**Analysis of the Commonwealth of Massachusetts State Standards and the**

**Common Core State Standards for English Language Arts and Mathematics**

**Final Report**

July 19, 2010

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**Analysis of the Commonwealth of Massachusetts State Standards and the Common Core State Standards for English Language Arts and Mathematics**

**Executive Summary**

WestEd was commissioned by the Massachusetts Business Alliance for Education (MBAE) to conduct an independent analysis of the revised Commonwealth of Massachusetts state standards and the Common Core State Standards (CCS) to address the following key question:

*To what extent do the revised Commonwealth of Massachusetts state standards correspond with the CCS in English language arts (ELA) and mathematics?*

<u>Methodology</u>

In order to address this question, WestEd analysts who have knowledge and experience in standards evaluation and development, test development, and alignment, as well as deep knowledge of the content areas (English language arts and mathematics), curriculum and instruction, the preK–20 student population, and effective educational practices, were trained to conduct an analysis of the following standards documents:

*Revised Commonwealth of Massachusetts State Standards (MA)*

- English Language Arts Curriculum Frameworks Working Draft (June 2010)
    - Individual grades PreK through 12 for all strands except:
        - 4 (Vocabulary) with grade span 9─12; 6 (Foundations) with grade span 7─12; 12 (Research) with grade spans 5─8 and 9─12
- Mathematics Curriculum Frameworks Working Draft (June 2010)
    - Individual grades PreK through 12, grade spans 9─10 and 11─12, and four courses

*Common Core State Standards (CCS)*

- English Language Arts, including the Literacy standards

  o Individual grades K through 8; grade spans 9─10 and 11─12

- Mathematics

  o Individual grades K through 8, and six high school conceptual categories

More specifically, WestEd analysts created a *crosswalk* between the two sets of standards. Crosswalks are useful tools for describing the alignment, or degree of correspondence, between two sets of content standards. WestEd analysts used the following criteria to conduct this crosswalk analysis:

- Content skill and knowledge alignment─Degree of correspondence was judged by analysts according to the following:

  o Full Alignment: The CCS standard describes a fundamental skill or concept as explicitly stated in the MA standard (or vice versa);

  o Partial Alignment: The CCS standard addresses a MA standard in a superficial way (or vice versa); the CCS standard covers targeted skills at a lower or higher complexity level than the MA standard.; and

  o No Alignment: There is no content relationship between the two standards.

- Depth of knowledge─ There are four levels of cognitive complexity (Webb, 1997):

  o Recall: The standard requires students to recall a fact, procedure, or piece of information;

  o Basic Application: The standard requires students to use a skill or concept;

  o Strategic Thinking: The standard requires students to reason, develop a plan, or follow a sequence of steps; and

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- o <u>Extended Thinking</u>: The standard requires students to conduct an investigation or process multiple conditions/elements of a problem or task.
- Clarity
- Measurability

The resulting crosswalks reflect the following information:

- Identification of CCS that align to each of the state content standards, by grade and content area;
- Specification of the degree or level of the alignment (Full, Partial, or None) of each of the CCS to the state content standards, by grade and content area, including specific information about the substantive correspondence between the two sets of standards;
- Identification of the state content standards for which there are no matching CCS, by grade and content area;
- Information about the depth of knowledge (Recall, Basic Application, Strategic Thinking, or Extended Thinking) of each standard (both state and CCS), by grade and content area;
- Judgments of clarity of each standard, by grade and content area; and
- Judgments of measurability of each standard, by grade and content area.

The vertical alignment of the standards also was analyzed. That is, analysts evaluated the degree to which the skills and knowledge reflected in the standards appropriately relate to each other and increase in complexity across grade levels, such that, for example, prerequisite skills and knowledge appear, as appropriate, at lower grade levels; broader, deeper, and new skills and knowledge appear at higher levels (building on skills and knowledge in lower/prior levels) and are introduced at the appropriate level; any repetition of standards (i.e., skills and knowledge)

appears purposeful; and it is clear what skill/knowledge is to be acquired and when it is to be acquired.

<u>Findings</u>

Results of the analyses of the **mathematics** standards suggest the following:

- Based on both the 96% full or partial alignment between the two sets of standards, with at least one partial alignment between each of the state content standards and the CCS, and a qualitative analysis of the two sets of standards, the basic concepts and topics that typically define the mathematics domain are covered by both sets of standards, and that the standards are comparable in terms of content coverage.

- Most of the alignments between the MA standards and the CCS are partial alignments, and the partial alignments are either on-grade or off-grade alignments[1] of MA standards to CCS in grades above as well as grades below. Additionally, 13 of the 351 MA standards were not aligned with a CCS. Results of qualitative analyses of the MA standards with partial or no matches to the CCS suggest that these MA standards tend to define content in a narrow way. The particular skills and knowledge specified in these MA standards may well be incorporated in the resulting curriculum based on the corresponding grade-level CCS, although not explicitly specified in the CCS. That is, given the degree of general correspondence between the two sets of standards and the variations in level of specificity of the standards, the MA standards and CCS generally allow for a comparable breadth and depth of content.

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[1] It is important to examine the nature of the off-grade alignments. Sometimes critical content and skills are purposefully repeated in lower and higher grade levels. Evaluation of the appropriateness of on- and off-grade alignments should be made vis-à-vis the desired goals of the state.

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- The state content standards and the CCS are comparable with regard to clarity and measurability.

- With regard to depth of knowledge (DOK), the two sets of standards reflect a comparable range of cognitive demand. Both sets of standards contained content skills and knowledge at three of the four levels of Webb's (1997) cognitive demand taxonomy: Recall, Basic Application, and Strategic Thinking. The CCS, however, appear to more consistently cover these three DOK levels at each grade level. Neither set of standards reflects skills and knowledge at the Extended Thinking level. Differences between the two sets of standards include the following:

  Level of detail with which student experiences and learning expectations are described in the standards—for example, some CCS are stated more specifically or narrowly and may limit potential for full alignment with MA standards that are stated more generally or broadly. Consider these two standards:

  - MA.6.N.6. Extend the number theory concepts of prime and composite numbers to an understanding of prime factorization, relatively prime, greatest common factor, least common multiple, and multiples. Use divisibility rules to solve problems.

  - CCS.6.NS.4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2).

An impact this may have on alignment results is that, in some cases, several partial alignments between a MA standards and CCS "add up to" a full alignment in terms of coverage of skills and knowledge reflected in the MA standard.

Organization of the standards─That is, MA standards have a more traditional organization with five strands (Number Sense and Operations; Algebra, Relations, and Functions; Geometry; Measurement; and Data Analysis, Statistics, and Probability) consistent across all grades. The CCS are organized with domain approaches to introducing new concepts and topics. The CCS seem somewhat similar to the National Council of Teachers of Mathematics focal points, in that there are combinations/connections among strands and different emphases depending on the grade level.

Approaches to introducing new concepts─The CCS appear more specific and provide more guidance related to the methods/strategies associated with the content; whereas MA standards seem generally less prescriptive. For example:

- In grade 3, MA standards continue with fractions:

  MA.3.N.4. Identify, represent, and compare fractions between 0 and 1 with denominators through 12 as parts of a whole and as parts of a group.

  MA.3.N.5. Identify, represent, and compare mixed numbers with denominators 2, 3, or 4 as whole numbers and as fractions (e.g., 1 2/3, 3 1/2).

  MA.3.N.6. Locate whole numbers, fractions, and mixed numbers with denominators 2, 3, or 4 on the number line. Use other concrete models and pictorial representations to represent and compare fractions and mixed numbers.

- The CCS grade 3 standards specify a more formal introduction to fractions:

  CCS.3.NF.1. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

  CCS.3.NF.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.

  a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.

  b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

Some of the differences of this type could be interpreted as indicators of differences in rigor; however, there is no consistent trend in the elements of each set of standards that supports one being clearly more rigorous than the other. The state and its stakeholders must examine the outcomes of this study vis-à-vis the state's history, values, and aspirations for its students, in order to determine the degree to which differences are significantly divergent in merit or whether they can be coordinated for augmentation.

- Overall, both sets of standards showed adequate vertical alignment.

Results of the analyses of the **English language arts** standards suggest the following:

- Based on both the 74% full or partial alignment, with at least one partial alignment when comparing the CCS to the MA standards, and a qualitative analysis of the standards, both sets of standards cover the same general concepts, knowledge, and skills that define the core domain of English language arts. There are a total of 535 MA standards and 860 CCS for ELA, and where they tend to differ is in elements of particular emphasis or focus of the content coverage. It is important to note that there may be potential for greater alignment if a reverse crosswalk were also conducted, comparing MA standards to the CCS.

- The state content standards and the CCS are comparable with regard to clarity and measurability.

- With regard to depth of knowledge (DOK), both sets of standards show Recall and Basic Application decreasing in percent as the grade levels increase, and Strategic Thinking and Extended Thinking increasing in percent as the grade levels increase. Compared to the MA standards, the CCS tend to have a lower percentage of standards at the Recall level, and a higher percentage of standards at the Strategic Thinking level. The CCS also have standards at the Extended Thinking level distributed across grades, whereas the MA standards at that DOK level are concentrated at grades 9 through 12.

- The different organization of content reflects a difference in focus between the two sets of standards and contributes to the nonalignment between them: as an example, the MA standards include strands on five genres of literature, whereas the CCS subdivide the literature standards into skill- and concept-related strands, intended to

apply to all genres of literature. The CCS also includes standards for literacy activities in other curriculum areas such as science, technology, and history.

- Overall, both sets of standards showed adequate vertical alignment for all the areas of ELA addressed in each set.

Conclusions and Recommendations

Based on these analyses, for both mathematics and ELA, the MA standards and the CCS overlap in content coverage and are comparable in terms of clarity and measurability. From a qualitative examination of the standards, both sets have merit. In ELA, for example, the MA standards include a focus on specific genres of literature and the clear, concise, and vertically well-aligned Research and Writing standards. The CCS include the detailed and vertically well-aligned Language standards, and the inclusion of the Standards for Literacy in History/Social Studies, Science and Technical Subjects. In mathematics, both sets of standards contain skills and knowledge across DOK levels; however, the CCS tend to include a slightly higher percentage of standards that reflect higher levels of cognitive demand (i.e. Strategic Thinking in mathematics; Strategic Thinking and Extended Thinking in ELA).

A closer examination of the nature of the correspondence between the two sets of standards is recommended, in order to verify that the particular points of overlap are in areas that are valued (e.g., particular content skills and knowledge, characteristics of standards), and to better understand the degree to which points of distinction present opportunities for further enhancing aspects of the state's standards rather than indicate limitations.

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## I. Introduction

WestEd was commissioned by the Massachusetts Business Alliance for Education (MBAE) to conduct an independent analysis of the revised Commonwealth of Massachusetts state standards and the Common Core State Standards (CCS) to address the following key question:

*To what extent do the revised Commonwealth of Massachusetts state standards correspond with the CCS in English language arts (ELA) and mathematics?*

More specifically, in order to understand the similarities and differences between the revised state content standards and the CCS, a crosswalk (matrix) between the two sets of standards were developed that reflects information regarding:

- the specific state grade-level standards knowledge and skills and their related level of complexity (i.e., depth of knowledge) that are addressed in the CCS; and

- specific gaps in knowledge and skills (i.e., state standards knowledge and skills that are not addressed in the CCS; CCS knowledge and skills that are not addressed in the state standards).

From this matrix, information related to the percentage of CCS and state standards that are fully, partially, and not aligned was gleaned. The MBAE will therefore have quantitative information about the degree of correspondence between the two sets of standards (i.e., percentage of full vs. partial vs. no alignment), and the MBAE also will have specific qualitative information about the substantive correspondence between the two sets of standards—

similarities/differences in specific terminology used, content skills and knowledge represented, depth of knowledge of standards, vertical alignment, clarity, and measurability.

This report is organized as follows: Section II presents an overview of the methodology used to examine the correspondence between the Commonwealth of Massachusetts state standards and the CCS for mathematics and ELA, Section III presents the findings of this study for mathematics and for ELA, and Section IV presents conclusions and recommendations.

**II.    Methodology**

This section describes the methodology for this independent standards analysis.

<u>Crosswalk Methodology</u>

A *crosswalk* is a useful tool for describing the alignment, or degree of correspondence, between two sets of content standards. Crosswalks present information about which content overlaps and also highlight gaps in content coverage. For this project, crosswalks were developed in ELA and mathematics. The crosswalks reflect an analysis of the revised state standards for K—12 ELA and mathematics and the K—12 CCS for ELA and mathematics. For both content areas, the revised Commonwealth of Massachusetts State Standards were used as the referent; thus, the crosswalks specify which CCS standards skills and knowledge overlap with the skills and knowledge in the state standards as well as highlight gaps that exist between the two sets of standards. The crosswalks are intended to help answer the key question, *To what extent do the revised Commonwealth of Massachusetts state standards correspond with the CCS in ELA and mathematics?* For both sets of content standards, the most specific level within a standard was used in this study's analysis.

<u>Overview of the Content Standards Analyzed</u>
*Revised Massachusetts State Standards (MA)*
- English Language Arts Curriculum Frameworks Working Draft (June 2010)
  - Individual grades PreK through 12 for all strands except:
    - 4 (Vocabulary) with grade span 9—12; 6 (Foundations) with grade span 7—12; 12 (Research) with grade spans 5—8 and 9—12
- Mathematics Curriculum Frameworks Working Draft (June 2010)
  - Individual grades PreK through 12, grade spans 9—10, 11—12, and four courses

*Common Core State Standards (CCS)*
- English Language Arts, including the Literacy standards
  - Individual grades K through 8, grade spans 9—10, 11—12
- Mathematics
  - Individual grades K through 8, and six high school conceptual categories

<u>Overview of the Organization of the Standards Analyzed</u>
*Revised Massachusetts State Standards (MA)*
Content Strand Heading (e.g., *8. Fiction*, *Measurement*)
      Grade/Strand/Standard (number/letter/number)
*Sample References:* **6.F.4; 9-12.VC.6; 2.G.1**

*Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects*
Strand (letter abbreviation)
      College and Career Readiness Anchor Standards (numbered)
      Standards (numbered and lettered)
*Sample References:* **RI.4.3; W.5.1a, SL.9-10.4**

*Common Core State Standards for Mathematics*
Domain (letter abbreviation)
      Cluster (group of standards)
      Standards (numbered and lettered)
*Sample References:* **3.NBT.1; 5.MD.3a; S-CP.2**

<u>Criteria</u>

In order to provide the MBAE with information related to the degree of correspondence between the two sets of standards, including the breadth and depth of content coverage, depth of knowledge expectations, vertical alignment, clarity, and measurability, WestEd analysts used the following criteria to conduct this crosswalk analysis:

- Content skill and knowledge alignment
- Depth of knowledge
- Clarity
- Measurability

*Content skill and knowledge alignment.* In order to examine the content coverage between the two sets of standards, at each grade level within each of the two content areas, WestEd analysts created a matrix that shows each state standard and the corresponding CCS that aligns with the skills and knowledge of the state standard. If more than one CCS aligns with the skills and knowledge reflected in a particular state standard, then the multiple relevant CCS were listed in

the matrix (up to three). If no on-grade alignment was found for a particular state standard, the analysts listed off-grade alignments[2] of the CCS (i.e., CCS from a different grade that aligns with the skills and knowledge of the state standard). Additionally, determination of the degree or level of the alignment (Full, Partial, None) of each of the CCS to the state content standards, by grade and content area, was made according to the following criteria:

- Full Alignment: The CCS standard describes a fundamental skill or concept as explicitly stated in the MA standard (or vice versa).

- Partial Alignment: The CCS standard addresses a MA standard in a superficial way (or vice versa); the CCS standard covers targeted skills at a lower or higher complexity level than the MA standard.

- No Alignment: There is no content relationship between the two standards.

Specification of the nature of the alignments which focuses on the substantive correspondence between the two sets of standards also is provided. Such information is intended to highlight, for example, where each set of standards may reflect the same content skills and knowledge but use different terminology; where each set of standards may require application of skills and knowledge to different contexts; or where one set of standards may contain a more comprehensive list of specific skills than the other.

*Depth of knowledge.* In order to examine the cognitive complexity or demand of the standards at each grade level and in each content area, WestEd analysts evaluated each standard (MA and CCS) according to the following depth of knowledge definitions (based on Webb, 1999).

- Recall: The standard requires students to recall a fact, procedure, or piece of information.

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[2] This protocol for alignment provides off-grade alignment information. Sometimes critical content and skills are purposefully repeated in lower and higher grade levels. For those interpreting and using such alignment results, evaluation of the appropriateness of on- and off-grade alignments should be made vis-à-vis desired goals, for example of the state.

- Basic Application: The standard requires students to use a skill or concept.

- Strategic Thinking: The standard requires students to reason, develop a plan, or follow a sequence of steps.

- Extended Thinking: The standard requires students to conduct an investigation or process multiple conditions/elements of a problem or task.

*Clarity.* In order to evaluate the clarity of each standard, WestEd analysts determined if the intent of each standard is understandable to a full range of intended audiences and if either simplification of language or structure or the addition of more detail is recommended. After considering both language and structure, analysts will record a judgment of Yes or No to indicate if the standard is clear (Yes) or is not clear (No). Analysts' notes are included to explain their judgments.

*Measurability.* In order to evaluate the measurability of each standard, WestEd analysts determined if the skills and knowledge of each standard provides sufficient information and specificity to develop aligned assessment items/tasks, and whether the skills and knowledge can be measured under typical assessment conditions. After considering both the quality and nature of the information reflected in the standard, analysts recorded a judgment of Yes or No to indicate if the standard is measurable (Yes) or is not measurable (No). Analysts' notes are included to explain their judgments.

The resulting crosswalks therefore reflect the following information:

- Identification of CCS which align to each of the state content standards, by grade and content area;

- Specification of the degree or level of the alignment (Full, Partial, None) of each of the CCS to the state content standards, by grade and content area, including specific information about the substantive correspondence between the two sets of standards;

- Identification of the state standards for which there are no matching CCS, by grade and content area;

- Information about the depth of knowledge (Recall, Basic Application, Strategic Thinking, Extended Thinking) of each standard (both state and CCS), by grade and content area;

- Judgments of clarity of each standard, by grade and content area; and

- Judgments of measurability of each standard by grade and content area.

Finally, analysts evaluated the *vertical alignment* of the standards; that is, analysts provided information related to the degree to which the skills and knowledge reflected in the standards appropriately relate to each other and increase in complexity across grade levels, such that, for example, prerequisite skills and knowledge appear as appropriate at lower grade levels; broader, deeper, and new skills and knowledge appear at higher levels (building on skills and knowledge in lower/prior levels) and are introduced at the appropriate level; any repetition of standards (i.e., skills and knowledge) appears purposeful; and it is clear what skill/knowledge is to be acquired and when it is to be acquired.

Analyst Training

The analysis of these standards requires both technical and content expertise. WestEd analysts possess both technical expertise, with knowledge and experience in standards evaluation and development, test development, and alignment, as well as content expertise, with deep knowledge of the content areas (ELA, mathematics), curriculum and instruction, the K–12

student population, and effective educational practices. Staff include former educators, curriculum developers, and population specialists with expertise in understanding the special needs of young learners (pre-Kindergarten, Kindergarten, grade 1) as well as diverse learners (e.g., economically disadvantaged students, students with disabilities, English language learners, gifted/academically talented students). Through graduate degrees and advanced training, WestEd staff have developed a deep understanding of pedagogy and research-supported practice in the fields of curriculum, instruction, and educational measurement.

The WestEd project director oversaw the training of analysts selected for the development of the crosswalks and with the content leads monitored cross-analyst calibration to ensure that criteria were applied accurately and consistently throughout the process. Because of the scope of this work—the K─12 grade span, the crosswalk between the revised state standards and the CCS, and the short time line required to complete the study—five content specialists analyzed each content area's standards. One analyst from each content area served as a team lead.

The analysts completing this work have deep content expertise and a wide range of experiences with standards development, revision, and evaluation. Analysts were trained on the specific criteria proposed for this scope of work and the application of these criteria to the relevant standards materials. They were guided through a review of procedures, evaluation criteria, use of data collection spreadsheets, and discussion of the appropriate unit of analysis for each content area. Prior to beginning independent work, they completed a practice exercise to demonstrate their understanding of the process and readiness to apply the protocol, as well as to ensure calibration across analysts. Training ended when analysts demonstrated consistent and

accurate understanding and application of the criteria. During independent work, they engaged in further discussions to monitor and ensure continued calibration.

As necessary during training and through the analyses, analysts created *decision rules*, which are guidelines for the application of the criteria that help to ensure accurate and consistent application throughout the analyses. On an ongoing basis, the project director and content leads met with the analysts to address any emerging concerns.

Independent External Expert Review of Methodology and Content Area Analyses

Per the requirements of this study's scope of work, an independent, external expert on alignment methodology reviewed and commented on WestEd's methodology. This was done to validate the appropriateness of the methodology vis-à-vis the independent and objective evaluation of the two sets of standards and the key question this study aimed to address. Similarly, independent, external experts in mathematics and ELA were asked to review and comment on WestEd ratings of the correspondence between the two sets of standards. Comments from these experts, and WestEd responses to comments from the mathematics and ELA reviewers can be found in this report's accompanying document, "Analysis of the Commonwealth of Massachusetts State Standards and the Common Core State Standards for English Language Arts and Mathematics: *Comments from Independent External Reviewers*."

## III.    Findings

This section presents findings from the analyses of the revised Commonwealth of

Massachusetts state standards and the CCS for mathematics and ELA. This section is organized

by content area and presents mathematics findings first, followed by ELA findings.

**Mathematics**

Tables 1 and 2 show the clarity and measurability ratings by grade level for the MA and

CCS standards respectively. Both sets of standards are clear (on average with rounding up, 99%

and 100% for the MA standards and the CCS respectively), and both sets of standards are

measurable (99% of the MA standards, on average with rounding up, and 100% of the CCS).

**Table 1. Massachusetts Mathematics Curriculum Framework—Summary of Clarity and Measurability Ratings by Grade Level**

| Grade | Standards/ Grade | Clarity | | | | Measurability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Yes | % | No | % | Yes | % | No | % |
| K | 20 | 20 | 100% | 0 | 0% | 20 | 100% | 0 | 0% |
| 1 | 29 | 29 | 100% | 0 | 0% | 29 | 100% | 0 | 0% |
| 2 | 31 | 31 | 100% | 0 | 0% | 31 | 100% | 0 | 0% |
| 3 | 31 | 31 | 100% | 0 | 0% | 31 | 100% | 0 | 0% |
| 4 | 32 | 32 | 100% | 0 | 0% | 32 | 100% | 0 | 0% |
| 5 | 24 | 23 | 96% | 1 | 4% | 23 | 96% | 1 | 4% |
| 6 | 33 | 33 | 100% | 0 | 0% | 33 | 100% | 0 | 0% |
| 7 | 25 | 25 | 100% | 0 | 0% | 25 | 100% | 0 | 0% |
| 8 | 30 | 30 | 100% | 0 | 0% | 30 | 100% | 0 | 0% |
| 10 | 47 | 46 | 98% | 1 | 2% | 46 | 98% | 1 | 2% |
| 12 | 49 | 48 | 98% | 1 | 2% | 48 | 98% | 1 | 2% |
| Total | 351 | 348 | 99% | 3 | 1% | 348 | 99% | 3 | 1% |

**Table 2. Common Core State Standards for Mathematics—Summary of Clarity and Measurability Ratings by Grade Level**

| Grade | Standards/ Grade | Clarity | | | | Measurability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Yes | % | No | % | Yes | % | No | % |
| K | 24 | 24 | 100% | 0 | 0% | 24 | 100% | 0 | 0% |
| 1 | 23 | 23 | 100% | 0 | 0% | 23 | 100% | 0 | 0% |
| 2 | 27 | 27 | 100% | 0 | 0% | 27 | 100% | 0 | 0% |
| 3 | 33 | 33 | 100% | 0 | 0% | 33 | 100% | 0 | 0% |
| 4 | 34 | 34 | 100% | 0 | 0% | 34 | 100% | 0 | 0% |
| 5 | 34 | 32 | 94% | 2 | 6% | 34 | 100% | 0 | 0% |
| 6 | 42 | 42 | 100% | 0 | 0% | 42 | 100% | 0 | 0% |
| 7 | 37 | 37 | 100% | 0 | 0% | 37 | 100% | 0 | 0% |
| 8 | 33 | 33 | 100% | 0 | 0% | 33 | 100% | 0 | 0% |
| N | 30 | 30 | 100% | 0 | 0% | 30 | 100% | 0 | 0% |
| A | 31 | 31 | 100% | 0 | 0% | 31 | 100% | 0 | 0% |
| F | 40 | 40 | 100% | 0 | 0% | 40 | 100% | 0 | 0% |
| G | 44 | 44 | 100% | 0 | 0% | 44 | 100% | 0 | 0% |
| S | 34 | 34 | 100% | 0 | 0% | 34 | 100% | 0 | 0% |
| **Total** | 466 | 464 | 100% | 2 | 0% | 466 | 100% | 0 | 0% |

Tables 3 and 4 show the depth of knowledge (DOK) ratings by grade level for the MA and CCS standards respectively. Both sets of standards reflect content skills and knowledge at the Recall, Basic Application, and Strategic Thinking levels. The CCS appear to more consistently cover these three DOK levels at each grade level, compared with the MA standards. Neither set of standards reflects skills and knowledge at the Extended Thinking level. Overall, the range of DOK reflected in the two sets of standards is comparable.

**Table 3. Massachusetts Mathematics Curriculum Framework—Depth of Knowledge Ratings by Grade Level**

| Grade | Standards/ Grade | Total Standards Rated Recall | % | Total Standards Rated Basic Application | % | Total Standards Rated Strategic Thinking | % | Total Standards Rated Extended Thinking | % |
|-------|-----------------|------------------------------|-----|----------------------------------------|-----|------------------------------------------|-----|-----------------------------------------|-----|
| K | 20 | 11 | 55% | 8 | 40% | 1 | 5% | 0 | 0% |
| 1 | 29 | 17 | 59% | 12 | 41% | 0 | 0% | 0 | 0% |
| 2 | 31 | 14 | 45% | 15 | 48% | 2 | 6% | 0 | 0% |
| 3 | 31 | 12 | 39% | 19 | 61% | 0 | 0% | 0 | 0% |
| 4 | 32 | 20 | 63% | 12 | 38% | 0 | 0% | 0 | 0% |
| 5 | 24 | 12 | 50% | 12 | 50% | 0 | 0% | 0 | 0% |
| 6 | 33 | 6 | 18% | 27 | 82% | 0 | 0% | 0 | 0% |
| 7 | 25 | 0 | 0% | 22 | 88% | 3 | 12% | 0 | 0% |
| 8 | 30 | 5 | 17% | 20 | 67% | 5 | 17% | 0 | 0% |
| 10 | 47 | 9 | 19% | 29 | 62% | 9 | 19% | 0 | 0% |
| 12 | 49 | 9 | 18% | 36 | 73% | 4 | 8% | 0 | 0% |
| **Total** | 351 | 115 | 33% | 212 | 60% | 24 | 7% | 0 | 0% |

**Table 4. Common Core State Standards for Mathematics—Depth of Knowledge Ratings by Grade Level**

| Grade | Standards/ Grade | Total Standards Rated Recall | % | Total Standards Rated Basic Application | % | Total Standards Rated Strategic Thinking | % | Total Standards Rated Extended Thinking | % |
|-------|-----------------|------------------------------|-----|----------------------------------------|-----|------------------------------------------|-----|-----------------------------------------|-----|
| K | 24 | 14 | 58% | 9 | 38% | 1 | 4% | 0 | 0% |
| 1 | 23 | 8 | 35% | 15 | 65% | 0 | 0% | 0 | 0% |
| 2 | 27 | 14 | 52% | 12 | 44% | 1 | 4% | 0 | 0% |
| 3 | 33 | 12 | 36% | 20 | 61% | 1 | 3% | 0 | 0% |
| 4 | 34 | 19 | 56% | 15 | 44% | 0 | 0% | 0 | 0% |
| 5 | 34 | 11 | 32% | 22 | 65% | 1 | 3% | 0 | 0% |
| 6 | 42 | 11 | 26% | 30 | 71% | 1 | 2% | 0 | 0% |
| 7 | 37 | 8 | 22% | 24 | 65% | 5 | 14% | 0 | 0% |
| 8 | 33 | 9 | 27% | 17 | 52% | 7 | 21% | 0 | 0% |
| N | 30 | 14 | 47% | 14 | 47% | 2 | 7% | 0 | 0% |
| A | 31 | 10 | 32% | 18 | 58% | 3 | 10% | 0 | 0% |
| F | 40 | 6 | 15% | 31 | 78% | 3 | 8% | 0 | 0% |
| G | 44 | 1 | 2% | 23 | 52% | 20 | 45% | 0 | 0% |
| S | 34 | 0 | 0% | 25 | 74% | 9 | 26% | 0 | 0% |
| **Total** | 466 | 137 | 29% | 275 | 59% | 54 | 12% | 0 | 0% |

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Table 5 shows the degree of correspondence between the MA standards and the CCS. Of the 351 MA standards, 338 correspond at least partially with a CCS, and 13 are not aligned with a CCS. At each grade level, there are MA standards that are fully aligned with a CCS; however, the majority of alignments are partial, most often with a MA standard aligned with more than one CCS.

**Table 5. Massachusetts Mathematics Curriculum Framework and Common Core State Standards Crosswalk—Alignment Summary**

| | Standards/ Grade | Total Standards with at least 1 Full Alignment | % with at least 1 Full Alignment | MA Standards with 1 CCS Alignment | | MA Standards with 2 CCS Alignments | | MA Standards with 3 CCS Alignments | | Total with No Alignment | % with No Alignment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Full | Partial | Full | Partial | Full | Partial | | |
| K | 20 | 4 | 20% | 4 | 10 | 0 | 12 | 0 | 0 | 0 | 0% |
| 1 | 29 | 8 | 28% | 6 | 14 | 1 | 11 | 3 | 6 | 0 | 0% |
| 2 | 31 | 5 | 16% | 3 | 22 | 3 | 9 | 0 | 0 | 0 | 0% |
| 3 | 31 | 7 | 23% | 7 | 12 | 0 | 18 | 0 | 9 | 0 | 0% |
| 4 | 32 | 5 | 16% | 5 | 18 | 0 | 12 | 0 | 6 | 1 | 3% |
| 5 | 24 | 3 | 13% | 2 | 8 | 1 | 21 | 0 | 9 | 0 | 0% |
| 6 | 33 | 7 | 21% | 7 | 12 | 0 | 22 | 0 | 6 | 1 | 3% |
| 7 | 25 | 3 | 12% | 3 | 13 | 0 | 8 | 0 | 12 | 1 | 4% |
| 8 | 30 | 3 | 10% | 3 | 10 | 0 | 22 | 0 | 6 | 4 | 13% |
| 10 | 47 | 7 | 15% | 7 | 21 | 0 | 22 | 0 | 12 | 4 | 9% |
| 12 | 49 | 22 | 45% | 21 | 8 | 1 | 15 | 0 | 30 | 2 | 4% |
| Total | 351 | 74 | 21% | 68 | 148 | 6 | 172 | 3 | 96 | 13 | 4% |

The following presents additional information about the degree of correspondence between the revised Commonwealth of Massachusetts standards and the CCS, including information from qualitative analyses of the standards. Based on the outcomes of these analyses,

it appears that basic concepts and topics that typically define the mathematics domain are covered by each set of standards (MA, CCS).

There is 96% alignment between the MA mathematics standards and the CCS, with at least one partial alignment between each of these MA standards and the CCS. The partial alignments reflect both on-grade and off-grade alignments[3], with the off-grade alignments to the MA standards including CCS that are grade-levels above as well as grade-levels below the MA standards. Additionally, given the variation in specificity and narrowness/breadth reflected in each set of standards, the content of a particular MA standard could be covered with multiple partially aligned CCS.

The two sets of standards generally are similar in that the content focus and introduction of new concepts and topics are on or near the same grade level. Each set of standards also provides detail and specificity regarding content knowledge and skill expectations.

However, neither set of standards is consistent in the depth in which given concepts and topics are described. The two sets of standards generally differ in terms of:

Level of detail: Overall, the CCS describe student experiences and learning expectations in more detail than the MA standards, making it more apparent what students will be doing and learning, and how they can demonstrate mastery. As mentioned previously, the CCS and the MA standards cover topics and content that are typical and appropriate for mathematics; however, the level of specificity/granularity differs between the two sets of standards—in some cases, the CCS are more specific, and in other cases, the MA standards are more specific and narrow.

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[3] A mentioned previously, this protocol for alignment provides off-grade alignment information because critical content and skills are sometimes purposefully repeated in lower and higher grade levels. For those interpreting and using such alignment results, evaluation of the appropriateness of on- and off-grade alignments is recommended vis-à-vis desired goals, for example of the state.

*Examples:*

Some CCS are stated more specifically or narrowly and may limit potential for full alignment with MA standards that are stated more generally or broadly.

- MA.6.N.6. Extend the number theory concepts of prime and composite numbers to an understanding of prime factorization, relatively prime, greatest common factor, least common multiple, and multiples. Use divisibility rules to solve problems.
- CCS.6.NS.4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4 (9 + 2)$.

Some MA standards are more focused on an aspect of a particular concept or topic, whereas the related CCS reflect a broader range of related content and/or focus on real-world contexts.

- MA.8.A.6. Given two points, find the intercept and write the equation.
- CCS.8.F.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

Organization: MA standards have a more traditional organization with five strands (Number Sense and Operations; Algebra, Relations, and Functions; Geometry; Measurement; and Data Analysis, Statistics, and Probability) consistent across all grades. The CCS are organized with domains, and have the flexibility of moving from number- and operation-oriented standards (Operations and Algebraic Thinking; Number and Operations in Base Ten; etc.) in grades K through 5, to Ratios and Proportional Relationships in grades 6 and 7, and Number Systems in grades 6 through 8, to high school's Number and Quantity. The CCS pair data with measurement in grades K through 5, and move data to Statistics and Probability in grades 6 through high school, with measurement addressed more with geometry standards.

Cross-domain connections also appear more evident in the CCS in terms of how to reinforce earlier learning, augment current learning, and introduce new concepts. An

example is the following CCS in the Measurement and Data domain that reinforces student learning in fractions and operations, as well as combines data and measurement, which traditionally are in separate strands.

*Example:*

- CCS.4.MD.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

The organization of the CCS may seem somewhat similar to the National Council of Teachers of Mathematics focal points, in that there are combinations/connections among strands and different emphases depending on the grade level.

Introduction of concepts: Although the introduction of new concepts and topics are generally on or near the same grade level in the two sets of standards, the approaches and levels of specificity presented by each set of standards with regard to introducing new concepts and topics appear to differ. That is, the CCS appear more specific and provide more guidance related to the methods/strategies associated with the content; whereas MA standards seem generally less prescriptive.

*Examples:*

- For the MA standards, the first mention of fractions is in grade 1:
  MA.1.N.4. Understand the concept of one half in relation to one whole in everyday situations (e.g., half a sandwich, half the class).
  MA.2.N.4. Identify 1/4, 1/2 , 2/4, 3/4, one whole, in various ways including as parts of a whole, as parts of a group, as measurement, and as numbers.
- The CCS first mention fractions in grade 2:
  CCS.2.G.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
- In grade 3, MA standards continue with fractions:
  MA.3.N.4. Identify, represent, and compare fractions between 0 and 1 with

denominators through 12 as parts of a whole and as parts of a group.
MA.3.N.5. Identify, represent, and compare mixed numbers with denominators 2, 3, or 4 as whole numbers and as fractions (e.g., 1 2/3, 3 1/2).
MA.3.N.6. Locate whole numbers, fractions, and mixed numbers with denominators 2, 3, or 4 on the number line. Use other concrete models and pictorial representations to represent and compare fractions and mixed numbers.

- The CCS grade 3 standards specify a more formal introduction to fractions:
CCS.3.NF.1. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
CCS.3.NF.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
  c. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
  d. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
CCS.3.NF.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
  a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
  b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.
  c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.
  d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Some of these differences between the two sets of standards could be interpreted as indicators of differences in rigor. However, there is no consistent trend in the elements of each set of standards that supports one being clearly more rigorous than the other. Some of the MA standards could be interpreted as being more rigorous than some of the CCS, and some of the CCS could be interpreted as being more rigorous than the MA standards.

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*Examples:*

- MA.10.A.7. Given coordinates for a linear equation and a point not on the line, find the equation that represents the line through the given point and perpendicular to the given line, and find the equation that represents the line through the given point and parallel to the given line.
- CCS.G-GPE.5. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
- MA.12.D.1. Select an appropriate graphical representation for a set of data and use appropriate statistics (e.g., quartile or percentile distribution) to communicate information about the data.
- CCS.S-ID.2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
- CCS.S-ID.5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data.

As shown previously in Table 5, 13 of the 351 MA standards do not align with a CCS. As shown in Table 6, 198 of the 466 CCS do not align with a MA standard (see Appendix A, Tables A1 and A2 for a list of the MA standards and CCS that were not aligned).

**Table 6. Common Core State Standards for Mathematics—Summary of Alignments with Revised Commonwealth of Massachusetts Mathematics Standards**

| Grade | Standards/ Grade | Total CCS with at least 1 MA Alignment | % | Total CCS with no MA Alignment | % |
|---|---|---|---|---|---|
| K | 24 | 15 | 63% | 9 | 38% |
| 1 | 23 | 19 | 83% | 4 | 17% |
| 2 | 27 | 22 | 81% | 5 | 19% |
| 3 | 33 | 24 | 73% | 9 | 27% |
| 4 | 34 | 24 | 71% | 10 | 29% |
| 5 | 34 | 18 | 53% | 16 | 47% |
| 6 | 42 | 22 | 52% | 20 | 48% |
| 7 | 37 | 20 | 54% | 17 | 46% |
| 8 | 33 | 21 | 64% | 12 | 36% |
| N | 30 | 12 | 40% | 18 | 60% |
| A | 31 | 16 | 52% | 15 | 48% |
| F | 40 | 24 | 60% | 16 | 40% |
| G | 44 | 20 | 45% | 24 | 55% |
| S | 34 | 11 | 32% | 23 | 68% |
| **Total** | 466 | 268 | 58% | 198 | 42% |

Regarding the nature of the 13 MA standards that are not aligned with any CCS, in grades 4, 6, and 7, the non-aligned standards represent three different strands, but each describes content in a narrow way, and may well be incorporated in the curriculum in the corresponding grade-level CCS, although not explicitly specified in the CCS. Of the four grade 8 non-aligned standards, three are in Algebra and two of those are specific to linear relationships, and are considerably more narrowly defined than related CCS in grade 8. The non-aligned Geometry standard is conceptually introduced in a grade 3 CCS, whereas the non-aligned Geometry standard in grade 10 specifies a type of graph that may or may not be included in the CCS. Two of the three non-aligned grade 10 Measurement standards are similarly narrow, as are the two grade 12 non-aligned Algebra standards; it is not evident that the content in these narrowly defined MA standards would or would not be included in corresponding grade-level CCS.

A review of the non-aligned CCS suggests that the content in a great many of these non-aligned CCS could be addressed in the MA standards. There are a variety of reasons that this correspondence was not coded, including:

- Within each set of standards, a portion of the standards are very specific and narrowly defined (e.g., specifying concepts and topics that are to be addressed and how they are to be addressed).

- Certain models and strategies specified in the CCS are not explicitly named in the MA standards, but may be included in the ways the MA standards are enacted in instruction and assessment.

- If one CCS was considered better aligned to the targeted MA standard, or aligned strongly enough, then other CCS, on- and off-grade level, were not considered.

  - For example, CCS.K.OA.5 could be included in MA.1.N.10, but analysts found an on-grade standard, CCS.1.OA.3, fully aligned to MA.1.N.10.

  - And CCS.K.OA.3 could be considered to be a strong match with MA.K.N.8, which was considered a full alignment with CCS.K.OA.1.

- When a CCS specified models or strategies to be used in building conceptual understanding, the standard could be interpreted narrowly and not necessarily as the focus of an MA standard.

  - For example, CCS.4.OA.1 is specific about multiplicative comparisons, and may not be the best match for a more general MA standard.

- Some CCS cover a great number of components (e.g., CCS.7.EE.4a), and others specify strategies (e.g., CCS.6.G.2) or models (e.g., CCS.7.SP.7b) that are not identified in the MA standards.

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- Some CCS content is related to MA standards that may be more than two years apart (e.g., CCS.7.SP.8c).

- And for some CCS, one or more individual subparts that could be aligned to MA standards are not specifically addressed (e.g., CCS.3.MD.7a-d; CCS.8.EE.8a-c; CCS.8.G.1a-c).

- In the upper grades, a certain amount of content is labeled "(+)," targeting the student taking or preparing to take advanced courses, much of which may not be reflected in more general MA standards.

  o The CCS include more content dealing with matrices than is found in the MA standards (MA.12.A.11). However, the CCS high school category Number and Quantity has an entire domain involving matrices, Vectors and Matrix Quantities. Most of these N-VM standards are designated (+) for students taking advanced courses; and 9 of the 12 non-aligned CCS standards are from this domain.

  o Much of the content described in the CCS geometry standards is not reflected in the MA standards. Although the MA standards cover conic sections and trigonometric functions, they do not include all content covered in the CCS geometry domains of Congruence, Circles, Geometric Measurement and Dimension, and Modeling with Geometry. MA

  o Standards do not include the content specified in the CCS geometry clusters on similarity and using coordinates to prove geometric theorems.

  o At least one MA standard was considered so general that it could apply to a great number of the CCS. In this case, MA.12.A.4 is rated Not Clear because the standard statement is so broad it can be interpreted to include a wide variety of content or can be taught more superficially. It may align with the entire Trigonometric Functions domain, and it could align with most of the Linear and Exponential Models domain except F-LE.1B and the

parts of F-LE.2 and F-LE.5 that include linear functions. The same standard could align to the Building Functions domain and the Interpreting Functions domain except for F-IF.3F through F-IF.7A–D.

- Finally, the referent used in an analysis of this type may have an effect on outcomes of alignment analyses. That is, if a "reverse" crosswalk analysis were conducted with the CCS used as a referent, and given the variability in level of specificity and focus reflected in both sets of standards, there may have been additional alignments found between the CCS and the MA standards.

Although there is no alignment between some of the MA standards and some of the CCS, both sets of standards appear to allow for a similar range of appropriate mathematics concepts and topics across the grade levels.

<u>Vertical Alignment</u>

Overall, both sets of standards showed adequate vertical alignment for all the areas of mathematics addressed in each set. The MA standards present standards by grade level, preK–8, by grade spans 9–10 and 11–12, and by course for high school. Related standards are grouped by strand and show purposeful progression from Kindergarten through grade 8 and high school. The CCS are presented by grade level, K–8, and by category for high school. Related standards are grouped by clusters which are grouped within domains and also show purposeful progression from Kindergarten through grade 8 and high school.

In the MA standards, across grades preK–6, the heaviest emphasis (based on number of standards) involves the Number and Operations strand, and the least emphasis is on the Data, Statistics, and Probability strand, with the exception of grade 2. Overall, in grades preK–8 there is steady emphasis on the Geometry and on the Measurement strands. In grades 7 and 8, the

number of standards in the Algebra, Relations, and Functions strand increases and there is a decrease in the Number and Operations strand. The heaviest emphases on Algebra, Relations, and Functions begin in grade 8 and continue in grade spans 9–10 and 11–12. The Geometry and the Measurement strands are heavily emphasized in the grade 9–10 span. A close look at related standards within each strand shows standards appropriately related to each other, within and across the grades. There are various instances where standards from different strands within a grade are connected and appropriately reinforce one another. For example, grade 6 standards in algebra and in measurement can reinforce one another, based on situations or contexts.

- 6.A.4 Identify and describe relationships between two variables with a constant rate of change. Contrast these with relationships where the rate of change is not constant.
- 6.M.1 Solve problems involving proportional relationships and units of measurement (e.g., rate of speed, unit conversions in the same system, scale models, maps). Include appropriate units.

Likewise, standards within strands build on one another and increase in complexity. The six standards in the grade 2 Measurement strand provide an example of this.

- 2.M.1 Measure and compare common objects using metric and U.S. customary (English) units of length measurement. Use appropriate notation of units, including symbols and abbreviations.
- 2.M.2 Select and correctly use appropriate measurement tools (e.g., ruler marked in quarter inch intervals, balance scale, thermometer).
- 2.M.3 Tell time at quarter-hour intervals on analog and digital clocks, using A.M. and P.M.
- 2.M.4 Compare length, weight, and capacity for two or more objects by using direct comparison.
- 2.M.5 Make and use estimates of measurement, including time, volume, and weight.
- 2.M.6 Describe relationships among equivalent quantities, including money and measurement.  For example, four cups are equivalent to one quart.

In all strands, the MA standards in the upper elementary grades lay foundations for the high school standards.

Although the MA standards may specify mastery of certain topics in various grades, students need preliminary experiences and opportunities in earlier grades in order to successfully reach mastery at grade level, and may benefit from additional instructional support to reach learning expectations at grade-level and beyond. The Framework goes beyond describing minimum essentials, but still allows for teachers to develop student learning experiences that would build deeper conceptual understandings and strengthen connections with other learning.

In the CCS, across grades K − 5, there is heavy emphasis on domains involving number and operations, and steady emphasis on geometry. The measurement and data domain is more heavily emphasized in grades 2 − 4. Counting and cardinality are appropriately emphasized in Kindergarten, and standards related to fractions begin in grade 3, increasing in emphasis in grades 4 and 5. A close look at related standards within each domain shows standards appropriately related to each other, within and across the grades.

One example of cross-grade progression is shown below:

Kindergarten: K.OA.4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

Grade 1: 1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 − 4 = 13 − 3 − 1 = 10 − 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 − 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Grade 2: 2.OA.4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Grade 3: 3.OA.1. Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as $5 \times 7$.

Grade 4: 4.OA.1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication

equations.

Grade 5: 5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.

There are several instances where standards from different domains within a grade are connected and appropriately reinforce one another. For example, in grade 3 students explore and model operations using area models related to measurement and geometric figures.

- 3.OA.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
- 3.MD.7. Relate area to the operations of multiplication and addition.
  - o 3.MD.7c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.
  - o 3.MD.7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Domain names and emphases shift in grades 6 through 8. There are six domains, with each grade level having clusters of standards in five of the six domains. In grades 6 and 7, for example, the ratios and proportional relationships domain builds from the algebraic thinking and work with fractions from the earlier grades.

- An example from grade 6 is 6.RP.3. Use ratio and rate reasoning to solve real-world and mathematical problems…. 6.RP.3a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
- An example from grade 7 is 7.RP.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks ½ mile in each ¼ hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour.

Also, grade 6 standards place heavy emphasis on the number system and expressions and equations, building from concepts introduced in number and operations, as well as algebraic thinking in the earlier grades. Grade 7 shows fairly even emphasis across the first three domains, increased emphasis in geometry, and heavy emphasis in statistics and probability. One reason for this heavy emphasis is that grade 7 is when the standards explicitly address probability. The foundation for this, however, is well-grounded in students' earlier work with number, data, sample spaces, and modeling.

The cluster begins with basic concepts of probability:
- 7.SP.5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around ½ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

The cluster ends with more sophisticated student experiences:
- 7.SP.7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.... and
- 7.SP.8c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?].

In grade 8, there is again heavy emphasis on expressions and equations, and functions are formally introduced; there is heavy emphasis on geometry, and decreased emphasis on statistics and probability. These emphases provide strong foundations for upcoming concepts in high school.

Unlike the grades K – 8 standards, the high school standards are organized in six conceptual categories, each with from four to six domains. Five of the six categories specifically address topics corresponding to the domains in grades K through 8. Within conceptual

categories, there are direct connections between students learning in the earlier years, and there is a range of complexity in the content. For example, consider the Functions standard for interpreting functions, F-IF.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. This standard builds on grade 8 standard 8.F.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. And, standard F-IF.4 leads directly to the standard for building functions F-BF.1. Write a function that describes a relationship between two quantities. F-BF.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context. And, standard F-IF.4 directly relates to linear and exponential models standard F-LE.2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

Although the CCS may specify mastery of certain topics in various grades, students need preliminary experiences and opportunities in earlier grades in order to successfully reach mastery at grade level. For example, students may not know the names of specific properties of operations or the formal language of concepts such as congruence; however these concepts and understandings are introduced early-on and reinforced through the grades. Students who have not been exposed to certain concepts or ways of doing mathematics, such as explaining their

reasoning, or reading and creating number sentences or equations with a symbol for an unknown number to represent a situation, may require additional instructional support to reach learning expectations at grade-level and beyond. From this standpoint, the CCS may be more complex or challenging than minimum essentials, upon and beyond which teachers and students are expected to build deeper understandings and connect with other learning.

Analyst ratings for each of the mathematics MA standards and CCS evaluated can be found in this report's accompanying document, "Analysis of the Commonwealth of Massachusetts State Standards and the Common Core State Standards for English Language Arts and Mathematics: *Analyst Ratings: Mathematics*."

**English Language Arts**

Tables 7 and 8 show the clarity and measurability ratings by grade level for the MA and CCS standards respectively. Both sets of standards are clear (on average with rounding up for both sets of standards, 93% and 98% for the MA standards and the CCS respectively), and both sets of standards are measurable (98% of the MA standards, on average with rounding up, and 97% of the CCS).

**Table 7. Massachusetts English Language Arts Curriculum Framework—Summary of Clarity and Measurability Ratings by Grade Level**

| Grade | Standards/ Grade | Clarity | | | | Measurability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Yes | % | No | % | Yes | % | No | % |
| K | 51 | 51 | 100% | 0 | 0% | 50 | 98% | 1 | 2% |
| 1 | 55 | 53 | 96% | 2 | 4% | 55 | 100% | 0 | 0% |
| 2 | 60 | 60 | 100% | 0 | 0% | 60 | 100% | 0 | 0% |
| 3 | 55 | 55 | 100% | 0 | 0% | 54 | 98% | 1 | 2% |
| 4 | 55 | 55 | 100% | 0 | 0% | 52 | 95% | 3 | 5% |
| 5 | 44 | 44 | 100% | 0 | 0% | 43 | 98% | 1 | 2% |
| 5–8 | 3 | 3 | 100% | 0 | 0% | 3 | 100% | 0 | 0% |
| 6 | 41 | 34 | 83% | 7 | 17% | 40 | 98% | 1 | 2% |
| 7 | 34 | 31 | 91% | 3 | 9% | 33 | 97% | 1 | 3% |
| 8 | 31 | 29 | 94% | 2 | 6% | 30 | 97% | 1 | 3% |
| 9 | 24 | 16 | 67% | 8 | 33% | 23 | 96% | 1 | 4% |
| 9–12 | 10 | 10 | 100% | 0 | 0% | 9 | 90% | 1 | 10% |
| 10 | 25 | 22 | 88% | 3 | 12% | 25 | 100% | 0 | 0% |
| 11 | 25 | 19 | 76% | 6 | 24% | 25 | 100% | 0 | 0% |
| 12 | 22 | 17 | 77% | 5 | 23% | 22 | 100% | 0 | 0% |
| **Total** | 535 | 499 | 93% | 36 | 7% | 524 | 98% | 11 | 2% |

**Table 8. Common Core State Standards for English Language Arts—Summary of Clarity and Measurability Ratings by Grade Level**

| Grade | Standards/ Grade | Clarity | | | | Measurability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Yes | % | No | % | Yes | % | No | % |
| K | 64 | 63 | 98% | 1 | 2% | 60 | 94% | 4 | 6% |
| 1 | 72 | 70 | 97% | 2 | 3% | 67 | 93% | 5 | 7% |
| 2 | 63 | 62 | 98% | 1 | 2% | 58 | 92% | 5 | 8% |
| 3 | 78 | 78 | 100% | 0 | 0% | 75 | 96% | 3 | 4% |
| 4 | 74 | 74 | 100% | 0 | 0% | 71 | 96% | 3 | 4% |
| 5 | 72 | 72 | 100% | 0 | 0% | 70 | 97% | 2 | 3% |
| 6 | 68 | 64 | 94% | 4 | 6% | 67 | 99% | 1 | 1% |
| 6–8 | 37 | 37 | 100% | 0 | 0% | 36 | 97% | 1 | 3% |
| 7 | 65 | 62 | 95% | 3 | 5% | 64 | 98% | 1 | 2% |
| 8 | 67 | 64 | 96% | 3 | 4% | 66 | 99% | 1 | 1% |
| 9–10 | 101 | 99 | 98% | 1 | 1% | 99 | 98% | 2 | 2% |
| 11–12 | 99 | 97 | 98% | 1 | 1% | 98 | 99% | 1 | 1% |
| Total | 860 | 842 | 98% | 16 | 2% | 831 | 97% | 29 | 3% |

Tables 9 and 10 show the depth of knowledge (DOK) ratings by grade level for the MA and CCS standards respectively. Both sets of standards reflect content skills and knowledge at the Recall, Basic Application, Strategic Thinking, and Extended Thinking levels. Overall, both sets of standards show Recall and Basic Application decreasing in percent as the grade levels increase, and Strategic Thinking and Extended Thinking increasing in percent as the grade levels increase. Compared to the MA standards, the CCS tend to have a lower percentage of standards at the Recall level, and a higher percentage of standards at the Strategic Thinking level. The CCS also have standards at the Extended Thinking level distributed across grades, whereas the MA standards at that DOK level are concentrated at grades 9 through 12.

**Table 9. Massachusetts English Language Arts Curriculum Framework—Depth of Knowledge Ratings by Grade Level**

| Grade | Standards/ Grade | Total Standards Rated Recall | % | Total Standards Rated Basic Application | % | Total Standards Rated Strategic Thinking | % | Total Standards Rated Extended Thinking | % |
|---|---|---|---|---|---|---|---|---|---|
| K | 51 | 35 | 69% | 16 | 31% | 0 | 0% | 0 | 0% |
| 1 | 55 | 33 | 60% | 19 | 35% | 3 | 5% | 0 | 0% |
| 2 | 60 | 30 | 50% | 25 | 42% | 5 | 8% | 0 | 0% |
| 3 | 55 | 23 | 42% | 26 | 47% | 6 | 11% | 0 | 0% |
| 4 | 55 | 15 | 27% | 28 | 51% | 11 | 20% | 1 | 2% |
| 5 | 44 | 11 | 25% | 21 | 48% | 12 | 27% | 0 | 0% |
| 5–8 | 3 | 0 | 0% | 0 | 0% | 0 | 0% | 3 | 100% |
| 6 | 41 | 9 | 22% | 19 | 46% | 13 | 32% | 0 | 0% |
| 7 | 34 | 8 | 24% | 11 | 32% | 15 | 44% | 0 | 0% |
| 8 | 31 | 6 | 19% | 11 | 35% | 12 | 39% | 2 | 6% |
| 9 | 24 | 3 | 13% | 4 | 17% | 12 | 50% | 5 | 21% |
| 9–12 | 10 | 2 | 20% | 5 | 50% | 2 | 20% | 1 | 10% |
| 10 | 25 | 4 | 16% | 5 | 20% | 12 | 48% | 4 | 16% |
| 11 | 25 | 0 | 0% | 5 | 20% | 11 | 44% | 9 | 36% |
| 12 | 22 | 0 | 0% | 4 | 18% | 12 | 55% | 6 | 27% |
| **Total** | 535 | 179 | 33% | 199 | 37% | 126 | 24% | 31 | 6% |

**Table 10. Common Core State Standards for English Language Arts—Depth of Knowledge Ratings by Grade Level**

| Grade | Standards/ Grade | Total Standards Rated Recall | % | Total Standards Rated Basic Application | % | Total Standards Rated Strategic Thinking | % | Total Standards Rated Extended Thinking | % |
|---|---|---|---|---|---|---|---|---|---|
| K | 64 | 35 | 55% | 26 | 41% | 3 | 5% | 0 | 0% |
| 1 | 72 | 35 | 49% | 28 | 39% | 9 | 13% | 0 | 0% |
| 2 | 63 | 23 | 37% | 32 | 51% | 7 | 11% | 1 | 2% |
| 3 | 78 | 22 | 28% | 38 | 49% | 15 | 19% | 3 | 4% |
| 4 | 74 | 13 | 18% | 36 | 49% | 22 | 30% | 3 | 4% |
| 5 | 72 | 11 | 15% | 27 | 38% | 29 | 40% | 5 | 7% |
| 6 | 68 | 8 | 12% | 16 | 24% | 40 | 59% | 4 | 6% |
| 6–8 | 37 | 0 | 0% | 15 | 41% | 19 | 51% | 3 | 8% |
| 7 | 65 | 6 | 9% | 12 | 18% | 38 | 58% | 9 | 14% |
| 8 | 67 | 9 | 13% | 11 | 16% | 38 | 57% | 9 | 13% |
| 9–10 | 101 | 7 | 7% | 18 | 18% | 58 | 57% | 18 | 18% |
| 11–12 | 99 | 6 | 6% | 15 | 15% | 56 | 57% | 22 | 22% |
| **Total** | 860 | 175 | 20% | 274 | 32% | 334 | 39% | 77 | 9% |

Table 11 shows the degree of correspondence between the MA standards and CCS. Of the 535 MA standards, 74% (397) correspond at least partially with a CCS. 61% (324) have at least one CCS that is fully aligned, and 26% (138) are not aligned with a CCS. The number of MA standards with no match to at least one CCS is highest in the elementary grades, much lower at the middle grades, and very low at high school.

**Table 11. Massachusetts English Language Arts Curriculum Framework and Common Core State Standards Crosswalk—Alignment Summary**

| | Standards/ Grade | Total Standards with at least 1 Full Alignment | % with at least 1 Full Alignment | MA Standards w/ 1 CCS Alignment | | MA Standards w/ 2 CCS Alignments | | MA Standards with 3 CCS alignments | | Total Standards with No Alignment | % No Alignment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Full | Partial | Full | Partial | Full | Partial | | |
| K | 51 | 33 | 65% | 26 | 3 | 10 | 4 | 3 | 0 | 14 | 27% |
| 1 | 55 | 32 | 58% | 25 | 4 | 9 | 1 | 6 | 0 | 19 | 35% |
| 2 | 60 | 31 | 52% | 22 | 7 | 8 | 4 | 9 | 3 | 21 | 35% |
| 3 | 55 | 25 | 45% | 25 | 5 | 0 | 0 | 0 | 0 | 26 | 47% |
| 4 | 55 | 29 | 53% | 29 | 2 | 0 | 0 | 0 | 0 | 25 | 45% |
| 5 | 44 | 27 | 61% | 27 | 2 | 0 | 2 | 0 | 0 | 15 | 34% |
| 5–8 | 3 | 3 | 100% | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0% |
| 6 | 41 | 27 | 66% | 16 | 11 | 17 | 1 | 4 | 2 | 4 | 10% |
| 7 | 34 | 21 | 62% | 12 | 8 | 16 | 0 | 3 | 0 | 5 | 15% |
| 8 | 31 | 19 | 61% | 11 | 7 | 10 | 0 | 9 | 0 | 5 | 16% |
| 9 | 24 | 19 | 79% | 9 | 5 | 6 | 0 | 21 | 0 | 0 | 0% |
| 9–12 | 10 | 10 | 100% | 1 | 0 | 16 | 0 | 3 | 0 | 0 | 0% |
| 10 | 25 | 19 | 76% | 13 | 4 | 2 | 0 | 15 | 0 | 2 | 8% |
| 11 | 25 | 15 | 60% | 9 | 10 | 3 | 1 | 12 | 0 | 0 | 0% |
| 12 | 22 | 14 | 64% | 7 | 6 | 3 | 1 | 15 | 0 | 2 | 9% |
| Total | 535 | 324 | 61% | 232 | 74 | 100 | 14 | 109 | 5 | 138 | 26% |

The following presents additional information about the degree of correspondence between the revised Commonwealth of Massachusetts standards and the CCS, including

information from qualitative analyses of the standards. Based on the outcomes of these analyses, it appears that both sets of standards (MA, CCS) cover the same general concepts, knowledge, and skills that define the domain of English language arts; where they tend to differ is in elements of particular emphasis or focus of the content coverage. The two sets of standards generally are similar in that the overarching content focus as well as the introduction and emphasis of English language arts knowledge and skills are on or near the same grade level. Each set of standards also provides detail and specificity regarding content knowledge and skill expectations.

Many of the MA standards that are not aligned to any CCS standards reflect the MA emphasis on certain genres (such as poetry and mythology) or on foreign words and phrases.

*Examples:*

- 1.M.1 Identify common characteristics of folktales and/or fairy tales, such as animals who speak, magic, a setting that is "anytime/anyplace."
- 4.VC.5 Identify words from other languages that have been adopted into English (e.g., *ballet, pizza, sushi, algebra*).
- 5.P.3 Explain how poets use sound effects in humorous poems.
- 7.M.1 Identify conventions in epic tales (e.g., extended simile, the quest, the hero's task, special weapons or clothing, or helpers).
- 8.VC.2 Identify the origin and explain the meaning of grade-appropriate foreign words or phrases used frequently in written English (e.g., *per se, passé, au courant, du jour*).
- 10.P.1 Analyze how authors create multiple layers of meaning and/or deliberate ambiguity in a poem.

In addition, the organization of the MA standards as compared to the CCS reflect the differences of emphasis, and account for many of the non-matched standards. The MA standards have separate strands for genres of literature (Nonfiction, Fiction, Poetry, Drama, and Myth, Legend, Traditional Narrative, and Classical Literature) whereas the CCS subdivide the literature standards into skill- and concept-related strands (Key Ideas and Details, Craft and Structure,

Integration of Knowledge and Ideas, and Range of Reading and Level of Text Complexity),
intended to apply to all genres of literature.

As shown previously in Table 11, 138 of the 535 MA standards do not align with a CCS.
As shown below in Table 12, 506 (59%) of the 860 CCS standards do not align with a MA
standard (see Appendix B, Tables B1 and B2 for a list of the MA standards and CCS that were
not aligned).

**Table 12. Common Core State Standards for English Language Arts—Summary of Alignments with Massachusetts English Language Arts Curriculum Framework**

| Grade | Standards/ Grade | Total CCS with at least 1 MA Alignment | % | Total CCS with no MA Alignment | % |
|---|---|---|---|---|---|
| K | 64 | 22 | 34% | 29 | 45% |
| 1 | 72 | 20 | 28% | 35 | 49% |
| 2 | 63 | 20 | 32% | 24 | 38% |
| 3 | 78 | 22 | 28% | 50 | 64% |
| 4 | 74 | 20 | 27% | 46 | 62% |
| 5 | 72 | 16 | 22% | 47 | 65% |
| 6 | 68 | 17 | 25% | 32 | 47% |
| 6–8 | 37 | 2 | 5% | 35 | 95% |
| 7 | 65 | 17 | 26% | 33 | 51% |
| 8 | 67 | 11 | 16% | 45 | 67% |
| 9–10 | 101 | 7 | 7% | 65 | 64% |
| 11–12 | 99 | 13 | 13% | 65 | 66% |
| **Total** | 860 | 187 | 22% | 506 | 59% |

Part of the reason for the large percentage of unaligned CCS is due to the difference in
the numbers of standards: 535 total MA standards versus 860 total CCS standards (as counted for
the purposes of this study, at the most specific level of the standard descriptors).

Another reason is the difference in organization, as mentioned above. The CCS address a
broader range of English language and literacy skills than do the MA standards, and structure
them so that the same strands and standards, as defined by the College and Career Readiness

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(CCR) anchor standards, are addressed by specific standards at each grade level or grade span. For example, in the Reading Standards for Literature, the strand Integration of Knowledge and Ideas includes the following CCR: Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. The following two grade-specific standards in the example below are not aligned to any MA standard, since cross-media connections are not a focus of the MA standards.

*Examples:*

- RL.6.7 Compare and contrast the experience of reading a story, drama, or poem to listening or viewing an audio, video, or live version of the text, including contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch.
- RL.7.7 Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).

The CCS also include an entire set of standards at grades 6-12, the Standards for Literacy in History/Social Studies, Science, and Technical Subjects, with a focus that is not directly addressed in the MA standards. While apparently intended as a guide for teachers of disciplines other than English language arts, they are included in the same document as the Standards for English Language Arts in recognition that English language arts teachers have a role in developing students' literacy skills as applied to all academic disciplines.

Vertical Alignment

The study of vertical alignment of the two sets of standards involved examining each set of standards based on the following criteria for how the standards relate to each other across grade levels and increase in complexity across grade levels:

- Prerequisite skills and knowledge appear as appropriate at lower grade levels.
- Broader, deeper, and new skills and knowledge appear at higher levels (building on skills and knowledge in lower/prior levels) and are introduced at the

appropriate level.
- Any repetition of standards (i.e., skills and knowledge) appears purposeful.
- It is clear what skill/knowledge is to be acquired and when it is to be acquired.

Overall, both sets of standards showed adequate vertical alignment for all the areas of English language arts addressed in each set. A strength of the CCS is the Language standards, which, in addition to individual descriptors for each grade, include charts showing the progression of language skills across grades. A limitation of the CCS standards is lack of cross-grade differentiation of certain standards, resulting in frequent repetition of the exact same or very similar descriptions of skills and knowledge across two or more grades; however, this appears to be purposeful in order to maintain consistency in addressing the overarching CCR standards throughout K-12. A strength of the MA standards is the Research and Writing standards, which clearly and concisely differentiate increasingly complex core skills and knowledge across grades from PreK through 12. A limitation of the MA standards is the frequent use of the verb "identify" in the descriptor of what students know and can do in the Reading and Literature standards at grade levels from PreK through 8 or 12, which can make it difficult to determine whether and how skills and knowledge increase in complexity for these standards across grades.

*Examples:*

**CCS Strength: Language Standards**
- L.3.1g  Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.
- L.4.1d  Order adjectives within sentences according to conventional patterns (e.g., *a small red bag* rather than *a red small bag*).

**CSS Limitation: Repetition of Standards**
- W.9-10.7 and W.11-12.7
  Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

**MA Standards Strength: Research and Writing Standards**
- 6.WP.1  Present a position or point of view to an identified audience and use relevant facts, quantitative information, or anecdotes in support of one's claims to persuade the reader.
- 7.WP.1  Write persuasive arguments that clearly present a position, that acknowledge other positions, and that are designed for a particular audience.
- 7.WP.2  Employ clear claims and premises to support arguments and language formality suitable to the intended audience.

**MA Standards Limitation: Overuse of the Verb "Identify"**
- 2.F.1  Identify the major characters, setting, and plot of a story.
- 3.F.2  Identify personality traits of characters from the thoughts, words, and actions that reveal their personalities.

Analyst ratings for each of the ELA MA standards and CCS evaluated can be found in this report's accompanying document, "Analysis of the Commonwealth of Massachusetts State Standards and the Common Core State Standards for English Language Arts and Mathematics: *Analyst Ratings: English Language Arts*."

# IV. Conclusions and Recommendations

Based on these analyses, for both mathematics and ELA, the MA standards and the CCS overlap in content coverage and are comparable in terms of clarity and measurability. From a qualitative examination of the standards, both sets have merit. In ELA, for example, the MA standards include a focus on specific genres of literature and the clear, concise, and vertically well-aligned Research and Writing standards. The CCS include the detailed and vertically well-aligned Language standards, and the inclusion of the Standards for Literacy in History/Social Studies, Science and Technical Subjects. In mathematics, both sets of standards contain skills and knowledge across DOK levels; however, the CCS tend to include a slightly higher percentage of standards that reflect higher levels of cognitive demand (i.e. Strategic Thinking in mathematics; Strategic Thinking and Extended Thinking in ELA).

A closer examination of the nature of the correspondence between the two sets of standards is recommended, in order to verify that the particular points of overlap are in areas that are valued (e.g., particular content skills and knowledge, characteristics of standards), and to better understand the degree to which points of distinction present opportunities for further enhancing aspects of the state's standards rather than indicate limitations.

**Reference**

Webb, N. L. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education* (Council of Chief State School Officers and National Institute for Science Education Research Monograph No. 6). Madison: University of Wisconsin, Wisconsin Center for Education Research.

**Appendix A: Standards Not Aligned—Mathematics**

**Table A1. Commonwealth of Massachusetts Mathematics Standards with No Common Core State Standards Alignments**

| Grade | Strand/ Cluster | ID | Student Learning Standards |
|---|---|---|---|
| 4 | Algebra, Relations, and Functions | 4.A.3 | 4.A.3 Determine how a change in one variable relates to a change in a second variable (e.g., input-output table). |
| 6 | Geometry | 6.G.1 | 6.G.1 Extend classification, description, and comparison of three-dimensional shapes to include spheres, cones, and cylinders based on their properties. |
| 7 | Data Analysis, Statistics and Probability | 7.D.3 | 7.D.3 Determine how the addition of new data points will affect measures of central tendency and spread. |
| 8 | Algebra, Relations, and Functions | 8.A.10 | 8.A.10 Find linear equations that represent lines parallel to a given line. |
| 8 | Algebra, Relations, and Functions | 8.A.11 | 8.A.11 Explain the meaning of a positive, negative, zero, and undefined slope. |
| 8 | Algebra, Relations, and Functions | 8.A.13 | 8.A.13 Explain and analyze (both quantitatively and qualitatively, using pictures, graphs, charts, or equations) how a change in one variable results in change in another variable. For example, How does the circumference change when the diameter is doubled? |
| 8 | Geometry | 8.G.1 | 8.G.1 Relate the distributive law to the area of rectangles. |
| 9-10 | Geometry | 10.G.16 | 10.G.16 Use vertex-edge graphs to model and solve problems. |
| 9-10 | Measurement | 10.M.4 | 10.M.4 Relate changes in the measurement of one attribute of a two-dimensional shape to changes in other attributes of the same shape. Relate changes in the measurement of one three-dimensional object to changes in other attributes. For example, explain how changing the radius or height of a cylinder affects its surface area or volume. |

| Grade | Strand/ Cluster | ID | Student Learning Standards |
|---|---|---|---|
| **9-10** | Measurement | 10.M.5 | 10.M.5  Describe the effects of approximate error in measurement and rounding on measurements and on computed values from measurements. |
| **9-10** | Measurement | 10.M.6 | 10.M.6  Use dimensional analysis for unit conversion and to confirm that expressions and equations make sense. |
| **11-12** | Algebra, Relations, and Functions | 12.A.20 | 12.A.20  Use mathematical induction to prove theorems and verify summation formulas, e.g., verify: . . . |
| **11-12** | Algebra, Relations, and Functions | 12.A.21 | 12.A.21  Solve quadratic equations with complex coefficients. |

**Table A2. Common Core State Standards with No Massachusetts Alignment**

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| K | Counting and Cardinality K.CC | Know number names and the count sequence. | K.CC.2 | 2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). |
| K | Counting and Cardinality K.CC | Count to tell the number of objects. | K.CC.5 | 5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. |
| K | Operations and Algebraic Thinking K.OA | Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. | K.OA.2 | 2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. |
| K | Operations and Algebraic Thinking K.OA | Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. | K.OA.3 | 3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). |
| K | Operations and Algebraic Thinking K.OA | Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. | K.OA.4 | 4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| K | Operations and Algebraic Thinking K.OA | Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. | K.OA.5 | 5. Fluently add and subtract within 5. |
| K | Geometry K.G | Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). | K.G.3 | 3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). |
| K | Geometry K.G | Analyze, compare, create, and compose shapes. | K.G.5 | 5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. |
| K | Geometry K.G | Analyze, compare, create, and compose shapes. | K.G.6 | 6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?" |
| 1 | Operations and Algebraic Thinking 1.OA | Understand and apply properties of operations and the relationship between addition and subtraction. | 1.OA.4 | 4. Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| 1 | Number and Operations in Base Ten 1.NBT | Use place value understanding and properties of operations to add and subtract. | 1.NBT.4 | 4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. |
| 1 | Number and Operations in Base Ten 1.NBT | Use place value understanding and properties of operations to add and subtract. | 1.NBT.5 | 5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. |
| 1 | Number and Operations in Base Ten 1.NBT | Use place value understanding and properties of operations to add and subtract. | 1.NBT.6 | 6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. |
| 2 | Operations and Algebraic Thinking 2.OA | Add and subtract within 20. | 2.OA.2 | 2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. |
| 2 | Number and Operations in Base Ten 2.NBT | Use place value understanding and properties of operations to add and subtract. | 2.NBT.6 | 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. |

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| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| 2 | Measurement and Data 2.MD | Relate addition and subtraction to length. | 2.MD.5 | 5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. |
| 2 | Measurement and Data 2.MD | Represent and interpret data. | 2.MD.9 | 9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. |
| 2 | Geometry 2.G | Reason with shapes and their attributes. | 2.G.2 | 2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. |
| 3 | Number and Operations in Base Ten 3.NBT | Use place value understanding and properties of operations to perform multi-digit arithmetic. | 3.NBT.3 | 3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. |
| 3 | Number and Operations – Fractions 3.NF | Develop understanding of fractions as numbers. | 3.NF.3a | a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. |
| 3 | Number and Operations – Fractions 3.NF | Develop understanding of fractions as numbers. | 3.NF.3b | b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. |
| 3 | Measurement and Data 3.MD | Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | 3.MD.5a | a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| 3 | Measurement and Data 3.MD | Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | 3.MD.5b | b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. |
| 3 | Measurement and Data 3.MD | Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | 3.MD.7a | a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. |
| 3 | Measurement and Data 3.MD | Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | 3.MD.7b | b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. |
| 3 | Measurement and Data 3.MD | Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | 3.MD.7c | c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. |
| 3 | Measurement and Data 3.MD | Geometric measurement: understand concepts of area and relate area to multiplication and to addition. | 3.MD.7d | d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. |
| 4 | Operations and Algebraic Thinking 4.OA | Use the four operations with whole numbers to solve problems. | 4.OA.1 | 1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| 4 | Operations and Algebraic Thinking 4.OA | Use the four operations with whole numbers to solve problems. | 4.OA.2 | 2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. |
| 4 | Number and Operations in Base Ten 4.NBT | Use place value understanding and properties of operations to perform multi-digit arithmetic. | 4.NBT.4 | 4. Fluently add and subtract multi-digit whole numbers using the standard algorithm. |
| 4 | Number and Operations – Fractions 4.NF | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | 4.NF.3a | a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. |
| 4 | Number and Operations – Fractions 4.NF | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | 4.NF.3b | b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8. |
| 4 | Number and Operations – Fractions 4.NF | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | 4.NF.4a | a. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4). |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| 4 | Number and Operations – Fractions 4.NF | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | 4.NF.4c | c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? |
| 4 | Measurement and Data 4.MD | Geometric measurement: understand concepts of angle and measure angles. | 4.MD.5a | a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. |
| 4 | Measurement and Data 4.MD | Geometric measurement: understand concepts of angle and measure angles. | 4.MD.5b | b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees. |
| 4 | Measurement and Data 4.MD | Geometric measurement: understand concepts of angle and measure angles. | 4.MD.7 | 7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. |
| 5 | Operations and Algebraic Thinking 5.OA | Write and interpret numerical expressions. | 5.OA.1 | 1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. |

| Grade | Domain | Cluster | ID | Standard |
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| 5 | Operations and Algebraic Thinking 5.OA | Write and interpret numerical expressions. | 5.OA.2 | 2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product. |
| 5 | Operations and Algebraic Thinking 5.OA | Analyze patterns and relationships. | 5.OA.3 | 3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. |
| 5 | Number and Operations in Base Ten 5.NBT | Understand the place value system. | 5.NBT.1 | 1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. |
| 5 | Number and Operations in Base Ten 5.NBT | Understand the place value system. | 5.NBT.4 | 4. Use place value understanding to round decimals to any place. |
| 5 | Number and Operations – Fractions 5.NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF.5a | a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. |

| Grade | Domain | Cluster | ID | Standard |
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| 5 | Number and Operations – Fractions 5.NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF.5b | b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b =(n×a)/(n×b) to the effect of multiplying a/b by 1. |
| 5 | Number and Operations – Fractions 5.NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF.7a | a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. |
| 5 | Number and Operations – Fractions 5.NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF.7b | b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. |
| 5 | Number and Operations – Fractions 5.NF | Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | 5.NF.7c | c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins? |

| Grade | Domain | Cluster | ID | Standard |
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| 5 | Measurement and Data 5.MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.3a | a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. |
| 5 | Measurement and Data 5.MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.3b | b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. |
| 5 | Measurement and Data 5.MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5a | a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. |
| 5 | Measurement and Data 5.MD | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | 5.MD.5c | c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems. |
| 5 | Geometry 5.G | Classify two-dimensional figures into categories based on their properties. | 5.G.3 | 3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. |

| Grade | Domain | Cluster | ID | Standard |
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| 5 | Geometry 5.G | Classify two-dimensional figures into categories based on their properties. | 5.G.4 | 4. Classify two-dimensional figures in a hierarchy based on properties. |
| 6 | Ratios and Proportional Relationships 6.RP | Classify two-dimensional figures into categories based on their properties. | 6.RP.1 | 1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes." |
| 6 | Ratios and Proportional Relationships 6.RP | Classify two-dimensional figures into categories based on their properties. | 6.RP.2 | 2. Understand the concept of a unit rate $a/b$ associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." |
| 6 | The Number System 6.NS | Compute fluently with multi-digit numbers and find common factors and multiples. | 6.NS.2 | 2. Fluently divide multi-digit numbers using the standard algorithm. |
| 6 | The Number System 6.NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS.5 | 5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. |

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| Grade | Domain | Cluster | ID | Standard |
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| 6 | The Number System 6.NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS.6b | b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. |
| 6 | The Number System 6.NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS.7b | b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write −3 °C > −7 °C to express the fact that −3 °C is warmer than −7 °C. |
| 6 | The Number System 6.NS | Apply and extend previous understandings of numbers to the system of rational numbers. | 6.NS.7d | d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than −30 dollars represents a debt greater than 30 dollars. |
| 6 | Expressions and Equations 6.EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE.2a | a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5 − y. |
| 6 | Expressions and Equations 6.EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE.2b | b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms. |

| Grade | Domain | Cluster | ID | Standard |
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| 6 | Expressions and Equations 6.EE | Apply and extend previous understandings of arithmetic to algebraic expressions. | 6.EE.4 | 4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for. |
| 6 | Expressions and Equations 6.EE | Reason about and solve one-variable equations and inequalities. | 6.EE.5 | 5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. |
| 6 | Expressions and Equations 6.EE | Reason about and solve one-variable equations and inequalities. | 6.EE.8 | 8. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams. |
| 6 | Geometry 6.G | Solve real-world and mathematical problems involving area, surface area, and volume. | 6.G.1 | 1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. |
| 6 | Geometry 6.G | Solve real-world and mathematical problems involving area, surface area, and volume. | 6.G.2 | 2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\,w\,h$ and $V = b\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. |

| Grade | Domain | Cluster | ID | Standard |
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| 6 | Geometry 6.G | Solve real-world and mathematical problems involving area, surface area, and volume. | 6.G.3 | 3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. |
| 6 | Statistics and Probability 6.SP | Develop understanding of statistical variability. | 6.SP.2 | 2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. |
| 6 | Statistics and Probability 6.SP | Develop understanding of statistical variability. | 6.SP.3 | 3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. |
| 6 | Statistics and Probability 6.SP | Summarize and describe distributions. | 6.SP.5a | a. Reporting the number of observations. |
| 6 | Statistics and Probability 6.SP | Summarize and describe distributions. | 6.SP.5b | b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. |
| 6 | Statistics and Probability 6.SP | Summarize and describe distributions. | 6.SP.5d | d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. |
| 7 | Ratios and Proportional Relationships 7.RP | Analyze proportional relationships and use them to solve real-world and mathematical problems. | 7.RP.1 | 1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour. |

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| 7 | Ratios and Proportional Relationships 7.RP | Analyze proportional relationships and use them to solve real-world and mathematical problems. | 7.RP.2a | a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. |
| 7 | Ratios and Proportional Relationships 7.RP | Analyze proportional relationships and use them to solve real-world and mathematical problems. | 7.RP.2b | b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. |
| 7 | Ratios and Proportional Relationships 7.RP | Analyze proportional relationships and use them to solve real-world and mathematical problems. | 7.RP.2c | c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn. |
| 7 | Ratios and Proportional Relationships 7.RP | Analyze proportional relationships and use them to solve real-world and mathematical problems. | 7.RP.2d | d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. |
| 7 | The Number System 7.NS | Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. | 7.NS.1a | a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. |

| Grade | Domain | Cluster | ID | Standard |
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| 7 | The Number System 7.NS | Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. | 7.NS.2b | b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts. |
| 7 | The Number System 7.NS | Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. | 7.NS.2d | d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. |
| 7 | The Number System 7.NS | Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. | 7.NS.3 | 3. Solve real-world and mathematical problems involving the four operations with rational numbers. |
| 7 | Expressions and Equations 7.EE | Use properties of operations to generate equivalent expressions. | 7.EE.2 | 2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05." |

| Grade | Domain | Cluster | ID | Standard |
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| **7** | Expressions and Equations 7.EE | Solve real-life and mathematical problems using numerical and algebraic expressions and equations. | 7.EE.4a | a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? |
| **7** | Expressions and Equations 7.EE | Solve real-life and mathematical problems using numerical and algebraic expressions and equations. | 7.EE.4b | b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions. |
| **7** | Geometry 7.G | Draw, construct, and describe geometrical figures and describe the relationships between them. | 7.G.1 | 1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. |
| **7** | Geometry 7.G | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | 7.G.5 | 5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. |

| Grade | Domain | Cluster | ID | Standard |
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| 7 | Statistics and Probability 7.SP | Investigate chance processes and develop, use, and evaluate probability models. | 7.SP.7a | a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. |
| 7 | Statistics and Probability 7.SP | Investigate chance processes and develop, use, and evaluate probability models. | 7.SP.7b | b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies? |
| 7 | Statistics and Probability 7.SP | Investigate chance processes and develop, use, and evaluate probability models. | 7.SP.8c | c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood? |
| 8 | Expressions and Equations 8.EE | Analyze and solve linear equations and pairs of simultaneous linear equations. | 8.EE.7a | a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where $a$ and $b$ are different numbers). |
| 8 | Expressions and Equations 8.EE | Analyze and solve linear equations and pairs of simultaneous linear equations. | 8.EE.8a | a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. |

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| 8 | Expressions and Equations 8.EE | Analyze and solve linear equations and pairs of simultaneous linear equations. | 8.EE.8b | b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6. |
| 8 | Expressions and Equations 8.EE | Analyze and solve linear equations and pairs of simultaneous linear equations. | 8.EE.8c | c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair. |
| 8 | Functions 8.F | Define, evaluate, and compare functions. | 8.F.1 | 1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. |
| 8 | Geometry 8.G | Understand congruence and similarity using physical models, transparencies, or geometry software. | 8.G.1a | a. Lines are taken to lines, and line segments to line segments of the same length. |
| 8 | Geometry 8.G | Understand congruence and similarity using physical models, transparencies, or geometry software. | 8.G.1b | b. Angles are taken to angles of the same measure. |
| 8 | Geometry 8.G | Understand congruence and similarity using physical models, transparencies, or geometry software. | 8.G.1c | c. Parallel lines are taken to parallel lines. |

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| **8** | Statistics and Probability 8.SP | Investigate patterns of association in bivariate data. | 8.SP.1 | 1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. |
| **8** | Statistics and Probability 8.SP | Investigate patterns of association in bivariate data. | 8.SP.2 | 2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. |
| **8** | Statistics and Probability 8.SP | Investigate patterns of association in bivariate data. | 8.SP.3 | 3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height. |
| **8** | Statistics and Probability 8.SP | Investigate patterns of association in bivariate data. | 8.SP.4 | 4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores? |

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| **N** | The Real Number System N-RN | Extend the properties of exponents to rational exponents. | N-RN.1 | 1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define 51/3 to be the cube root of 5 because we want (51/3)3 = 5(1/3)3 to hold, so (51/3)3 must equal 5. |
| **N** | The Real Number System N-RN | Use properties of rational and irrational numbers. | N-RN.3 | 3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. |
| **N** | Quantities* N-Q | Reason quantitatively and use units to solve problems. | N-Q.3 | 3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. |
| **N** | The Complex Number System N-CN | Represent complex numbers and their operations on the complex plane. | N-CN.6 | 6. (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints. |
| **N** | The Complex Number System N-CN | Use complex numbers in polynomial identities and equations. | N-CN.8 | 8. (+) Extend polynomial identities to the complex numbers. For example, rewrite x2 + 4 as (x + 2i)(x − 2i). |
| **N** | The Complex Number System N-CN | Use complex numbers in polynomial identities and equations. | N-CN.9 | 9. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. |
| **N** | Vector and Matrix Quantities N-VM | Represent and model with vector quantities. | N-VM.1 | 1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., v, |v|, ||v||, v). |

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| **N** | Vector and Matrix Quantities N-VM | Represent and model with vector quantities. | N-VM.2 | 2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on vectors. | N-VM.4b | b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on vectors. | N-VM.4c | c. Understand vector subtraction v – w as v + (–w), where –w is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise. |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on vectors. | N-VM.5b | b. Compute the magnitude of a scalar multiple cv using $||cv|| = |c|v$. Compute the direction of cv knowing that when $|c|v \neq 0$, the direction of cv is either along v (for c > 0) or against v (for c < 0). |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.6 | 6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.7 | 7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.8 | 8. (+) Add, subtract, and multiply matrices of appropriate dimensions. |
| **N** | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.9 | 9. (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. |

| Grade | Domain | Cluster | ID | Standard |
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| N | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.10 | 10. (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. |
| N | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.11 | 11. (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors. |
| N | Vector and Matrix Quantities N-VM | Perform operations on matrices and use matrices in applications. | N-VM.12 | 12. (+) Work with $2 \times 2$ matrices as a transformations of the plane, and interpret the absolute value of the determinant in terms of area. |
| A | Seeing Structure in Expressions A-SSE | Interpret the structure of expressions | A-SSE.1a | a. Interpret parts of an expression, such as terms, factors, and coefficients. |
| A | Seeing Structure in Expressions A-SSE | Interpret the structure of expressions | A-SSE.1b | b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)n$ as the product of P and a factor not depending on P. |
| A | Seeing Structure in Expressions A-SSE | Investigate patterns of association in bivariate data. | A-SSE.2 | 2. Use the structure of an expression to identify ways to rewrite it. For example, see $x4 - y4$ as $(x2)2 - (y2)2$, thus recognizing it as a difference of squares that can be factored as $(x2 - y2)(x2 + y2)$. |
| A | Seeing Structure in Expressions A-SSE | Write expressions in equivalent forms to solve problems | A-SSE.3a | a. Factor a quadratic expression to reveal the zeros of the function it defines. |

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| A | Seeing Structure in Expressions A-SSE | Write expressions in equivalent forms to solve problems | A-SSE.3c | c. Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15t can be rewritten as (1.151/12)12t ≈ 1.01212t to reveal the approximate equivalent monthly interest rate if the annual rate is 15%. |
| A | Seeing Structure in Expressions A-SSE | Write expressions in equivalent forms to solve problems | A-SSE.4 | 4. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments. |
| A | Arithmetic with Polynomials and Rational Expressions A-APR | Understand the relationship between zeros and factors of polynomials | A-APR.3 | 3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. |
| A | Arithmetic with Polynomials and Rational Expressions A-APR | Use polynomial identities to solve problems | A-APR.4 | 4. Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity (x2 + y2)2 = (x2 − y2)2 + (2xy)2 can be used to generate Pythagorean triples. |
| A | Arithmetic with Polynomials and Rational Expressions A-APR | Rewrite rational expressions | A-APR.6 | 6. Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system. |
| A | Creating Equations* A-CED | Create equations that describe numbers or relationships | A-CED.2 | 2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. |

| Grade | Domain | Cluster | ID | Standard |
|-------|--------|---------|-----|----------|
| **A** | Creating Equations* A-CED | Create equations that describe numbers or relationships | A-CED.3 | 3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. |
| **A** | Creating Equations* A-CED | Create equations that describe numbers or relationships | A-CED.4 | 4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R. |
| **A** | Reasoning with Equations and Inequalities A-REI | Solve systems of equations | A-REI.5 | 5. Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. |
| **A** | Reasoning with Equations and Inequalities A-REI | Solve systems of equations | A-REI.8 | 8. (+) Represent a system of linear equations as a single matrix equation in a vector variable. |
| **F** | Interpreting Functions F-IF | Understand the concept of a function and use function notation | F-IF.2 | 2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. |
| **F** | Interpreting Functions F-IF | Interpret functions that arise in applications in terms of the context | F-IF.5 | 5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.* |
| **F** | Interpreting Functions F-IF | Analyze functions using different representations | F-IF.7b | b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| F | Interpreting Functions F-IF | Analyze functions using different representations | F-IF.7c | c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. |
| F | Interpreting Functions F-IF | Analyze functions using different representations | F-IF.7d | d. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. |
| F | Interpreting Functions F-IF | Analyze functions using different representations | F-IF.8b | b. Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as y = (1.02)t, y = (0.97)t, y = (1.01)12t, y = (1.2)t/10, and classify them as representing exponential growth or decay. |
| F | Interpreting Functions F-IF | Analyze functions using different representations | F-IF.9 | 9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. |
| F | Building Functions F-BF | Build new functions from existing functions | F-BF.4b | b. (+) Verify by composition that one function is the inverse of another. |
| F | Building Functions F-BF | Build new functions from existing functions | F-BF.4c | c. (+) Read values of an inverse function from a graph or a table, given that the function has an inverse. |
| F | Building Functions F-BF | Build new functions from existing functions | F-BF.4d | d. (+) Produce an invertible function from a non-invertible function by restricting the domain. |
| F | Linear and Exponential Models* F-LE | Construct and compare linear and exponential models and solve problems. | F-LE.1a | a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| F | Linear and Exponential Models* F-LE | Construct and compare linear and exponential models and solve problems. | F-LE.4 | 4. For exponential models, express as a logarithm the solution to abct = d where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology. |
| F | Linear and Exponential Models* F-LE | Interpret expressions for functions in terms of the situation they model | F-LE.5 | 5. Interpret the parameters in a linear or exponential function in terms of a context. |
| F | Trigonometric Functions F-TF | Extend the domain of trigonometric functions using the unit circle | F-TF.4 | 4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions. |
| F | Trigonometric Functions F-TF | Model periodic phenomena with trigonometric functions | F-TF.6 | 6. (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed. |
| F | Trigonometric Functions F-TF | Model periodic phenomena with trigonometric functions | F-TF.7 | 7. (+) Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.* |
| G | Congruence G-CO | Experiment with transformations in the plane | G-CO.1 | 1. Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. |
| G | Congruence G-CO | Experiment with transformations in the plane | G-CO.2 | 2. Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| G | Congruence G-CO | Experiment with transformations in the plane | G-CO.4 | 4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. |
| G | Congruence G-CO | Experiment with transformations in the plane | G-CO.5 | 5. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another. |
| G | Congruence G-CO | Understand congruence in terms of rigid motions | G-CO.7 | 7. Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. |
| G | Congruence G-CO | Understand congruence in terms of rigid motions | G-CO.8 | 8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. |
| G | Congruence G-CO | Make geometric constructions | G-CO.13 | 13. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. |
| G | Similarity, Right Triangles, and Trigonometry G-SRT | Understand similarity in terms of similarity transformations. | G-SRT.1a | a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. |
| G | Similarity, Right Triangles, and Trigonometry G-SRT | Understand similarity in terms of similarity transformations. | G-SRT.1b | b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| **G** | Similarity, Right Triangles, and Trigonometry G-SRT | Understand similarity in terms of similarity transformations. | G-SRT.2 | 2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. |
| **G** | Similarity, Right Triangles, and Trigonometry G-SRT | Understand similarity in terms of similarity transformations. | G-SRT.3 | 3. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar. |
| **G** | Similarity, Right Triangles, and Trigonometry G-SRT | Define trigonometric ratios and solve problems involving right triangles. | G-SRT.7 | 7. Explain and use the relationship between the sine and cosine of complementary angles. |
| **G** | Similarity, Right Triangles, and Trigonometry G-SRT | Apply trigonometry to general triangles. | G-SRT.9 | 9. (+) Derive the formula A = 1/2 ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. |
| **G** | Circles G-C | Understand and apply theorems about circles. | G-C.1 | 1. Prove that all circles are similar. |
| **G** | Circles G-C | Understand and apply theorems about circles. | G-C.3 | 3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. |
| **G** | Circles G-C | Understand and apply theorems about circles. | G-C.4 | 4. (+) Construct a tangent line from a point outside a given circle to the circle. |

| Grade | Domain | Cluster | ID | Standard |
|-------|--------|---------|-----|----------|
| **G** | Circles G-C | Find arc lengths and areas of sectors of circles. | G-C.5 | 5. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. |
| **G** | Expressing Geometric Properties with Equations G-GPE | Use coordinates to prove simple geometric theorems algebraically. | G-GPE.6 | 6. Find the point on a directed line segment between two given points that partitions the segment in a given ratio. |
| **G** | Expressing Geometric Properties with Equations G-GPE | Use coordinates to prove simple geometric theorems algebraically. | G-GPE.7 | 7. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.* |
| **G** | Geometric Measurement and Dimension G-GMD | Explain volume formulas and use them to solve problems. | G-GMD.1 | 1. Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments. |
| **G** | Geometric Measurement and Dimension G-GMD | Explain volume formulas and use them to solve problems. | G-GMD.2 | 2. (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures. |
| **G** | Modeling with Geometry G-MG | Apply geometric concepts in modeling situations. | G-MG.1 | 1. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).* |
| **G** | Modeling with Geometry G-MG | Apply geometric concepts in modeling situations. | G-MG.2 | 2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).* |

| Grade | Domain | Cluster | ID | Standard |
|-------|--------|---------|-----|----------|
| **G** | Modeling with Geometry G-MG | Apply geometric concepts in modeling situations. | G-MG.3 | 3. Apply geometric methods to solve design problems (e.g., design an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).* |
| **S** | Interpreting Categorical and Quantitative Data S-ID | Summarize, represent, and interpret data on two categorical and quantitative variables. | S-ID.6b | b. Informally assess the fit of a function by plotting and analyzing residuals. |
| **S** | Interpreting Categorical and Quantitative Data S-ID | Interpret linear models. | S-ID.7 | 7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. |
| **S** | Interpreting Categorical and Quantitative Data S-ID | Interpret linear models. | S-ID.8 | 8. Compute (using technology) and interpret the correlation coefficient of a linear fit. |
| **S** | Interpreting Categorical and Quantitative Data S-ID | Interpret linear models. | S-ID.9 | 9. Distinguish between correlation and causation. |
| **S** | Making Inferences and Justifying Conclusions S-IC | Understand and evaluate random processes underlying statistical experiments. | S-IC.1 | 1. Understand statistics as a process for making inferences about population parameters based on a random sample from that population. |
| **S** | Making Inferences and Justifying Conclusions S-IC | Understand and evaluate random processes underlying statistical experiments. | S-IC.2 | 2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model? |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| S | Making Inferences and Justifying Conclusions S-IC | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | S-IC.4 | 4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. |
| S | Making Inferences and Justifying Conclusions S-IC | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | S-IC.5 | 5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. |
| S | Making Inferences and Justifying Conclusions S-IC | Make inferences and justify conclusions from sample surveys, experiments, and observational studies. | S-IC.6 | 6. Evaluate reports based on data. |
| S | Conditional Probability and the Rules of Probability S-CP | Understand independence and conditional probability and use them to interpret data. | S-CP.1 | 1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). |
| S | Conditional Probability and the Rules of Probability S-CP | Understand independence and conditional probability and use them to interpret data. | S-CP.2 | 2. Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| S | Conditional Probability and the Rules of Probability S-CP | Understand independence and conditional probability and use them to interpret data. | S-CP.3 | 3. Understand the conditional probability of A given B as P(A and B)/P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. |
| S | Conditional Probability and the Rules of Probability S-CP | Understand independence and conditional probability and use them to interpret data. | S-CP.4 | 4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. |
| S | Conditional Probability and the Rules of Probability S-CP | Understand independence and conditional probability and use them to interpret data. | S-CP.5 | 5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. |
| S | Conditional Probability and the Rules of Probability S-CP | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | S-CP.6 | 6. Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model. |

| Grade | Domain | Cluster | ID | Standard |
|---|---|---|---|---|
| S | Conditional Probability and the Rules of Probability S-CP | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | S-CP.7 | 7. Apply the Addition Rule, P(A or B) = P(A) + P(B) – P(A and B), and interpret the answer in terms of the model. |
| S | Conditional Probability and the Rules of Probability S-CP | Use the rules of probability to compute probabilities of compound events in a uniform probability model. | S-CP.8 | 8. (+) Apply the general Multiplication Rule in a uniform probability model, P(A and B) = P(A)P(B|A) = P(B)P(A|B), and interpret the answer in terms of the model. |
| S | Using Probability to Make Decisions S-MD | Calculate expected values and use them to solve problems. | S-MD.1 | 1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. |
| S | Using Probability to Make Decisions S-MD | Calculate expected values and use them to solve problems. | S-MD.2 | 2. (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. |
| S | Using Probability to Make Decisions S-MD | Use probability to evaluate outcomes of decisions. | S-MD.5a | a. Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fastfood restaurant. |
| S | Using Probability to Make Decisions S-MD | Use probability to evaluate outcomes of decisions. | S-MD.5b | b. Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident. |

| Grade | Domain | Cluster | ID | Standard |
|-------|--------|---------|-----|----------|
| **S** | Using Probability to Make Decisions S-MD | Use probability to evaluate outcomes of decisions. | S-MD.6 | 6. (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). |
| **S** | Using Probability to Make Decisions S-MD | Use probability to evaluate outcomes of decisions. | S-MD.7 | 7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). |

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**Appendix B: Standards Not Aligned—English Language Arts**

**Table B1. Massachusetts ELA Standards with No CCS Alignments**

| Grade | Subject | Strand | ID | Student Learning Standards |
|-------|---------|--------|-----|---------------------------|
| K | Reading and Literature | 6: Foundations of Reading and Spelling | K.R.16 | K.R.16 Identify words that have the same initial sound (e.g., Given *pat, put, sat,* indicate that the first two words begin with /p/). |
| K | Reading and Literature | 6: Foundations of Reading and Spelling | K.R.17 | K.R.17 Orally blend individual sounds in simple one-syllable words (e.g., /c/ /u/ /p/ → *cup).* |
| K | Reading and Literature | 6: Foundations of Reading and Spelling | K.R.20 | K.R.20 Match spoken words to printed words (e.g., The teacher pronounces /pat/, and the student selects *pat* from a set of three word cards. |
| K | Reading and Literature | 6: Foundations of Reading and Spelling | K.R.21 | K.R.21 Blend letter sounds to decode simple CVC (consonant-vowel-consonant) or VC (vowel-consonant) words with two or three letters (e.g., *man, cat, up).* |
| K | Reading and Literature | 7: Nonfiction | K.N.2 | K.N.2 Identify textual and graphic features of a nonfiction text (e.g., title, author, table of contents, illustrations, and index). |
| K | Reading and Literature | 7: Nonfiction | K.N.3 | K.N.3 Restate and follow two-step directions. |
| K | Reading and Literature | 8: Fiction | K.F.1 | K.F.1 Make predictions about what will happen in a story as it is read aloud. |
| K | Reading and Literature | 9: Poetry | K.P.1 | K.P.1 Identify and demonstrate the regular beat in Mother Goose rhymes and other rhymes and songs for children. |
| K | Reading and Literature | 10: Drama | K.D.1 | K.D.1 Act out dialogue from a familiar story. |
| K | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | K.M.1 | K.M.1 Identify and predict recurring phrases (e.g., *Once upon a time)*in traditional literature. |
| K | Research and Writing | 13: Analytical Writing | K.WA.2 | K.WA.2 Describe orally patterns of change (e.g., changes in weather day to day and over the seasons). |
| K | Research and Writing | 14: Persuasive Writing | K.WP.1 | K.WP.1 Give logical reasons for suggesting that others follow a particular course of action. *For example, some students say that the teacher should allow more time for music because the class needs to practice for an upcoming assembly.* |
| K | Research and Writing | 15: Expressive Writing | K.WE.2 | K.WE.2 Arrange ideas of a story in order. |

| Grade | Subject | Strand | ID | Student Learning Standards |
|---|---|---|---|---|
| K | Research and Writing | 15: Expressive Writing | K.WC.3 | K.WC.3 Identify words and phrases that convey meaning expressively. |
| 1 | Language Study | 4: Vocabulary and Concept Development | 1.VC.5 | 1.VC.5 Use knowledge of the meaning of individual words to predict the meaning of unknown compound words (e.g., *lunchtime, daydream*). |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.1 | 1.R.1 Use a table of contents to identify chapters or parts of a book. |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.3 | 1.R.3 Produce a series of rhyming words. |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.4 | 1.R.4 Identify the number of words in a sentence. |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.7 | 1.R.7 Identify the individual sounds in one-syllable words. |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.14 | 1.R.14 Read words in common word families (e.g., *-at, -ate).* |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.17 | 1.R.17 Read simple compound words (e.g., *birthday*, *anything)*and contractions (e.g., *isn't*, *aren't*, *can't*, *won't).* |
| 1 | Reading and Literature | 6: Foundations of Reading and Spelling | 1.R.21 | 1.R.21 Make predictions about what will happen in texts using prior knowledge and text features. |
| 1 | Reading and Literature | 7: Nonfiction | 1.N.3 | 1.N.3 Explain and follow two-step directions. |
| 1 | Reading and Literature | 9: Poetry | 1.P.1 | 1.P.1 Identify similarities in ending sounds in children's poems and songs. |
| 1 | Reading and Literature | 9: Poetry | 1.P.2 | 1.P.2 Identify repetition in phases or refrains in children's poems and songs. |
| 1 | Reading and Literature | 10: Drama | 1.D.1 | 1.D.1 Identify characters and dialogue in a puppet play or performance by actors. |
| 1 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 1.M.1 | 1.M.1 Identify common characteristics of folktales and/or fairy tales, such as animals who speak, magic, a setting that is "anytime/anyplace." |
| 1 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 1.M.2 | 1.M.2 Identify the use of rhyme, rhythm, and repetition in folk- and fairy tales. |
| 1 | Research and Writing | 12: The Research Process | 1.RP.1 | 1.RP.1 Consult local experts to locate or gather information. |
| 1 | Research and Writing | 12: The Research Process | 1.RP.3 | 1. RP.3 Make informal presentations of information gathered. |

| Grade | Subject | Strand | ID | Student Learning Standards |
|-------|---------|--------|-----|----------------------------|
| 1 | Research and Writing | 14: Persuasive Writing | 1.WP.1 | 1.WP.1 Write letters with logically connected sentences to make a proposal to a particular audience and give reasons why the proposal should be considered. *For example, students write a letter to the school's parent-teacher organization to explain that the first grade should take a field trip to a farm because they are studying where food comes from.* |
| 1 | Research and Writing | 15: Expressive Writing | 1.WE.1 | 1.WE.1 Develop topics for stories and poems based on the student's experience or imagination. |
| 1 | Research and Writing | 15: Expressive Writing | 1.WE.2 | 1.WE.2 Organize ideas into a beginning and ending. |
| 2 | Language Study | 3: Structure and Conventions of Modern English | 2.SE.4 | 2.SE.4 Distinguish a statement from a question or a command. |
| 2 | Language Study | 3: Structure and Conventions of Modern English | 2.SE.5 | 2.SE.5 Identify and demonstrate indentation for a paragraph. |
| 2 | Reading and Literature | 6: Foundations of Reading and Spelling | 2.R.4 | 2.R.4 Read words in common word families (e.g., *-ale,-est,-ine, -ock).* |
| 2 | Reading and Literature | 6: Foundations of Reading and Spelling | 2.R.7 | 2.R.7 Read common abbreviations (e.g., *Dr., Mr., Am, PM).* |
| 2 | Reading and Literature | 6: Foundations of Reading and Spelling | 2.R.13 | 2.R.13 Make predictions about the content of texts using prior knowledge and text features (e.g., headings, table of contents, key words in informational texts, story events in literary texts), explaining whether they were confirmed or disconfirmed and why. |
| 2 | Reading and Literature | 6: Foundations of Reading and Spelling | 2.R.15* | 2.R.15* Distinguish cause and effect. |
| 2 | Reading and Literature | 7: Nonfiction | 2.N.4 | 2.N 4 Identify the words and phrases that connect paragraphs and explain the logical relationship they signal. |
| 2 | Reading and Literature | 7: Nonfiction | 2.N.6 | 2.N.6 Restate and follow simple multi-step directions. |
| 2 | Reading and Literature | 7: Nonfiction | 2.N.7 | 2.N.7 Distinguish cause from effect in the events laid out in a nonfiction text. |
| 2 | Reading and Literature | 8: Fiction | 2.F.2 | 2.F.2 Explain the problem to be solved in a story. |
| 2 | Reading and Literature | 8: Fiction | 2.F.3 | 2.F.3 Identify dialogue as words spoken by the characters, usually enclosed in quotation marks. |
| 2 | Reading and Literature | 8: Fiction | 2.F.6 | 2.F.6 Describe differences between fables, folk tales, legends, and myths. |

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| Grade | Subject | Strand | ID | Student Learning Standards |
|---|---|---|---|---|
| 2 | Reading and Literature | 9: Poetry | 2.P.2 | 2.P.2 Memorize and recite lines and verses in poems and songs. |
| 2 | Reading and Literature | 10: Drama | 2.D.1 | 2.D.1 Identify characters, setting, dialogue, acts, scenes in a play. |
| 2 | Reading and Literature | 10: Drama | 2.D.2 | 2.D.2 Perform informal plays for an audience, speaking clearly with adequate volume and maintaining eye contact with the audience or other characters. |
| 2 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 2.M.2 | 2.M.2 Identify the functions of myths (e.g., their attempt to explain the forces of nature or the nature of the after-life). |
| 2 | Research and Writing | 12: The Research Process | 2.RP.2 | 2.RP.2 Identify the location and purpose of various visual and text reference sources in the school library media center or classroom library. |
| 2 | Research and Writing | 12: The Research Process | 2.RP.3 | 2.RP.3 Use quotation marks to denote direct quotations when recording specific words and sentences from a source. |
| 2 | Research and Writing | 14: Persuasive Writing | 2.WP.1 | 2.WP.1 Write letters with logically connected paragraphs and multiple reasons to explain to a particular audience why a certain course of action should be followed. *For example, second graders write a letter to the principal to persuade her that the school library should be kept open after school because students would like extra time to browse books and the librarian is willing to work with them to start a library helpers' club.* |
| 2 | Research and Writing | 15: Expressive Writing | 2.WE.1 | 2.WE.1 Develop topics for friendly letters, stories, and poems on familiar subjects. |
| 2 | Research and Writing | 15: Expressive Writing | 2.WE.2 | 2.WE.2 Begin and end imaginative stories with familiar words and phrases (e.g., *Once, One time, In the end).* |
| 3 | Speaking and Listening | 2: Oral Presentation | 3.OP.1 | 3.OP.1 Present information from a text or film, organizing ideas clearly and giving details from the work. |
| 3 | Speaking and Listening | 2: Oral Presentation | 3.OP.2 | 3.OP.2 Use teacher-developed assessment criteria to prepare their presentations. |
| 3 | Language Study | 3: The Structure and Conventions of Modern English | 3.SE.2 | 3.SE.2. Identify the subject-predicate relationship in sentences. |
| 3 | Language Study | 3: The Structure and Conventions of Modern English | 3.SE.4 | 3.SE.4 Identify correct subject-verb agreement in sentences. |
| 3 | Language Study | 3: The Structure and Conventions of Modern English | 3.SE.6 | 3.SE.6 Use commas to denote a series of items. |

| Grade | Subject | Strand | ID | Student Learning Standards |
|---|---|---|---|---|
| 3 | Language Study | 5: Formal and Informal English | 3.FI.1 | 3.FI.1 Recognize dialect and informal language in advertisements, films, videos, and songs. |
| 3 | Reading and Literature | 6: Foundations of Reading and Spelling | 3.R.1 | 3.R.1 Write upper- and lower-case cursive letters, and use them in words and sentences, leaving spaces between words. |
| 3 | Reading and Literature | 6: Foundations of Reading and Spelling | 3.R.4 | 3.R.4 Read aloud words in common word families *(-ight, -ump)*. |
| 3 | Reading and Literature | 6: Foundations of Reading and Spelling | 3.R.8 | 3.R.8 Arrange words in alphabetical order (e.g., given a list of words, such as *apple*, *grapefruit*, *cherry*, *banana*, *pineapple*, and *peach*, put them in alphabetical order). |
| 3 | Reading and Literature | 7: Nonfiction | 3.N.2 | 3.N.2 Identify the topic sentence and the gist of each paragraph. |
| 3 | Reading and Literature | 7: Nonfiction | 3.N.3 | 3.N.3 Identify how the nonfiction text is organized (e.g., chronological, problem-solution, topical organization). |
| 3 | Reading and Literature | 7: Nonfiction | 3.N.4 | 3.N.4 Identify common textual features (e.g., paragraphing, topic sentences, words in bold or italics, glossary) and graphic features (e.g., charts, graphs, maps). |
| 3 | Reading and Literature | 7: Nonfiction | 3.N.5 | 3.N.5 Identify selected types of nonfiction: texts written to provide information about a particular topic, expository texts written to examine or analyze particular event, discovery, invention, or natural phenomenon, and biographies written to tell the story of a person's life. |
| 3 | Reading and Literature | 7: Nonfiction | 3.N.6 | 3.N.6 Distinguish fact from fiction or opinion. |
| 3 | Reading and Literature | 8: Fiction | 3.F.3 | 3.F.3 Identify foreshadowing clues as hints from the author about characters' destinies or what will happen later in a story. |
| 3 | Reading and Literature | 9: Poetry | 3.P.1 | 3.P.1 Identify poetic elements (e.g., rhyme, rhythm, repetition, sensory images) and basic forms of poetry (e.g., a couplet). |
| 3 | Reading and Literature | 9: Poetry | 3.P.2 | 3.P.2 Identify stanza and verse as terms for groups of lines in poetry. |
| 3 | Reading and Literature | 9: Poetry | 3.P.3 | 3.P.3 Memorize and recite appealing children's poems and songs. |

| Grade | Subject | Strand | ID | Student Learning Standards |
|---|---|---|---|---|
| 3 | Reading and Literature | 10: Drama | 3.D.1 | 3.D.1 Identify elements of plot and character presented through dialogue and/or action in scripts that are read, viewed, listened to, or performed. |
| 3 | Reading and Literature | 10: Drama | 3.D.2 | 3.D.2 Plan and perform readings for an audience, using appropriate expression, clear diction, and adequate volume. |
| 3 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 3.M.1 | 3.M.1 Identify phenomena explained in origin myths (Prometheus/fire; Pandora/evils). |
| 3 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 3.M.2 | 3.M.2 Identify and compare the adventures or exploits of a character type in the traditional literature of different cultures (e.g., trickster tales such as the Anansi tales from Africa, the Iktomi stories of the Plains Indians, the Br'er Rabbit tales, and the pranks of Til Eulenspiegel). |
| 3 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 3.M.3 | 3.M.3 Identify the meaning of figurative phrases used today that come from Greek mythology (e.g., *the Midas touch*). |
| 3 | Research and Writing | 12: The Research Process | 3.RP.2 | 3.RP.2 Determine the accuracy and relevance of the information for their specific questions. |
| 3 | Research and Writing | 12: The Research Process | 3.RP.3 | 3.RP.3 Record relevant information in their own words. |
| 4 | Language Study | 4: Vocabulary and Concept Development | 4.VC.4 | 4.VC.4 Determine a word's part of speech from its suffix (e.g., the noun *beauty*, the adjective *beautiful*, and the adverb *beautifully*). |
| 4 | Language Study | 4: Vocabulary and Concept Development | 4.VC.5 | 4.VC.5 Identify words from other languages that have been adopted into English (e.g., *ballet, pizza, sushi, algebra*). |
| 4 | Reading and Literature | 6: Foundations of Reading and Spelling | 4.R.1 | 4.R.1 Write legibly in cursive, leaving spaces between words. |
| 4 | Reading and Literature | 7: Nonfiction | 4.N.1 | 4.N.1 Identify and distinguish between expository texts written to examine or analyze a particular event, discovery, invention, or natural phenomenon, and persuasive texts written to urge the reader to adopt a belief or take a particular course of action. |
| 4 | Reading and Literature | 7: Nonfiction | 4.N.2 | 4.N.2 Explain the author's precise purpose in a piece of analytical or persuasive writing, using evidence from the text. |

| Grade | Subject | Strand | ID | Student Learning Standards |
|---|---|---|---|---|
| 4 | Reading and Literature | 7: Nonfiction | 4.N.5 | 4.N.5 Identify the connectives between paragraphs and the logical relationships they indicate. |
| 4 | Reading and Literature | 8: Fiction | 4.F.1 | 4.F.1 Identify and describe how main characters in a story or novel change as a result of events. |
| 4 | Reading and Literature | 8: Fiction | 4.F.2 | 4.F.2 Identify the narrator of a story or novel (e.g., a character in the story, the author, someone else). |
| 4 | Reading and Literature | 9: Poetry | 4.P.1 | 4.P.1 Identify rhyme elements, such as consonance (i.e., repetition of consonant only sounds) and assonance (i.e., repetition of vowel only sounds). |
| 4 | Reading and Literature | 9: Poetry | 4.P.2 | 4.P.2 Identify forms of poetry (e.g., the limerick or haiku). |
| 4 | Reading and Literature | 9: Poetry | 4.P.3 | 4.P.3 Identify similes, metaphors, and sensory images. |
| 4 | Reading and Literature | 10: Drama | 4.D.1 | 4.D.1 Identify and analyze how characters change from the beginning to the end of a play or film. |
| 4 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 4.M.1 | 4.M.1 Identify characteristics of legends (e.g., Robin Hood or King Arthur). |
| 4 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 4.M.2 | 4.M.2 Identify culturally significant characters and places in Greek, Roman, and Norse mythology (e.g., Athena, Apollo, Pan, Zeus, Jupiter, Mercury, Hades, Thor, Woton, Mt. Olympus, Valhalla, the river Styx). |
| 4 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 4.M.3 | 4.M.3 Identify English words that come from Greek, Roman, and Norse mythology (e.g., names of days of week, months, constellations). |
| 4 | Research and Writing | 12: The Research Process | 4.RP.1 | 4.RP.1 Identify and read through a variety of relevant sources (e.g., digital, print, and/or interviews with local authorities). |
| 4 | Research and Writing | 12: The Research Process | 4.RP.2 | 4.RP.2 On the basis of these sources, decide on one major research question to address. |
| 4 | Research and Writing | 12: The Research Process | 4.RP.4 | 4.RP.4 Determine the accuracy of the information gathered. |
| 4 | Research and Writing | 12: The Research Process | 4.RP.5 | 4.RP.5 Record pertinent source information and follow an established format. |
| 4 | Research and Writing | 12: The Research Process | 4.RP.6 | 4.RP.6 Summarize and organize information using a variety of tools (e.g., note cards, spreadsheets, outlines, graphic organizers). |

| Grade | Subject | Strand | ID | Student Learning Standards |
|-------|---------|--------|-----|----------------------------|
| 4 | Research and Writing | 12: The Research Process | 4.RP.7 | 4.RP.7 Cite all quoted words, introducing them in one's own words, and identify sources for illustrations, graphs, or video clips copied or imported from print or digital sources. |
| 4 | Research and Writing | 12: The Research Process | 4.RP.8 | 4.RP.8 Present the research project and evaluate how completely, accurately, and efficiently the major research question was explored or answered. |
| 4 | Research and Writing | 13: Analytical Writing | 4.WE.3*(s/b e4.WA.3) | 4.WE.3* Use language and level of formality that is appropriate to the audience and purpose of the composition and connect ideas and events using relatively simple transition words (e.g., *first, second, and, but*). |
| 4 | Research and Writing | 15: Expressive Writing | 4.WE.4 | 4.WE.4 Organize writing using meaningful paragraphing and connecting ideas and events using relatively simple transition words, such as *first, before, and, but*. |
| 5 | Language Study | 4: Vocabulary and Concept Development | 5.VC.5 | 5.VC.5 Identify and use words and phrases that signal contrast, addition, and other logical relationships (e.g., *however, although, nevertheless, similarly, moreover, in addition*, etc.) |
| 5 | Language Study | 5: Formal and Informal English | 5.FI.1 | 5.FI.1 Identify differences in formal and informal language used in a film. |
| 5 | Reading and Literature | 7: Nonfiction | 5.N.4 | 5.N.4 Identify selected types of informational texts: biographies, autobiographies, newspaper articles, encyclopedias, travelogues, political commentary, research reports personal writing (memoirs, chronicles), and procedural or practical texts explaining how to accomplish a task. |
| 5 | Reading and Literature | 8: Fiction | 5.F.1 | 5.F.1 Identify and describe how the main characters in a story or novel change over time. |
| 5 | Reading and Literature | 8: Fiction | 5.F.2 | 5.F.2 Identify and describe conflict in a story or novel and its resolution. |
| 5 | Reading and Literature | 8: Fiction | 5.F.3 | 5.F.3 Identify the differences between fantasies (e.g., *Mary Poppins*), historical fiction, true adventure stories. |
| 5 | Reading and Literature | 8: Fiction | 5.F.5 | 5.F.5 Identify how the author uses descriptions of settings to create a mood. |
| 5 | Reading and Literature | 9: Poetry | 5.P.1 | 5.P.1 Identify sound elements (e.g., alliteration and rhyme scheme, couplets, ABAB) and visual elements (e.g., unusual patterns of punctuation or capitalization). |

| Grade | Subject | Strand | ID | Student Learning Standards |
|-------|---------|--------|-----|----------------------------|
| 5 | Reading and Literature | 9: Poetry | 5.P.2 | 5.P.2 Identify forms of poems (e.g., dramatic poems with dialogue and action). |
| 5 | Reading and Literature | 9: Poetry | 5.P.3 | 5.P.3 Explain how poets use sound effects in humorous poems. |
| 5 | Reading and Literature | 10: Drama | 5.D.2 | 5.D.2 Identify similarities and differences between a story or novel and its film or play adaptation. |
| 5 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 5.M.1 | 5.M.1 Identify common structures such as the rule of three (e.g., three wishes); magic helpers (e.g., talking animals, genies, or elves); or transformations (e.g., a frog who turns into a prince). |
| 5 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 5.M.2 | 5.M.2 Identify common stylistic elements, such as exaggeration (hyperbole), repeated refrains, and similes. |
| 5 | Research and Writing | 13: Analytical Writing | 5.WE.3*(s/be5.WA.3) | 5.WE.3* Use language and sentence variety to convey meaning, for effect, and to support a tone and formality appropriate to the topic, audience, and purpose. |
| 6 | Language Study | 4: Vocabulary and Concept Development | 6.VC.3 | 6.VC.3 Identify singular and plural forms of Latin words often used in English (e.g., *alumna, alumnae*). |
| 6 | Language Study | 4: Vocabulary and Concept Development | 6.VC.3 | 6.VC.3 Determine the meaning of grade-appropriate foreign words used frequently in written English (e.g., *résumé, repertoire*). |
| 6 | Language Study | 5: Formal and Informal English | 6.FI.1 | 6.FI.1 Identify differences between oral and written language patterns used in texts read in class. |
| 7 | Language Study | 4: Vocabulary and Concept Development | 7.VC.3 | 7.VC.3 Determine the meaning of foreign words used frequently in various subject areas. |
| 7 | Language Study | 5: Formal and Informal English | 7.FI.1 | 7.FI.1 Identify forms of informal language and symbols that are commonly used in texting and emails among friends and differentiate them from formal electronic communications. |
| 7 | Reading and Literature | 8: Fiction | 7.F.2 | 7.F.2 Analyze the ways in which main characters change or interact throughout a story or a novel. |
| 7 | Reading and Literature | 8: Fiction | 7.F.5 | 7.F.5 Identify and analyze the characteristics of a parody. |
| 7 | Reading and Literature | 11: Myth, Legend, Traditional Narrative, and Classical Literature | 7.M.1 | 7.M.1 Identify conventions in epic tales (e.g., extended simile, the quest, the hero's tasks, special weapons or clothing, or helpers). |

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| Grade | Subject | Strand | ID | Student Learning Standards |
|-------|---------|--------|-----|---------------------------|
| 8 | Speaking and Listening | 2: Oral Presentation | 8.OP.2 | 8.OP.2 Create a scoring guide based on categories supplied by the teacher (content, presentation style) to prepare and assess a presentation on a local issue to a specific audience. |
| 8 | Language Study | 4: Vocabulary and Concept Development | 8.VC.2 | 8.VC.2 Identify the origin and explain the meaning of grade-appropriate foreign words or phrases used frequently in written English (e.g., *per se, passé, au courant, du jour*). |
| 8 | Reading and Literature | 7: Nonfiction | 8.N.1 | 8.N.1 Identify and distinguish among major subgenres of nonfiction: exposition (e.g., biography, autobiography, political, historical, scientific, literary essays and documents, research reports, book or arts reviews, news or features articles, textbooks, trade books, encyclopedia entries, informational website articles); persuasive texts (e.g., editorials, letters to the editor, speeches, journals, commentaries, position papers, advertisements, and political campaign literature); and procedural texts or documents (recipes, directions, manuals, schedules, application forms, contracts and other legal documents). |
| 8 | Reading and Literature | 8: Fiction | 8.F.5 | 8.F.5 Identify and analyze the characteristics of a satire. |
| 8 | Reading and Literature | 9: Poetry | 8.P.2 | 8.P.2 Distinguish free verse from rhymed verse and explain its purposes. |
| 10 | Reading and Literature | 9: Poetry | 10.P.1 | 10.P.1 Analyze how authors create multiple layers of meaning and/or deliberate ambiguity in a poem. |
| 10 | Reading and Literature | 10: Drama | 10.D.1 | 10.D.1 Analyze how dramatic conventions (such as monologue, soliloquy, aside) support, interpret, and enhance the play. |
| 12 | Language Study | 5: Formal and Informal English | 12.FI.1 | 12.FI.1 Analyze how oral dialect can be a source of negative or positive stereotypes among social groups and the purposes for using standard American English in spoken language. |
| 12 | Reading and Literature | 8: Fiction | 12.F.5 | 12.F.5 Identify characteristics of genres (e.g., satire, parody, allegory, pastoral) that cut across the lines of genre classifications such as fiction, poetry, and drama. |

## Table B2. Common Core State Standards with No Massachusetts Alignment

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| K | Reading Standards for Literature RL | Craft and Structure | RL.K.4 | 4. Ask and answer questions about unknown words in a text. |
| K | Reading Standards for Literature RL | Craft and Structure | RL.K.5 | 5. Recognize common types of texts (e.g., storybooks, poems). |
| K | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.K.9 | 9. With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories. |
| K | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.K.10 | 10. Actively engage in group reading activities with purpose and understanding. |
| K | Reading Standards for Informational Text RI | Key Ideas and Details | RI.K.3 | 3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. |
| K | Reading Standards for Informational Text RI | Craft and Structure | RI.K.4 | 4. With prompting and support, ask and answer questions about unknown words in a text. |
| K | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.K.8 | 8. With prompting and support, identify the reasons an author gives to support points in a text. |
| K | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.K.9 | 9. With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures). |
| K | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.K.10 | 10. Actively engage in group reading activities with purpose and understanding. |
| K | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.K.3d | d. Distinguish between similarly spelled words by identifying the sounds of the letters that differ. |
| K | Reading Standards: Foundational Skills K–5 RF | Fluency | RF.K.4 | 4. Read emergent-reader texts with purpose and understanding. |
| K | Writing W | Production and Distribution of Writing | W.K.5 | 5. With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed. |
| K | Writing W | Production and Distribution of Writing | W.K.6 | 6. With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| K | Writing W | Research to Build and Present Knowledge | W.K.7 | 7. Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). |
| K | Speaking and Listening SL | Comprehension and Collaboration | SL.K.1b | b. Continue a conversation through multiple exchanges. |
| K | Speaking and Listening SL | Comprehension and Collaboration | SL.K.2 | 2. Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood. |
| K | Speaking and Listening SL | Comprehension and Collaboration | SL.K.3 | 3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood. |
| K | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.K.5 | 5. Add drawings or other visual displays to descriptions as desired to provide additional detail. |
| K | Language L | Conventions of Standard English | L.K.1b | b. Use frequently occurring nouns and verbs. |
| K | Language L | Conventions of Standard English | L.K.1c | c. Form regular plural nouns orally by adding /s/ or /es/ (e.g., *dog, dogs; wish, wishes*). |
| K | Language L | Conventions of Standard English | L.K.1d | d. Understand and use question words (interrogatives) (e.g., *who, what, where, when, why, how*). |
| K | Language L | Conventions of Standard English | L.K.1e | e. Use the most frequently occurring prepositions (e.g., *to, from, in, out, on, off, for, of, by, with*). |
| K | Language L | Conventions of Standard English | L.K.1f | f. Produce and expand complete sentences in shared language activities. |
| K | Language L | Conventions of Standard English | L.K.2b | b. Recognize and name end punctuation. |
| K | Language L | Conventions of Standard English | L.K.2c | c. Write a letter or letters for most consonant and short-vowel sounds (phonemes). |
| K | Language L | Vocabulary Acquisition and Use | L.K.4b | b. Use the most frequently occurring inflections and affixes (e.g., *-ed, -s, re-, un-, pre-, -ful, -less*) as a clue to the meaning of an unknown word. |
| K | Language L | Vocabulary Acquisition and Use | L.K.5a | a. Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| K | Language L | Vocabulary Acquisition and Use | L.K.5b | b. Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms). |
| K | Language L | Vocabulary Acquisition and Use | L.K.5c | c. Identify real-life connections between words and their use (e.g., note places at school that are *colorful*). |
| 1 | Reading Standards for Literature RL | Craft and Structure | RL.1.6 | 6. Identify who is telling the story at various points in a text. |
| 1 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.1.7 | 7. Use illustrations and details in a story to describe its characters, setting, or events. |
| 1 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.1.9 | 9. Compare and contrast the adventures and experiences of characters in stories. |
| 1 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.1.3 | 3. Describe the connection between two individuals, events, ideas, or pieces of information in a text. |
| 1 | Reading Standards for Informational Text RI | Craft and Structure | RI.1.4 | 4. Ask and answer questions to help determine or clarify the meaning of words and phrases in a text. |
| 1 | Reading Standards for Informational Text RI | Craft and Structure | RI.1.5 | 5. Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. |
| 1 | Reading Standards for Informational Text RI | Craft and Structure | RI.1.6 | 6. Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. |
| 1 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.1.7 | 7. Use the illustrations and details in a text to describe its key ideas. |
| 1 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.1.8 | 8. Identify the reasons an author gives to support points in a text. |
| 1 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.1.9 | 9. Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures). |
| 1 | Reading Standards: Foundational Skills K–5 RF | Print Concepts | RF.1.1a | a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation). |
| 1 | Reading Standards: Foundational Skills K–5 RF | Phonological Awareness | RF.1.2a | a. Distinguish long from short vowel sounds in spoken single-syllable words. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|----|----|
| 1 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.1.3c | c. Know final -e and common vowel team conventions for representing long vowel sounds. |
| 1 | Reading Standards: Foundational Skills K–5 RF | Fluency | RF.1.4a | a. Read on-level text with purpose and understanding. |
| 1 | Writing W | Text Types and Purposes | W.1.1 | 1. Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure. |
| 1 | Writing W | Text Types and Purposes | W.1.3 | 3. Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. |
| 1 | Writing W | Production and Distribution of Writing | W.1.5 | 5. With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed. |
| 1 | Writing W | Production and Distribution of Writing | W.1.6 | 6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. |
| 1 | Writing W | Research to Build and Present Knowledge | W.1.8 | 8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. |
| 1 | Speaking and Listening SL | Comprehension and Collaboration | SL.1.1b | b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. |
| 1 | Speaking and Listening SL | Comprehension and Collaboration | SL.1.3 | 3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. |
| 1 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.1.4 | 4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| 1 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.1.5 | 5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings. |
| 1 | Language L | Conventions of Standard English | L.1.1c | c. Use singular and plural nouns with matching verbs in basic sentences (e.g., *He hops; We hop*). |
| 1 | Language L | Conventions of Standard English | L.1.1d | d. Use personal, possessive, and indefinite pronouns (e.g., *I, me, my; they, them, their, anyone, everything*). |
| 1 | Language L | Conventions of Standard English | L.1.1e | e. Use verbs to convey a sense of past, present, and future (e.g., *Yesterday I walked home; Today I walk home; Tomorrow I will walk home*). |
| 1 | Language L | Conventions of Standard English | L.1.1f | f. Use frequently occurring adjectives. |
| 1 | Language L | Conventions of Standard English | L.1.1g | g. Use frequently occurring conjunctions (e.g., *and, but, or, so, because*). |
| 1 | Language L | Conventions of Standard English | L.1.1h | h. Use determiners (e.g., articles, demonstratives). |
| 1 | Language L | Conventions of Standard English | L.1.1i | i. Use frequently occurring prepositions (e.g., *during, beyond, toward*). |
| 1 | Language L | Conventions of Standard English | L.1.2e | e. Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions. |
| 1 | Language L | Vocabulary Acquisition and Use | L.1.5b | b. Define words by category and by one or more key attributes (e.g., a *duck* is a bird that swims; a *tiger* is a large cat with stripes). |
| 1 | Language L | Vocabulary Acquisition and Use | L.1.5c | c. Identify real-life connections between words and their use (e.g., note places at home that are *cozy*). |
| 1 | Language L | Vocabulary Acquisition and Use | L.1.5d | d. Distinguish shades of meaning among verbs differing in manner (e.g., *look, peek, glance, stare, glare, scowl*) and adjectives differing in intensity (e.g., *large, gigantic*) by defining or choosing them or by acting out the meanings. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| 1 | Language L | Vocabulary Acquisition and Use | L.1.6 | 6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., *I named my hamster Nibblet because she nibbles too much because she likes that*). |
| 2 | Reading Standards for Literature RL | Key Ideas and Details | RL.2.1 | 1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. |
| 2 | Reading Standards for Literature RL | Key Ideas and Details | RL.2.3 | 3. Describe how characters in a story respond to major events and challenges. |
| 2 | Reading Standards for Literature RL | Craft and Structure | RL.2.6 | 6. Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud. |
| 2 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.2.1 | 1. Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text. |
| 2 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.2.3 | 3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. |
| 2 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.2.9 | 9. Compare and contrast the most important points presented by two texts on the same topic. |
| 2 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.2.10 | 10. By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range. |
| 2 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.2.3a | a. Distinguish long and short vowels when reading regularly spelled one-syllable words. |
| 2 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.2.3b | b. Know spelling-sound correspondences for additional common vowel teams. |

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| 2 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.2.3d | d. Decode words with common prefixes and suffixes. |
| 2 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.2.3e | e. Identify words with inconsistent but common spelling-sound correspondences. |
| 2 | Writing W | Text Types and Purposes | W.2.1 | 1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. |
| 2 | Writing W | Text Types and Purposes | W.2.3 | 3. Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure. |
| 2 | Writing W | Production and Distribution of Writing | W.2.6 | 6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. |
| 2 | Speaking and Listening SL | Comprehension and Collaboration | SL.2.1b | b. Build on others' talk in conversations by linking their comments to the remarks of others. |
| 2 | Speaking and Listening SL | Comprehension and Collaboration | SL.2.1c | c. Ask for clarification and further explanation as needed about the topics and texts under discussion. |
| 2 | Speaking and Listening SL | Comprehension and Collaboration | SL.2.3 | 3. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue. |
| 2 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.2.5 | 5. Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. |
| 2 | Language L | Conventions of Standard English | L.2.1c | c. Use reflexive pronouns (e.g., *myself, ourselves*). |

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| 2 | Language L | Conventions of Standard English | L.2.1e | e. Use adjectives and adverbs, and choose between them depending on what is to be modified. |
| 2 | Language L | Conventions of Standard English | L.2.2b | b. Use commas in greetings and closings of letters. |
| 2 | Language L | Conventions of Standard English | L.2.2e | e. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings. |
| 2 | Language L | Vocabulary Acquisition and Use | L.2.5a | a. Identify real-life connections between words and their use (e.g., describe foods that are *spicy* or *juicy*). |
| 2 | Language L | Vocabulary Acquisition and Use | L.2.5b | b. Distinguish shades of meaning among closely related verbs (e.g., *toss, throw, hurl*) and closely related adjectives (e.g., *thin, slender, skinny, scrawny*). |
| 3 | Reading Standards for Literature RL | Key Ideas and Details | RL.3.1 | 1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. |
| 3 | Reading Standards for Literature RL | Craft and Structure | RL.3.5 | 5. Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections. |
| 3 | Reading Standards for Literature RL | Craft and Structure | RL.3.6 | 6. Distinguish their own point of view from that of the narrator or those of the characters. |
| 3 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.3.7 | 7. Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting). |
| 3 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.3.9 | 9. Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series). |
| 3 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.3.10 | 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently. |

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| 3 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.3.1 | 1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. |
| 3 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.3.3 | 3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. |
| 3 | Reading Standards for Informational Text RI | Craft and Structure | RI.3.4 | 4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area. |
| 3 | Reading Standards for Informational Text RI | Craft and Structure | RI.3.6 | 6. Distinguish their own point of view from that of the author of a text. |
| 3 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.3.7 | 7. Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). |
| 3 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.3.8 | 8. Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). |
| 3 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.3.9 | 9. Compare and contrast the most important points and key details presented in two texts on the same topic. |
| 3 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.3.10 | 10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently. |
| 3 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.3.3b | b. Decode words with common Latin suffixes. |
| 3 | Reading Standards: Foundational Skills K–5 RF | Fluency | RF.3.4c | c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. |
| 3 | Writing W | Text Types and Purposes | W.3.1b | b. Provide reasons that support the opinion. |

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| 3 | Writing W | Text Types and Purposes | W.3.1c | c. Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons. |
| 3 | Writing W | Text Types and Purposes | W.3.1d | d. Provide a concluding statement or section. |
| 3 | Writing W | Text Types and Purposes | W.3.2b | b. Develop the topic with facts, definitions, and details. |
| 3 | Writing W | Text Types and Purposes | W.3.2c | c. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information. |
| 3 | Writing W | Text Types and Purposes | W.3.2d | d. Provide a concluding statement or section. |
| 3 | Writing W | Text Types and Purposes | W.3.3d | d. Provide a sense of closure. |
| 3 | Writing W | Production and Distribution of Writing | W.3.4 | 4. With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.) |
| 3 | Writing W | Production and Distribution of Writing | W.3.5 | 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.* |
| 3 | Writing W | Production and Distribution of Writing | W.3.6 | 6. With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. |
| 3 | Writing W | Research to Build and Present Knowledge | W.3.7 | 7. Conduct short research projects that build knowledge about a topic. |
| 3 | Writing W | Research to Build and Present Knowledge | W.3.8 | 8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. |
| 3 | Speaking and Listening SL | Comprehension and Collaboration | SL.3.1a | a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 3 | Speaking and Listening SL | Comprehension and Collaboration | SL.3.1c | c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. |
| 3 | Speaking and Listening SL | Comprehension and Collaboration | SL.3.1d | d. Explain their own ideas and understanding in light of the discussion. |
| 3 | Speaking and Listening SL | Comprehension and Collaboration | SL.3.2 | 2. Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. |
| 3 | Speaking and Listening SL | Comprehension and Collaboration | SL.3.3 | 3. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. |
| 3 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.3.5 | 5. Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. |
| 3 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.3.6 | 6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.* |
| 3 | Language L | Conventions of Standard English | L.3.1c | c. Use abstract nouns (e.g., *childhood*). |
| 3 | Language L | Conventions of Standard English | L.3.1d | d. Form and use regular and irregular verbs. |
| 3 | Language L | Conventions of Standard English | L.3.1f | f. Ensure subject-verb and pronoun-antecedent agreement.* |
| 3 | Language L | Conventions of Standard English | L.3.1g | g. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified. |
| 3 | Language L | Conventions of Standard English | L.3.1h | h. Use coordinating and subordinating conjunctions. |
| 3 | Language L | Conventions of Standard English | L.3.2a | a. Capitalize appropriate words in titles. |
| 3 | Language L | Conventions of Standard English | L.3.2b | b. Use commas in addresses. |
| 3 | Language L | Conventions of Standard English | L.3.2c | c. Use commas and quotation marks in dialogue. |

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| 3 | Language L | Conventions of Standard English | L.3.2e | e. Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., *sitting, smiled, cries, happiness*). |
| 3 | Language L | Conventions of Standard English | L.3.2g | g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings. |
| 3 | Language L | Knowledge of Language | L.3.3a | a. Choose words and phrases for effect.* |
| 3 | Language L | Knowledge of Language | L.3.3b | b. Recognize and observe differences between the conventions of spoken and written standard English. |
| 3 | Language L | Vocabulary Acquisition and Use | L.3.4c | c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *company, companion*). |
| 3 | Language L | Vocabulary Acquisition and Use | L.3.5b | b. Identify real-life connections between words and their use (e.g., describe people who are *friendly* or *helpful*). |
| 3 | Language L | Vocabulary Acquisition and Use | L.3.5c | c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., *knew, believed, suspected, heard, wondered*). |
| 4 | Reading Standards for Literature RL | Key Ideas and Details | RL.4.1 | 1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. |
| 4 | Reading Standards for Literature RL | Key Ideas and Details | RL.4.3 | 3. Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions). |
| 4 | Reading Standards for Literature RL | Craft and Structure | RL.4.5 | 5. Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 4 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.4.7 | 7. Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text. |
| 4 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.4.10 | 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. |
| 4 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.4.1 | 1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. |
| 4 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.4.3 | 3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. |
| 4 | Reading Standards for Informational Text RI | Craft and Structure | RI.4.4 | 4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area. |
| 4 | Reading Standards for Informational Text RI | Craft and Structure | RI.4.6 | 6. Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided. |
| 4 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.4.8 | 8. Explain how an author uses reasons and evidence to support particular points in a text. |
| 4 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.4.9 | 9. Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. |
| 4 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.4.10 | 10. By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. |

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| 4 | Reading Standards: Foundational Skills K–5 RF | Fluency | RF.4.4c | c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. |
| 4 | Writing W | Text Types and Purposes | W.4.1b | b. Provide reasons that are supported by facts and details. |
| 4 | Writing W | Text Types and Purposes | W.4.1c | c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition). |
| 4 | Writing W | Text Types and Purposes | W.4.1d | d. Provide a concluding statement or section related to the opinion presented. |
| 4 | Writing W | Text Types and Purposes | W.4.2c | c. Link ideas within categories of information using words and phrases (e.g., another, for example, also, because). |
| 4 | Writing W | Text Types and Purposes | W.4.2d | d. Use precise language and domain-specific vocabulary to inform about or explain the topic. |
| 4 | Writing W | Text Types and Purposes | W.4.2e | e. Provide a concluding statement or section related to the information or explanation presented. |
| 4 | Writing W | Text Types and Purposes | W.4.3b | b. Use dialogue and description to develop experiences and events or show the responses of characters to situations. |
| 4 | Writing W | Text Types and Purposes | W.4.3e | e. Provide a conclusion that follows from the narrated experiences or events. |
| 4 | Writing W | Production and Distribution of Writing | W.4.4 | 4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) |
| 4 | Writing W | Production and Distribution of Writing | W.4.5 | 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.* |

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| 4 | Writing W | Production and Distribution of Writing | W.4.6 | 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting. |
| 4 | Writing W | Research to Build and Present Knowledge | W.4.7 | 7. Conduct short research projects that build knowledge through investigation of different aspects of a topic. |
| 4 | Writing W | Research to Build and Present Knowledge | W.4.8 | 8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. |
| 4 | Writing W | Research to Build and Present Knowledge | W.4.9a | a. Apply grade 4 Reading standards to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character's thoughts, words, or actions]."). |
| 4 | Writing W | Research to Build and Present Knowledge | W.4.9b | b. Apply grade 4 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text"). |
| 4 | Speaking and Listening SL | Comprehension and Collaboration | SL.4.1a | a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. |
| 4 | Speaking and Listening SL | Comprehension and Collaboration | SL.4.1b | b. Follow agreed-upon rules for discussions and carry out assigned roles. |
| 4 | Speaking and Listening SL | Comprehension and Collaboration | SL.4.1c | c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. |

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| 4 | Speaking and Listening SL | Comprehension and Collaboration | SL.4.2 | 2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. |
| 4 | Speaking and Listening SL | Comprehension and Collaboration | SL.4.3 | 3. Identify the reasons and evidence a speaker provides to support particular points. |
| 4 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.4.5 | 5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. |
| 4 | Language L | Conventions of Standard English | L.4.1a | a. Use relative pronouns (*who, whose, whom, which, that*) and relative adverbs (*where, when, why*). |
| 4 | Language L | Conventions of Standard English | L.4.1b | b. Form and use the progressive (e.g., *I was walking; I am walking; I will be walking*) verb tenses. |
| 4 | Language L | Conventions of Standard English | L.4.1c | c. Use modal auxiliaries (e.g., *can, may, must*) to convey various conditions. |
| 4 | Language L | Conventions of Standard English | L.4.1d | d. Order adjectives within sentences according to conventional patterns (e.g., *a small red bag* rather than *a red small bag*). |
| 4 | Language L | Conventions of Standard English | L.4.1e | e. Form and use prepositional phrases. |
| 4 | Language L | Conventions of Standard English | L.4.1g | g. Correctly use frequently confused words (e.g., *to, too, two; there, their*).* |
| 4 | Language L | Conventions of Standard English | L.4.2a | a. Use correct capitalization. |
| 4 | Language L | Knowledge of Language | L.4.3a | a. Choose words and phrases to convey ideas precisely.* |
| 4 | Language L | Knowledge of Language | L.4.3b | b. Choose punctuation for effect.* |
| 4 | Language L | Knowledge of Language | L.4.3c | c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion). |
| 4 | Language L | Vocabulary Acquisition and Use | L.4.4a | a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase. |

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| 4 | Language L | Vocabulary Acquisition and Use | L.4.6 | 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., *quizzed, whined, stammered*) and that are basic to a particular topic (e.g., *wildlife, conservation,* and *endangered* when discussing animal preservation). |
| 5 | Reading Standards for Literature RL | Key Ideas and Details | RL.5.1 | 1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. |
| 5 | Reading Standards for Literature RL | Key Ideas and Details | RL.5.3 | 3. Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact). |
| 5 | Reading Standards for Literature RL | Craft and Structure | RL.5.4 | 4. Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes. |
| 5 | Reading Standards for Literature RL | Craft and Structure | RL.5.6 | 6. Describe how a narrator's or speaker's point of view influences how events are described. |
| 5 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.5.7 | 7. Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem). |
| 5 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.5.9 | 9. Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics. |
| 5 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.5.10 | 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently. |
| 5 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.5.1 | 1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. |

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| 5 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.5.3 | 3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. |
| 5 | Reading Standards for Informational Text RI | Craft and Structure | RI.5.4 | 4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. |
| 5 | Reading Standards for Informational Text RI | Craft and Structure | RI.5.5 | 5. Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts. |
| 5 | Reading Standards for Informational Text RI | Craft and Structure | RI.5.6 | 6. Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent. |
| 5 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.5.7 | 7. Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. |
| 5 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.5.9 | 9. Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. |
| 5 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.5.10 | 10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently. |
| 5 | Reading Standards: Foundational Skills K–5 RF | Phonics and Word Recognition | RF.5.3a | a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context. |
| 5 | Reading Standards: Foundational Skills K–5 RF | Fluency | RF.5.4c | c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. |

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| 5 | Writing W | Text Types and Purposes | W.5.1a | a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose. |
| 5 | Writing W | Text Types and Purposes | W.5.1d | d. Provide a concluding statement or section related to the opinion presented. |
| 5 | Writing W | Text Types and Purposes | W.5.2c | c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially). |
| 5 | Writing W | Text Types and Purposes | W.5.2d | d. Use precise language and domain-specific vocabulary to inform about or explain the topic. |
| 5 | Writing W | Text Types and Purposes | W.5.2e | e. Provide a concluding statement or section related to the information or explanation presented. |
| 5 | Writing W | Text Types and Purposes | W.5.3a | a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. |
| 5 | Writing W | Text Types and Purposes | W.5.3c | c. Use a variety of transitional words, phrases, and clauses to manage the sequence of events. |
| 5 | Writing W | Text Types and Purposes | W.5.3d | d. Use concrete words and phrases and sensory details to convey experiences and events precisely. |
| 5 | Writing W | Text Types and Purposes | W.5.3e | e. Provide a conclusion that follows from the narrated experiences or events. |
| 5 | Writing W | Production and Distribution of Writing | W.5.4 | 4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) |
| 5 | Writing W | Production and Distribution of Writing | W.5.5 | 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.* |

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| 5 | Writing W | Production and Distribution of Writing | W.5.6 | 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting. |
| 5 | Writing W | Research to Build and Present Knowledge | W.5.9a | a. Apply grade 5 Reading standards to literature (e.g., "Compare and contrast two or more characters, settings, or events in a story or a drama, drawing on specific details in the text [e.g., how characters interact]"). |
| 5 | Writing W | Research to Build and Present Knowledge | W.5.9b | b. Apply grade 5 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]"). |
| 5 | Speaking and Listening SL | Comprehension and Collaboration | SL.5.1a | a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. |
| 5 | Speaking and Listening SL | Comprehension and Collaboration | SL.5.1b | b. Follow agreed-upon rules for discussions and carry out assigned roles. |
| 5 | Speaking and Listening SL | Comprehension and Collaboration | SL.5.1c | c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. |
| 5 | Speaking and Listening SL | Comprehension and Collaboration | SL.5.1d | d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions. |
| 5 | Speaking and Listening SL | Comprehension and Collaboration | SL.5.2 | 2. Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 5 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.5.5 | 5. Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. |
| 5 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.5.6 | 6. Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.* |
| 5 | Language L | Conventions of Standard English | L.5.1b | b. Form and use the perfect (e.g., *I had walked; I have walked; I will have walked*) verb tenses. |
| 5 | Language L | Conventions of Standard English | L.5.1c | c. Use verb tense to convey various times, sequences, states, and conditions. |
| 5 | Language L | Conventions of Standard English | L.5.1e | e. Use correlative conjunctions (e.g., *either/or, neither/nor*). |
| 5 | Language L | Conventions of Standard English | L.5.2a | a. Use punctuation to separate items in a series.* |
| 5 | Language L | Conventions of Standard English | L.5.2c | c. Use a comma to set off the words yes and no (e.g., *Yes, thank you*), to set off a tag question from the rest of the sentence (e.g., *It's true, isn't it?*), and to indicate direct address (e.g., *Is that you, Steve?*). |
| 5 | Language L | Conventions of Standard English | L.5.2d | d. Use underlining, quotation marks, or italics to indicate titles of works. |
| 5 | Language L | Knowledge of Language | L.5.3b | b. Compare and contrast the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems. |
| 5 | Language L | Vocabulary Acquisition and Use | L.5.5c | c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words. |
| 5 | Language L | Vocabulary Acquisition and Use | L.5.6 | 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., *however, although, nevertheless, similarly, moreover, in addition*). |
| 6 | Reading Standards for Literature RL | Key Ideas and Details | RL.6.1 | 1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|----|--------------------------|
| 6 | Reading Standards for Literature RL | Key Ideas and Details | RL.6.3 | 3. Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution. |
| 6 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.6.7 | 7. Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch. |
| 6 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.6.1 | 1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. |
| 6 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.6.3 | 3. Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes). |
| 6 | Reading Standards for Informational Text RI | Craft and Structure | RI.6.4 | 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings. |
| 6 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.6.9 | 9. Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person). |
| 6 | Writing W | Text Types and Purposes | W.6.1c | c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons. |
| 6 | Writing W | Text Types and Purposes | W.6.1d | d. Establish and maintain a formal style. |
| 6 | Writing W | Text Types and Purposes | W.6.1e | e. Provide a concluding statement or section that follows from the argument presented. |
| 6 | Writing W | Text Types and Purposes | W.6.2c | c. Use appropriate transitions to clarify the relationships among ideas and concepts. |
| 6 | Writing W | Text Types and Purposes | W.6.3e | e. Provide a conclusion that follows from the narrated experiences or events. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 6 | Writing W | Production and Distribution of Writing | W.6.4 | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) |
| 6 | Writing W | Production and Distribution of Writing | W.6.5 | 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.* |
| 6 | Writing W | Production and Distribution of Writing | W.6.6 | 6. Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting. |
| 6 | Writing W | Research to Build and Present Knowledge | W.6.9a | a. Apply grade 6 Reading standards to literature (e.g., "Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics"). |
| 6 | Writing W | Research to Build and Present Knowledge | W.6.9b | b. Apply grade 6 Reading standards to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not"). |
| 6 | Speaking and Listening SL | Comprehension and Collaboration | SL.6.1d | d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. |
| 6 | Speaking and Listening SL | Comprehension and Collaboration | SL.6.2 | 2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 6 | Speaking and Listening SL | Comprehension and Collaboration | SL.6.3 | 3. Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not. |
| 6 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.6.6 | 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.* |
| 6 | Language L | Conventions of Standard English | L.6.1a | a. Ensure that pronouns are in the proper case (subjective, objective, possessive). |
| 6 | Language L | Conventions of Standard English | L.6.1b | b. Use intensive pronouns (e.g., *myself, ourselves*). |
| 6 | Language L | Conventions of Standard English | L.6.1c | c. Recognize and correct inappropriate shifts in pronoun number and person.* |
| 6 | Language L | Conventions of Standard English | L.6.1e | e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.* |
| 6 | Language L | Conventions of Standard English | L.6.2a | a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.* |
| 6 | Language L | Knowledge of Language | L.6.3b | b. Maintain consistency in style and tone.* |
| 6 | Language L | Vocabulary Acquisition and Use | L.6.4d | d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). |
| 6 | Language L | Vocabulary Acquisition and Use | L.6.5a | a. Interpret figures of speech (e.g., personification) in context. |
| 6 | Language L | Vocabulary Acquisition and Use | L.6.5b | b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words. |
| 6 | Language L | Vocabulary Acquisition and Use | L.6.5c | c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *stingy, scrimping, economical, unwasteful, thrifty*). |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| **6** | Language L | Vocabulary Acquisition and Use | L.6.6 | 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression. |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.6–8.1 | 1. Cite specific textual evidence to support analysis of primary and secondary sources. |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.6–8.2 | 2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions. |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.6–8.3 | 3. Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered). |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.6–8.4 | 4. Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies. |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.6–8.5 | 5. Describe how a text presents information (e.g., sequentially, comparatively, causally). |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.6–8.6 | 6. Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts). |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.6–8.7 | 7. Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts. |
| **6–8** | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.6–8.8 | 8. Distinguish among fact, opinion, and reasoned judgment in a text. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|-------------------------|
| 6–8 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.6–8.9 | 9. Analyze the relationship between a primary and secondary source on the same topic. |
| 6–8 | Reading Standards for Literacy in History/Social Studies RH | Range of Reading and Level of Text Complexity | RH.6–8.10 | 10. By the end of grade 8, read and comprehend history/social studies texts in the grades 6–8 text complexity band independently and proficiently. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.6–8.1 | 1. Cite specific textual evidence to support analysis of science and technical texts. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.6–8.2 | 2. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.6–8.3 | 3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.6–8.4 | 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6–8 texts and topics*. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.6–8.5 | 5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.6–8.6 | 6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.6–8.7 | 7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.6–8.8 | 8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.6–8.9 | 9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. |
| 6–8 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Range of Reading and Level of Text Complexity | RST.6–8.10 | 10. By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.1a | a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.1b | b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.1c | c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.1d | d. Establish and maintain a formal style. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.1e | e. Provide a concluding statement or section that follows from and supports the argument presented. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.2c | c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.2d | d. Use precise language and domain-specific vocabulary to inform about or explain the topic. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.2e | e. Establish and maintain a formal style and objective tone. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.6–8.2f | f. Provide a concluding statement or section that follows from and supports the information or explanation presented. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.6–8.4 | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.6–8.5 | 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.6–8.6 | 6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.6–8.7 | 7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.6–8.8 | 8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. |
| 6–8 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.6–8.9 | 9. Draw evidence from informational texts to support analysis reflection, and research. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 7 | Reading Standards for Literature RL | Key Ideas and Details | RL.7.1 | 1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. |
| 7 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.7.7 | 7. Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film). |
| 7 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.7.9 | 9. Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history. |
| 7 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.7.10 | 10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. |
| 7 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.7.1 | 1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. |
| 7 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.7.2 | 2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text. |
| 7 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.7.3 | 3. Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events). |
| 7 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.7.7 | 7. Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words). |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 7 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.7.9 | 9. Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts. |
| 7 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.7.10 | 10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. |
| 7 | Writing W | Text Types and Purposes | W.7.1c | c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence. |
| 7 | Writing W | Text Types and Purposes | W.7.1e | e. Provide a concluding statement or section that follows from and supports the argument presented. |
| 7 | Writing W | Text Types and Purposes | W.7.2c | c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. |
| 7 | Writing W | Text Types and Purposes | W.7.2f | f. Provide a concluding statement or section that follows from and supports the information or explanation presented. |
| 7 | Writing W | Text Types and Purposes | W.7.3c | c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. |
| 7 | Writing W | Text Types and Purposes | W.7.3e | e. Provide a conclusion that follows from and reflects on the narrated experiences or events. |
| 7 | Writing W | Production and Distribution of Writing | W.7.4 | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) |
| 7 | Writing W | Production and Distribution of Writing | W.7.5 | 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.* |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 7 | Writing W | Production and Distribution of Writing | W.7.6 | 6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources. |
| 7 | Writing W | Research to Build and Present Knowledge | W.7.9a | a. Apply grade 7 Reading standards to literature (e.g., "Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history"). |
| 7 | Writing W | Research to Build and Present Knowledge | W.7.9b | b. Apply grade 7 Reading standards to literary nonfiction (e.g. "Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims"). |
| 7 | Speaking and Listening SL | Comprehension and Collaboration | SL.7.1a | a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. |
| 7 | Speaking and Listening SL | Comprehension and Collaboration | SL.7.1c | c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. |
| 7 | Speaking and Listening SL | Comprehension and Collaboration | SL.7.1d | d. Acknowledge new information expressed by others and, when warranted, modify their own views. |
| 7 | Speaking and Listening SL | Comprehension and Collaboration | SL.7.2 | 2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study. |
| 7 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.7.5 | 5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| 7 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.7.6 | 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.* |
| 7 | Language L | Conventions of Standard English | L.7.2a | a. Use a comma to separate coordinate adjectives (e.g., *It was a fascinating, enjoyable movie* but not *He wore an old[,] green shirt*). |
| 7 | Language L | Conventions of Standard English | L.7.2b | b. Spell correctly. |
| 7 | Language L | Knowledge of Language | L.7.3a | a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.* |
| 7 | Language L | Vocabulary Acquisition and Use | L.7.4d | d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). |
| 7 | Language L | Vocabulary Acquisition and Use | L.7.5c | c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *refined, respectful, polite, diplomatic, condescending*). |
| 7 | Language L | Vocabulary Acquisition and Use | L.7.6 | 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression. |
| 8 | Reading Standards for Literature RL | Key Ideas and Details | RL.8.1 | 1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. |
| 8 | Reading Standards for Literature RL | Craft and Structure | RL.8.5 | 5. Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style. |
| 8 | Reading Standards for Literature RL | Craft and Structure | RL.8.6 | 6. Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 8 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.8.10 | 10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6–8 text complexity band independently and proficiently. |
| 8 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.8.1 | 1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. |
| 8 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.8.2 | 2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text. |
| 8 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.8.3 | 3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories). |
| 8 | Reading Standards for Informational Text RI | Craft and Structure | RI.8.4 | 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts. |
| 8 | Reading Standards for Informational Text RI | Craft and Structure | RI.8.6 | 6. Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints. |
| 8 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.8.7 | 7. Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea. |
| 8 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.8.8 | 8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 8 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.8.9 | 9. Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation. |
| 8 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.8.10 | 10. By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently. |
| 8 | Writing W | Text Types and Purposes | W.8.1a | a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. |
| 8 | Writing W | Text Types and Purposes | W.8.1b | b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. |
| 8 | Writing W | Text Types and Purposes | W.8.1c | c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. |
| 8 | Writing W | Text Types and Purposes | W.8.1d | d. Establish and maintain a formal style. |
| 8 | Writing W | Text Types and Purposes | W.8.1e | e. Provide a concluding statement or section that follows from and supports the argument presented. |
| 8 | Writing W | Text Types and Purposes | W.8.2c | c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. |
| 8 | Writing W | Text Types and Purposes | W.8.2d | d. Use precise language and domain-specific vocabulary to inform about or explain the topic. |
| 8 | Writing W | Text Types and Purposes | W.8.2f | f. Provide a concluding statement or section that follows from and supports the information or explanation presented. |
| 8 | Writing W | Text Types and Purposes | W.8.3a | a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 8 | Writing W | Text Types and Purposes | W.8.3c | c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events. |
| 8 | Writing W | Text Types and Purposes | W.8.3e | e. Provide a conclusion that follows from and reflects on the narrated experiences or events. |
| 8 | Writing W | Production and Distribution of Writing | W.8.4 | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) |
| 8 | Writing W | Production and Distribution of Writing | W.8.6 | 6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others. |
| 8 | Writing W | Research to Build and Present Knowledge | W.8.9a | a. Apply grade 8 Reading standards to literature (e.g., "Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new"). |
| 8 | Writing W | Research to Build and Present Knowledge | W.8.9b | b. Apply grade 8 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced"). |
| 8 | Speaking and Listening SL | Comprehension and Collaboration | SL.8.1a | a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| 8 | Speaking and Listening SL | Comprehension and Collaboration | SL.8.2 | 2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation. |
| 8 | Speaking and Listening SL | Comprehension and Collaboration | SL.8.3 | 3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced. |
| 8 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.8.4 | 4. Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. |
| 8 | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.8.5 | 5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. |
| 8 | Language L | Conventions of Standard English | L.8.1a | a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences. |
| 8 | Language L | Conventions of Standard English | L.8.1b | b. Form and use verbs in the active and passive voice. |
| 8 | Language L | Conventions of Standard English | L.8.1d | d. Recognize and correct inappropriate shifts in verb voice and mood.* |
| 8 | Language L | Conventions of Standard English | L.8.2a | a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break. |
| 8 | Language L | Conventions of Standard English | L.8.2b | b. Use an ellipsis to indicate an omission. |
| 8 | Language L | Conventions of Standard English | L.8.2c | c. Spell correctly. |
| 8 | Language L | Knowledge of Language | L.8.3a | a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact). |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 8 | Language L | Vocabulary Acquisition and Use | L.8.4a | a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. |
| 8 | Language L | Vocabulary Acquisition and Use | L.8.4d | d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). |
| 8 | Language L | Vocabulary Acquisition and Use | L.8.5a | a. Interpret figures of speech (e.g. verbal irony, puns) in context. |
| 8 | Language L | Vocabulary Acquisition and Use | L.8.5c | c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *bullheaded, willful, firm, persistent, resolute*). |
| 8 | Language L | Vocabulary Acquisition and Use | L.8.6 | 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression. |
| 9–10 | Reading Standards for Literature RL | Key Ideas and Details | RL.9–10.1 | 1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. |
| 9–10 | Reading Standards for Literature RL | Craft and Structure | RL.9–10.6 | 6. Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature. |
| 9–10 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.9–10.7 | 7. Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus). |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| 9–10 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.9–10.10 | 10. By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 9–10 text complexity band independently and proficiently. |
| 9–10 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.9–10.1 | 1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. |
| 9–10 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.9–10.2 | 2. Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text. |
| 9–10 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.9–10.3 | 3. Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them. |
| 9–10 | Reading Standards for Informational Text RI | Craft and Structure | RI.9–10.4 | 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper). |
| 9–10 | Reading Standards for Informational Text RI | Craft and Structure | RI.9–10.5 | 5. Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter). |
| 9–10 | Reading Standards for Informational Text RI | Craft and Structure | RI.9–10.6 | 6. Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| 9–10 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.9–10.7 | 7. Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account. |
| 9–10 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.9–10.10 | 10. By the end of grade 9, read and comprehend literary nonfiction in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literary nonfiction at the high end of the grades 9–10 text complexity band independently and proficiently. |
| 9–10 | Writing W | Text Types and Purposes | W.9–10.1e | e. Provide a concluding statement or section that follows from and supports the argument presented. |
| 9–10 | Writing W | Text Types and Purposes | W.9–10.2a | a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. |
| 9–10 | Writing W | Text Types and Purposes | W.9–10.2c | c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. |
| 9–10 | Writing W | Text Types and Purposes | W.9–10.2f | f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). |
| 9–10 | Writing W | Text Types and Purposes | W.9–10.3e | e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative. |
| 9–10 | Writing W | Production and Distribution of Writing | W.9–10.5 | 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.* |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| 9–10 | Writing W | Production and Distribution of Writing | W.9–10.6 | 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. |
| 9–10 | Writing W | Research to Build and Present Knowledge | W.9–10.9b | b. Apply *grades 9–10 Reading standards* to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning"). |
| 9–10 | Speaking and Listening SL | Comprehension and Collaboration | SL.9–10.1a | a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. |
| 9–10 | Speaking and Listening SL | Comprehension and Collaboration | SL.9–10.1c | c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. |
| 9–10 | Speaking and Listening SL | Comprehension and Collaboration | SL.9–10.1d | d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented. |
| 9–10 | Speaking and Listening SL | Comprehension and Collaboration | SL.9–10.2 | 2. Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. |
| 9–10 | Language L | Conventions of Standard English | L.9–10.2c | c. Spell correctly. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 9–10 | Language L | Knowledge of Language | L.9–10.3a | a. Write and edit work so that it conforms to the guidelines in a style manual (e.g., *MLA Handbook*, Turabian's *Manual for Writers*) appropriate for the discipline and writing type. |
| 9–10 | Language L | Vocabulary Acquisition and Use | L.9–10.4a | a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. |
| 9–10 | Language L | Vocabulary Acquisition and Use | L.9–10.5b | b. Analyze nuances in the meaning of words with similar denotations. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.9–10.1 | 1. Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.9–10.2 | 2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.9–10.3 | 3. Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.9–10.4 | 4. Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.9–10.5 | 5. Analyze how a text uses structure to emphasize key points or advance an explanation or analysis. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.9–10.6 | 6. Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.9–10.7 | 7. Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.9–10.8 | 8. Assess the extent to which the reasoning and evidence in a text support the author's claims. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.9–10.9 | 9. Compare and contrast treatments of the same topic in several primary and secondary sources. |
| 9–10 | Reading Standards for Literacy in History/Social Studies RH | Range of Reading and Level of Text Complexity | RH.9–10.10 | 10. By the end of grade 10, read and comprehend history/social studies texts in the grades 9–10 text complexity band independently and proficiently. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.9–10.1 | 1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.9–10.2 | 2. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.9–10.3 | 3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.9–10.4 | 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 9–10 texts and topics*. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.9–10.5 | 5. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., *force, friction, reaction force, energy*). |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.9–10.6 | 6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.9–10.7 | 7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.9–10.8 | 8. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.9–10.9 | 9. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. |
| 9–10 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Range of Reading and Level of Text Complexity | RST.9–10.10 | 10. By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.1a | a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.1b | b. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.1c | c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.1d | d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.1e | e. Provide a concluding statement or section that follows from or supports the argument presented. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.2a | a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.2b | b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.2c | c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.2d | d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.2e | e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.9–10.2f | f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.9–10.4 | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.9–10.5 | 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.9–10.6 | 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.9–10.7 | 7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.9–10.8 | 8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. |
| 9–10 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.9–10.9 | 9. Draw evidence from informational texts to support analysis, reflection, and research. |
| 11–12 | Reading Standards for Literature RL | Key Ideas and Details | RL.11–12.3 | 3. Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed). |
| 11–12 | Reading Standards for Literature RL | Craft and Structure | RL.11–12.6 | 6. Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement). |
| 11–12 | Reading Standards for Literature RL | Integration of Knowledge and Ideas | RL.11–12.7 | 7. Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (Include at least one play by Shakespeare and one play by an American dramatist.) |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| 11–12 | Reading Standards for Literature RL | Range of Reading and Level of Text Complexity | RL.11–12.10 | 10. By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 11–CCR text complexity band independently and proficiently. |
| 11–12 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.11–12.1 | 1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain. |
| 11–12 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.11–12.2 | 2. Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text. |
| 11–12 | Reading Standards for Informational Text RI | Key Ideas and Details | RI.11–12.3 | 3. Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text. |
| 11–12 | Reading Standards for Informational Text RI | Integration of Knowledge and Ideas | RI.11–12.7 | 7. Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem. |
| 11–12 | Reading Standards for Informational Text RI | Range of Reading and Level of Text Complexity | RI.11–12.10 | 10. By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literary nonfiction at the high end of the grades 11–CCR text complexity band independently and proficiently. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|---|---|---|---|---|
| 11–12 | Writing W | Text Types and Purposes | W.11–12.1d | d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.1e | e. Provide a concluding statement or section that follows from and supports the argument presented. |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.2a | a. Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.2c | c. Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.2d | d. Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic. |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.2e | e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.2f | f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). |
| 11–12 | Writing W | Text Types and Purposes | W.11–12.3e | e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| **11–12** | Writing W | Production and Distribution of Writing | W.11–12.5 | 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.* |
| **11–12** | Writing W | Production and Distribution of Writing | W.11–12.6 | 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. |
| **11–12** | Writing W | Research to Build and Present Knowledge | W.11–12.9b | b. Apply grades 11–12 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning [e.g., in U.S. Supreme Court Case majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., The Federalist, presidential addresses]"). |
| **11–12** | Speaking and Listening SL | Comprehension and Collaboration | SL.11–12.1a | a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. |
| **11–12** | Speaking and Listening SL | Comprehension and Collaboration | SL.11–12.1c | c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
|-------|--------|-------|-----|------------------------|
| **11–12** | Speaking and Listening SL | Comprehension and Collaboration | SL.11–12.2 | 2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. |
| **11–12** | Speaking and Listening SL | Presentation of Knowledge and Ideas | SL.11–12.5 | 5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. |
| **11–12** | Language L | Conventions of Standard English | L.11–12.2b | b. Spell correctly. |
| **11–12** | Language L | Knowledge of Language | L.11–12.3a | a. Vary syntax for effect, consulting references (e.g., Tufte's *Artful Sentences*) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading. |
| **11–12** | Language L | Vocabulary Acquisition and Use | L.11–12.4a | a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. |
| **11–12** | Language L | Vocabulary Acquisition and Use | L.11–12.4d | d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). |
| **11–12** | Language L | Vocabulary Acquisition and Use | L.11–12.5b | b. Analyze nuances in the meaning of words with similar denotations. |
| **11–12** | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.11–12.1 | 1. Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole. |
| **11–12** | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.11–12.2 | 2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Key Ideas and Details | RH.11–12.3 | 3. Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain. |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.11–12.4 | 4. Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines *faction* in *Federalist* No. 10). |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.11–12.5 | 5. Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole. |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Craft and Structure | RH.11–12.6 | 6. Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence. |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.11–12.7 | 7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem. |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.11–12.8 | 8. Evaluate an author's premises, claims, and evidence by corroborating or challenging them with other information. |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Integration of Knowledge and Ideas | RH.11–12.9 | 9. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources. |
| 11–12 | Reading Standards for Literacy in History/Social Studies RH | Range of Reading and Level of Text Complexity | RH.11–12.10 | 10. By the end of grade 12, read and comprehend history/social studies texts in the grades 11–12 text complexity band independently and proficiently. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.11–12.1 | 1. Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. |
| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.11–12.2 | 2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. |
| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Key Ideas and Details | RST.11–12.3 | 3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. |
| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.11–12.4 | 4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11–12 texts and topics*. |
| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.11–12.5 | 5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. |
| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Craft and Structure | RST.11–12.6 | 6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. |
| **11–12** | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.11–12.7 | 7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| 11–12 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.11–12.8 | 8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. |
| 11–12 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Integration of Knowledge and Ideas | RST.11–12.9 | 9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. |
| 11–12 | Reading Standards for Literacy in Science and Technical Subjects 6–12 RST | Range of Reading and Level of Text Complexity | RST.11–12.10 | 10. By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently. |
| 11–12 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.1a | a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. |
| 11–12 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.1b | b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. |
| 11–12 | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.1c | c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. |

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| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.1d | d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.1e | e. Provide a concluding statement or section that follows from or supports the argument presented. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.2a | a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.2b | b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.2c | c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.2d | d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Text Types and Purposes | WHST.11–12.2e | e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). |

| Grade | Strand | CCRAS | ID | Grade-Specific Standard |
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| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.11–12.4 | 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.11–12.5 | 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Production and Distribution of Writing | WHST.11–12.6 | 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.11–12.7 | 7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.11–12.8 | 8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. |
| **11–12** | Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12 WHST | Research to Build and Present Knowledge | WHST.11–12.9 | 9. Draw evidence from informational texts to support analysis, reflection, and research. |