

Math Supplement:

Grade 2 Vocabulary



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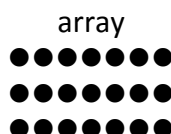
analog clock: A clock that shows the time by position of the hand and minutes.



angle: A figure that is formed by two rays with a common endpoint.

area: The measure of a bounded surface.

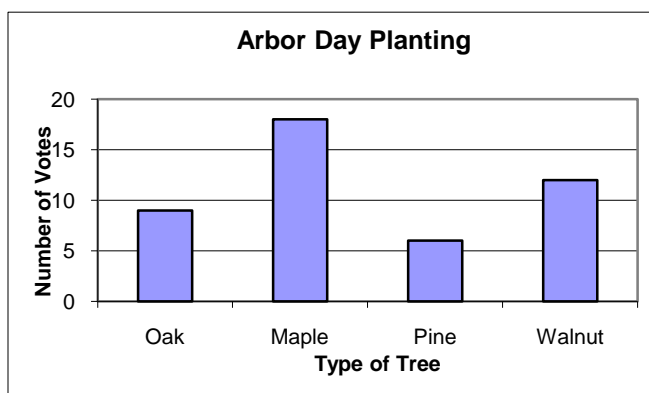
array: A rectangular arrangement of objects in rows and columns.



arrow path: The route to follow in moving on a number grid. Solving number-grid puzzles with arrow paths use the pattern on the grid. After sufficient practice, arrow paths may be drawn without the number grid.

arrow rule: The operation that determines how to find the number that goes into the next frame when moving from one frame to another in a Frames and Arrows diagram.

bar graph: A drawing which shows the relationship between certain data by the use of bars to represent the numbers. ↓



base: The flat face whose shape is the basis for classifying polyhedrons.

big cube: The larger cube of the base-10 blocks consisting of 1000 cm cubes.

Celsius: The temperature scale on which zero degrees is the freezing point of water.

cm cube: The smaller cube of the base-10 blocks measuring 1 cm on each edge.

change diagram: Used to represent an addition or subtraction problem in which a given quantity is increased or decreased. The diagram includes the starting quantity, ending quantity, and amount of change.

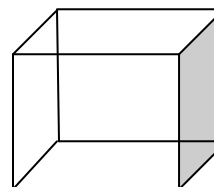
column: A vertical line of objects or numbers in an array or table.

compare diagram: A diagram used to represent problems in which two quantities are compared to find how much more or less one quantity is than the other.

cone: A three-dimensional shape having a circular base, curved surface, and one vertex.

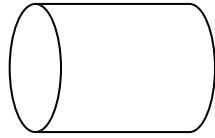


cube: A polyhedron with six square faces.



curved surface or face: A rounded side of a 3-dimensional shape.

cylinder: A three-dimensional shape having a curved surface and parallel circular bases that are the same size. A can is a common object shaped like a cylinder.



data: A collection of information that is gathered by observation, questioning, or measurement.

decimal point: The period which separates the whole number from the fraction in decimal notation. In expressing money, it separates the dollars from the cents.

denominator: The number of equal parts into which the unit is divided. It is the number written below the line in a fraction.

digital clock: A clock that shows the time in hours and minutes with a colon separating the two.



digit: The symbols from 0 through 9 that are used for writing numbers.

division: The operation used to solve equal-sharing problems. It is used to find how a total amount can be separated into an equal number of groups, or into groups of equal size.

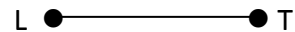
domino puzzle: An activity, presented as a domino, which explores the relationship (as in What's My Rule?) between the number of dots on the two sides.

double: Two times an amount or an amount added to itself.

doubles fact: The sum or product of two 1-digit numbers where both numbers are the same, such as $4 + 4 = 8$ or $3 \times 3 = 9$. Such a multiplication fact is called the "square of the number".

edge: A line segment where two faces of a polyhedron meet.

endpoints: The point at either end of a line segment. The names of the points are used for naming a line segment. "Segment LT " or "segment TL " is the line segment drawn between points L and T .



equal groups: Sets with the same number of elements.

equal-sharing stories: A number story that uses the operation of division to get the solution.

equivalent names: Different ways of naming the same number, $2 + 6$, $4 + 4$, $12 - 4$, $18 - 10$, $100 - 92$, $5 + 1 + 2$, eight are some of the names for 8.

estimate: A calculation of a close, rather than exact, answer. A number close to another number.

even number: An even number is a whole number that can be evenly divided by two.

exploration: An independent or small-group activity. The activities include concept development with manipulatives, links to move abstract levels, data collection, classification and ordering, problem solving, games, and skill reviews.

face: A flat surface on a 3-dimensional shape.

fact family: A collection of related addition and subtraction facts, or multiplication and division facts, made from the same numbers. For the numbers 2, 5, and 7, the family consists of $2 + 5 = 7$, $5 + 2 = 7$, $7 - 5 = 2$, and $7 - 2 = 5$. For the numbers 3, 5, and 15, the family consists of $3 \times 5 = 15$, $5 \times 3 = 15$, $15 \div 3 = 5$, $15 \div 5 = 3$.

fact power: Development of basic number-fact reflexes so the facts are known without having to figure them out.

fact triangle A triangular card that uses the members of fact families for practice with addition/subtraction and multiplication/division facts. The two one-digit numbers and their sum or product (marked with an asterisk) appear in the corner.

factor: The numbers being multiplied in a multiplication number model. In the number model $4 \times 3 = 12$, 4 and 3 are factors.

Facts Table: A chart of rows and columns, also known as an Addition Table or Multiplication Table, for use in finding addition and subtraction or multiplication and division facts.

Fahrenheit: The temperature scale on which 32 degrees is the freezing point of water.

flat: The base-10 block consisting of 100 cm cubes.

flat surface or face: A non-curved side of a 3-dimensional shape.

fraction: A way of naming a number of the equal parts of some unit.

frames: The shapes in which numbers are written for a Frames and Arrows diagram.

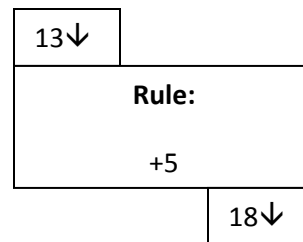
Frames and Arrows: Diagrams to represent number sequences—sets of numbers that are ordered according to a rule. The diagrams consist of *frames* in which numbers are written and *arrows* that give rules for moving from one frame to another. Frames and Arrows diagrams are also called chains.

frequency: The number of times an event or value occurs in a set of data.

frequency graph: A diagram to represent the relationship of the data summarized on the frequency table.

frequency table: A chart on which data is tallied to find the frequency of given events or values.

function machine: A diagram of an imaginary machine that processes numbers according to a certain rule. A number (input) is put into the machine and is transformed into a second number (output) by application rule.



generation: A single stage in a natural family descent (father, son, grandson). People born about the same time.

heptagon: A 7-sided polygon.

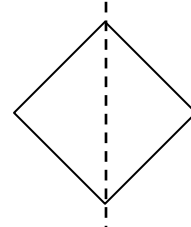
hexagon: A 6-sided polygon.

Home Links: Suggested activities intended to promote follow-up and enrichment activities in the home.

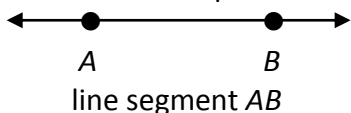
Journal: A student record of mathematical discoveries and experiences. Journal pages provide visual models for concept understanding, problem material, and activities for individual and small-group settings.

label: Descriptive word or phrase used to put numbers in context. Using a label reinforces the idea that numbers always refer to something. Flags, snowballs, and scary monsters are examples of labels.

line of symmetry: The line of which a shape can be folded into two matching halves.



line segment: Two points on a line and all the points on the line between them. A line segment can be any length and is the shortest path between two points.



long: The base-10 blocks consisting of 10 cm cubes.

making change: When the buyer pays with coins or bills that add up to more than the cost of the item(s), the vendor gives back the money owed.

Math Boxes: A format to provide review and to practice skills.

Math Message: Activities for students to complete before the start of a lesson of the day, or reviews of previously learned topics that may consist of problems to solve, directions to follow, tasks to complete, notes to copy, sentences to complete or correct, or brief quizzes.

mathematics: A study of relationships among numbers, shapes, and patterns. Mathematics is used to count and measure things, to discover similarities and differences, to solve problems, and to learn about and organize the world.

measurement unit: The reference unit used when measuring length, weight, capacity, time, temperature. Ounces, degrees, and centimeters are examples of measurement units.

median: The number in the middle when a set of data is organized in sequential order; also the middle value.

memory: Storage of information for later recall.

memory keys: The [M+], [M-]. And [MCR] calculator keys. The [M+] key is used to add a number to the number stored in the calculator's memory; the [M-] key is used to subtract a number from the number in memory. The [MCR] key, pressed once displays the

number currently stored in memory; when the key is pressed twice, the calculator's memory is cleared.

mental arithmetic: Does not require all computations to be done in one's head. Children develop a variety of flexible solution strategies including drawing pictures and doodles, counting jumps on a number line or grid, and so on. Children devise their own solution strategies.

metric system: The measurement system used in most countries in the world. A system of measurement based on the decimal numeration system. Some measures include: *linear* (length, distance)—millimeter, centimeter, decimeter, meter, kilometer; *mass* (weight)—gram, kilogram, and *capacity* (an amount of liquid pourable substance)—milliliter, liter.

middle value: The number in the middle when a set of data is organized in sequential order; also the median.

mode: The value or category that occurs most often in a set of data.

multiples: Repeated groups of the same amount. Multiples of numbers are the product of that number and whole numbers.

multiplication: The operation used to find the total number of things in several equal groups.

multiplication diagram: Used to represent numbers in which several equal groups are being considered together. The diagram has three parts: a number of groups, a number in each group, and a total number.

multiplied by: The number of times a group is added to itself, "3 x 5" is read as "3 multiplied by 5" or "3 times 5". This indicates 3 equal groups are being considered.

name collection box: A box-like diagram tagged with a given number and used for collecting equivalent names for that number.

number line: A line on which the points correspond to numbers in order and used as a frame of reference for counting and numeration activities.

number model: A numerical representation (number sentence) that shows how the parts of a number story are related. Some examples are $5 + 8 = 13$; $27 - 11 = 16$; $3 \times 30 = 90$; $56 \div 8 = 7$.

number scroll: Multiple number-grid pages taped together.

numerator: Names the number of equal parts of the unit being considered. It is the number written above the line in a fraction.

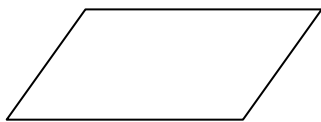
octagon: An 8-sided polygon.

odd number: A whole number that cannot be evenly divided by two. It has 1, 3, 5, 7, or 9 in the ones place.

1-facts: The sum of two 1-digit numbers where one of the numbers is one, such as $6 + 1 = 7$. If one is added to any number, or vice-versa, the result is the next higher number. The product of the numbers is one, such as $1 \times 3 = 3$. The product of 1 and any number is equal to that number.

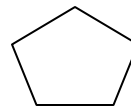
ordinal number: A number used to express position or order in a series, such as first, third, tenth. People use ordinal numbers to name a date, such as "May fifth", rather than "May five."

parallelogram: A quadrilateral that has two pairs of parallel sides and equal opposite sides.



parentheses: Grouping symbols () which are used in multi-operation numbers models to indicate which operation(s) should be done first.

penta-: A prefix meaning five.



percent (%): Per hundred; 1% means $1/100$ or 0.01. 15% means $15/100$ or 0.15.

perimeter: The distance around a figure. *Peri-* comes from the Greek word *peri*, around, and *-meter* comes from the Greek word *metron*, measure.

pie graph-: A drawing which represents data by using a circle divided into parts to show the relationship of the parts to the whole. Also called a circle graph.

plane: A flat surface that extends forever.

plane figures: 2-dimensional figures

parts-and-total diagram: Used to represent problems in which two or more quantities are combined to form a total quantity. It is often used when the parts are known and the total is the unknown. It can also be used when the total and one or more parts are known, but one part is the unknown.

pentagon: A 5-sided polygon.

per: In each or for each, as in ten chairs per row or six tickets per family.

percent: Times $1/100$, 0.01; 1 one-hundredth; 15% means $15/100$ or 0.15 of a number.

perimeter: The distance around a surface with a boundary. *Peri-* comes from the Greek word *peri*, around, and *-meter* comes from the Greek word *metron*, measure: perimeter means around measure.

place value: The relative worth of each digit in a number is determined by its position. Each place has a value ten times that of the place to its right and one-tenth of the value of the place to its left.

point: An exact location in space and has no size. Points are usually labeled with capital letters.

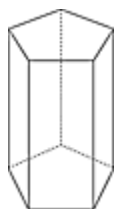
poly-: Prefix meaning *many*

polygon: A 2-dimensional figure, all of whose sides are line segments connected end to end, so that each segment intersects exactly two others its endpoints. The word comes from the Greek language; *poly* means many and *gon* means angle.

polyhedron: A 3-dimensional shape, all of whose surfaces (faces) are flat, as opposed to curved. Each face is a polygon.

precipitation: Rain or snow.

prism: A polyhedron (3-dimensional shape) with two parallel flat faces (called bases) with the same size and shape. Prisms are classified according to the shape of the two parallel bases; the sides (also called faces) are parallelograms.



product: The result of doing multiplication. In number model $4 \times 3 = 12$, 12 is the product.

pyramid: A polyhedron (3-dimensional shape) in which one face (called the base) is a polygon and the other faces are triangles with a common vertex. A pyramid is classified according to the shape of its base.

quadrangle: a 4-sided polygon.

quadrilateral: A 4-sided polygon.

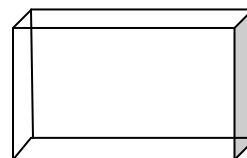
quadruple: Four times the amount.

quotient: The result after dividing one number by another; the number of equal shares. In the division number model " $11 \div 5 = 2 \text{ R}1$ " 2 is the quotient.

range: The difference between the greatest and least numbers in a set of data.

rectangle: A parallelogram whose angles are all right angles.

rectangular prism: A prism whose faces are all rectangles.



regular polyhedron: A polyhedron with all faces the same shape and same size.

remainder: The amount left over when things are divided into equal shares. In the division model " $16 \div 3 = 5 \text{ R}1$ " the remainder is 1.

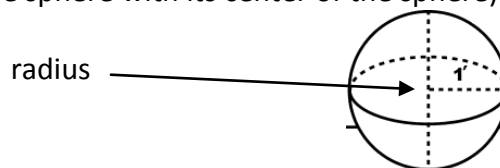
rhombus: A parallelogram whose sides are all the same length.



row: A horizontal line of objects or numbers in an array or table.

side: Any one of the line segments that make up a polygon.

sphere: The set of all points in space that are a given distance (the *radius* of the sphere) from a given point (the *center* of the sphere). A ball is shaped like a sphere, as is Earth. A *hemisphere* is "half of a sphere;" that is, either of the two parts into which the sphere is divided by its *equator* (or by any circle on the sphere with its center of the sphere).



square: A rectangle whose sides are all the same length.

square number: A number which is the product of a number multiplied by itself; numbers that can be represented by a square array.

square of a number: A number multiplied by itself; the product of two identical factors.

square units: The units used to measure area. A square unit represents a square with the measure of each side being one of that unit. A square inch represents a square that measures one inch on each side, a square centimeter measures one centimeter on each side, and so on.

straightedge: A tool, such as a ruler, used to draw a straight line.

subtraction: The operation that can be used to find how many are left when some are taken away, when a given quantity is decreased, or when comparing quantities.

symmetry: The matching of the two halves of a shape.

template: A sheet of plastic with geometric shapes cut out, used to draw patterns and designs.

tetrahedron: A polyhedron with four faces.

time line: A device for showing in sequences when certain events took place.

times: Multiplied by. "4 x 6" is read as "4 times 6" or "multiplied by 6". This indicates how many equal groups are being considered together.

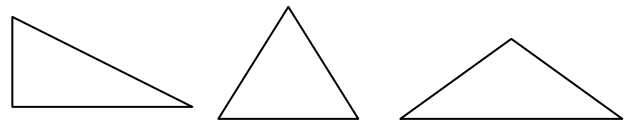
tool kit: A zippered bag or box containing measuring tools and manipulatives that will be used often throughout the program. Each student should have a tool kit.

trapezoid: A quadrilateral that has one pair of parallel sides.



trapezoids

triangle: A 3-sided polygon.



triangles

triangular prism: A prism whose base is a triangle.



triple: Three times the same amount.

turn-around facts: A pair of facts in which the order of addends or the factors is reversed, such as $3 + 5 = 8$ and $5 + 3 = 8$ or $3 \times 9 = 27$ or $9 \times 3 = 27$. If you know a fact, then you also know its turn-around.

unit box: A rectangular box displayed beside a problem or set of problems. Unit boxes contain the labels of units of measure used in the problem(s).

U.S. customary system: The measuring system used most often in the United States. Units for linear measure (length, distance) include inch, foot, yard, and mile; units for weight include ounce and pound; units for capacity (amount of liquid or other pourable substance a container can hold) include cup, pint, quart, and gallon).

vertex (vertices): The point where the sides of a polygon meet. The point where the edges of a polyhedron meet.

What's My Rule?: A routine which consists of a set of number pairs in which the numbers in each pair are related to one another according to the same rule. The problems are usually displayed in table form in which two of the three parts are known. The goal is to find the unknown part.

x-by-x array: An arrangement having x rows of y per row, representing x sets of y objects in each set.

0-facts: The sum of two 1-digit numbers where one of the numbers is zero, such as $0 + 5 = 5$. If zero is added to any number, or vice versa, there is no change in the number. The product of two numbers where one of the numbers is zero, such as $4 \times 0 = 0$. The product of a number and 0 is always 0.

