

Accelerometer in a Bottle

You may work with a partner during this activity but be sure you both try the following.

Part 1 Cork and Water

1. Gently take off the lid of the supplied plastic bottle and fill the bottle with water almost to the top. Be sure that the cork attached to the lid doesn't fall off the attached string or the lid of the bottle. If it does, reattach it before continuing.
2. Put the lid back on the bottle and turn it upside down. Water should not leak from the bottle and the cork should be submerged and floating below the water level.
3. What do you expect the cork to do when you move the bottle? Why?
4. Move the bottle quickly from side to side in front of you. Note the behavior of the cork.
5. Move the bottle toward and away from you, noting the behavior of the cork.
6. Hold the bottle in front of you and rotate in a circle, noting the behavior of the cork.
7. How did the cork behave? Why? Is this different from what you expected?

Part 2 Cork and Air

8. Pour out the water, turn the bottle right-side up
9. Now what do you expect the cork to do when you move the bottle? Why?
10. Move the bottle quickly from side to side in front of you. Note the behavior of the cork.
11. Move the bottle toward and away from you, noting the behavior of the cork.
12. Hold the bottle in front of you and rotate in a circle, noting the behavior of the cork.
13. How did the cork behave? Why? Is this different from what you expected?
14. Did the cork behave the same way as it did with water in the bottle? Why not? Explain.