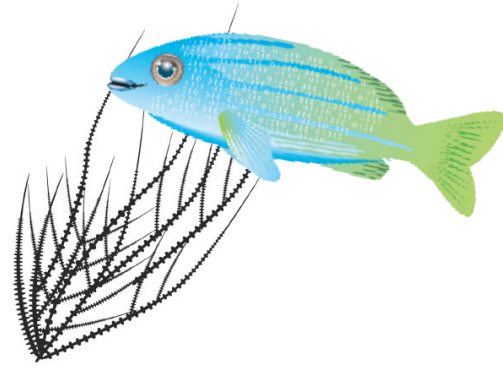


Sand Inquiry Record Sheet

Name: _____ Date: _____

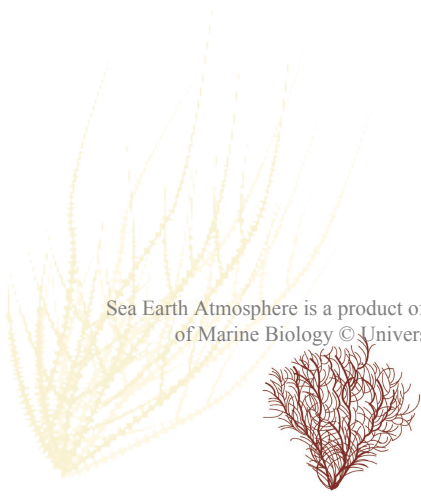
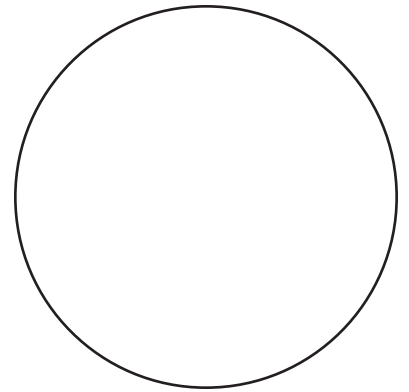
Directions:

1. Place a small sample of sand onto a piece of paper.
2. Using a toothpick, separate the particles.
3. Use a magnifying glass to observe the particles.
4. Feel the sand texture with your fingers.
5. Glue (or tape) samples of the particles into the circle.
6. Answer the following questions in complete sentences.



Sample 1

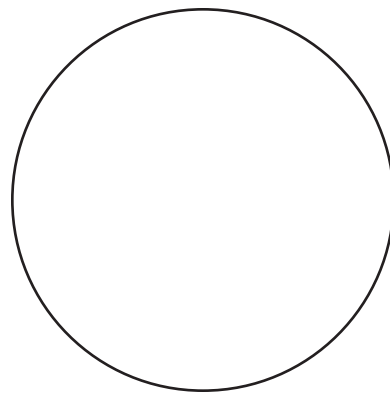
1. Describe how the sand looks and feels.
2. Where do you think the sand particles came from?
3. How do you think the sand got to the beach?



Sample 2

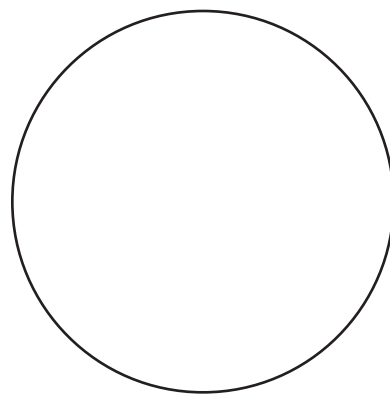


1. Describe how the sand looks and feels.
2. Where do you think the sand particles came from?
3. How do you think the sand got to the beach?



Sample 3

1. Describe how the sand looks and feels.
2. Where do you think the sand particles came from?
3. How do you think the sand got to the beach?



Vinegar Test:

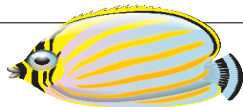
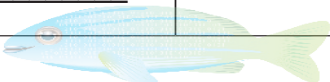
The vinegar test is used to help determine if the sand is of volcanic or biological origin.

- Vinegar is a weak acid that reacts with and dissolves calcium carbonate.
- The shells and skeletons of many marine invertebrates (like corals, urchins, clams, calcified algae, plankton, etc.) are made of calcium carbonate.
- When vinegar dissolves calcium carbonate, it releases carbon dioxide bubbles. If there is no calcium carbonate present when you add the vinegar, there will not be any bubbles.

1. What would happen if you add vinegar to:
 - a. biological sand (with shells, corals, or algae)?
 - b. volcanic sand (from volcanic rock)?
2. From your exploration of the three sand samples, record your hypotheses about the origin of the sand.
3. For each sand sample, place 1 teaspoon of sand into the glass dish and slowly add 1 teaspoon of vinegar.
4. Record your observations and interpretations for each sand sample on the table below.



Sample	Hypothesis	Observations	Is the sand of volcanic or biological origin?	Explain your evidence?
1 Color of Sand: _____				
2 Color of Sand: _____				
3 Color of Sand: _____				



Activity Questions:

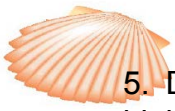


1. What differences did you observe between the different colors of sand?
2. What do the differences you observed tell you about the source of that sand?

3. If one sand sample bubbled a little bit but another bubbled a lot when you added vinegar, what would this tell you about the amount of biological material in each sample?



4. How do you think the sand got to the beach?



5. Did you see anything else in the sand? Describe any items that do not look biological or volcanic.

6. How do you think non-sand items got to the beach?

7. Do all beaches get their sand in the same way? Explain your ideas.

