

Second Grade Math Curriculum

Second Grade mathematics is about (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

Module 1: Sums and Differences to 20

From Grade 1, students have fluency of addition and subtraction within 10 and extensive experience working with numbers to 100. Module 1 of Grade 2 establishes a motivating, differentiated fluency program in the first few weeks that will provide each student with enough practice to achieve mastery of the new required fluencies (i.e., adding and subtracting within 20 and within 100) by the end of the year. Students learn to represent and solve word problems using addition and subtraction: a practice that will also continue throughout the year.

Module 2: Addition and Subtraction of Length Units

In Module 2, students learn to measure and estimate using standard units for length and solve measurement word problems involving addition and subtraction of length. A major objective is for students to use measurement tools with the understanding that linear measure involves an iteration of units and that the smaller a unit, the more iterations are necessary to cover a given length. Students work exclusively with metric units, i.e. centimeters and meters, in this module to support upcoming work with place value concepts in Module 3. Units also play a central role in the addition and subtraction algorithms of Modules 4 and 5. An underlying goal for this module is for students to learn the meaning of a “unit” in a different context, that of length. This understanding serves as the foundation of arithmetic, measurement, and geometry in elementary school.

Module 3: Place Value, Counting, and Comparison of Numbers to 1000

In Module 3, students extend their understanding of base ten notation and apply their understanding of place value to count and compare numbers to 1000.

Module 4: Addition and Subtraction Within 200 with Word Problems to 100

In Module 4, students apply their work with place value units to add and subtract within 200 moving from concrete to pictorial to abstract. This work deepens their understanding of base-ten, place value, and the properties of operations. It also challenges them to apply their knowledge to one-step and two-step word problems. During this module, students also continue to develop one of the required fluencies of the grade: addition and subtraction within 100.

Module 5: Addition and Subtraction Within 1000 with Word Problems to 100

Module 5 builds upon the work of Module 4. Students again use place value strategies, manipulatives, and math drawings to extend their conceptual understanding of the addition

and subtraction algorithms to numbers within 1000. They maintain addition and subtraction fluency within 100 through daily application work to solve one- and two-step word problems of all types. A key component of Modules 4 and 5 is that students use place value reasoning to explain why their addition and subtraction strategies work.

Module 6: Foundations of Multiplication and Division

In Module 6, students extend their understanding of a unit to build the foundation for multiplication and division wherein any number, not just powers of ten, can be a unit. Making equal groups of “four apples each” establishes the unit “four apples” (or just four) that can then be counted: 1 four, 2 fours, 3 fours, etc. Relating the new unit to the one used to create it lays the foundation for multiplication: 3 groups of 4 apples equal 12 apples (or 3 fours is 12).

Module 7: Problem Solving with Length, Money, and Data

Module 7 provides another opportunity for students to practice their algorithms and problem-solving skills with perhaps the most well-known, interesting units of all: dollars, dimes, and pennies. Measuring and estimating length is revisited in this module in the context of units from both the customary system (e.g., inches and feet) and the metric system (e.g., centimeters and meters). As they study money and length, students represent data given by measurement and money data using picture graphs, bar graphs, and line plots.

Module 8: Time, Shapes, and Fractions as Equal Parts of Shapes

Students finish Grade 2 by describing and analyzing shapes in terms of their sides and angles. In Module 8, students investigate, describe, and reason about the composition and decomposition of shapes to form other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.