**\*\*USE THIS AS A GUIDE TO COMPLETE YOUR LAB WRITE-UP THAT YOU WILL PRINT OUT AND HAND IN\*\***

**Lab 2-1 B: Generating and Burning Hydrogen Gas and Synthesis of Oxygen** Name:

 Date:

 Block:

**Purpose**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials/Apparatus**: Refer to p. \_\_\_\_\_ of BC Science 9.

**Procedure**: Refer to p. \_\_\_\_\_ - \_\_\_\_\_ of BC Science 9.

**Data/Observations/Results:**

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Procedure Step** | **Observations** |
| 4. Appearance of zinc metal as it reacts with acid. |  |
| 7. Flame reacting with hydrogen gas. |  |

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Procedure Step** | **Observations** |
| Evidence of a chemical reaction. |  |
| Glowing splint reacting with oxygen gas. |  |

**Discussion Questions**: *(Answer the following questions using full, complete sentences.*

*Don’t forget to include your results.)*

1. Identify the element and the compound that were the reactants in this experiment. Make sure you state which one is the element and which one is the compound.
2. What element was produced in this reaction?
3. How does the appearance of the zinc metal change as it reacts with the acid?
4. Explain how a burning splint can be used to test for the presence of hydrogen gas.

**Conclusion**: *(Answer the following questions in a paragraph, using full, complete sentences.*

*Don’t forget to include your results.)*

1. Explain how you generated hydrogen gas.
2. Describe what happens during a positive test for hydrogen gas.

**Critical Thinking:**

1. Predict what might happen to the zinc if it were left in the acid for a long time. Provide an explanation for your prediction based on the evidence you collected during the lab.
2. Your friend is completing an experiment and generating an unknown gas in a test tube. Describe the steps involved to test whether the gas is hydrogen or oxygen.
3. What is one limitation of the hydrogen pop test and one limitation of the oxygen test.

**LAB 2-1 B** **GENERATING AND BURNING HYDROGEN GAS** NAME:\_\_\_\_\_\_\_\_\_\_\_\_

**SELF ASSESSMENT RUBRIC** BLOCK:\_\_\_\_\_

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|   | **3** | **2** | **1** |
| **PAGE SET-UP/ PURPOSE /** **MATERIALS/****PROCEDURE** | Format is correct. Name, date & block. All present, neat, using dark, blue or black ink. Headings are underlined, using a ruler. | All/ most present, using dark, blue or black ink/or pencil.  | Some filled in, using dark, blue or black ink/or pencil or missing.  |
| **DATA/****OBSERVATIONS/RESULTS:**  | Data table is accurate, neat, and complete and has an appropriate title. Heading is underlined using a ruler. | Data table is neat, and complete. | Data table is incomplete or missing. |
| **SAFETY, SKILL & CLEAN-UP** | Student is on task and follows procedures safely. Materials are cleaned up and disposed of as teacher instructed. | Some reminders needed to be on task and follow procedures safely. Materials are cleaned up and disposed of with some reminders.  | Many reminders needed to be on task and follow procedures safely. Materials are not cleaned up and disposed of, or require many reminders to do so. |
| **DISCUSSION** **QUESTIONS** | All questions are answered neatly and accurately in full, complete sentences using dark, blue or black ink. Results are included. Heading is underlined, using a ruler. | Most questions are answered accurately, using dark, blue or black ink/or pencil. | Many inaccurate/missing answers.  |
| **CONCLUSION** | Conclusion accurately answers the questions, in a paragraph, using full, complete sentences using dark, blue or black ink. The results are referred to. Heading is underlined, using a ruler. | Conclusion answers the questions, using dark, blue or black ink/or pencil. The results are not referred to. | Conclusion does not answer the questions or refer to the or results. |
|  | **5** | **3-4** | **1-2** |
| **CRITICAL THOUGHT:****Weigh evidence and draw reasoned conclusions** | The student accurately identifies conclusions, implications and consequences with a well-developed explanation.  | The student identifies conclusions, implications and consequences in a brief summary or only discusses one area. | The student does not explain, provides inaccurate information or merely provides a list of ideas. |

**TEACHER ASSESSMENT RUBRIC** TOTAL: /20 = /10

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| --- | --- | --- | --- |
|  | **3** | **2** | **1** |
| **PAGE SET-UP/ PURPOSE /** **MATERIALS/****PROCEDURE** | Format is correct. Name, date & block. All present, neat, using dark, blue or black ink. Headings are underlined, using a ruler. | All/ most present, using dark, blue or black ink/or pencil.  | Some filled in, using dark, blue or black ink/or pencil or missing.  |
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