type
- 4) Working in one section at a time, remove material and label the section with material type or description

Q1 The largest section of the "sand pie" is _____

Q2 The smallest section of the "sand pie" is _____

Q3 Something about my sand pie that _____ me was _____
