Jackson Area Catholic Schools

Mathematics Academic Standards
for
Third Grade

Numbers and Operations

A. Understand and use number notation and place value

N.ME.03.01 The student will read and write 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).

N.ME.03.02 The student will 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.

N.ME.03.03 The student will compare and order numbers up to 10,000.

B. Count in steps, and understand even and odd number

N.ME.03.04 The student will recognize, describe, and create patterns and solve problems using number lines, fact families and the hundreds chart.

N.ME.03.05 The student will count orally by 6's, 7's, 8's, and 9's starting with 0, making the connection between repeated addition and multiplication.

N.ME.03.06 The student will know that even numbers end in 0, 2, 4, 6, or 8; name a whole number quantity that can be shared in two equal groups or grouped into pairs with no remainders; recognize even numbers as multiples of 2. Know that odd numbers end in 1, 3, 5, 7, or 9, and work with patterns involving even and odd numbers.

C. Add and subtract whole numbers

N.FL.03.07 The student will add and subtract fluently two numbers through 999 with regrouping and through 9,999 without regrouping.

N.FL.03.08 The student will estimate by rounding, the sum and difference of two numbers with three digits (sums up to 1,000), and judge reasonableness of estimates, including word problems.

N.FL.03.09 The student will use mental strategies to fluently add and subtract two-digit numbers.

D. Multiply and divide whole numbers

N.MR.03.10 The student will use multiplication and division fact families to understand the inverse relationship of these two operations (e.g., because $3 \times 8 = 24$, we know that $24 \div 3 = 8$); express a multiplication statement as an equivalent division statement.

N.MR.03.11 The student will recognize situations that can be solved using multiplication and division including finding "How many groups?" and "How may in a group?" and write mathematical statements to represent those situations.

N.FL.03.12 The student will find products fluently up to 10×10; find related quotients using multiplication and division relationships.

N.MR.03.13 The student will find solutions to open sentences, such as $7 \times \_\_ = 42$ or $12 \div \_\_ = 4$, using the inverse relationship between multiplication and division.

N.FL.03.14 The student will multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and properties of operations.

N.MR.03.15 The student will apply properties of operations as strategies to multiply and divide. (Commutative, associative and distributive properties of multiplication. The student need not use the formal terms for these properties).

E. Problem solving with whole numbers

N.MR.03.16 The student will solve two-step problems that use any of the four operations.

F. Understand simple fractions, relation to the whole, and addition and subtraction of fractions.

N.ME.03.17 The student will 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.”

N.ME.03.18 The student will recognize, name, and use equivalent fractions with denominators 2, 3, 4, 6 and 8, using various models.

N.ME.03.19 The student will place fractions with denominators of 2, 3, 4, 6, and 8, on the number line; relate the number line to a ruler; compare and order up to three fraction with denominators 2, 3, 4, 6, and 8.

N.ME.03.20 The student will compare and order unit fractions and fractions with like denominators of 2, 3,4, 6,and 8.

G. Understand simple decimal fractions in relation to money

N.ME.03.21 The student will understand and relate decimal fractions to fractional parts of a dollar (e.g., ½ dollar = $0.50; ¼ dollar = $0.25).

Measurement

A. Measure and use units for length, weight, mass, capacity, temperature and time

M.UN.03.01 The student will know and use common units of measurements in length, weight, mass, capacity, and time.

M.UN.03.02 The student will measure and estimate in mixed units within the same measurement system for length, weight, mass, capacity, 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. The student will solve one-step work problems using drawings.

M.UN.03.03 The student will estimate and read temperature.

M.UN.03.04 The student will know benchmark temperatures such as freezing (32°F, 0°C); boiling (212°F, 100°C); and compare temperatures to these (e.g., cooler, warmer).

M.UN.03.05 The student will determine elapsed and predicted time to the hour and tell time within one minute with both digital and analog clocks (e.g. by representing the problem on a number line diagram).

B. Understand meaning of area and perimeter and apply in problems

M.UN.03.06 The student will know the definition of area and perimeter and calculate the perimeter of a square and rectangle given whole number side lengths.

M.UN.03.07 The student will use square units in calculating area by covering the region and counting the number of square units (e.g., square cm, square in, square ft, and improvised units).

M.UN.03.08 The student will distinguish between units of length and area and choose a unit appropriate in the context.

B. Measurement (cont.)

M.UN.03.09 The student will relate area to the operations of multiplication and addition using whole numbers.

a. Find the area of rectangle with side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

b. Multiply side lengths to find areas of rectangles in real world and mathematical problems.

c. Tile area models to represent the distributive property (a and b +c is the sum of a x b and a x c).

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.

M.UN.03.10 The student will solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding and unknown side length, and exhibiting rectangles with the same perimeter and different area or with the same area and different perimeter.

C. Solve measurement problems involving money

M.PS.03.11 The student will add and subtract money in dollars and cents, up to $20.

M.PS.03.12 The student will solve applied problems involving money.

Geometry

A. Recognize the basic elements of geometric objects

G.GS.03.01 The student will identify points, line segments, lines, and distance.

G.GS.03.02 The student will identify perpendicular lines and parallel lines in familiar shapes and in the classroom.

G.SR.03.03 The student will locate and describe an object on a map and on a coordinate plane.

B. Name and explore properties of shapes

G.GS.03.04 The student will understand the shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

Data and Probability

A. Use bar graphs

D.RE.03.01 The student will read and interpret scaled bar graphs and pictographs in both horizontal and vertical forms.

D.RE.03.02 The student will solve problems using information in bar graphs, including comparison of bar graphs.

D.RE.03.03 The student will draw scaled bar graph and pictographs to represent data with several categories using a scale that represents up to five objects.

B. Use Fractions

D.RE.03.04 The student will use fractions to describe probabilities using manipulatives and illustrations.