**Supplement 1: Investigation Assignment Rubric**

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| Individual Science Investigation Rubric | |  |
| Meets expectations | Does not meet expectations | Pts. Possible |
| Entries are dated and made regularly for time required (6 weeks minimum) | Entries are not dated or not made daily | 4 |
| Descriptions/drawings include enough detail to visualize the object or event (photos are OK); data are displayed appropriately | No data table or incomplete data table; data are inappropriately displayed | 8 |
| Reflections, inferences, questions, predictions, and possible explanations based on your observations and research are included.  Further questions for exploration are included. | Little or no attempt to answer questions or develop explanations through observation or research | 8 |
| Clearly demonstrates personal research (library, Internet, ask a scientist, etc.) and how you used this information to answer your questions or confirm your explanations. Cites all sources. | Little or no evidence of research to answer your questions | 8 |
| Clearly demonstrates science reasoning and logical and critical thinking skills in data collection, explanations, and conclusions. The conclusion includes an explanation of the findings based on both evidence and research. | No concluding summary of your study; explanations and/or conclusions are unrelated to your questions | 8 |
| Addresses how you might use the science concepts you have learned in your future classroom. Also discusses how this science investigation has helped you learn how to do science and how this will benefit your teaching. | No discussion of classroom applications | 4 |
| Total |  | 40 |

**Supplement 2: Investigation Presentation Rubric**

**Total points possible: 30**

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| **\_\_\_\_\_\_\_5 pts.** | **Background**: Why did you choose this area of science to investigate? What did you already know before starting? Outline some of the research you did prior to starting your investigation. |
| **\_\_\_\_\_\_\_3 pts.** | **Research Question(s):** What was your research question or questions? How did you formulate this question? Did you start with a different question and change during the investigation? Make sure to discuss the predictions you made about possible outcomes. |
| **\_\_\_\_\_\_\_2 pts.** | **Methodology:** Describe the materials you used, how you collected data, and how your methodology may have changed during the investigation. |
| **\_\_\_\_\_\_\_\_5 pts** | **Results**: Provide your results in a variety of forms; make sure to include clear data displays of all your data. Include photographs, empirical data, or qualitative data. Make sure to clearly delineate results and conclusions. |
| **\_\_\_\_\_\_\_\_5 pts.** | **Conclusions:** Clearly provide a generalization based on your results. Include discussion of how you have validated your conclusion, specifically how it compares to the accepted scientific explanations on this topic. Include citations of books, articles, web sites you used to evaluate your conclusion. Be sure to propose a possible explanation of WHY what you found occurred. |
| **\_\_\_\_\_\_\_\_5 pts.** | **Relationship of Project to Your Future Teaching**: Discuss how this project may impact your future teaching. How has it helped you learn about doing science in the classroom? How will you use what you have learned or done when you teach science? |
| **\_\_\_\_\_\_\_\_5 pts.** | **Overall Presentation Quality**: Make sure the PowerPoint is easy to read and understand. Your presentation of the material should be clear and competent. This obviously needs to be a presentation that was not “put together the night before.” |