

April 26, 2006

Test for **Density, Buoyancy and Centrifugation** Activity

Name _____ Teacher _____

Date _____ Class _____

Check one:

Pretest

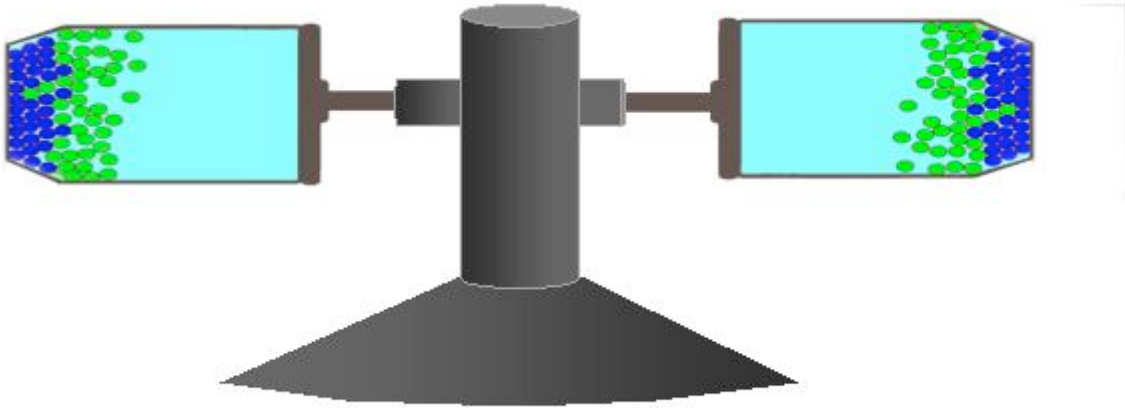
Posttest

1. Why does a can of Classic Coke sink and a can of diet Coke float in water? Use the data in the table below to compare volume and composition of Classic and Diet Coke to explain the answer.



Classic Coke	Diet Coke
Volume = 355 mL	Volume = 355 mL
Contains: water = 355 g sugar = 39 g Nutra Sweet = 0 g Total. = 394 g	Contains: water = 355 g sugar = 0 g Nutra Sweet = 0.1g Total. = 355.1 g

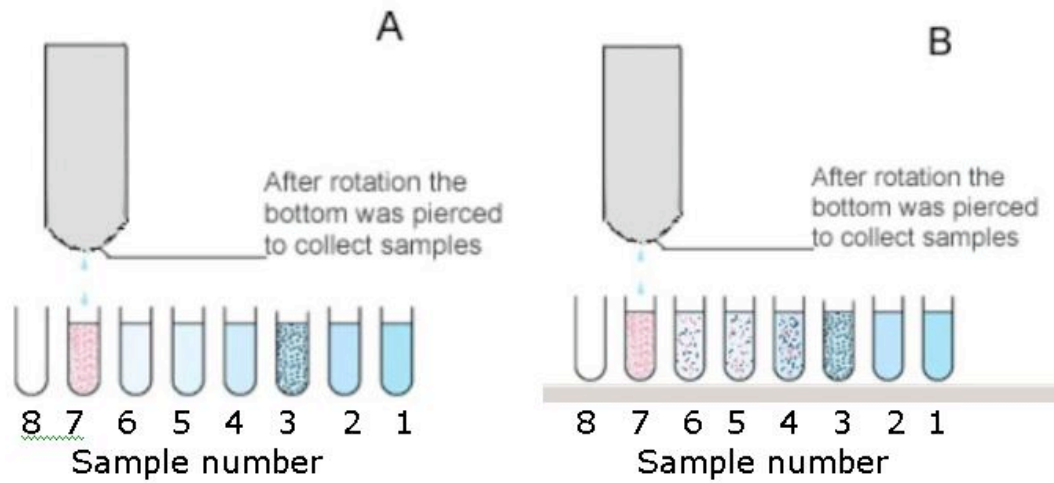
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2a. The picture above represents two centrifuge tubes spinning. Do the green molecules (or light gray molecules if in black and white) or blue molecules (dark gray) have greater density? How do you know?

2b. Suppose you were a particle inside the tube on the right in the illustration above. It would feel as if gravity were pulling you sideways. Draw an arrow that shows which way it would feel like you were being pulled.

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3 A lab technician has to separate two different types of molecules. She places the mixture in a centrifuge tube and rotates it for 12 hours, at 60,000 rpm at room temperature. The next morning she pierces the bottom of the plastic tubes and collects her samples (Fig. A). She sees two distinct types of molecules in samples #3 and #7. The next day she decides to cut the time in half (Fig B) and her result was quite different (Fig B).

Explain why cutting the rotation time in half affects the results.