**Objective:**

To construct a **bell-jar model** so that you may observe the mechanics of breathing

**Materials:**

gatorade.jpg

I clean, dry Gatorade bottle, with the cap removed

1 pair of pointed scissors

2 medium latex balloons

heavy duty duct tape

Sharpie marker (to label your name!)

**Procedure:**

1. Poke a hole in the bottom of the Gatorade bottle by twisting the point of the scissors near the edge where the side of the bottle meets the bottom. This will allow you to insert the scissors into the hard plastic so that you may begin cutting!
2. Cut around the bottom of the bottle’s edge. You will be removing the entire circular bottom of the bottle.
3. Stretch one balloon a few times and partially insert the balloon down the neck of the top of the Gatorade bottle. The “lip” of the balloon should be stretched over the top of the bottle. Duct-tape the balloon around the top of the bottle.
4. Take the second balloon and cut off the “lip” of the balloon. Stretch the balloon slightly over the open bottom of the bottle. It should look flat, without being too taught. Duct-tape the balloon around the edges to hold in place.
5. Label your bottle with your name, using the Sharpie marker

**You are now ready to use your bell-jar model!**

**Questions:**

1. Which structure of the respiratory system does the balloon at the top of the bottle represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Which structure of the respiratory system does the balloon at the bottom of the bottle represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Which structure does the bottle itself represent? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. What happens to the balloon at the top of the bottle when you pull down on the bottom balloon?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What happens to the balloon at the top of the bottle when you push up on the balloon at the bottom? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. What would happen if you poked a hole in the bottom balloon?

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1. What might happen if you poked a hole in the balloon at the top of the bottle?

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