Montana • English Language Arts

DOCUMENTS REVIEWED

Grade-Level Expectations, Reading (Grades 3-8, 11). March 31, 2010.
Accessed from: http://opi.mt.gov/pdf/standards/ReadingExpect.pdf

Grade-Level Expectations, Writing (Grades 4, 8, 12). March 31, 2010.
Accessed from: http://www.opi.mt.gov/pdf/Standards/ContStds-Writing.pdf

Grade-Level Expectations, Literature (Grades 4, 8, 12). March 31, 2010.
Accessed from: http://www.opi.mt.gov/pdf/Standards/ContStds-Literature.pdf

Montana K-12 Communication Arts Content Standards Framework, (January 2010).
Accessed from: http://opi.mt.gov/PDF/Standards/ContStds-CommArts2010.pdf

Overview

The Montana ELA standards are woefully deficient. Specific indicators are provided only for three grade levels—fourth, eighth, and upon graduation—leaving the vast majority of teachers in the Treasure State with no guidance about what students should know and be able to do. Worse still, even when benchmarks are provided, they are generally too vague to be instructionally useful.

Clarity and Specificity:	0/3
Content and Rigor:	2/7
Total State Score:	**2/10**

(*Common Core Grade: B+*)

General Organization

The *Montana Communication Arts Content Standards* are five in number: Speaking and Listening; Reading; Literature; Media Literacy; and Writing. For each of these standards, the state provides a "rationale," which includes a several-paragraph description of why the standard is included. For instance, the Reading rationale states:

> ...Reading is a strategic problem-solving process in which readers gain personal meaning as they interact with media forms in a culturally diverse society. Readers systematically inquire, assess, analyze, synthesize, and critically evaluate information. Constructing meaning from text is first accomplished with teacher guidance, moving students to become proficient and independent readers...

The standards are then divided into benchmarks that describe what "proficient" students should know and be able to do by the end of fourth grade, eighth grade, and upon graduation. (No grade-specific benchmarks are provided.)

Finally, Montana provides "performance descriptors" for the three benchmark grades (fourth grade, eighth grade, and upon graduation). These descriptors are designed to "define how well students apply the knowledge and skills they have acquired" and to "gauge the level to which benchmarks have been attained in terms of range, frequency, facility, depth, creativity and quality."

Clarity and Specificity

On the positive side, the Montana ELA standards are well organized and clearly presented. Unfortunately, that clarity is more a reflection of the emptiness of the standards than a particularly thoughtfully designed organizational structure.

As noted above, the state provides benchmarks for only three grades: fourth, eighth, and upon graduation. While the standards acknowledge that "a district's curriculum should include the entire progression of knowledge contained in the

benchmarks," the state fails to provide any specific guidance about what that progression should look like. And most of the benchmarks that it does provide for grades 4, 8, and 12 are too nebulous to be instructionally valuable. For example:

> Expand and utilize general and specialized vocabulary through the use of context clues, analysis of word origins, and reference sources (upon graduation)
>
> Recognize the need for background knowledge and research to enhance comprehension (upon graduation)
>
> Identify and use text features to enhance comprehension (end of grade 4)

Similarly vague benchmarks plague the document across grade levels and strands.

Rather than adding clarity or specificity, the performance descriptors generally just repeat the vague language of the indicators themselves. Take, for example, the following indicators and corresponding performance descriptors:

> Standard: Make and revise predictions
> Performance Descriptor: Makes predictions (end of grade 4)
>
> Standard: Make, revise, and explain predictions
> Performance Descriptor: Revises and explains predictions (end of grade 8)
>
> Standard: Make, revise, and justify predictions
> Performance Descriptor: Justifies predictions (upon graduation)

Taken together, these shortcomings leave Montana teachers with virtually no guidance about what students should know and be able to do. The standards earn zero points out of three for Clarity and Specificity. (See *Common Grading Metric*, Appendix A.)

Content and Rigor

Content Strengths

Given both their vagueness and their failure to articulate expectations for most grades, the Montana standards are thin on content. On the positive side, they give a perfunctory nod to some essential content. For instance, the state delineates expectations for the comprehension and analysis of literary and non-literary texts, including:

> Explain how authors' choices of language and use of devices contribute to the meaning of literary works (end of grade 4)
>
> Identify and explain the impact of the organizational structure of a selection, including order of importance, spatial, problem-solution, and cause-effect (end of grade 8)

Similarly, the standards address, albeit in generic terms, the characteristics and quality of writing expected of students, such as:

> Demonstrate knowledge of language choices and their impact on writing through control of voice, strong sentence fluency, and effective word choice (end of grade 8)

Standards outlining expectations for listening, speaking, the delivery of formal oral presentation, and multimedia are also included.

Content Weaknesses

Even among the areas of strength noted above, there is much room for improvement. The larger problem, however, is the immense amount of essential content that is missing entirely from Montana's standards.

For starters, standards covering phonics, phonemic awareness, and vocabulary development provide virtually no content-specific guidance, as demonstrated below:

> Decode unknown words combining the elements of phonics, use of word parts, and context clues (end of grade 4)

In addition, while standards are included for the comprehension and analysis of literary and non-literary texts (discussed above), other than briefly mentioning in the reading rationale that students should read books that have "stood

the test of time," the state fails to provide any guidance about the quality or complexity of texts that students should read from grade to grade. They also only make passing (and politically correct) reference to the importance of reading outstanding works of American literature that reflect our common cultural heritage, as shown below:

> Recognize author's purpose, point of view, and language use in culturally diverse texts, including those by and about Montana American Indians (end of grade 4)

This standard, with minor variation, also appears in benchmarks for grade 8 and upon graduation.

The standards also fail to include specific guidance—rubrics, exemplar student work, etc.—that would help clarify the quality of writing that students should produce each year. Nor do they specify in which genres students should gain experience and proficiency by writing at each grade level, thus omitting nearly all of the essential genre-specific writing content.

While benchmarks addressing grammar are covered, they are woefully inadequate and repeated verbatim for each benchmark level. For example:

> Apply conventions of standard written English (e.g., usage, punctuation, spelling) appropriate for purpose, audience, and form (end of grade 4, end of grade 8, upon graduation)

Finally, the standards include no benchmarks for research at any grade level.

Taken together, these critical shortcomings leave well over 80 percent of the essential K-12 content missing and earn the standards two points out of seven for Content and Rigor. (See *Common Grading Metric*, Appendix A.)

The Bottom Line

With their grade of F, Montana's ELA standards are among the worst in the country, while those developed by the Common Core State Standards Initiative earn a solid B-plus. The CCSS ELA standards are significantly superior to what the Treasure State has in place today.

Montana • Mathematics

DOCUMENTS REVIEWED[1]

Grade Level Expectations: Grades 3-8 and 10, Mathematics. 2003.
Accessed from: http://www.measuredprogress.org/assessments/clients/montana/MathGLE.pdf

Montana K-12 Mathematics Content Standards Framework. September 2009.
Accessed from: http://www.opi.mt.gov/pdf/Standards/10ContStds-Math.pdf

Overview

Montana's mathematics standards are so minimal that they supply nearly no guidance. There are only eight broadly worded standards per grade. While the standards are accompanied by a *Content Standards Framework* document, that framework is only occasionally more specific than the grade-level material and falls far short of clearly explicating specific content expectations.

GRADE **F**

Clarity and Specificity:	1/3
Content and Rigor:	0/7
Total State Score:	**1/10**

(*Common Core Grade: A-*)

General Organization

Montana's grade-level expectations (GLEs) are provided for grades 3-8 and grade 10, with eight standards per grade. For example, one of the eight standards for grade 3 is "Communicates solutions to problems in a variety of ways (e.g., concrete, pictorial, graphical)."

The *Framework* document contains benchmark expectations for the end of grades 4, 8, and "upon graduation." The benchmark statements are presented in grade-banded charts, which are organized by four content strands: Number Sense and Operation, Data Analysis, Geometric Reasoning, and Algebraic and Functional Reasoning. For example, here is benchmark 1.1 under Number Sense and Operation:

> A proficient student will:
> - End of Grade 4—1.1 Whole Number Relationships: Demonstrate relationships among whole numbers; identify place value up to 100,000 and compare numbers (e.g., greater than, less than, and equal to)
> - End of Grade 8—1.1 Rational Number Relationships: Recognize, model, and compare different forms of integers and rational numbers including percents, fractions, decimals, and numbers using exponents and scientific notation
> - Upon Graduation—1.1 Quantification: Use multiple notations to perform and interpret the effects of operations on very large and very small numbers with and without technology

Both the benchmark expectations and the GLEs are referred to as standards below.

Clarity and Specificity

The standards are far from clear or specific. The GLEs (eight per grade) are generally stated so broadly that they are not measurable. The benchmark statements at the end of grades 4, 8, and upon graduation are slightly more substantial, yet still far from clear. Examples of vague GLEs and benchmarks include:

> Selects and uses appropriate problem-solving strategies (e.g., estimate, look for a pattern, simplify the problem) and technologies (e.g., paper and pencil, calculator) in many contexts (GLE, grade 3)
>
> Use spatial reasoning to identify slides and flips of congruent figures within artistic and cultural contexts, including those of Montana American Indians (benchmark, end of grade 4)
>
> Applies geometric relationships such as coordinates and transformations to solve selected problems (GLE, grade 7)
>
> Formulates and communicates logical arguments using appropriate mathematical ideas (e.g., mathematical terms, notations) (GLE, grade 8)
>
> Applies functions, graphs, and algebraic concepts to solve real-world problems (GLE, grade 10)

The lack of detail in these standards renders them almost completely subject to interpretation on the part of the reader. Further, since they are basically the totality of the statements on each topic, there is no other material to offer clarification.

In general, Montana's standards are almost completely lacking in clear, specific statements that explicate the material that students are expected to know. Most statements are sweeping generalities that do not provide the necessary detail to determine the intent. They "offer limited guidance to users," and receive a Clarity and Specificity score of one point out of three. (See *Common Grading Metric*, Appendix A.)

Content and Rigor

Content Priorities

Montana does not provide explicit guidance on the relative importance of the content. The GLEs for the crucial elementary grades have only a few standards covering arithmetic. The benchmarks contain more standards about arithmetic, but in the crucial elementary grades, these standards still amount to less than 30 percent of the expectations, which does not sufficiently prioritize this essential content.

Content Strengths

Strengths are hard to come by in Montana's standards. That said, the standards do specify that students have minimal computational skills, for example:

> Uses addition, subtraction, multiplication, and division of whole numbers to estimate, compute, and determine whether results are accurate (GLE, grade 4)
>
> Compute fluently and solve multi-step problems using integers, fractions, decimals, and numbers in exponential form (benchmark, end of grade 8)

Content Weaknesses

Very little essential content is covered, as illustrated by the following words that do not appear at all in the Montana standards: denominator, triangle, rectangle, parallelogram, compass, parallel, perpendicular, polynomial, factor (in high school), series, point, absolute, quadratic, sine, and logarithm.

A similar list of key content words (e.g., slope, line) are mentioned only minimally. "Place value" is not in the grade-level standards at all, and is mentioned in the benchmark standards only twice.

Aside from the bare statements that students should learn operations in arithmetic, there is no development of arithmetic. Standard procedures are not included, and very little of the structure of arithmetic is mentioned. The totality of fraction development is:

> Identify and model common fractions such as tenths, fourths, thirds, and halves; and decimals such as money and place value to 0.001; and recognize and compare equivalent representations (benchmark, end of grade 4)

Linear functions are not developed as a topic, and only a few standards relate to them. For example, slope is mentioned only once:

> Identify and compute rate of change/slope and intercepts from equations, graphs, and tables; model and solve contextual problems involving linear proportions or direct variation using cultural contexts, including those of Montana American Indians (benchmark, end of grade 8)

There is only one more standard on linear equations:

> Identify linear and non-linear functional relationships and contrast their properties using tables, graphs, or equations with appropriate technology (benchmark, end of grade 8)

Missing content on lines includes practically all the basics such as point-slope form and finding the equation of a line between two points.

High school geometry is similarly lacking. Proof is mentioned, but the content implicit in the following standard is entirely subject to interpretation:

> Establish the validity of geometric conjectures using deductive reasoning, indirect proof, and counterexamples, and critique arguments made by others (benchmark, upon graduation)

A few standards express expectations about functions, such as:

> Applies functions, graphs, and algebraic concepts to solve real-world problems (GLE, grade 10)
>
> Represent functions in a variety of ways including tables, graphs or diagrams, verbal descriptions, and symbolic expressions in recursive and explicit form. Justify the choice of an appropriate form for solving a given problem (benchmark, upon graduation)

Yet these do not develop specific functions that these standards might be referring to. This renders them essentially useless in terms of evaluating the content that they are supposed to cover.

All STEM-ready content is missing from the standards, including graphs of trigonometric functions, inverse trigonometric functions, polar coordinates, and logarithms.

Finally, Montana's standards fall victim to political correctness. The state's constitution requires that "the implementation of these standards must incorporate the distinct and unique cultural heritage of Montana American Indians." Therefore, there are fifteen references in the GLEs to Montana American Indians. Here are two:

> Evaluating Data: Solve problems and make decisions using data descriptors such as minimum, maximum, median, and mode within scientific and cultural contexts, including those of Montana American Indians (benchmark, end of grade 4)
>
> Finding Probability and Predicting: Create sample spaces and simulations from events found in different cultures, including those of Montana American Indians, determine experimental and theoretical probabilities, and use probability to make predictions (benchmark, end of grade 8)

Including references to Montana American Indians as part of the "cultural context" of math is distinctly not math. Further, by so doing, the standards "embrace fads, suggest political bias, or teach moral dogma"—all of which is discouraged in the *Common Grading Metric* (see Appendix A).

Montana's standards are so sparse and poorly written as to supply very little of the essential content of mathematics. The almost complete lack of specific content, coupled with the politically correct references, render these standards of little use in guiding mathematics education, and they receive a Content and Rigor score of zero points out of seven. (See *Common Grading Metric*, Appendix A.)

The Bottom Line

With their grade of F, Montana's mathematics standards are among the worst in the country, while those developed by the Common Core State Standards Initiative earn an impressive A-minus. The CCSS math standards are vastly superior to what the Treasure State has in place today.

1 Montana's Office of Public Instruction released an updated version of their grade-level expectations (called Essential Learning Expectations, or ELEs) on March 31, 2010. This is a guiding document only, and therefore has no official adoption date. Given the date of creation, the document materials have not yet begun to be used in classrooms. Since they have not been officially adopted, and are not yet used in classrooms, they did not fit criteria for reviewable documents (see Methods section, *Introduction and National Findings*). Therefore, Fordham reviewers did not review these most recent Montana ELEs.