

Colorado • English Language Arts

DOCUMENTS REVIEWED

Colorado Academic Standards: Reading, Writing, and Communicating. 2009. Accessed from:
http://www.cde.state.co.us/cdeassess/UAS/AdoptedAcademicStandards/Reading_Writing_Comm_Adopted_12.10.09.pdf

Overview

These new Colorado standards are very thoughtful and their core (termed “evidence outcomes”) addresses almost all of the *English Language Arts Content-Specific Criteria* in useful ways (see Appendix A). Though most essential content is covered, they are dense and wordy in places.



Clarity and Specificity: 2/3
Content and Rigor: 6/7
Total State Score: 8/10
(Common Core Grade: B+)

General Organization

The Colorado standards are divided into four strands: Oral Expression and Listening, Reading for All Purposes, Writing and Composition, and Research and Reasoning. Each strand is divided into grade-level expectations. These are subdivided into “concepts and skills” and finally into “evidence outcomes.” The latter are detailed, grade-specific student expectations, which are the focus herein.

Clarity and Specificity

Colorado’s standards are dense and numerous. Although they manage to convey essential content, in quite a few places the objectives become too personal, nonacademic, and unmeasurable, as in:

- Identify stereotypes, prejudices, biases, and distortions in self and thinking of others (grade 6)
- Identify personal attitudes and beliefs about events, ideas, and themes in text, and explain how these shape their comprehension of text (grade 8)

In a few places, the language is vague and unmeasurable, for example:

- Reflect on the content and approach to a presentation (grade 10)

Still, most evidence outcomes are clear and specific. One of the biggest problems relative to clarity and specificity is the voluminous amount of extraneous “rationale” (called “Relevance and Application”) that is included grade by grade. The information appears designed to illuminate the reasons for having to learn the content, but its effect is that it distracts the reader from the core content. For instance, under the Research and Reasoning strand in grade 12, several standards pertain to gathering, analyzing, and evaluating information. But the Relevance and Application section below it includes various bulleted statements, one of which is “Data organization is a skill used in medical testing.”

For these reasons, Colorado receives two points of three for Clarity and Specificity. (See *Common Grading Metric*, Appendix A.)

Content and Rigor

Content Strengths

Standards for Oral Expression And Listening address speaking, listening, group discussions, and group work. They are detailed and thorough, if not a little heavy-handed. Oral presentations are consistently addressed. Specific characteris-

tics are enumerated, as in this culminating twelfth-grade standard:

- a. Prepare and deliver a formal presentation for different purposes and audiences (such as expository, persuasive, entertaining, inspirational, or recognition)
- b. Identify a central idea or thesis, organize ideas, and develop a speech for an intended purpose and audience
- c. Use examples, illustrations, graphics, quotations, analogies, facts, and statistics to focus and support the content of a presentation
- d. Use grammar and vocabulary appropriate for the situation, audience, topic, and purpose
- e. Choose specific words and word order for intended effect and meaning
- f. Select appropriate technical or specialized language (grade 12)

Standards addressing phonics and phonemic awareness are strong and appropriately rigorous, as demonstrated by this one for first-grade students:

- a. Segment spoken words into onset (initial consonant sounds) and rime (vowel to end of syllable)
- b. Use onsets and rimes to create new words that include blends and digraphs
- c. Identify the initial, medial, and final phoneme of spoken words
- d. Manipulate individual phonemes to create new words through addition, substitution, and deletion (grade 1)

Vocabulary standards are focused on morphology and progress through the grades with rigor.

Colorado admirably de-emphasizes unmeasurable metacognitive strategies.

Colorado’s standards for literary and non-literary text are carefully drawn. Each text type is treated separately and thoroughly throughout the grades, as these eighth-grade informational text standards demonstrate:

- a. Identify key words that signal a variety of organizational patterns (such as chronology, compare/contrast, problem/solution, cause/effect); explain how various organizational patterns structure information differently; use organizational patterns to guide interpretation of text
- b. Evaluate viewpoints, values, and attitudes (such as detecting bias, word connotations, and incomplete data)
- c. Make inferences and draw conclusions about relevance and accuracy of information...(grade 8)

These literary text standards, also from grade 8, are comparably detailed:

- b. ...Explain and compare the different roles and functions that characters play in a narrative (such as antagonist, protagonist, hero)
- c. Interpret mood, tone, and literary devices (such as symbolism, flashback, foreshadowing, hyperbole), and provide supporting evidence from text
- d. Identify use of third person, omniscient, and third person limited points of view; explain how each narrative point of view provides different insights in plots, characters and themes...(grade 8)

At grade 11, students are also required to “demonstrate knowledge of classical foundational works of American literature,” a welcome addition. This standard is presented in the context of other “critical reading approaches,” such as analyzing literary devices; explaining the influence of historical context; and interpreting and synthesizing themes across texts, so the standards do not appear out of the blue.

The writing standards address both the characteristics of good writing generally and those that are specific to genres. All genres of writing are developed and, in high school, appropriate emphasis is placed on the development of arguments, as in grade 11:

- Evaluate and revise own text as needed to eliminate logical fallacies and to enhance credibility of ideas and information (grade 11)

English language conventions are also contained within the writing strand; they systematically cover grammar, usage, and mechanics from the earliest grades through the end of high school.

Colorado’s research and reasoning strand is a mostly useful addition. These standards maintain a rigorous progression for research processes and products. They also address logic, as in this commendable twelfth-grade standard in which students:

- a. Synthesize information to support a logical argument
- b. Distinguish between evidence and inferences
- c. Identify false premises or assumptions
- d. Analyze rhetorical devices used in own and others’ appeals
- e. Summarize ideas that include alternate views, rich detail, well-developed paragraphs, and logical argumentation (grade 12)

As noted below under weaknesses, this strand overreaches in the early grades, but works well in high school.

Content Weaknesses

The standards do not describe the quality and complexity of reading that students should master, nor do they provide samples of desirable student writing.

In a few places, the Research and Reasoning standards set unrealistic goals that could not necessarily be observable or measurable, as in this eleventh-grade standard in which students:

- Determine the extent to which they entered empathetically into competing points of view, exercised confidence in reason, recognized the limits of their knowledge on the topic (intellectual humility), explored alternative approaches to solving or addressing complex problems (intellectual flexibility), were open to constructive critique (intellectual open-mindedness) (grade 11)

Worthy and ambitious as they are, it would be hard to hold students accountable for these tasks.

A number of the expectations in the lower grades are far too abstract for elementary school—or perhaps for anyone. In grade 5, for example, students:

- a. Accurately explain the implications of concepts they use
- b. Identify irrelevant ideas and use concepts and ideas in ways relevant to their purpose
- c. Analyze concepts and draw distinctions between related but different concepts (grade 5)

Students in fifth grade are also expected to “recognize what they know and don’t know (intellectual humility),” a skill that certainly eludes many adults. The addition of these unnecessary standards among so many others makes it hard for teachers to set priorities.

One final weakness in the Colorado standards is the lack of student writing samples illustrating the kind of writing expected. Such examples would be a welcome addition.

In sum, these standards represent a very thorough and rigorous set of expectations for the students in Colorado. Some streamlining and editing to exclude nonacademic and unrealistic goals would improve them tremendously, but as written, they earn a solid six points out of seven for Content and Rigor. (See *Common Grading Metric*, Appendix A.)

The Bottom Line

Colorado’s standards for literary and non-literary text analysis are more thorough and detailed than the Common Core, addressing specific genres, sub-genres, and characteristics of both literary and non-literary texts. In addition, Colorado includes a strand devoted to “research and reasoning” which, despite occasional overreaching, outlines more detailed and rigorous expectations for logic. Colorado’s standards for oral presentations are also clearer and more detailed than those presented in the Common Core.

On the other hand, the Common Core standards are more focused and include few of the unnecessary and distracting “rationale” statements that can be found in the Colorado document. Common Core also includes samples of student writing to clarify grade- and genre-specific writing expectations, as well as standards explicitly addressing foundational U.S. documents. Colorado’s standards would be improved by eliminating both the unnecessary material and the gaps mentioned above.

Colorado • Mathematics

DOCUMENTS REVIEWED

Colorado Academic Standards: Mathematics. December 12, 2009.

Accessed from: http://www.cde.state.co.us/cdeassess/UAS/AdoptedAcademicStandards/Math_Standards_Adopted_12.10.09.pdf

Overview

Colorado's standards are presented in an unusual way and include some extra, peripheral material. Arithmetic is given moderate priority, but is not adequately developed. The high school material includes some strong standards, but misses a good deal of essential content.



Clarity and Specificity: 2/3

Content and Rigor: 3/7

Total State Score: 5/10

(Common Core Grade: A-)

General Organization

The K-12 standards are organized into four content strands such as “Number Sense, Properties, and Operations,” which are further subdivided into grade-level expectations. Oddly, the sequencing of the standards is top to bottom: They begin in high school and work down through the grades. They also include peripheral material such as “Inquiry Questions” and “The Nature of Mathematics.” The former, for instance, are “intended to promote deeper thinking, reflection and refine understandings” of the grade-level expectations.

Clarity and Specificity

Standards are often clearly stated:

- Find the value of a collection of coins and choose coins to have a given value (grade 2)
- Name and locate points specified by ordered number pairs on a coordinate grid (grade 4)
- Use a protractor to measure angles to the nearest degree (grade 6)
- Compare and order sets of integers and rational numbers that are expressed as fractions, decimals, or percents (grade 8)

However, other standards are far too broadly stated to allow readers to interpret the intent:

- Apply addition and subtraction concepts to financial decision-making (grade 2)
- Use geometric properties of points and line segments to describe figures (grade 3)
- Analyze various lending sources, services, and financial institutions (high school)

These standards are not specific enough to determine what students are expected to know or what kinds of problems they should be able to solve.

The high school standards in particular are often too general to be clear, and the material is often not coherent. Standards relating to a single topic, such as quadratics, may be strewn across various strands. Many topics are often included in a single standard, which makes such a standard difficult to understand. For example, in the following standard, the specific techniques mentioned do not apply to all of the topics:

- Find solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula (high school)

While the K-8 standards are often clear and easy to interpret, the high school standards are not. As a whole, the standards “do not quite provide a complete guide” to users and therefore receive a Clarity and Specificity score of two points out of three. (See *Common Grading Metric*, Appendix A.)

Content and Rigor

Content Priorities

Arithmetic is the key content priority in the early-middle grades, but it is barely prioritized in Colorado’s standards. In fact, just over one-third of the standards in the appropriate grades address the development of arithmetic. This provides an implicit indication that arithmetic is not much of a priority, which is not sufficient.

Content Strengths

The structure of arithmetic, commutativity, associativity, distributivity, and the inverse nature of addition and subtraction and of multiplication and division are all well covered.

There are some strong standards on the development of area, including:

- Model area using square units (grade 4)
- Determine the perimeter of polygons and area of rectangles (grade 5)
- Develop and apply formulas and procedures for finding area of triangles, parallelograms, and trapezoids (grade 6)

In high school, the coverage of linear equations is also strong:

- Demonstrate the relationship between all forms of linear functions using point-slope, slope-intercept, and standard form of a line (high school)

Although geometry foundations in high school are weak (see *Mathematics Content-Specific Criteria* in Appendix A for foundations), some standards explicitly mention proof, such as:

- Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations (high school)

Content Weaknesses

The development of whole-number arithmetic is inadequate. Instant recall of number facts is not stated strongly enough, since the relevant standards can be interpreted as requiring computational fluency instead. Instant recall is an important building block for future mathematics; students who are still struggling with basic facts are not prepared to move on to the next level of mathematics.

In the continued development of arithmetic, students are expected to be able to use different methods of computing, but fluency is not required:

- Use flexible methods of computing, including student-generated strategies and standard algorithms (grade 3)
- Use flexible methods of computing including standard algorithms to multiply and divide multi-digit numbers by two-digit factors or divisors (grade 5)

For addition and subtraction, the standard algorithms are given equal status with student-generated algorithms, defeating an important goal of arithmetic. For multiplication and division, it also appears that alternative algorithms are acceptable.

In the continued development of arithmetic, common denominators for fractions are not mentioned, though they appear in the peripheral material.

High school content is often weak. The coverage of linear equations is missing some essential details, including equations for parallel and perpendicular lines. The coverage of quadratics is also incomplete. Quadratics is not developed

coherently, and specific mention of it is infrequent. Much of their coverage is subsumed in a single standard:

Find solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula (high school)

Missing content includes complex roots, vertex form, and max/min problems.

While factoring is mentioned, polynomials are not, and the arithmetic of polynomials and rational functions is not covered.

Much of the STEM-ready content is also missing, including inverse trigonometric functions and polar coordinates.

Though prioritized somewhat, the development of whole-number arithmetic is not adequate. The high school material is not presented coherently and misses much essential content. These “serious problems” result in a Content and Rigor score of three points out of seven. (See *Common Grading Metric*, Appendix A.)

The Bottom Line

With their grade of C, Colorado’s mathematics standards are mediocre, while those developed by the Common Core State Standards Initiative earn an impressive A-minus. The CCSS math standards are significantly superior to what the Centennial State has in place today.