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| **Identify the Phenomenon** | **4** | **3** | **2** | **1** |
| Describe the purpose of your investigation in terms of the phenomenon and what you hope to learn and/or questions you want answered. | You clearly describe your phenomenon and your question using appropriate vocabulary. | You describe your phenomenon and question only misusing one vocabulary term or misinterpreting one idea. | You partly describe your phenomenon and question using some appropriate vocabulary. | You give an unclear description of the phenomenon or use ineffective or inappropriate vocabulary. |
| **Identify the Evidence** | **4** | **3** | **2** | **1** |
| Describe what kind of evidence you want to gather or observe and how you plan to do it.  Describe how your evidence is important to answering your question. | You fully describe evidence you need to observe to answer your question. Write a detailed plan of how to observe it. You justify, with specific examples, how it will help you answer your question. | You describe the evidence you need to observe. You describe, briefly, a plan for collecting the evidence. You give some justification for how your evidence will help you answer your question. | Your description of the evidence you need is unclear or you are missing key details for how to collect it. You give a partially flawed justification for how you evidence is important to your question. | You give very incomplete descriptions of your evidence, its importance, and your plan for collecting it.  *or*  You are missing one of these ideas from your report. |
| **Plan the Investigation** | **4** | **3** | **2** | **1** |
| Plan what factors you want to measure or observe, factors you want to manipulate, and factors you want to limit or control.  Plan a procedure for how to collect, measure, and record your data. | You give a clear and detailed description of any variables you plan to manipulate, limit, control, or measure in your experiment.  You give a detailed plan for how to collect, measure, and record your observations. | You describe variables you plan to manipulate, limit, control, or measure but some important things are missing or unclear. You give a general plan for how to collect your observations. A few steps are unclear. | You confuse several of the factors or variables on how they fit into your experiment. Several steps or ideas for how to conduct your investigation are either missing or very unclear. | You give an incorrect description of the factors or variables in how they relate to your investigation. Your design is missing many important steps or ideas. |
| **Collect the Data** | **4** | **3** | **2** | **1** |
| Record your observations in a neat and organized way so someone else can read your findings. Include proper descriptions, units of measurements and any mathematical processes you used. | You organize your data in a way appropriate to your investigation. Quantitative measurements are in tables with correct units and descriptions. Qualitative observation are recorded using clear/correct language. | Most of your data is organized in a way suitable to your organization. Some data is missing measurement units or other necessary descriptions. Some of your qualitative observations are not clearly or fully described. | You organize some of your data appropriately, but about half of your observations are incompletely or incorrectly described. You do not use always record your observations in a way suitable to your investigation. | You record your observations in a much disorganized way. You are missing most of the appropriate units of measurements or other necessary descriptions. You do not fully or clearly describe most of your observations. |
| **Refine the Design** | **4** | **3** | **2** | **1** |
| Evaluate your results for precision and accuracy.  Evaluate whether or not your results helped answer your question or met your predictions. Suggest ways to improve your investigation and/or ideas for new investigations | You demonstrate a clear understanding of how to evaluate your all observations for precision and accuracy. You give many thoughtful recommendations for how to improve your investigation and ideas for more investigations. | You demonstrate clear understanding of how to evaluate precision and accuracy of most of your observations. You give several thoughtful recommendations for improving your investigation or ideas for more investigations. | You demonstrate understanding of how to evaluate some of your observations for precision and accuracy. You give very few recommendations for how to improve your investigation or ideas for more investigations. | You demonstrate very little understanding of how to evaluate any of your observations for precision or accuracy. You give very limited recommendations for how to improve your investigation or ideas for other investigations. |