

**ASD MATHEMATICS STANDARDS**  
**GRADE 5**  
**(Revised 6/06)**

**A. Numbers and Operations:**

***Number Relationships:***

- 5.A.1.M Read, write, and round whole numbers through billions and decimals through thousandths and identify the place value for each digit.
- 5.A.2.M Compare, order, and group whole numbers through millions and decimals through thousandths.
- 5.A.3.M Use expanded notation to represent whole numbers through billions and decimals through thousandths.
- 5.A.4.M Locate/ Identify negative integers on a number line (greater than or equal to -20) and on a thermometer (C° or F°).
- 5.A.5.M Define/ list/ identify factors and/or multiples of a given whole number less than or equal to 50.
- 5.A.6.M Define/ list/ identify prime and composite numbers less than or equal to 100.
- 5.A.7.M Represent a number in exponential form.

***Operations:***

- 5.A.8.M Use addition, subtraction, multiplication and division to compute accurately without a calculator (multipliers up to 2 digits, single-digit whole number divisors or multiples of 10 – whole numbers through thousands and decimals through hundredths – no division with decimals).
- 5.A.9.M Solve problems involving addition, subtraction, multiplication and division of whole numbers (multipliers up to 2 digits – divisors of one digit) and decimals including money (answer through hundredths – no division with decimals).
- 5.A.10.M Choose the correct operation(s) to solve a problem (no more than 2 operations).

***Fractions, Decimals and Percents:***

- 5.A.11.M Use or develop regions and/or sets (e.g., circle graph, hundred-blocks) to model fractions and mixed numbers through hundredths (may include reducing the fractions).
- 5.A.12.M Identify, draw, and write equivalent fractions using the greatest common factor.
- 5.A.13.M Compare proper fractions through 16ths with like and unlike denominators.

- 5.A.14.M Solve problems involving addition and subtraction of fractions and express answers in simplest form (through 16ths – like and unlike denominators – for unlike denominators, the LCD must be one of the given denominators).
- 5.A.15.M Understand, demonstrate, and explain the concepts of multiplication and division of fractions.
- 5.A.16.M Compute and perform simple multiplication and division of fractions and apply these procedures to solve problems.
- 5.A.17.M Interpret percents as part of a hundred.
- 5.A.18.M *Compute a given percent of a whole number.(Awareness)*
- 5.A.19.M Find decimal and percent equivalents for common fractions and explain why they represent the same value.

***Estimation:***

- 5.A.20.M Use estimation to solve problems involving whole numbers and/or decimals (up to 2-digit multipliers, single-digit divisors or multiples of 10; whole numbers through thousands and decimals through hundredths.).

**B. Measurement:**

- 5.B.1.M Select the appropriate unit for measuring weight (mass), capacity, length, perimeter and area.
- 5.B.2.M Solve problems involving weight, time (elapsed), temperature, length and capacity (limited to 3 digits).
- 5.B.3.M Use a ruler to measure to the nearest  $\frac{1}{8}$  inch or centimeter.
- 5.B.4.M Find the area of a square or rectangle (with the same units throughout – whole numbers only).
- 5.B.5.M Estimate which polygon (shown) has a greater perimeter or area (compare either area to area or perimeter to perimeter).
- 5.B.6.M Estimate the area of an irregular figure shown on a grid.
- 5.B.7.M Convert using linear measurements, capacity, and weight (mass) within the same system to the unit immediately above or below the given unit (using only the units below).  
 •Metric using mm, cm, m and km; mL and L; g and kg  
 •Customary using cup, pint, quart, gallon; in, ft, yd; oz, lb  
 Use a conversion chart or hint with problems e.g., (hint: 16 oz. = 1 lb.)
- 5.B.8.M Add or subtract linear measurements, (inches and feet) or units of time (hours and minutes), without having to regroup with subtraction (answer should be in simplest form).
- 5.B.9.M Find the perimeter of a figure drawn and labeled (with the same units throughout).

## C. Geometry:

- 5.C.1.M Identify and/or determine the measure of the diameter and radii of a circle (when one or the other is given).
- 5.C.2.M Identify/classify/compare cubes, rectangular prisms and pyramids using faces, vertices and edges.
- 5.C.3.M Identify and or describe properties of all types of quadrilaterals (Parallelogram, rectangle, rhombus, square, trapezoid).
- 5.C.4.M Identify and/or compare parts of right triangles, including right angles, acute angles, hypotenuse and legs.
- 5.C.5.M Know that the sum of the angles of any triangle is  $180^\circ$  and the sum of the angles of any quadrilateral is  $360^\circ$  and use this information to solve problems.
- 5.C.6.M Draw or identify a translation (slide), reflection (flip) or rotation (turn) of a 2-dimensional shape.
- 5.C.7.M Identify the number of lines of symmetry and/or draw all lines of symmetry in a two-dimensional polygon
- 5.C.8.M Identify congruent and similar figures.
- 5.C.9.M Identify, draw and/or label points, lines, line segments and rays.
- 5.C.10.M *Construct a cube and a rectangular box from two-dimensional patterns and use these patterns to compute the surface areas for these objects. (Awareness)*
- 5.C.11.M *Create an original tessellation.*
- 5.C.12.M Locate, plot and/or identify points in Quadrant I and on the x and y axes of a grid (intervals of 1 – up to 20 by 20 grid).

## D. Algebraic Concepts:

- 5.D.1.M Extend or find a missing element in a numerical or simple geometric pattern (+, -, x or  $\div$  of whole numbers). Patterns must show 3 repetitions.
- 5.D.2.M Form a rule based on a given pattern, or illustrate a pattern based on a given rule (+, -, x or  $\div$  of whole numbers). Patterns must show 3 repetitions.
- 5.D.3.M Create or replicate a numerical or geometric pattern showing 3 repetitions of that pattern. (+, -, x or  $\div$  of whole numbers may be used).
- 5.D.4.M Match a realistic situation to an equation, expression, inequality (<, >, =), table or graph (variable must be isolated, e.g.,  $17 + 39 = n$ ).
- 5.D.5.M Choose the operation needed to solve for the variable in a one-step equation.
- 5.D.6.M Solve for a missing number (blank, question mark, variable) in an equation involving a single operation.

