

**DRAFT LDC Rubric Dimensions for NGSS Science Integration**

**Grades: Elementary (K–5)**

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|  | **Not Yet** | **Approaches Expectations** | **Meets Expectations** | **Advanced** |
| **Integration of NGSS Strands: *How well does the student integrate disciplinary core ideas, cross cutting concepts, and science/ engineering practices?***  |
| *Use this row to holistically rate the student’s integration of the NGSS strands.* | *Uses science/engineering practice(s) to demonstrate and apply content OR makes connections to the cross cutting concepts with major errors or omissions.* | *Uses science/engineering practice(s) to demonstrate and apply content while making connections to the cross cutting concepts with minor errors.* | *Uses science/engineering practice(s) to demonstrate and apply accurate content and makes connections to the cross cutting concepts* | *Uses science/engineering practice(s) to demonstrate and apply accurate content and explains the connections (relationships) to the cross-cutting concepts.* |
| **NGSS Strand** | **Not Yet** | **Approaches Expectations** | **Meets Expectations** | **Advanced** |
| ***Disciplinary Core Ideas*** *[SELECT SPECIFIC CONTENT STANDARD(S) HERE.]* | Identifies or otherwise applies irrelevant content OR relevant content with major errors or omissions. | Identifies or otherwise applies relevant content with minor errors or omissions.  | Explains or otherwise applies relevant and accurate content. | Explains and applies relevant and accurate content. |
| ***Cross Cutting Concepts****[SELECT SPECIFIC CROSS-CUTTING CONCEPT(S).]*Patterns; Cause & Effect; Scale, Proportion, and Quantity; Systems & System Models; Energy & Matter; Structure & Function; Stability & Change | Identifies or makes connection to irrelevant cross cutting concept(s) OR to relevant cross cutting concept(s) with major errors or omissions. | Identifies or makes connection(s) to relevant cross cutting concept(s) with minor errors or omissions. | Explains OR makes accurate connections to relevant cross cutting concept(s). | Explains and makes accurate connections to relevant cross cutting concept(s). |

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| **NGSS Strand** | **Not Yet** | **Approaches Expectation** | **Meets Expectation** | **Advanced** |
| **Science and Engineering Practices *[SELECT SPECIFIC PRACTICE(S) RELEVANT TO THE TEACHING TASK.]*** |
| *ASK Questions*  | Asks general or non-testable question(s) focused on a direct observation or personal experience. | Asks testable question(s) focused on a direct observation or personal experience. | Asks testable question(s) that require sufficient and relevant evidence to answer. | Asks testable question(s) that require sufficient and relevant evidence to answer and explains why it is a testable question(s). |
| *DEfine Problems* | * Defines a problem or design statement that is unrealistic, impossible, or impractical. OR
* Does not match the intent of the problem.
 | * Defines a problem or design statement that is realistic, possible, or practical.
* Partially matches the intent of the problem or constraints.
 | * Defines a problem or design statement that is realistic, possible, or practical.
* Matches the intent of the problem and satisfies constraints.
 | * Defines a problem or design statement that is realistic, possible, or practical.
* Completely matches the intent of the problem and satisfies constraints.
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| *DEvelop MODEL* | Constructs simple models (e.g., analogies, diagrams, drawings, etc.) to represent the object, tool, or process to be investigated that are incomplete or with major errors or omissions. | Constructs simple models (e.g., analogies, diagrams, drawings, etc.) to represent the object, tool, or process to be investigated with minor errors or omissions. | Constructs simple, accurate models (e.g., analogies, diagrams, drawings, etc.) to represent the object, tool, or process to be investigated. | Constructs simple, accurate models (e.g., analogies, diagrams, drawings, etc.) to represent the object, tool, or process to be investigated and explains how the parts of the model represents the “real thing”.  |
| *use Models* | Compares the model to the “real thing” and identifies the features that are the same and different with major errors or omissions. | Compares the model to the “real thing” and identifies the features that are the same and different with minor errors or omissions. | * Compares the model to the “real thing” and accurately identifies the features that are the same and different.
* Identifies some possible ways to use the model.
 | * Compares the model to the “real thing” and accurately explains the features that are the same and different.
* Explains how the model can be used to describe or predict a natural occurrence.
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| **NGSS Strand** | **Not Yet** | **Approaches Expectation** | **Meets Expectation** | **Advanced** |
| **Science and Engineering Practices *[SELECT SPECIFIC PRACTICE(S) RELEVANT TO THE TEACHING TASK.]*** |
| ***PLAN THE INVESTIGATION*** *Fair test – variables are controlled and number of trials are considered.* | Designs an investigation that is not a fair test, and will not produce relevant data or evidence to answer the question(s). | * Designs a fair test investigation that will produce relevant data and/or evidence to be used to answer the question(s)
* Provides minimal description of the variables.
 | * Designs a fair test investigation that will produce relevant data and/or evidence will be used to answer the question(s).
* Identifies the variables (dependent, independent), and controls.
 | * Designs a fair test investigation that will produce relevant data and/or evidence to answer the question(s).
* Explains the variables (dependent, independent), and controls.
* Explains how the evidence will help to answer the question(s).
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| ***PLAN THE DESIGN***  | Proposes a design plan that does not identify the criteria, constraints, OR intent of the problem. | Proposes a design plan and identifies the criteria, constraints, and intent of the problem with minor errors or omissions. | Proposes a design plan and identifies the criteria, constraints, and intent of the problem. | Proposes a design plan and explains how the plan adequately addresses the criteria, constraints, and intent of the problem |
| *CONDUCT INVESTIGATION OR TEST DESIGN* | Makes observations and/or measurements with major errors or omissions, OR generates data irrelevant to the question(s). | Makes observations and/or measurements with minor errors or omissions, generating limited relevant data to be used as evidence to make comparisons or answer the question(s). | Makes observations and/or measurements with multiple trials (if appropriate) of relevant data be used as evidence to make comparisons or answer the question(s). | Makes observations and/or measurements with multiple trials (if appropriate) of relevant data to be used as evidence to make comparisons or answer the question(s). Evaluates the data collection methods used. |
| ***REPRESENT*** ***DATA*** | Constructs data tables and/or graphs (e.g., bar graphs, pictographs and/or pie charts) that are inaccurate or incomplete. | Constructs data tables and/or graphs (e.g., bar graphs, pictographs and/or pie charts) but presentation of data does not allow for identifying patterns among variables. | Constructs accurate data tables and/or graphs (e.g., bar graphs, pictographs and/or pie charts) and presents data to identify patterns among variables. | Constructs accurate data tables and/or graphs (e.g., bar graphs, pictographs and/or pie charts) and presents data to identify patterns and relationships among variables. |
| ***Analyze*** ***data*** | Analyzes data using inappropriate methods or appropriate methods with major errors or omissions. | Analyzes data using appropriate methods to identify patterns, with minor errors or omissions. | Accurately analyzes data using appropriate methods to identify patterns in the data. | Accurately analyzes data using appropriate and systematic methods to identify patterns in the data. |

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| **NGSS Strand** | **Not Yet** | **Approaches Expectation** | **Meets Expectation** | **Advanced** |
| **Science and Engineering Practices *[SELECT SPECIFIC PRACTICE(S) RELEVANT TO THE TEACHING TASK.]*** |
| ***interpret******data*** | Identifies similarities/differences in their data compared with other groups’ results or “expert” results with major errors or omissions. | Identifies similarities/differences in their data compared with other groups’ results or “expert” results with minor errors or omissions. | Identifies similarities/differences in their data compared with other groups’ results or “expert” results. | Identifies similarities/differences in their data compared with other groups’ results or “expert” results. Identifies possible sources of error. |
| ***USE MATHEMATICS & COMPUTATIONAL THINKING*** | Uses counting and numbers, with major errors or omissions, to identify and describe patterns.  | Uses counting and numbers, with minor errors or omissions, to identify and describe patterns. | Uses counting and numbers to accurately identify and describe patterns. | Uses counting and numbers to accurately identify and describe patterns. Explains relationships in the data. |
| ***Design Solutions*** | Generates a solution to a problem and identifies how well it meets the criteria and constraints of the solution.  | Generates and compares multiple solutions to a problem, but comparison is only partially based on how well they meet the criteria or constraints of the solution. | Generates and compares multiple solutions to a problem based on how well they meet the criteria and constraints of the solution. Recommends the “best” solution. | Generates and compares multiple solutions to a problem based on how well they meet the criteria and constraints of the solution. Recommends the “best” solution and explains why their recommendation is the “best”. |
| ***Obtain, evaluate, and communicate information*** | When conducting independent research, gathers inadequate or inappropriate sources and summarizes a limited amount of information relevant to the research question or topic. OR Summary includes major errors or omissions. | When conducting independent research, gathers a limited number of sources and summarizes information that is mostly relevant to the research question or topic. OR Summary includes minor errors or omissions. | When conducting independent research, gathers multiple sources and accurately summarizes information relevant to the research question or topic. | When conducting independent research, gathers a variety of sources and accurately summarizes information relevant to the question or research topic. Evaluates sources for their usefulness and relevance to the research question or topic. |

Note: Two science practices, 1) Construct Explanations and 2) Engage in Arguments from Evidence, have been purposely excluded from the menu because they are already addressed by the LDC rubrics for Argumentation and Informational/Explanatory writing.