3rd Grade Performance Task Common Rubric

Science

Virginia Department of Education

Genre: Laboratory Investigation

This rubric is designed to provide guidance to teachers in the assessment of laboratory based performance tasks. Not all of the skills provided below may be reflected in a single performance task; only choose scientific skills that are needed to complete the student performance task.

Laboratory investigation, the application of science processes and skills within the grade level content, is a fundamental part of science education. The student will demonstrate an understanding of scientific and engineering practices by

1. asking questions and defining problems

* ask questions that can be investigated and predict reasonable outcomes
* ask questions about what would happen if a variable is changed
* define a simple design problem that can be solved through the development of an object, tool, process, or system

1. planning and carrying out investigations

* with guidance, plan and conduct investigations
* use appropriate methods and/or tools for collecting data
* estimate length, mass, volume, and temperature
* measure length, mass, volume, and temperature in metric and U.S. Customary units using proper tools
* measure elapsed time
* use tools and/or materials to design and/or build a device that solves a specific problem

1. interpreting, analyzing, and evaluating data

* organize and represent data in pictographs or bar graphs
* read, interpret, and analyze data represented in pictographs and bar graphs
* analyze data from tests of an object or tool to determine if it works as intended

1. constructing and critiquing conclusions and explanations

* use evidence (measurements, observations, patterns) to construct or support an explanation
* generate and/or compare multiple solutions to a problem
* describe how scientific ideas apply to design solutions

1. developing and using models

* use models to demonstrate simple phenomena and natural processes
* develop a model (e.g., diagram or simple physical prototype) to illustrate a proposed object, tool, or process

1. obtaining, evaluating, and communicating information

* read and comprehend reading-level appropriate texts and/or other reliable media
* communicate scientific information, design ideas, and/or solutions with others

| Skill | Exceeds Expectations (4) | E/M (3.5) | Meets Expectations (3) | M/D (2.5) | Developing (2) | D/E  (1.5) | Emerging (1) | Not  Observed |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Asking Questions and Defining Problems | Asks questions that require data to answer and evaluates the testability of the questions. |  | Asks questions that require data to answer. |  | Asks questions that can be investigated but do not require data to answer. |  | Asks questions that cannot be investigated. |  |
|  | Predicts an outcome that is directly related to the question and provides science-based support for the prediction. |  | Predicts an outcome that is directly related to the question. |  | Predicts an outcome that is indirectly related to the question. |  | No prediction was made or the prediction was not related to the question. |  |
| Planning and Carrying Out Investigations | Designs procedures (individually or as a team) and uses appropriate tools to make accurate measurements. |  | Follows procedures (individually or as a team) and uses tools appropriately to make accurate measurements. |  | Follows procedures or uses tools inappropriately or does not make accurate measurements. |  | Does not follow procedures, uses tools incorrectly, or does not make accurate measurements. |  |
| Interpreting, Analyzing, and Evaluating Data | Accurately represents data using data tables, charts, and/or graphs and includes supporting details (i.e. labels, units, titles). |  | Accurately represents data using data tables, charts, and/or graphs. |  | Partially complete or inaccurate placement of data in data tables, charts, and/or graphs. |  | Inaccurate or missing data tables, charts, and/ or graphs |  |
|  | Accurately analyzes or interprets information using a graph and/or table, identifies patterns in the data, and recognizes unusual or unexpected data. |  | Accurately analyzes or interprets information using a graph and/or table. |  | Analyzes or interprets information using a graph and/or table but makes minor mistakes. |  | Analyzes or interprets information using a graph and/or table but makes major mistakes. |  |
| Constructing and Critiquing Conclusions and Explanations | Constructs or evaluates an explanation based on observations or laboratory evidence, relates it to scientific ideas or principles, and applies explanation to new contexts. |  | Constructs or evaluates an explanation based on observations or laboratory evidence and relates it to scientific ideas or principles. |  | Constructs or evaluated an explanation or evaluation of evidence that is supported by laboratory evidence but does not include scientific ideas or principles. |  | Constructs or evaluates an explanation that includes an irrelevant claim. |  |
| Developing and Using Models | Makes accurate and labelled models (drawings, diagrams, or other) to represent the process or system and explains the model. |  | Makes accurate and labelled models (drawings, diagrams, or other) to represent the process or system. |  | Makes models (drawings, diagrams, or other) to represent the process or system investigated with minor errors. |  | Makes models (drawings, diagrams, or other) with major errors. |  |
| Obtaining, Evaluating, and Communicating Information | Communicates accurate, clear, and complete information. Uses scientific terms and concepts accurately to support explanations. |  | Communicates accurate, clear, and adequate information. Use of scientific terms to support explanations is evident. |  | Communicates partially accurate and/or minimal information in explanations. Use of scientific terms in explanations is limited or partially accurate. |  | Communicates information that reflects inaccurate concepts. Use of scientific terms is inaccurate or absent. |  |
| Content  SOL\_\_\_\_\_\_ | Explains and applies relative and accurate content. |  | Explains or otherwise applies relevant and accurate content. |  | Identifies or otherwise applies relevant content with minor errors or omissions. |  | Identifies or makes connections to irrelevant content OR relevant with major errors or omissions. |  |