

Massachusetts Department of Elementary and Secondary Education

Prerequisite Content Standards: Elementary Grade Four

This resource is only to be used during school closure due to COVID-19.

The Department identified content standards that are prerequisites for student success in the next grade level. The standards should not be used in connection with MCAS expectations or referenced in preparing students for the MCAS for any grade level. Since most standards will already have been taught prior to the closures, we anticipate that significant time would still be spent on reinforcement as an integral part of opposed to advancing new concepts.

English Language Arts

Reading Literature and Informational

1. Refer to details and examples in a text when explaining what the text states explicitly and when drawing inferences from the text.

10. Independently and proficiently read and comprehend texts exhibiting complexity appropriate for at least grade 4.

Reading Literature

2. Determine a theme of a story, drama, or poem from details in the text and summarize a text.

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. Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean); explain how figurative language (e.g., simile, metaphor) enriches a text.

Reading Informational

2. Determine the main idea of a text and explain how it is supported by key details

3. Explain events, procedures, ideas, or concepts in a historical, scientific, mathematical, or technical text, including what happened and why, based on specific information in the text.
8. Explain how an author uses reasons and evidence to support particular points in a text.

Reading Foundational Skills

3. Know and apply grade-level phonics and word analysis skills in decoding words.
 - 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.
4. Read with sufficient accuracy and fluency to support comprehension.
5. Read grade-level text with purpose and understanding.
6. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.
7. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Writing

1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped in paragraphs and sections to support the writer's purpose.

Provide reasons that are supported by facts and details.

Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).

Provide a concluding statement or section related to the opinion presented.

2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Introduce a topic clearly and group related information in paragraphs and sections; include text features (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.

Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.

Link ideas within categories of information using words and phrases (e.g., another, for example, also, because).

Use precise language and domain-specific vocabulary to inform about or explain the topic.

Provide a concluding statement or section related to the information or explanation presented.

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)

Language

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; retain and further develop language skills learned in previous grades. (See grade 4 Writing Standard 5 and Speaking and Listening Standard 6 on strengthening writing and presentations by applying knowledge of conventions.)

Sentence Structure and Meaning

a. Produce complete sentences, using knowledge of subject and predicate to recognize and correct inappropriate sentence fragments and run-on sentences.¹³

- b. Correctly use frequently confused words (e.g., their/there).
- c. Use helping verbs, also known as auxiliaries (e.g., can, may, might, should), to convey various conditions of possibility, likelihood, obligation, or permission, choosing among helping verbs depending on the overall meaning of the sentence.
- d. Use relative pronouns and relative adverbs to add more information about a noun or verb used in a sentence.

¹³ These skills are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking.

- e. Form and use prepositional phrases in sentences to add more information about qualities such as location, time, agency, and direction.

Word Usage

- f. Form and use progressive verb tenses. 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - d. Write legibly and fluently by hand, using either printing or cursive handwriting; write their given name signature in cursive.
 - e. Use correct capitalization.
 - f. Use commas and quotation marks to mark direct speech and quotations from a text.
 - g. Use a comma before a coordinating conjunction in a compound sentence.
 - h. Spell grade-appropriate words correctly, consulting references as needed.
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

Mathematics

Operations and Algebraic Thinking

- A. Use the four operations with whole numbers to solve problems.
 - a. 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.¹⁴
 - b. Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- a. Know multiplication facts and related division facts through 12×12 .

Number and Operations in Base Ten

- A. Generalize place value understanding for multi-digit whole numbers less than or equal to 1,000,000.
 - 2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- B. Use place value understanding and properties of operations to perform multi-digit arithmetic on whole numbers less than or equal to 1,000,000.
 - 1. Fluently add and subtract multi-digit whole numbers using the standard algorithm.
 - 2. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.

Illustrate and explain the calculation by using equations, rectangular arrays, and/or area

models. 6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit

divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Number and Operations

A. Extend understanding of fraction equivalence and ordering for fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.

1. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \cdot a)}{(n \cdot b)}$ by using visual fraction models, with attention to how the numbers and sizes of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions, including fractions greater than 1.
2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers for fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.

3. Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
 1. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. (The whole can be a set of objects.)
 2. 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 drawings or visual fraction models.

Examples: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

3. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
4. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using drawings or visual fraction models and equations to represent the problem.

C. Understand decimal notation for fractions, and compare decimal fractions.

5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.¹⁵
6. Use decimal notation to represent fractions with denominators 10 or 100.
7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.

¹⁵ Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.

Measurement and Data

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

1. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

2. Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.

Geometry

A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles. 1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and

parallel lines. Identify these in two-dimensional figures.

Science and Technology/Engineering

Earth and Space Sciences

4-ESS2-1. Make observations and collect data to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering and moved around through erosion.

Life Science

4-LS1-1. Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction.

Physical Science

4-PS3-2. Make observations to show that energy can be transferred from place to place by sound, light, heat, and electric currents. 4-PS4-2. Develop a model to describe that light must reflect off an object and enter the eye for the object to be seen.

History and Social Science

Practice Standard 3: Organize information from multiple sources

Teachers are encouraged to prioritize Content Standards not yet introduced, and to apply them in connection with Practice Standard 3. Content Standards from Topic 4 are identified here with the assumption that earlier Topics were introduced earlier in the year.

Content Topic 4: The Expansion of the United States over time and its regions

3. Explain that many different groups of people immigrated to the United States from other places voluntarily and some were brought to the United States against their will (as in the case of people of Africa).
4. Show understanding that in the middle of the 19th century, the people of the United States were deeply divided over the question of slavery and its expansion into newly settled parts of the West, which led to the Civil War from 1861 to 1865.

Content Topic 4a: The Northeast

1. On a political map of the United States, locate the states in the Northeast. 5. Describe the diverse cultural nature of the region, including contributions of Native Peoples (e.g., Wampanoag, Iroquois, Abenaki), Africans, Europeans (e.g., the early settlements of the

Dutch in New York, French near Canada, Germans in Pennsylvania, the English in Massachusetts, Rhode Island, Connecticut, Vermont and New Hampshire, subsequent 19th and early 20th century immigration by groups such as Irish, Italian, Portuguese, and Eastern Europeans) and various other immigrant groups from other regions of the world in the later 20th and 21st centuries (e.g., Puerto Ricans, Dominicans, Mexicans, Salvadorans, Colombians, Guatemalans, Brazilians, Haitians, Vietnamese, Cambodians, Chinese, Indians, and Somalis).

The Southeast, Midwest, Southwest, and West

1. On a political map of the United States, locate the states in the Southeast, Midwest, Southwest, and West.
5. Describe the diverse cultural nature of the region.