

Edits to MCA-III Test Specifications for Science

Below is a list of all edits made to the Test Specifications for Science version October 10, 2012 since version June 1, 2010. Only substantive changes are noted here. Typos or grammatical changes were not included in this list unless they changed the meaning of the relevant test specification.

Grade 5 Science MCA-III

Benchmark code	Edit
3.1.1.1.1	Added specification: "Items may require students to determine the appropriate evidence or data necessary to support a statement or claim"
5.1.1.1.2	Edited specification: " Uncontrolled Variables are will-referred to as variables that are not kept the same, measured or changed by the student" Added specification: "Items may require students to identify types of variables in an investigation or what caused differences in the results of an investigation"
5.1.1.2.1	Added specification: "Items will refer to systematic observations as observations"
4.1.2.2.3	Added specifications: <ul style="list-style-type: none"> • Items may require students to identify which actions scientists and engineers take to test and evaluate solutions and communicate results • Items may require students to evaluate an engineering solution • Communicating results may include putting results into a data table or graph, publishing results, or discussing conclusions with other scientists

3.1.3.4.1	<p>Edited specification: "Appropriate measurement tools are limited to rulers, thermometers, magnifiers simple balances, graduated cylinders, rain gauges, timers and common items that may indicate wind speed or direction, such as a flag or weather vane"</p> <p>Added specification: "Observational tools are limited to magnifiers or hand lenses, microscopes, binoculars and telescopes"</p>
5.1.3.4.2	<p>Added specifications:</p> <ul style="list-style-type: none"> • Analyze and interpret maps using a key or legend • Evaluate which type of map is most appropriate for informational need • Identify the features or information included on a map
4.2.1.1.1	<p>Edited specification: "Items will may use the more familiar term "weight" to represent both weight and mass and will use grams as the base unit for this measurement type"</p>
5.2.2.1.2	<p>Added specifications:</p> <ul style="list-style-type: none"> • Items may require students to identify the force, the location where the force is applied or the part of an object which provides the force • Items will not use the terms balanced or unbalanced force • Additional vocabulary may include terms such as push or pull
3.2.3.1.2	<p>Added specification: "Items may require students to understand that shadows form when light is blocked by an object"</p>
3.2.3.1.3	<p>Removed specification: "Items may include the words transparent or opaque"</p>
4.2.3.1.2	<p>Added specifications:</p> <ul style="list-style-type: none"> • Metal objects are limited to those made of iron, copper, aluminum and silver • Items that expect students to distinguish between the magnetic properties of different metal objects will label the type of metal in each object
5.3.1.2.1	<p>Removed specifications:</p> <ul style="list-style-type: none"> • Soil composition is limited to rocks, organic matter, water and air • Items will NOT require students to identify the four components of soil • Soil properties are limited to color and particle size • Soil formation is limited to making soil through weathering and erosion • Items will NOT assess soil horizons

4.3.1.3.2	<p>Edited specification: "Items will NOT require students to compare minerals based on density or, fracture or Mohs scale of hardness"</p> <p>Added specification: "Items may require students to compare minerals based on relative hardness but will NOT require students to know specific values of an individual scale such as Mohs scale of hardness"</p>
3.3.3.1.2	<p>Added specification: "Items may require students to understand the pattern of changes in the Moon's daily and monthly position"</p>
4.3.4.1.1	<p>Added specifications:</p> <ul style="list-style-type: none"> • Methods to obtain and use water include both community systems such as building dams, agriculture, manufacturing and water treatment plants along with personal uses of water for washing, cooking and drinking • Items may require students to identify personal and community water conservation measures such as turning off running water when not in use and fixing leaks in the water delivery system
5.3.4.1.1	<p>Added specifications:</p> <ul style="list-style-type: none"> • Renewable resources include water, solar, wind, forest resources and other materials or energy that are inexhaustible or replaceable by new growth • Nonrenewable resources include iron ore, granite, limestone, clay, sand, gravel and other materials that renew on a long time scale
5.3.4.1.3	<p>Added vocabulary term: compost</p>
5.4.2.1.1	<p>Added vocabulary term: ecosystem</p>
4.4.4.2.1	<p>Added specification: "Items will NOT use the term microorganism"</p>

Grade 8 Science MCA-III

Benchmark code	Edit
6.1.2.1 standard	Changed number of points in the standard from 2-4 to 1-3 points.
6.1.2.1.1	Added specifications: <ul style="list-style-type: none"> • Items may require students to identify the advantages and disadvantages of the engineered system • Items may require students to identify the effect of the engineered system on different groups of people involved in the use or design of the system
6.1.2.1.2	Added specification: "Items may require students to identify benefits and risks of new technologies"
6.1.2.1.3	Added specification: "Vocabulary may include terms such as benefit"
6.1.2.1.4	Added specification: "Items may provide a flaw or failure and require students to recognize the necessary design changes for a product or system"
6.1.2.2.1	Added specification: "Vocabulary may include terms such as limitations"
8.1.3.3.1	Added specification: "Vocabulary may include terms such as concern, limitations"
7.1.3.4.2	Edited specification: "Mathematical analyses are limited to mean, median and range and use of mathematical equations; no algebraic manipulation of equations will be required"
7.2.1.1.2	Added specification: "Items will NOT require students to know the difference between a molecule and a compound"
8.2.1.1.2	Edited specification: "Physical properties that distinguish between a metal and a nonmetal will be limited to electrical and thermal conductivity"
6.2.1.2.3	Added specification: "The motion of particles may be described as farther apart, moving faster, or sliding past one another"

8.2.3.1.1	Edited specification: "Layers of the earth are limited to lithosphere, mantle, and inner and outer core"
8.3.1.1.1	Edited specification: "Layers are limited to lithosphere, mantle, and inner and outer core"
8.3.2.2.3	Added specification: " Vocabulary may include terms such as jet stream, Coriolis Effect, hurricanes "
8.3.4.1.2	Added specification: " Land and water use practices may include practices in systems common in Minnesota such as mining, agriculture, forestry, dam building and water treatment "
7.4.1.2.3	Added specification: " Items may require students to know that plant and animal cells can be distinguished by the presence of cell wall and chloroplast but cannot only be distinguished by the presence of a cell membrane, mitochondria, nucleus or ribosomes "
7.4.2.1.1	Added vocabulary term: " biome "
7.4.2.2.2	Edited specification: " Items will label all organisms with the Additional vocabulary may include terms such as producer, primary consumer, secondary consumer, tertiary consumer and decomposer when illustrating a food chain or web "
7.4.4.2.4	Added specification: " Items will NOT require students to know specific organs, tissues or cells in the immune system "

High School Science MCA-III

Benchmark code	Edit
9.4.4 sub-strand	Changed the number of points from a range of 8-10 points to 7-10 points at the substrand level
9.1.1.2.4	Added specification: "Items may require students to identify the different types of questions or methodologies of scientists in different disciplines"
9.1.2.1.1	Edited specification: "Items are limited to environmental effects on natural and artificial ecosystems and their physical and biological components"
9.1.2.1.2	Edited specification: "Items are limited to environmental effects on natural and artificial ecosystems and their physical and biological components"
9.1.2.1.3	Edited specification: "Items are limited to environmental effects on natural and artificial ecosystems and their physical and biological components"
9.1.2.2.1	Added specification: "Vocabulary may include terms such as limitations or problems"
9.1.3.1.1	Added specification: "Items may require students to identify common reactants and products in a life science context as inputs and outputs"
9.1.3.3.3	Added specifications: <ul style="list-style-type: none"> • Items may require students to identify appropriate disciplines that contribute to or collaborate in a given scientific investigation or engineering effort • Items may require students to evaluate the contributions of a discipline or group of disciplines

9.1.3.4.2	<p>Added specifications:</p> <ul style="list-style-type: none"> • Appropriate tools and measurement instruments include tools such as thermometer, pipette, test tube, beaker, balance, graduated cylinder, microscope • Appropriate safety procedures include using equipment such as goggles, apron, protective gloves, closed-toe shoes, fume hood, eye wash, fire extinguisher • Vocabulary may include terms such as hazardous chemicals
9.1.3.4.3	<p>Added specification: "Items may require students to use one of the representations to describe a phenomena, evaluate results or identify the best way to represent a set of data"</p>
9.4.3.3.1	<p>Edited specification: "Items may require students to identify relevant evidence or connect evidence to the development of Darwin's ideas"</p>
9.4.3.3.6	<p>Edited specification: "Items may address the following processes and terms: divergence, convergence and adaptive radiation and co-evolution"</p>
9.4.4.1.3	<p>Added specification: "Items may require students to analyze the impact or results of a contribution when provided with a specific contribution"</p>
9.4.4.2.2	<p>Added specification: "Additional vocabulary may include such terms as antihistamine"</p>
9.4.4.2.3	<p>Added specification: "Additional vocabulary may include such terms as antihistamine"</p>
9.4.4.2.5	<p>Removed specification: "Items may assess risk factors associated with cancer. (e.g., genetic predisposition, viruses, carcinogens, mutagens)"</p>