# Alaska Mathematics Standards
# Vocabulary Word List
# Grade 6

| Ratios and Proportional Relationships | |
|---|---|
| benchmark | A reference point, such as 0, 1/2, or 1, that is used for estimating fractions. |
| conversion factor | A type of rate in which two quantities use different units but remain equal; used to convert a measurement from one unit to another. |
| double number line diagram | A graphic diagram that shows a proportional relationship between two quantities. |
| equivalent ratios | Two ratios that have the same value when simplified. |
| percent | A special ratio that compares a number to 100 using the symbol %. |
| proportion | An equation showing that two ratios are equivalent. |
| rate | A ratio comparing two different units. |
| ratio | A comparison of two numbers using division. |
| rational number | A number that can be expressed as a ratio of two integers. |
| reciprocal | One of two numbers whose product is 1. (also known as multiplicative inverse) |
| repeating decimal | A decimal which has repeating digits or a repeating pattern of digits. |
| simplest form | A fraction is in simplest form when the greatest common factor of the numerator and denominator is 1. |
| simplify | To express a fraction in its simplest form. |
| terminating decimal | A decimal which has a finite number of digits. |
| unit fraction | A fraction that has 1 as its numerator. A unit fraction names 1 equal part of a whole. |
| unit rate | A rate with a denominator of 1. |
| value | The amount something is worth. |

| The Number System | |
|---|---|
| absolute value | The distance of a number from zero on the number line. Absolute value is always positive. |
| addend | Any number being added. |
| additive inverse | The opposite of a number. When a number is added to its additive invers, the sum is zero. |
| algebraic expression | A group of numbers, symbols, and variables that express an operation or a series of operations. |
| algorithm | A step-by-step method for computing. |
| array | An arrangement of objects in equal rows. |
| common denominator | For two or more fractions, a common denominator is a common multiple of the denominators. |
| common factor | Any common factor of two or more numbers. |
| common multiple | Any common multiple of two or more numbers. |
| compatible numbers | Pairs of numbers that are easy to compute mentally. |
| compose | To put together, as in numbers or shapes. |
| constant speed | Movement at a fixed (constant) distance per unit of time. |
| coordinate grid | A two-dimensional system in which the coordinates of a point are its distances from two intersecting, usually perpendicular, straight lines called axes. (also known as a coordinate plane or coordinate system) |
| coordinate pair | A pair of numbers that gives the coordinates of a point on a grid in this order: (horizontal coordinate, vertical coordinate). (also known as an ordered pair) |
| coordinate plane | A two-dimensional system in which the coordinates of a point are its distances from two intersecting, usually perpendicular, straight lines called axes. (also known as coordinate grid or coordinate system) |
| coordinate system | A two-dimensional system in which the coordinates of a point are its distances from two intersecting, usually perpendicular, straight lines called axes. (also known as a coordinate grid or coordinate plane) |
| coordinates | An ordered pair of numbers that identify a point on a coordinate plane. |
| decimal | A number with one or more digits to the right of a decimal point. Decimal is used as another name for decimal fraction. |
| decimal fraction | A fractional number with a denominator of 10 or a power of 10. It can be written with a decimal point. |
| decompose | To separate into components or basic elements. |
| denominator | The number or expression written below the line in a fraction. |
| difference | The amount that remains after one quantity is subtracted from another. |
| Distributive Property | $a \times (b + c) = (a \times b) + (a \times c)$ *and* $a \times (b - c) = (a \times b) - (a \times c)$, where *a*, *b*, and *c* stand for any real numbers. |
| dividend | A quantity to be divided. |
| divisible | A number is divisible by another number if the quotient is a counting number without a remainder. |

| The Number System | |
|---|---|
| divisor | The quantity by which another quantity is to be divided. |
| equivalent | Naming the same number. |
| equivalent fractions | Fractions that have the same value (e.g. 1/2, 2/4, and 4/8 all have the same value) |
| exponent | The number that tells how many equal factors there are. In $5^2$, 5 is the base and 2 is the exponent. 5 is raised to the power of 2. ($5^2 = 5 \times 5 = 25$) |
| expression | A variable or combination of variables, numbers, and symbols that represents a mathematical relationship. |
| factor | An integer that divides evenly into another. |
| formula | A general mathematical rule that is written as an equation. |
| fraction | A way of representing part of a whole or part of a group by telling the number of equal parts in the whole and the number of parts you are describing. |
| fraction bar | A horizontal bar that separates the numerator and the denominator. |
| fraction greater than one | A fraction with a numerator greater than its denominator. |
| fraction less than one | A fraction with a numerator less than its denominator. |
| greater than | Greater than is used to compare two numbers when the first number is larger than the second number. |
| greater than or equal to | Greater than or equal to is used to compare two quantities in an inequality where the first quantity is larger than or equal to the second quantity. |
| greatest common factor (GCF) | The largest factor of two or more numbers. |
| inequality | A mathematical sentence that compares two unequal expressions using one of the symbols $<$, $>$, $\leq$, $\geq$, or $\neq$. |
| infinite | Having no boundaries or limits. |
| integers | The set of whole numbers and their opposites. |
| inverse operations | Operations that undo each other. |
| is not equal to | A symbol used to compare two quantities in an inequality where the two quantities do not equal each other. |
| least common multiple | The smallest common multiple of a set of two or more numbers. |
| less than | Less than is used to compare two numbers when the first number is smaller than the second number. |
| less than or equal to | Less than or equal to is used to compare two quantities in an inequality where the first quantity is smaller than or equal to the second quantity. |
| metric system | A system of measurement based on tens. The basic unit of capacity is the liter. The basic unit of length is the meter. The basic unit of mass is the gram. |
| minuend | The quantity from which another quantity, the subtrahend, is to be subtracted. |

| The Number System | | |
|---|---|---|
| mixed number | A number with an integer and a fraction part. | |
| multiple | The product of a whole number and any other whole number. | |
| multiplicative inverse | One of two numbers whose product is 1. (also known as reciprocal) | |
| negative numbers | Numbers less than 0 (zero). | |
| numerator | The number written above the line in a fraction. It tells how many equal parts are described in the fraction. | |
| numerical expression | A mathematical statement including numbers and operations. | |
| opposites | Having a different sign but the same numeral. Order of Operations An order, agreed on by mathematicians, for performing operations to simplify expressions. | |
| ordered pair | A pair of numbers that gives the coordinates of a point on a grid in this order (horizontal coordinate, vertical coordinate). (also known as a coordinate pair) | |
| origin | The intersection of the *x*- and *y*- axes in a coordinate plane, described by the ordered pair (0, 0). | |
| pattern | A repeating or growing sequence. An ordered set of numbers or shapes arranged according to a rule. | |
| plot | To place points on a graph or coordinate plane. | |
| positive numbers | Numbers that are greater than zero. | |
| prime factorization | The expression of a number as the product of its prime factors. | |
| prime number | A whole number greater than 0 that has exactly two different factors, 1 and itself. | |
| product | The result of multiplication. | |
| | | |
| Properties of Addition | Additive Identity Property of 0 (zero) number gives a sum identical to the given number. | Adding zero to a given 3 + 0 = 3 |
| | Addition Property of Equality If you add the same number to both sides of an equation, the two sides will remain equal. 2 + 4 = 6 | |
| 2 + 4 + 3 = 6 + 3 | | |
| | Associative Property of Addition or more addends does not change the sum. | Changing the grouping of 3 (2 + 3) + 4 = 2 + (3 + 4) |
| | Commutative Property of Addition addends does not change the sum. | Changing the order of the 1 + 3 + 4 = 3 + 4 + 1 |

| The Number System | | |
|---|---|---|
| Properties of Division | Division Property of Equality<br>an equation by the same nonzero number, the two sides will remain equal | If you divide both sides of<br>2 + 5 ÷ 2 = 7 + 3 |
| | | |
| Properties of Multiplication | Associative Property of Multiplication<br>three or more factors does not change the product. | Changing the grouping of<br>(2 x 4) x 5 = 2 x (4 x 5) |
| | Commutative Property of Multiplication<br>factors does not change the product. | Changing the order of the<br>1 x 4 x 6 = 6 x 1 x 4 |
| | Distributive Property of Multiplication When one of the factors of a product is a sum, multiplying each addend before adding does not change the product. | |
| 3 x (4 + 5) = (3 x 4) + (3 x 5) | | |
| | Multiplicative Identity Property of 1<br>gives a product identical to the given factor. | Multiplying a factor by one<br>1 x 6 = 6 |
| | Multiplication Property of Equality<br>an equation by the same number, the two sides will remain equal. | If you multiply both sides of<br>(3 + 4) x 3 = (2 + 5) x 3 |
| | Zero Property of Multiplication<br>zero is 0. 2 x 0 = 0 | The product of a factor and |
| | | |
| Properties of Subtraction | Subtraction Property of Equality<br>number from both sides of an equation, the two sides will remain equal. | If you subtract the same<br>2 + 4 – 3 = 5 + 1 - 3 |
| | | |
| quadrants | The four sections of a coordinate grid that are separated by the axes. | |
| quantity | An amount. | |
| quotient | The result of the division of one quantity by another. | |
| repeating decimal | A decimal which has repeating digits or a repeating pattern of digits. | |
| signed number | Positive or negative number. | |
| subtrahend | In subtraction, the subtrahend is the number being subtracted. | |
| sum | The result of addition. | |
| terminating decimal | A decimal which has a finite number of digits. | |
| value | The amount something is worth. | |
| whole numbers | Whole numbers are 0 and the counting numbers 1, 2, 3, 4, 5, 6, and so on. | |

| The Number System | |
|---|---|
| x-axis | In a Cartesian grid, the horizontal axis. |
| x-coordinate | In an ordered pair, the value that is always written first. |
| y-axis | In a Cartesian grid, the vertical axis. |
| y-coordinate | In an ordered pair, the value that is always written second. |

| Expressions and Equations | |
|---|---|
| base of an exponent | The number that is raised to a power. In $5^2$, 5 is the base and 2 is the exponent. 5 is raised to the power of 2. ($5^2 = 5 \times 5 = 25$) |
| coefficient | A numerical factor in a term of an algebraic expression. |
| constant | A number with a value that is always the same. |
| dependent variable | In a function, a variable whose value is determined by the value of the related independent variable. |
| equation | A statement that two mathematical expressions are equal. |
| equivalent expressions | Expressions which are equal to each other for any values of their variables. They can be generated by properties of operations. |
| evaluate | To find the value of a mathematical expression. |
| independent variable | A variable in a mathematical equation whose value determines that of a dependent variable. |
| like terms | Terms that have the same variables and the same exponents. |
| solution of an equation | The value of a variable that makes the equation true. |
| solution of an inequality | The value of a variable that makes the inequality true. |
| substitution | The replacement of the letters in an algebraic expression with known values. |
| term | A number, variable, product, or quotient in an expression. A term is *not* a sum or difference. |
| value | The amount something is worth. |
| variable | A quantity that changes or can have different values. A symbol, usually a letter, that can stand for a variable quantity. |

| Geometry | |
|---|---|
| acute triangle | A triangle with no angle measuring 90º or more. |
| altitude | The perpendicular distance from a vertex to the opposite side of a plane figure. |
| area | The measure, in square units, of the interior region of a two-dimensional figure or the surface of a three-dimensional figure. |
| attribute | A characteristic of an object such as color, shape, size, etc. |
| axis (plural – axes) | A reference line from which distances or angles are measured in a coordinate grid. |
| base of a polygon | The side of a polygon that is perpendicular to the altitude or height. |
| base of a solid figure | A base of a solid figure is usually thought of as a face upon which it can "sit." Most solid figures have more than one base. |
| capacity | Capacity refers to the amount of liquid a container can hold. |
| composite figure | A shape made up of two or more simpler figures, such as triangles and quadrilaterals. |
| congruent | Having exactly the same shape and size. |
| cube | A rectangular solid having 6 congruent square faces. |
| cubic unit | A unit such as a cubic meter to measure volume or capacity. |
| customary system | A system of measurement used in the U.S. The system includes units for measuring length, capacity, and weight. |
| diagonal | A line that goes through vertices of a polygon that are not next to each other. |
| edge | The place where two flat surfaces of a solid figure meet. |
| equiangular triangle | A triangle with all equal angles (60º). |
| equilateral triangle | A triangle with all sides the same length. |
| face | A flat surface on a solid figure. |
| height | The perpendicular distance from a vertex to the opposite side of a plane figure. |
| isosceles triangle | A triangle that has exactly 2 equal sides. |
| lateral area | The sum of the lateral faces of a solid figure. |
| lateral face | The face of a prism or pyramid that is not a base. |
| length | How long something is. The distance from one point to another. Length is measured in units such as inches, feet, centimeters, etc. One dimension of a two- or three- dimensional figure. |
| line of symmetry | A line that divides a figure into two congruent halves that are mirror images of each other. |
| net | A two-dimensional shape that can be folded into a three-dimensional figure is a net of that figure. (also known as a network) |

| Geometry | |
|---|---|
| obtuse triangle | A triangle that contains one angle with a measure greater than 90º (obtuse angle) and two acute angles. |
| parallelogram | A quadrilateral with 2 pairs of parallel and congruent sides. |
| polygon | A closed plane figure formed from line segments that meet only at their endpoints. |
| polyhedron | A three-dimensional figure in which all the faces are polygons. Polyhedrons have no curved surfaces. |
| prism | A three-dimensional figure that has two congruent and parallel faces that are polygons. The remaining faces are parallelograms. |
| pyramid | A polyhedron whose base is a polygon and whose other faces are triangles that share a common vertex. |
| quadrilateral | A polygon with 4 sides. |
| rectangle | A quadrilateral with 2 pairs of congruent, parallel sides and 4 right angles. |
| regular polygon | A polygon with all sides the same length and all angles the same measure. |
| right rectangular prism | A prism with 6 rectangular faces where the lateral edge is perpendicular to the plane of the base. |
| right triangle | A triangle that has one 90° angle. |
| scalene triangle | A triangle that has no congruent sides. |
| solid figure | Three-dimensional figure that has length, width, and height. |
| square | A parallelogram with 4 equal angles AND 4 equal sides. |
| surface area | The total area of the faces (including the bases) and curved surfaces of a solid figure. |
| three-dimensional figure | A solid figure that has length, width, and height. |
| trapezoid | A quadrilateral with 1 pair of parallel sides and 1 pair of sides that are not parallel. |
| two-dimensional figure | A plane, flat figure that has length and width. |
| unit cube | A precisely fixed quantity used to measure volume. |
| unit square | A square with side lengths of 1 unit each. It has an area of 1 square unit. |
| vertex (plural - vertices) | The point at which two line segments, lines, or rays meet to form an angle. |
| volume | The number of cubic units it takes to fill a figure. |
| weight | The measure of how heavy something is. |

| Statistics and Probability | |
|---|---|
| bar graph | A graph that uses the height or length of rectangles to compare data. |
| bar model | A drawing that looks like a segment of tape, used to illustrated number relationships. (also known as a strip diagram, tape diagram, fraction strip, or length model) |
| box plot | A diagram that shows the figure number summary of a distribution. (Five number summary includes lowest value, lower quartile, median, upper quartile, and highest value.) |
| cluster | A group of the same or similar elements gathered or occurring closely together on a graph. |
| data | Information, especially numerical information. Usually organized for analysis. |
| distribution | A table that shows how many of each type of data. |
| dot plot | A diagram showing frequency of data on a number line. (also known as a line plot) |
| first quartile | The first quartile is the middle (the median) of the lower half of the data on a box plot. One-fourth of the data lies below the first quartile and three-fourths lies above. (also known as Q1 or lower quartile) |
| frequency table | A table which shows the number of times each data value or range of values occurs. |
| gap | A place on a graph where no data values are present. |
| histogram | A bar graph in which the labels for the bars are numerical intervals. |
| interquartile range | The difference between the upper quartile and the lower quartile. |
| interval | The range of values represented by each bar. The data is divided into equal increments. |
| line plot | A diagram showing frequency of data on a number line. (also known as a dot plot) |
| line symmetry | What a figure has if it can be folded in half and its two parts match exactly. |
| lower extreme | The smallest or least number out of a data set, usually farther away from interquartile range than other data in set. (also known as minimum) |
| lower quartile | The lower quartile is the middle (the median) of the lower half of the data on a box plot. One-fourth of the data lies below the first quartile and three-fourths lies above. (also known as Q1 or first quartile) |
| magnitude | Size; a property by which something can be compared as larger or smaller than other objects of the same kind. |
| maximum | The largest amount; the greatest number in a data set. |
| mean | The sum of a set of numbers divided by the number of elements in the set; a type of average. |
| mean absolute deviation | In statistics, the absolute deviation of an element of a data set is the absolute difference between that element and a given point. |

| Statistics and Probability | |
|---|---|
| measure of center | An average; a single value that is used to represent a collection of data. Three commonly used types of averages are mode, median, and mean. (also known as measure of central tendency or measure of average) |
| measure of variability | A measure of how much a collection of data is spread out. Commonly used types include range and quartiles. (also known as spread) |
| median | The middle number of a set of numbers when the numbers are arranged from least to greatest, or the mean of two middle numbers when the set has two middle numbers. |
| minimum | The smallest amount; the smallest number in a data set. |
| mode | The number or numbers that occur most often in a data set. |
| number line | A diagram that represents numbers as points on a line. |
| outlier | A number in a set of data that is much larger or smaller than most of the other numbers in the set. |
| range | The difference between the greatest number and the least number in a set of numbers. |
| relative frequency table | A table which shows the percent of time each data item or group of data occurs. |
| spread | A measure of how much a collection of data is spread out. Commonly used types include range and quartiles. (also known as measure of variability) |
| statistical question | A question that generates a variety of categorical or numerical answers. |
| statistical variability | A spread in the distribution of data. An example is the interquartile range. |
| statistics | The science of collecting, organizing, representing, and interpreting data. |
| table | An organized way to list data. Tables usually have rows and columns of data. |
| tape diagram | A drawing that looks like a segment of tape, used to illustrate number relationships. (also known as a strip diagram, bar model, fraction strip, or length model) |
| third quartile | The third quartile is the middle (the median) of the upper half of the data on a box plot. One-fourth of the data lies above the third quartile and three-fourths lies below. (also known as Q3 or upper quartile) |
| upper extreme | The greatest or largest number out of a data set, usually farther away from interquartile range than other data in set. (also known as maximum) |
| upper quartile | The upper quartile is the middle (the median) of the upper half of the data on a box plot. One-fourth of the data lies |
| above the upper quartile and three-fourths lies below. (also known as Q3 or third quartile) | |

| Measurements | |
|---|---|
| gallon | A customary unit of capacity. 1 gallon = 4 quarts. |
| gram | The standard unit of mass in the metric system. 1,000 grams = 1 kilogram. |
| liter | The basic unit of capacity in the metric system. 1 liter = 1,000 milliliters. |
| mass | The amount of matter in an object. Usually measured by comparing with an object of known mass. While gravity influences weight, it does not affect mass. |
| meter | A standard unit of length in the metric system. |
| ounce (oz) | A customary unit of weight equal to one sixteenth of a pound. 16 ounces = 1 pound |
| pint (pt) | A customary unit of capacity. 1 pint = 2 cups |
| pound (lb) | A customary unit of weight. 1 pound = 16 ounces. |
| quart (qt) | A customary unit of capacity. 1 quart = 2 pints or 1 quart = 4 cups |
| ton (T) | A customary unit of weight. 1 ton (T) = 2,000 pounds. A metric ton (t) is a unit of mass equal to 1,000 kilograms (about 2,200 pounds). |

Illustrated Mathematics Dictionary – Math is Fun Definitions