**LAB 3-1 B**: **THE SYNTHESIS AND DETECTION OF COPPER** NAME:\_\_\_\_\_\_\_\_\_\_\_\_

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **3** | **2** | **1** |
| **PAGE SET-UP/ PURPOSE / MATERIALS/**  **PROCEDURE** | Format is correct. 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 accurate 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 cleaned up and disposed of, with many reminders. |
| **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. |
|  | **7** | **4-6** | **1-3** |
| **Extended Thought** | Student neatly and accurately answers the questions in full, complete sentences using dark, blue or black ink. Heading is underlined, using a ruler. The student accurately draws conclusions based on evidence and research with a well-developed explanation. | Student answers the questions, using dark, blue or black ink/or pencil. The student draws conclusions, may be well developed but inaccurate or a brief summary. Reference is made to evidence and research. | The student does not explain or draw a conclusion based on the evidence. No research has gone into the explanation. |
|  | **1** | **0** |  |
| **Self Assessment**  **Rubric** | Completed | incomplete |  |

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **3** | **2** | **1** |
| **PAGE SET-UP/ PURPOSE / MATERIALS/**  **PROCEDURE** | Format is correct. 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 accurate 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 cleaned up and disposed of, with many reminders. |
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|  | **1** | **0** |  |
| **Self Assessment**  **Rubric** | Completed | incomplete |  |

TOTAL: /20 = /10

**\*\*USE THIS AS A GUIDE TO COMPLETE YOUR LAB WRITE-UP ON A SEPARATE SHEET OF PAPER!!!**

**Lab 3-1 B: The Synthesis and Detection of Copper** 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Procedure Step** | **Observations** |
| 2. Observations of aluminum foil in  copper(II) chloride. |  |
| 9. Colour of flame with copper  placed in it. |  |

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

1. a) 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 (0.5 marks)
2. Is the compound an ionic or covalent compound? (0.5 marks)
3. What changes showed that a chemical change took place when aluminum was placed in the copper (II) solution? (1 mark)
4. a) What element was produced in this reaction? (0.5 marks)

b) how did we verify that this element was produced? (0.5 marks)

**Extended Thinking**: *Answer the following in paragraph form, using full, complete sentences.* ***This section will require some research on your part.***

1. In this experiment it is necessary to use copper (II) chloride because the chloride acts as a ***catalyst***. (4 marks)
2. Describe what catalyst means in this statement. (1 mark)
3. How would a catalyst affect this experiment? (1 mark)
4. Predict what you think may happen if we were to use cooper (II) sulphate instead of copper (II) chloride? (2 marks)
5. Copper turned a particular colour when we burned it in the flame. In your own words, explain why this particular colour is shown (will need to reference the electrons of copper). (3 marks)