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Buoyancy

Activity Instructions

- The students can begin at either Station I or Station II, but Station III must be the final station.
- Ensure each group has a copy of the *Student Handout*.
- Print out the instructions on the following pages and place them at each station.

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Buoyancy - Activity Instructions

Station I - Find the Hidden Message

Step 1

Without lifting the bottle off the table or tipping it over, try to find the hidden message.

Step 2

Record the message and describe how you found it. This message will be used in Station III.

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Buoyancy - Activity Instructions

Station II - Conservation of Mass

Step 1

Place the water bottle and the small balloon on the balance. Set the balance to zero.

Step 2

Pour 100 mL of water into the water bottle. Place the bottle on the balance. The balance should now have a reading of ~100 g.

Step 3

Put the funnel into the neck of the balloon and pour the white powder substance into the balloon.

Step 4

Remove the funnel and stretch the neck of the balloon around the opening of the water bottle, without adding the white substance to the water. Make sure the balloon is well-secured around the opening of the water bottle and let the balloon hang down the side of the bottle.

Step 5

Place the bottle and attached balloon on the balance. Record the mass.

Step 6

Add the white substance to the water by lifting the balloon and wait for a reaction.

Step 7

Once the reaction is complete, record the balance reading for the reacted system.

Step 8

Calculate the difference between the balance readings before the reaction (Step 5) and after the reaction (Step 7). Record this change in mass.

Step 9

Empty the water from the bottle into the small bucket.

Step 10

Depending upon whether or not a change in mass occurred, either a diet pop can or a regular pop can will be used in Station III. If a change in mass occurred, pick a regular pop can. If no change occurred, pick a diet pop can.

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Station III - Pop Floats

The results from the first two stations, "Find the Hidden Message" (Station I) and "Conservation of Mass" (Station II), provide information which is necessary for this station.

Step 1

If a change in mass occurred in Station II, select a regular pop can; if no change occurred, select a diet pop can.

Step 2

Drop the can into the bucket labelled with the hidden message that was discovered at Station I. What happened to the can? Record your observations.