

Cloud in a Jug Worksheet

Name: _____

Directions

1. Place a small amount of water in the bottom of the jug. A 1/4 inch depth should do.
2. Now, put the stopper in the mouth of the jug. Connect the pressure bulb's plastic tube to one of the glass tubes coming from the stopper. Connect the other piece of plastic tubing to the second glass tube coming from the stopper. Make sure the pinch clamp is closed on this second piece of plastic tubing.
3. Squeeze the black bulb while keeping the pinch clamp closed until it becomes somewhat difficult to operate. About 30-40 squeezes should do. You may need to hold the stopper in place while squeezing the black bulb (else it might be tempted to pop out!).
You are about to release the pressure by unpinching the clamp. BUT NOT YET!

Question: What do you think will happen after you unpinch the clamp and the pressure drops? (Let's be more creative than "the air will come out.")

4. Now release the pressure by unpinching the clamp.

Question: Describe everything that happened when you released the pressure.

Question: Was your prediction correct? Suggest reasons for the results you got:

Question: Before you continue with the next part, state a hypothesis for the results expected in the steps below:

5. Unstopper the jug and drop in one burning match (it will rapidly go out when it hits the water). Quickly restopper the jug. Squeeze the black bulb while keeping the pinch clamp closed until it becomes somewhat difficult to operate. About 30-40 squeezes should do. You may need to hold the stopper in place while squeezing the black bulb (else it might be tempted to pop out!).
6. Now release the pressure by unpinching the clamp.

Question: What happened when the pressure was released this time? Did anything new happen?

Question: How do you account for the difference in the results between releasing the pressure without the match in the jug and releasing the pressure when the match was in the jug? (Hint: the heat from the match is not a significant factor!)

Question: Based on the results obtained in this lab -- What are some possible effects of burning trash, coal and wood, upon the atmosphere, weather and climate? (Aside from the obvious pollution itself...)