

**Scientific Literacy Assessment Rubric, v. 3; February 2019**

| <b>Criteria</b>   | <b>Rating=4<br/>(Excellent)</b>  | <b>Rating=3<br/>(Satisfactory)</b>   | <b>Rating=2<br/>(Marginal)</b>  | <b>Rating=1<br/>(Unsatisfactory)</b>  | <b>Score</b> |
|---|--|--|---|---|--------------|
| <b>a) Does the student apply the methods of science for the generation, collection, assessment, and interpretation of scientific data and/or phenomena?</b> | Plans and implement data collection strategies appropriate to the research question or hypothesis using methods unique to the question at hand and uses multiple sources.<br><br>Interprets data and/or phenomena in a complex manner that acknowledges questions and counter-   | Plans and implement data collection strategies appropriate to the research question or hypothesis.<br><br>Appropriately interprets data and/or phenomena collected and/or observed.                      | Plans and implement data collection strategies appropriate to simple relationships and/or neglects to collect data on important variables for the research questions/hypothesis.<br><br>Interprets data and/or phenomena collected and/or observed, but arrives at a simplistic, incorrect, or poorly | Plans and implement data collection strategies that are not appropriate to the research question or hypothesis.<br><br>Presents data and/or phenomena collected and/or observed, but does not interpret.                |              |
|   | <b>What evidence of student learning do you see for this outcome? How would you have this student go further for this outcome?</b>   |  |   |   |              |
| <b>b) Does the student use the scientific method and ways of thinking to solve problems?</b>  | Generates research questions or hypotheses for complex relationships observed.<br><br>Provides sufficient evidence to develop a comprehensive analysis or synthesis about the research question or hypothesis that considers relevant assumptions or preconceptions, evaluates the limitations and errors of evidence, and begins to articulate possible sources of error. | Generates research questions or hypotheses for simple relationships observed.<br><br>Provides sufficient evidence to develop a coherent analysis or synthesis about the research question or hypothesis. | Observes and articulates simple relationships for phenomena, but generates a research question or hypothesis that is inappropriate to what was observed.<br><br>Provides evidence about the research question or hypothesis, but not enough to develop a coherent analysis or synthesis.              | Generates research questions or hypotheses based on inappropriate or superficial observations of phenomena.<br><br>Provides an analysis or synthesis about the research question or hypothesis not based upon evidence. |              |
|   | <b>What evidence of student learning do you see for this outcome? How would you have this student go further for this outcome?</b>   |  |   |   |              |
| <b>c) Does the student describe scientific theories on cognitive and behavioral, intellectual, or physical development?</b>                                 | Explains scientific theories (for example, cognitive and behavioral, intellectual, or physical development) using appropriate concepts and terms, and makes connections between scientific theories.   | Explains scientific theories (for example, cognitive and behavioral, intellectual, or physical development) using appropriate concepts and terms.  | Describes scientific theories (for example, cognitive and behavioral, intellectual, or physical development) that use a basic understanding of concepts, terms.   | Describes observations without accompanying theory (for example, cognitive and behavioral, intellectual, or physical development).  |              |
|   | <b>What evidence of student learning do you see for this outcome? How would you have this student go further for this outcome?</b>   |  |   |   |              |
| <b>d) Does the student articulate the interrelationships of the development of human societies with the natural world around them?</b>                      | Uses own concepts to effectively articulate how human societies have developed in relation to their natural surrounding and the impact that this relationship has had on both societies and their natural surroundings.  | Effectively articulates how human societies have developed in relation to their natural surrounding, using their own concepts.   | Articulates how human societies have developed in relation to their natural surroundings, but can only use examples and language that model faculty have presented to them.   | Cannot articulate how human societies have developed in relation to the natural world.  |              |
|   | <b>What evidence of student learning do you see for this outcome? How would you have this student go further for this outcome?</b>   |  |   |   |              |
| <b>e) Does the student articulate the relevance of science to the global community in order to serve as active stewards for the natural environment?</b>    | Uses evidence-based claims to articulate the relevance of science to discourse about the natural environment. Student evaluate positions and arguments based on available evidence and articulates the limitations and/or contradictions of current evidence.  | Uses evidence-based claims to articulate the relevance of science to discourse about the natural environment and begins to evaluate positions and arguments based on available evidence.                 | Generally articulates the role of science in the natural environment, but may not always base claims on evidence.   | Cannot articulate how science applies to discourse about the natural environment.   |              |
|   | <b>What evidence of student learning do you see for this outcome? How would you have this student go further for this outcome?</b>   |  |   |   |              |

**Total Score**

**Comments:**

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|----------|-------------------------|----------------------------|------------------------|------------------------------|-------|
|          |                         |                            |                        |                              |       |