**Rubric for IB owl pellet lab Year 2**

**Criterion B: Inquiring and Designing**

At the end of year 2, students should be able to:

i: outline an appropriate problem to be tested by a scientific investigation ii. Outline a testable prediction

iii: outline how to manipulate the variables and how data will be collected

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| **Achievement Level** | **Level Descriptor** | **Task Specific Clarifications** |
| **0** | The student does not reach a standard indicated by any of the descriptors below. |  |
| **1 - 2** | The student is able to:  i. **select** a problem /question to be tested  ii.. **select** a testable prediction  iii **state** a variable | i. You were barely able to explain an experiment that showed you could recall the process for an owl pellet lab.  iii. You were barely able to somewhat state the testable prediction.  iii. You were barely able to somewhat state a variable. |
| **3 - 4** | The student is able to:  i. **state** a problem /question to be tested  ii.. **state** a testable prediction  iii **state** how to manipulate the variable | i. You were somewhat able to explain an experiment that showed you could explain the owl pellet lab.  ii. You were somewhat able to state the testable prediction for the lab.  iii. You were somewhat able to state how to manipulate a variable to get a different result in owl pellet lab. |
| **5 - 6** | The student is able to:  i. **state** a problem /question to be tested  ii.. **outline** a testable prediction  iii **state** how to manipulate a variable & how data will be collected | i. You were able to explain an experiment that showed you could outline the owl pellet lab.  iii. You were able to outline the prediction for the owl pellet lab.  iii. You were able to state how to manipulate a variable and how data would be collected for the owl pellet lab |
| **7 - 8** | The student is able to:  i. **outline** a problem /question to be tested  ii.. **outline** a testable prediction using scientific reasoning  iii **outline** how to manipulate a variable & how sufficient, relevant data will be collected | i. You were completely able to explain an experiment that showed you could outline the problem or question to be tested in the owl pellet lab.  iii. You were completely able to outline the testable prediction in the owl pellet lab using scientific reasoning.  iii. You were completely able to outline how to manipulate the variables and show how sufficient, relevant data would be collected on the owl pellet lab |

Include all components of the demonstration lab----the materials used and the procedure observed. Since this is a demonstration lab of various forms of energy transfer, there is not a specific hypothesis or prediction. Do include an explanation of each type of energy transfer and how the demonstration lab showed this information.

**Criterion C: Processing and Evaluating**

At the end of year 2, students should be able to:

i: Present collected and transformed data

ii: Interpret the data and outline results using scientific reasoning

iii: Discuss the validity of a prediction based on the outcome of the scientific investigation

iv: Describe improvements or extensions to the method

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| **Achievement Level** | **Level Descriptor** | **Task Specific Clarifications** |
| **0** | The student does not reach a standard indicated by any of the descriptors below. |  |
| **1 - 2** | The student is able to:  i. **collect & present data** in numerical & or visual forms.  ii. **Interpret** data.  iii. **State** the validity of a prediction based on the outcome of the scientific investigation **with limited success.**  iv. State improvements or extensions to the method **with limited success**. | i.. You were barely able to collect and present the data of the owl pellet lab with limited success.  ii. You were barely able to interpret the data of the owl pellet lab with limited success.  iii. You were barely able to state the validity of your prediction with limited success.  iv. You were barely able state some improvements with limited success. |
| **3 - 4** | The student is able to:  i. **correctly collect & present data** in numerical and or visual forms.  ii. **Accurately interpret** data and outline results based on a scientific investigation.  iii. **State** the validity of a prediction based on the outcome of the scientific investigation.  iv. State improvements or extensions to the method. | i.. You were somewhat able to collect and present the data of the owl pellet lab with some success  ii. You were somewhat able to interpret owl pellet lab with some success  iii. You were somewhat able to state the validity of your prediction with some success.  iv. You were somewhat able state some improvements with some success. |
| **5 - 6** | The student is able to:  i. **correctly collect, organize & present data** in numerical and or visual forms.  ii. **Accurately interpret** data and outline results using scientific reasoning.  iii. **State** the validity of a prediction based on the outcome of the scientific investigation**.**  iv. State improvements or extensions to the method that would benefit the scientific investigation. | i.. You were able to collect, organize and present data in an visual or numerical form.  ii. You were mostly able to interpret the data bacteria lab with some success using scientific reasoning.  iii. You were mostly able to state the validity of your prediction of owl pellet lab based on the outcome of the scientific investigation.  iv. You were mostly able state improvements to the scientific method. |
| **7 - 8** | The student is able to:  i. **correctly collect, organize & present data** in numerical and or visual forms.  ii. **Accurately interpret** data and outline results using scientific reasoning.  iii. **Outline** the validity of a prediction based on the outcome of the scientific investigation**.**  iv. Outline improvements or extensions to the method that would benefit the scientific investigation. | i.. You were completely able to collect ,organize & present data in an visual or numerical form.  ii. You were completely able accurately interpret the data of the owl pellet lab using scientific reasoning.  Iii You were completely able to state the validity of your prediction of the owl pellet lab based on the outcome of the scientific investigation.  iv. You were completely able to state improvements to the method that would benefit the scientific investigation. |

**Score:**

**Recommended Areas of Growth:**

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**Reflection:**

(Guiding Questions: What would you change next time? How could this project be improved? What was the most interesting part about this project? What was the least interesting part about this project? What could you do on the next project to improve the outcome of the final product?)

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