

Problem-solving Standard: The problem-solver gathers data, organizes data, constructs and implements a systematic plan, checks results, reflects on the problem-solving process, and makes appropriate modifications.

Criteria To meet the standard in Science a student must:	Descriptor: Meets Standard	Does Not Meet Standard	Score: (MS or NMS)
Design and carry out an experiment and write a lab report.	Demonstrates a reasonably sound approach to designing and carrying out an experiment; (i.e. designs appropriate types of scientific investigations to answer the question, uses appropriate tools and techniques to make observations and gather data, uses data to develop a reasonable conclusion, and shows reasonable understanding of underlying scientific ideas) but the written explanation may contain some weaknesses or errors (i.e. in explanation of independent and dependent variables, in assessing the reliability of the data generated, and/or in clearly articulating and explaining the results or in reaching a conclusions.)	Demonstrates an ineffective, inaccurate, or unsuccessful approach in designing and carrying out an experiment; (i.e. may set up the experiment appropriately but fail to complete it or may omit significant parts of the experiment (i.e. independent or dependent variables); may fail to show understanding of scientific ideas and processes; may make major errors in collecting or interpreting data; may contain significant misconceptions which result in illogical or irrelevant conclusions.	
Demonstrate understanding of basic science concepts including some of physical science, life science, and earth science.	Demonstrates a reasonable understanding of basic science concepts included in (but not limited to) the study of some of the following: energy transfer and transformation, chemical structures and properties, global interdependence, cell chemistry and biotechnology, genetics, evolution, and biodiversity.	Demonstrates little understanding of basic scientific concepts; may include major misconceptions; may show inaccuracies, omissions, and/or inappropriate connections to prior knowledge.	
Apply scientific knowledge to explain, to solve a problem, and to predict and outcome.	Demonstrates application of scientific knowledge (concepts and problems) to explain, to solve a problem, and/or to predict an outcome; answers are generally correct, complete, and appropriate, although some inaccuracies may appear; answers show evidence of elaboration, higher-order thinking, extension, and use of relevant prior knowledge.	Demonstrates limited ability to apply scientific knowledge; shows limited ability to address a question or may fail to address the question; answers show limited use of elaboration or relevant prior knowledge; answers are inaccurate, incomplete, and/or misapply prior knowledge.	