Cloud Lab

1. What is the purpose of the match and smoke?

_____
_____

2. What happened to the temperature inside the bottle when we increase the pressure by pumping more air into the bottle?

_____
_____

3. Explain the adiabatic temperature change that took place inside the bottle.

_____
_____

4. What happened to the water on the bottom of the bottle as we increased the temperature inside the bottle?

_____
_____

5. As the water evaporated inside the bottle, what happened to the humidity?

_____

6. When the stopper popped out of the bottle, what happened to the temperature inside the bottle? _____

7. At this point, was the dew point reached? If yes, how could you tell?

_____
_____

8. When the stopper popped out, what impact did the decrease in temperature have on the air's ability to hold moisture?

_____
_____

9. Describe the process needed for a cloud to form on a regular day outside.

_____
_____
_____
_____
_____

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1. Which will probably have more humidity (water vapor) in the air above it? (Circle one)

A) a part of the ocean having colder surface waters

B) a part of the ocean having warmer surface waters

2. For a cloud to form, the air must be cooled below its _____. (Circle one)

thermal point condensation point dew point

3. As air is compressed (pressurized), it will become: (Circle one)

warmer cooler

4. As air expands, what happens to its temperature?

5. What are **condensation nuclei**? Give two examples.(In your experiment, what served as the condensation nuclei?)

6. Why was cloud formation more impressive when smoke particles were present in the bottle?

7. Did the cloud appear _____. (Circle one)

A. when you caused high pressure on the air in the bottle (by pressurizing).

B. When you caused low pressure (by releasing pressure).

8. Which would cause more vapor in the bottle. (Circle one)

hot water, or cold water?

9. Based on your findings, write out (use the back of the page if you need it) a recipe for cloud formation? (at least 2 ingredients and 2 conditions)

10. Why did the cloud disappear when you pressurized the bottle ? You must use the term "dew point" in your answer.

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3 TRIALS

Trial #1 Put the stopper in the bottle and pump (you'll know when to stop)

Record what you see.

Trial #2 Place a lighted match in the bottle, immediately put the stopper in and pump.

Record what you see.

Trial #3 Quickly reseal the bottle with the stopper and pump 3-4 times.

Reord what happens.