

**Science 2002
Performance Definitions**

Grade 8

Exceeded Level

With respect to the middle school Michigan Science Curriculum Framework, a student who scored at the “Exceeded” level of the Michigan standards in science:

- demonstrated deep knowledge, understanding and skill in earth, life and physical science by generating or connecting the relationships among ideas and concepts across these branches of science.
- used his or her knowledge to describe and/or explain real-world events as well as understand prediction of future observations and outcomes.
- solved problems using scientific knowledge and information from resources such as tables, graphs and text.
- has analyzed and reflected about real-world situations using his or her science knowledge and understanding.

Students who performed at the “Exceeded” level:

- designed and critiqued investigations; knew and applied the sequence of steps for making a scientific investigation; readily identified and understood the appropriate use of scientific equipment; readily understood and used the metric system.
- consistently predicted complex outcomes based on scientific knowledge.
- evaluated alternative explanations for observations and events offering evidence for making conclusions.
- applied scientific concepts to technical problems recognizing the advantages and possible risks from new technology beyond immediate application.
- correctly, completely and thoroughly answered questions without contradiction; answer provided example, evidence or elaboration.

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Met Level

With respect to the middle school Michigan Science Curriculum Framework, a student who scored at the “Met” level of the Michigan standards in science:

- demonstrated knowledge, understanding and skill in earth, life and physical science by recognizing the relationships among ideas and concepts across these branches of science.
- used his or her own knowledge to describe and/or explain real-world objects or events.
- developed solutions for problems using scientific information from resources such as tables, graphs and text.
- judged and used evidence and reason to make a scientific explanation.

Students who performed at the “Met” level:

- designed investigations and knew the sequence of steps for a scientific investigation; identified uses for scientific equipment as well as used the metric system for measurement.
- consistently predicted reasonable outcomes based on scientific knowledge.
- evaluated alternative explanations for observations or events based on scientific knowledge.
- applied scientific concepts to technical problems and explained the intended results of the application with anticipation of the advantages and the risk of the application.
- provided complete answers to questions without contradiction; the answer was supported with some evidence and some elaboration.

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Basic Level

With respect to the middle school Michigan Science Curriculum Framework, a student who scored at the Basic level for Michigan standards in science:

- demonstrated a knowledge of earth, life and physical science; did not, however, recognize relations among these three branches of science.
- used his or her own knowledge to partially describe and/or partially explain real-world objects or events.
- gathered information for scientific problems from resources such as tables, graphs and text.
- demonstrated a limited capacity to judge evidence or develop scientific reasons for explanation of observations and events.

Students who performed at the “Basic” level:

- contributed to a scientific investigation; performed less complex tasks used to observe, measure, collect and record scientific information; had some knowledge about scientific equipment; exhibited partial use of the metric system.
- predicted obvious outcome based on scientific knowledge.
- considered alternative explanations for observations or events with some scientific reasons supporting conclusions.
- recognized some forms of technology; did not, however, anticipate the extent of benefits or risks that could be associated with technology.
- provided partially correct answers to questions that could include some error or contradiction; answer lacked sufficient evidence or elaboration.