Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Water Rockets Report RUBRIC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **4** | **3** | **2** | **1** |
| Title, Student’s Purpose and Pre-Lab Questions | Descriptive Title, and clear specific purpose; uses appropriate scientific vocabulary; shows clear understanding of the problem. Correctly answer all questions | Descriptive Title, and clear specific purpose; uses appropriate scientific vocabulary; shows clear understanding of the problem. Incorrectly answer some questions | Descriptive Title but vague purpose; does not shows clear understanding of the problem.  Incorrectly answer questions | Vague title and purpose; does not shows clear understanding of the problem.  Incorrectly answer all questions |
| Experimental Design – Ideas considered and scientific reasoning behind them | Distinguishes independent, dependent, and controlled variables; includes scientific explanation of the why of their design | Incorrectly identify some of the variables. Includes scientific explanation of the why of their design | Incorrectly identify some the variables. The scientific explanation for their design is incomplete | Completely omit or incorrectly identify the variables or the scientific explanation is missing |
| Claim: Formulating Hypothesis | Makes an accurate and complete claim citing scientific reasoning | Makes an accurate but incomplete claim with limited explanation | Makes a an accurate claim with no explanation, or claim is vague with limited explanation. | Claim is vague and there is no explanation |
| Label Diagram with Measurements of Finished Rocket | Scaled diagram of the rocket is accurate and all parts are labeled | Scaled diagram have minor discrepancies, but all parts are label | Scaled diagram have discrepancies, and not all parts are label | Diagram does not resemble actual rocket, and important labels are missing |
| Evidence: Data Presentation | Data is complete and relevant. Tables are easy to read and units are provided.  It provides appropriate and sufficient evidence to support or rebut claim | One component of data is incomplete.  Provides appropriate but insufficient evidence to support claim. | Two components of data is incomplete or missing.  May include some inappropriate evidence for the claim | Data is brief and missing significant pieces of information. Does not provide evidence or only provides inappropriate evidence. |
| Computations | All calculations are shown and the results are correct and labeled appropriately. | Some calculations are shown and the results are correct and labeled appropriately. | Some calculations are shown and the results labeled appropriately. | No calculations are shown OR results are inaccurate or mislabeled. |
| Reasoning: Conclusion | Provides reasoning that connects the evidence (data) to the claim. Includes appropriate and sufficient scientific principles to explain why the evidence supports the claim OR recognizes alternative scientific explanations if evidence does not support the claim. Experimental errors, their possible effects, and ways to reduce errors are discussed. | Provides reasoning that connects the evidence to the claim. May include some scientific principles or justifications for why the evidence supports the claim, but is not sufficient OR recognizes some alternative explanations but insufficient.  Experimental errors and their possible effects are discussed. | Provides reasoning that connects the evidence to the claim but does not offer a scientific principles as justification or the interpretation is wrong.  Experimental errors are mentioned. | Does not provide reasoning or explanation, OR only provides inappropriate reasoning OR does not recognize that alternative explanations exists if evidence does not support claim.  There is no discussion of errors. |
| Argumentation Questions | All questions are correctly answered in complete sentences with appropriate explanations. | All questions are answer correctly. | Answers are vague, with very little explanation or support. | Answers are vague, and there is no explanation. |
| Notebook | An entry is made for everyday. This must include notes, calculations, and design info. | An entry was made 4-6 times. | An entry was made 2-3 times. | No entries were made. |

Water Rockets Construction RUBRIC

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Rubric for constructing the bottle rocket and recording observations**  ***(30 points max.)***   |  |  |  | | --- | --- | --- | |  | **Yes** | **No** | | Team carries out assignment criteria | 3 points | 0 points | | Team performs testing safely | 1 point | 0 points | | Records observations and findings are correct | 3 points | 0 points | | Team demonstrates proper science process skills | 3 points | 0 points | | Participates in class discussions | 5 points | 0 points | | Team kept on task | 5 points | 0 points | | Bottle rockets fins aligned properly | 3 points | 0 points | | Nose cone straight on rocket | 3 points | 0 points | | Team contributes ideas to the class | 4 points | 0 points | |