

2nd grade Mathematics Considerations from Achieve the Core/CCSSO

2020-21 Priority Instructional Content in English Language Arts/Literacy and Mathematics

Grade 2 Mathematics Priority Instructional Content for the 2020-21 School Year

The Mathematics Priority Instructional Content for the 2020-21 School Year (Mathematics Instructional Priorities) is designed to support decisions about how to elevate some of the most important mathematics at each grade level in the coming school year while reducing time and intensity for topics that are less integral to the overall coherence of college- and career-ready standards.

At each grade level from kindergarten through grade 8, the Mathematics Instructional Priorities name the grade-level mathematics that is of highest priority at each grade; provide a framework for strategically drawing in prior grade-level content that has been identified as essential for supporting students' engagement with the most important grade-level work; and suggest ways to reduce or sometimes eliminate topics in a way that minimizes the impact to overall coherence. In using this guidance, decision makers should thoughtfully consider in their unique context the likely implications of the spring 2020 disruption as decisions are made to select supports to ensure that students are able to successfully engage with the grade-level content. Decision makers should also bear in mind that while this document articulates content priorities, elevating the Standards for Mathematical Practice in connection with grade-level content is always a priority.

At each grade level, recommendations are provided for facilitating social, emotional, and academic development (SEAD) in mathematics. These recommendations stress themes of discourse, belonging, agency, and identity and can either be applied across grades (even if only listed in one) or they can be modified to fit different grades. These themes of discourse, belonging, agency, and identity are integral to the Standards of Mathematical Practice and the language in the recommendations reflects this connection.

The 2020-21 school year presents a unique set of opportunities and challenges due to the disruption to instruction in spring 2020 as well as the uncertainty associated with the 2020-2021 school year. The Mathematics Instructional Priorities are provided in response to these conditions. They are not criteria, and they do not revise the standards. Rather, they are potential ways, and not the only ways possible, to help students engage deeply with grade-level mathematics in the 2020-21 school year.

The Mathematics Instructional Priorities do not stand alone but are to be used in conjunction with college- and career-ready standards. One reason for this is that codes such as 2.OA.A must be traced back to the standards in order to see the language to which they refer. The Mathematics Instructional Priorities do not reiterate what the standards already say—even in cases where the specific language of a standard is fundamentally important to a high-quality aligned curriculum. Nor do the Mathematics Instructional Priorities mention every opportunity the standards afford to make coherent connections within a grade or between one grade and another—again, even when those connections are fundamentally important and are the basis for the guidance given. Therefore, the Mathematics Instructional Priorities will be used most powerfully in cross-grade collaboration among educators who know the standards well and can use existing resources such as the *Progressions* documents and other resources listed in the Appendix.

While the grade-level guidance isn't specific to any math program or set of programs, an examination of a selection of curriculum scope and sequence documents informed the recommendations, especially recommendations about when and how to integrate prior-grade concepts into the current grade. The guidance does not list all possible prior-grade content relevant to the current grade, but instead concentrates the recommendations on the most critical prior-grade connections, with greater emphasis on that content which was likely taught during the last third of the 2019–20 school year based on the scope and sequence analysis.

Where to focus Grade 2 Mathematics?

CCSS WHERE TO FOCUS GRADE 2 MATHEMATICS

This document shows where students and teachers should spend the large majority of their time in order to meet the expectations of the Standards.

Not all content in a prior grade is emphasized equally in the Standards. Some content is more grade-specific than other content. Based on the depth of knowledge that students may take to master, content that is more likely to be mastered in one grade is highlighted in yellow. Content that is more likely to be mastered in multiple grades is highlighted in green. Work that is more likely to be mastered in multiple grades is highlighted in blue.

To see how this content fits into the larger context of the Standards, users can refer to the [Standards for Mathematical Practice](#) and the [Standards for Mathematical Practice](#).

Students should spend the large majority of their time on the major work of the grade (green) and, where appropriate, additional work (yellow). See larger documents for the major work of the grade.

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 2
 Expectations are listed by cluster and grade. See the [Standards for Mathematical Practice](#) for the specific practices that are common to all grades.

Key: Major Cluster | Supporting Cluster | Additional Cluster

HIGHLIGHTS OF MAJOR WORK IN GRADES K-2

K-2	Additional subtraction: concepts, skills, and problem-solving strategies.
2-5	Multiplication and division of whole numbers and fractions: concepts, skills, and problem-solving strategies.
2-5	Area and perimeter and volume: concepts, skills, and problem-solving strategies.
2-5	Area and perimeter and volume: concepts, skills, and problem-solving strategies.
2-5	Area and perimeter and volume: concepts, skills, and problem-solving strategies.
2-5	Area and perimeter and volume: concepts, skills, and problem-solving strategies.

RELEVANT GUIDANCE FOR GRADE 2

2.OA.B.2	Single-digit multiplication and division (base ten).
2.MD.A.1	Area and perimeter (unit square).

College- and career-ready mathematics standards have important emphases at each grade level, which for grade 2 are highlighted in this [Focus Document](#). The considerations for the 2020–21 school year that follow are intended to be a companion to the Focus Document. Users should have both documents in hand, as well as a copy of grade-level standards, when considering these recommendations.

For the 2020–21 school year, prioritization of grade-level mathematical concepts combined with some incorporation of prior-grade knowledge and skills will be essential to support all students in meeting grade-level expectations. For these unique times, Student Achievement Partners has developed additional guidance above and beyond what is communicated through the major work designations. As described at greater length on the previous page, the following tables:

- Name priority instructional content at each grade;
- Provide considerations for addressing grade-level content in a coherent way;
- Articulate selected content from the prior grade that may be needed to support students in fully engaging with grade-level mathematics;
- Suggest where adaptations can be made to allow for additional time on the most important topics; and
- Provide suggestions for ways to promote social, emotional, and academic development (SEAD) in grade-level mathematics learning, often through the Standards for Mathematical Practice.

The considerations repeatedly use several verbs, such as *combine*, *integrate*, etc. The verbs most commonly used in the considerations are italicized below and defined in a glossary in the Appendix. Note that content is designated at the cluster level when the guidance refers to the cluster and its standards, and at the standard level in cases where guidance varies within a cluster.

Considerations for Addressing PRIORITY Grade-Level Content	
The clusters and standards listed in this table name the priority instructional content for grade 2. The right-hand column contains approaches to shifting how time is dedicated to the clusters and standards in the left-hand column.	
Clusters/Standards	Considerations
2.OA.A	<i>Emphasize</i> problems that involve sums less than or equal to 20 and/or the related differences to keep the focus on making sense of different problem types; assign fewer problems with sums greater than 20 or related differences.
2.OA.B	<i>Incorporate</i> additional practice on the grade 1 fluency of adding and subtracting within 10 (1.OA.C.6) early in the school year to support the addition and subtraction work of grade 2 (2.OA).
2.NBT.B	<i>Prioritize</i> strategies based on place value in written work to strengthen the progression toward fluency with multi-digit addition and subtraction. (Note that grade 2 students are not expected to be fluent with three-digit sums and differences; repetitive fluency exercises are not required.) <i>Incorporate</i> foundational work on addition and subtraction within 100 from grade 1 (1.NBT.C) to support the addition and subtraction work of grade 2.
2.MD.B.5	Ensure word problems represent all grade 2 problem types, and refer to guidance for 2.OA.A.
2.MD.B.6	No special considerations for curricula well aligned to representing lengths on number line diagrams, as detailed in this standard. Time spent on instruction and practice should NOT be reduced.

Considerations for Addressing <u>REMAINING</u> Grade-Level Content	
The clusters and standards listed in this table represent the remainder of grade 2 grade-level content. The right-hand column contains approaches to shifting how time is dedicated to the clusters and standards in the left-hand column.	
Clusters/Standards	Considerations
2.OA.C	<i>Eliminate</i> lessons on foundations for multiplication.
2.NBT.A*	<i>Emphasize</i> the conceptual understanding of three-digit numbers (as detailed in 2.NBT.A.1). <i>Integrate</i> lessons and practice on counting, reading/writing, and comparing numbers (2.NBT.A.2, 3, and 4) into the work of place value. <i>Limit</i> the amount of required student practice on counting by ones, reading/writing, and comparing numbers.
2.MD.A*	<i>Integrate</i> lessons and practice on comparing and estimating lengths (2.MD.A.2, 3, and 4) into the work of measuring length with tools (2.MD.A.1) in order to reduce the amount of time spent on this cluster. <i>Limit</i> the amount of required student practice.
2.MD.C	<i>Combine</i> lessons in order to reduce the amount of time spent on time and money. <i>Emphasize</i> denominations that support place value understanding such as penny-dime-dollar. <i>Limit</i> the amount of required student practice.
2.MD.D	<i>Eliminate</i> lessons on generating measurement data (2.MD.D.9) and creating picture/bar graphs (2.MD.D.10). <i>Integrate</i> data displays only as settings for addition/subtraction word problems (2.OA.A).
2.G.A	<i>Combine</i> lessons to address key concepts on reasoning with shapes and their attributes in order to reduce the amount of time spent on this cluster. <i>Limit</i> the amount of required student practice.

*While these clusters are Major Work of the Grade, during the 2020–21 school year, it is recommended that they receive lighter treatment in favor of other priority instructional content.

Facilitate <u>Social, Emotional, and Academic Development (SEAD)</u>¹¹ Through Grade-Level Content	
The left-hand column contains sample actions for how SEAD can be effectively integrated into grade-level mathematics instruction, in connection with Standards for Mathematical Practice named in the right-hand column. Efforts should be made to facilitate SEAD even in remote learning environments, using synchronous and asynchronous approaches and the capabilities afforded by remote learning technologies.	
Sample Actions	Connection to Standards for Mathematical Practice (SMP)
Use discussion protocols to provide a safe environment for students to share their developing thinking and to allow for interactions where peers value multiple contributions.	MP3: Construct viable arguments and critique the reasoning of others.
Design question threads that prompt students to recognize frustration with a problem, manage the frustration without turning their back on the task, re-evaluate, and look for an alternate pathway to a solution.	MP1: Make sense of problems and persevere in solving them.
Empower students to self-monitor their individual progress as they use properties and patterns along the way toward knowing sums of two one-digit numbers from memory. This monitoring includes reflection and individual recording, supporting their ability to try and try again to show off their improvement.	MP8: Look for and express regularity in repeated reasoning.

¹¹ Sample SEAD actions contribute to students' sense of belonging and safety, efficacy, value for effort and growth, as well as a sense of engagement in work that is relevant and culturally responsive. The actions can be modified to fit any grade, K-8, by considering the content of that grade level. See other grade-level Mathematics Instructional Priorities documents for additional samples.

2nd Grade Math Important Prerequisites

Prerequisite Standard	Grade-Level Standard	Standard Language	Instructional Time
Address before or within grade-level instruction	<ul style="list-style-type: none"> ■ Major ■ Supporting ■ Additional 		<p>Preserve or reduce time in 20-21 as compared to a typical year, per SAP guidance</p>
	■ 2.G.A.1 Conceptual	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	Combine lessons to address key concepts on reasoning with shapes and their attributes in order to reduce the amount of time spent on this cluster. Limit the amount of required student practice.
	■ 2.G.A.2 Conceptual	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	
1.G.A.3	■ 2.G.A.3 Conceptual	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.	
1.MD.A.2	■ 2.MD.A.1 Conceptual, Procedural	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Integrate lessons and practice into the work of measuring length with tools (2.MD.A.1) in order to reduce the amount of time spent on this cluster. Limit the amount of required student practice.
	■ 2.MD.A.2 Conceptual, Procedural	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	
	■ 2.MD.A.3 Conceptual	Estimate lengths using units of inches, feet, centimeters, and meters.	
	■ 2.MD.A.4 Application	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard unit length.	
	■ 2.MD.B.5 Application	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.	Ensure word problems represent all grade 2 problem types, and refer to guidance for 2.OA.A.
	■ 2.MD.B.6 Conceptual, Application	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the number 0, 1, 2, ... and represent whole-number sums and differences within 100 on a number line diagram.	
1.MD.B.3	■ 2.MD.C.7 Application	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	Combine lessons in order to reduce the amount of time spent. Emphasize denominations that support place value understanding
	■ 2.MD.C.8 Application	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols	



		appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?	such as penny-dime-dollar. Limit the amount of required student practice.
	2.MD.D.9 Procedural, Application	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.	Eliminate lessons on these standards. Integrate data displays only as settings for addition & subtraction word problems (2.OA.A).
	2.MD.D.10 Procedural, Application	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	
1.NBT.B.2a-c	2.NBT.A.1 Conceptual	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.	
1.NBT.B.2a-c	2.NBT.A.1a Conceptual	100 can be thought of as a bundle of ten tens called a hundred.	
	2.NBT.A.1b Conceptual	The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	
	2.NBT.A.2 Procedural	Count within 1000; skip-count by 5s, 10s, and 100s.	Integrate lessons and practice on these standards into the work of place value. Limit the amount of required student practice on counting by ones, reading/writing, and comparing numbers.
	2.NBT.A.3 Conceptual	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	
1.NBT.B.3	2.NBT.A.4 Conceptual	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.	
1.NBT.C.5, 1.NBT.C.6	2.NBT.B.5 Conceptual, Procedural	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	
	2.NBT.B.6 Conceptual, Procedural	Add up to four two-digit numbers using strategies based on place value and properties of operations.	Prioritize strategies based on place value in written work to strengthen the progression toward fluency with multi-digit addition and subtraction.
1.OA.A.2	2.NBT.B.7 Conceptual, Procedural	Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	
	2.NBT.B.8 Procedural	Mentally add 10 or 100 to a given number 100 to 900, and mentally subtract 10 or 100 from a given number 100 to 900.	



	■ 2.NBT.B.9 Conceptual	Explain why addition and subtraction strategies work, using place value and the properties of operations.	
1.OA.A.1 1.OA.D.8	■ 2.OA.A.1 Application	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Emphasize problems that involve sums less than or equal to 20 and/or the related differences to keep the focus on making sense of different problem types; assign fewer problems with sums greater than 20 or related differences.
1.OA.C.6	■ 2.OA.B.2 Procedural	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Incorporate additional practice on the grade 1 fluency of adding and subtracting within 10 (1.OA.C.6) early in the school year to support the addition and subtraction work of grade 2 (2.OA).
	■ 2.OA.C.3 Conceptual	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	Eliminate lessons on foundations for multiplication.
	■ 2.OA.C.4 Conceptual	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.	



- **What should we make of standards that have an important prerequisite that needs to be addressed, but a reduction in instructional time is also recommended?** These considerations should be weighed together, along with the needs of your group of students. For example, the time spent on a standard might be reduced from five days to three days by de-emphasizing one part of the standard, but prior-grade needs might be addressed within the first lesson through strategic choice of tasks.

Category	Meaning	Example	Actions to take
Address before grade-level instruction	Without this prior knowledge, students most likely do not have a way to access the grade-level standard.	A 7th-grader who has not learned how to divide positive fractions (6.NS.A.1) needs to build that understanding before beginning to divide negative fractions (7.NS.A.2c).	Students may require dedicated instruction on prerequisite standards before the grade level instruction is taught. (Not every standard needs its own full lesson; multiple standards may be addressed at once, or a standard might be taught as a short mini-lesson.)
Address within grade-level instruction	Students will have an entry point into grade-level content, but will benefit from instruction that weaves in this prior-grade content.	A 4th-grader who struggles with recalling multiplication facts (3.OA.C.7) can still access grade-level, multi-step application problems (4.OA.A.3) when given a multiplication table, but will need small doses of continued support to attain fluency.	Individual tasks or strategies from these standards can be incorporated into grade-level lessons to address important content that was missed in the prior grade.

See Complete K-8 Documents here:

2020–21 Priority Instructional Content from Achieve the Core

https://achievethecore.org/content/upload/2020%E2%80%9321%20Priority%20Instructional%20Content%20in%20ELA%20Literacy%20and%20Mathematics_June%202020.pdf

Math Important prerequisite skills list from CCSSO:

https://docs.google.com/document/d/1mcApF1n7sPI7Xsrlx29Ab_tmAAvne4A-VuJKSWb_qSg/edit