

Name: _____ Date: _____

Beach in a Bottle

1. Do Steps 1–6 of the Task Card. Record your measurements and observations in the chart below.

2. **Predict:** How will your results be different with stronger waves?

3. Do Step 8 of the Task Card. Record your measurements and observations in the chart below.

	Starting beach measurement	Ending beach measurement	How has the beach changed?	How has the sand under the water changed?
Gentle waves				
Strong waves				

4. What differences did you notice between the gentle and the strong waves?

5. Which took you more energy to make?

6. Which waves had more energy? How do you know?

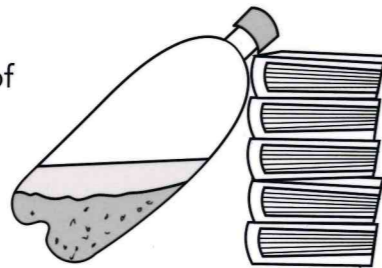
7. Which were more like hurricane waves?

task card 1

Beach in a Bottle

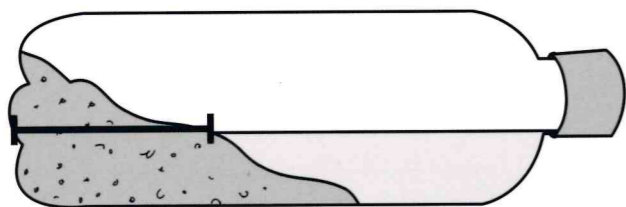
Build a beach and make waves!

1. Place a funnel into an empty 1-liter soda bottle. Pour in 240 ml (1 cup) of sand. Then pour in 240 ml of water. Replace the bottle cap. Remove any label from the bottle.



2. Shake the bottle to mix the sand and water. As soon as you stop shaking, lean the top of the bottle against the stack of books. Wait about 10 seconds for the sand to settle.

3. Gently lay the bottle on its side. Some of the sand should rise out of the water, making a beach.



4. Look at the shape of the beach. Look at the shape of the sand below the water. Find the line where the water meets the sand. Measure from that line to the bottom end of the bottle. Write that beach measurement on your data sheet.

5. Carefully hold the bottle in both hands, keeping it horizontal. Rock it to make small, gentle waves. Let the waves go about halfway up your beach. Keep making waves for about 1 minute.

6. Gently put down your bottle. How has your beach changed? What about the sand under the water? Record your observations on your data sheet. Measure your beach again. Did your beach change size?

7. **Predict:** How will your results be different with stronger waves? Record your predictions.

8. Repeat Steps 2–6, but this time make larger waves. Allow your waves to go all the way up your beach.

9. What differences did you notice between the gentle and the strong waves? Which took you more energy to make? Which waves had more energy? How do you know? Which were more like hurricane waves?