Cloud Formation Lab

Pre-lab Questions:

1. Why would there be more humidity in the air above a warmer lake than there would be above a colder lake?

2. In order for a cloud to form, the humid air must be cooled below it’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. As air is compressed (squeezed), does it become warmer, or does it become cooler? Why?

4. As air rises, will it be compressed, or will it expand? How will this affect its temperature?

5. What are “condensation nuclei”? Give two examples.

**Lab Procedure/Observations:**

Trial #1: Get 30 mL of very cold water and then pour it into the plastic bottle. Firmly screw on the lid. Shake the bottle vigorously for 30 seconds. Squeeze the bottle for several seconds to increase the pressure, and then release it to allow the air inside to expand. Squeeze and release several times as you watch the air in the bottle.

*Observations:*

Trial #2: Unscrew the cap from the bottle. Light a match, blow it out into the bottle, and then hold it there for about 2 seconds. Quickly replace the cap. Squeeze and release in procedure #1.

*Observations:*

Trial #3: Empty the cold water from the bottle, and get 30 mL of very hot water (near microwave). Replace the cap, and shake the bottle for 30 seconds. Squeeze, release, and observe.

*Observations:*

Trial #4: Unscrew the cap, and hold a match into the bottle as you did in procedure #2. Quickly replace the cap, and then squeeze, release, and observe.

*Observations:*

*Analysis Question:* Why did the cloud disappear when you squeezed the bottle? You must use the terms **evaporate** and **dew point** in your answer.

CER *(Claim, Evidence, Reasoning)*

Experimental Question:**Which of your four trials resulted in the best cloud formation?**

**\*Draw a diagram to help support your evidence & Reasoning!!**