Virtual Lab: Acetylene Lab

Name: _____ **Core:** ___

Purpose: To examine the properties of a gas created from calcium carbide and water

Materials

watch glass	tongs	25ml Erlenmeyer flask
matches	weighing dish	pH color chart
calcium carbide	water	10ml graduated cylinder

Procedures

1. Add 10 ml of water to the flask.
2. Get 0.5g of ***calcium carbide*** in a weighing dish from your teacher.
3. Light a match.
4. Pour the calcium carbide into the flask and move the lit match to the opening. It might take a few tries to get it to light, so don't blow out the match right away.
5. Using tongs, hold a watch glass over the flame until the flame goes out. (You are collecting a product produced in this chemical reaction onto the watch glass.)
6. Once the flame goes out, add 2 drops of universal indicator to the contents in the flask.
7. Allow the flask and watch glass to cool down before you clean them.

Results/Conclusion

1. What is your evidence that a chemical reaction occurred when the CaC was added to the water?

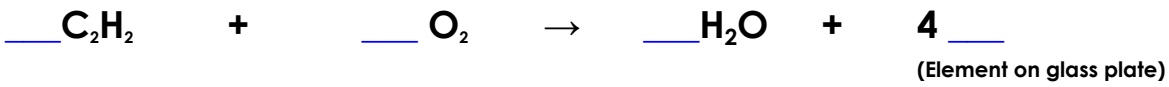
2. What gas is required for combustion to occur?

3. What gas was produced in this chemical reaction? How do you know?

4. What color did you see once you added the Universal Indicator?

5. The color change of the universal indicator was due to the presence of $Ca(OH)_2$. Is $Ca(OH)_2$ an Acid or a Base?

6. Using the chemical reaction below, what element is left on the glass plate when acetylene is burned? Place this element's atomic symbol in the space below. Once you have determined the element, balance this chemical equation.



(Element on glass plate)

PART 2

Watch the second virtual lab with additional examples and explanations. Add new information to your notes. Read through the information provided carefully. Answer the questions below.

Virtual Lab: Calcium Carbide and Water forms Acetylene

This lab has two chemical reactions.

A. The first reaction produces the acetylene gas (C_2H_2)
B. The second reaction is a combustion reaction in which acetylene gas burns in the presence of oxygen

Respond to the questions below: Use **BLUE BOLD FONT**:

1. The first reaction produces the acetylene gas (C_2H_2)

   a. Balance the Chemical Equation. Use BLUE BOLD FONT for your Coefficients.

   $$\_\_CaC_2 + \_\_ H_2O \rightarrow \_\_Ca(OH)_2 + \_\_C_2H_2$$

   b. What type of chemical reaction is this (shown above)? (Highlight your response)

   A. Decomposition B. Replacement C. Synthesis

2. The second reaction is a combustion reaction in which acetylene gas burns in the presence of oxygen

   a. Balance the Chemical Equation. Use BLUE BOLD FONT for your Coefficients.

   $$\_\_C_2H_2(g) + \_\_O_2(g) \rightarrow \_\_CO_2(g) + \_\_H_2O(g)$$

b. What type of reaction occurred above? (Highlight your response)

How do you know? This may require some investigating. This is a new type of reaction.

A. Decomposition B. Combustion C. Synthesis

3. Finish the CER started below. Refer back to the video as needed and your notes on how to do a CER (Claim, Evidence, Reasoning).

Claim: Calcium Carbide reacted with water producing acetylene gas.

Evidence: (as viewed in the video and using the above chemical equation):

Reasoning: Complete in the box below

4. What did you learn about car lights that used acetylene?
