Grade 3 Math

Fluently add and subtract whole numbers up to 999 with regrouping and up to 9999 without regrouping.

See 2nd grade adding and subtracting content expectations.

- Read, write, compare and order numbers to 10,000 in both numerals and words, and relate them to the quantities they represent, e.g., relate numeral or written word to a display of dots or objects.
- Use mental strategies to fluently add and subtract two-digit numbers.
- Identify the place value of a digit in a number, e.g., in 3,241, 2 is in the hundreds place. Recognize and use expanded notation for numbers using place value through 9,999, e.g., 2,517 is 2000+ 500+10+ 7; 4 hundreds and 2 ones is 402.
- Estimate the sum and difference of two numbers with three digits (sums up to 1,000), and judge reasonableness of estimates.

See power standards about measurement of perimeter/area – students strengthen their abilities to add and subtract as they do perimeter problems.

Multiply fluently up to 10x10 and use related quotients to solve problems.

See 2nd grade multiplying and dividing content expectations.

- Recognize situations that can be solved using multiplication and write mathematical statements to represent those situations.
- Use multiplication and division fact families to understand the inverse relationship of these two operations; e.g., because 3 x 8 = 24, we know that 24 ÷ 8 = 3 or 24 ÷ 3 = 8. Express a multiplication statement as an equivalent division statement.
- Count orally by 6s, 7s, 8s and 9s starting with 0, making the connection between repeated addition and multiplication.
- Find solutions to open sentences such as 7 x ? = 42 or 12 ÷ ? = 4, using the inverse relationship between multiplication and division.
- Understand even numbers as divisible by two, odd numbers as not.
- Mentally calculate simple products and quotients up to a three-digit number by a one digit number involving multiples of 10, e.g., 500 x 6, or 400 ÷ 8.
- Given problems that use any one of the four operations with appropriate numbers, represent with objects, words (including “product” and “quotient”), and mathematical statements, and solve.

See power standard about perimeter/area – students strengthen their abilities to multiply and divide as they do area problems.

Solve and interpret division problems involving remainders.

- Recognize situations that can be solved using division including finding “How many groups?” and “How many in a group?” and write mathematical statements to represent those situations.

Find equivalent fractions with denominators 2, 4, and 8; place fractions on the number line.

See 2nd grade fractions content expectations.

- Understand that fractions may represent a portion of a whole unit that has been partitioned into parts of equal area or length; use the terms “numerator” and “denominator.”
- Recognize, name and use equivalent fractions with denominators 2, 4, and 8, using strips, circle fraction pieces, and number lines.
- Place fractions with denominators of 2, 4, and 8 on the number line; relate the number line to a ruler; compare and order up to three fractions with denominators 2, 4, and 8.

Add and subtract fractions with like denominators.

- Understand that any fraction can be written as a sum of unit fractions.
- Recognize that addition and subtraction of fractions with equal denominators can be modeled by adjoining or taking away segments on the number line.

Know and use common units of measurements in length, weight, time; solve problems involving money.

- Measure in mixed units within the same measurement system for length, weight and time: feet and inches, meters and centimeters, kilograms and grams, pounds and ounces, liters and milliliters, hours and minutes, minutes and seconds, years and months.
- Understand relationships between sizes of standard units, e.g., feet and inches, meters and centimeters.
- Know benchmark temperatures such as freezing, 32ºF, 0ºC; boiling, 212ºF, 100ºC; and compare temperatures to these, e.g., cooler, warmer.
- Add and subtract lengths, weights and times using mixed units within the same measurement system.
- Add and subtract money in dollars and cents.
- Solve applied problems involving money, length and time.

Solve applied problems involving the perimeter and area of squares and rectangular regions.

Students begin studying perimeter and area of squares and rectangles in 2nd grade.

- Know the definition of area and perimeter and calculate the perimeter of a square and rectangle given whole number side lengths.
- Use square units in calculating area by covering the region and counting the number of square units.
- Distinguish between units of length and area and choose a unit appropriate in the context.
- Visualize and describe the relative sizes of one square inch and one square centimeter.
- Estimate the perimeter of a square and rectangle in inches and centimeters; estimate the area of a square and rectangle in square inches and square centimeters.
- Solve contextual problems about perimeters of rectangles and areas of rectangular regions.

Describe and classify two- and three-dimensional shapes.

- Identify points, line segments, lines and distance.
- Identify perpendicular lines and parallel lines in familiar shapes and in the classroom.
- Identify parallel faces of rectangular prisms, in familiar shapes and in the classroom.
- 2nd grade: Describe, construct and transform various geometric shapes.
- Identify, describe, compare and classify two-dimensional shapes, e.g., parallelogram, trapezoid, circle, rectangle, square and rhombus, based on their component parts (angles, sides, vertices, line segment) and the number of sides and vertices.
- Compose and decompose triangles and rectangles to form other familiar two-dimensional shapes, e.g., form a rectangle using two congruent right triangles, or decompose a parallelogram into a rectangle and two right triangles.
- Identify, describe, build and classify familiar three-dimensional solids, e.g., cube, rectangular prism, sphere, pyramid, cone, based on their component parts (faces, surfaces, bases, edges, vertices).
- Represent front, top, and side views of solids built with cubes.

Also in 3rd grade:

- Relate decimal fractions to fractional parts of a dollar (e.g. ¼ of a dollar is $0.25); there is no effort in 3rd grade to teach about decimals other than recognizing this notation. Students begin to learn about decimals in 4th grade.
- Using bar graphs – a power standard in 4th grade.