Glossary

This glossary provides definitions of key vocabulary terms in the Grade 3 lessons. Locations of key vocabulary terms in the curriculum are included with each definition.

A

Area (URG Unit 5 pp. 4, 18; SG p. 58)
The area of a shape is the amount of space it covers, measured in square units.

Array (URG Unit 7 p. 4 & Unit 11 p. 5)
An array is an arrangement of elements into a rectangular pattern of (horizontal) rows and (vertical) columns. (*See* column and row.)

Associative Property of Addition (URG Unit 2 p. 24)
For any three numbers *a, b,* and *c* we have $a + (b + c) = (a + b) + c$. For example in finding the sum of 4, 8, and 2, one can compute $4 + 8$ first and then add 2: $(4 + 8) + 2 = 14$. Alternately, we can compute $8 + 2$ and then add the result to 4: $4 + (8 + 2) = 4 + 10 = 14$.

Average (URG Unit 5 pp. 24, 25)
A number that can be used to represent a typical value in a set of data. (*See also* mean, median, and mode.)

Axes (URG Unit 8 p. 5; SG pp. 96, 97)
Reference lines on a graph. In the Cartesian coordinate system, the axes are two perpendicular lines that meet at the origin. The singular of axes is axis.

B

Base (of a cube model) (URG Unit 18 p. 37; SG p. 274)
The part of a cube model that sits on the "ground."
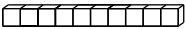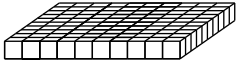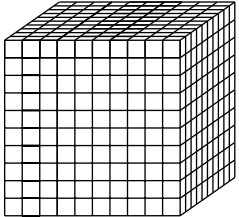
Base-ten Board (URG Unit 4 p. 22)
A tool to help children organize base-ten pieces when they are representing numbers.

Base-ten Pieces (URG Unit 4 pp. 31, 32; SG p. 44)
A set of manipulatives used to model our number system as shown in the figure at the right. Note that a skinny is made of 10 bits, a flat is made of 100 bits, and a pack is made of 1000 bits.

Base-ten Shorthand (SG p. 46)
A pictorial representation of the base-ten pieces as shown.

Nickname	Picture	Shorthand
bit		•
skinny		/
flat		
pack		

Best-fit Line (URG Unit 9 pp. 5, 32; SG p. 120; DAB p. 141)
The line that comes closest to the most number of points on a point graph.

Bit (URG Unit 4 pp. 22, 31; SG p. 44)
A cube that measures 1 cm on each edge. It is the smallest of the base-ten pieces that is often used to represent 1. (*See also* base-ten pieces.)

C

Capacity (URG Unit 16 p. 4)
1. The volume of the inside of a container.
2. The largest volume a container can hold.

**Cartesian Coordinate System** (URG Unit 8 p. 5)
A method of locating points on a flat surface by means of numbers. This method is named after its originator, René Descartes. (*See also* coordinates.)

Centimeter (cm) (SG p. 59)
A unit of measure in the metric system equal to one-hundredth of a meter. (1 inch = 2.54 cm)

Column (URG Unit 11 pp. 5, 36)
In an array, the objects lined up vertically.

column 3
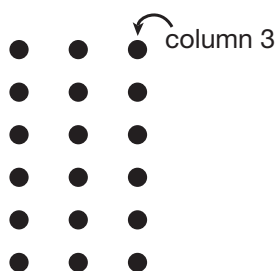
Common Fraction (URG Unit 15 p. 20)
Any fraction that is written with a numerator and denominator that are whole numbers. For example, $\frac{3}{4}$ and $\frac{9}{4}$ are both common fractions. (*See also* decimal fraction.)

Commutative Property of Addition (URG Unit 2 p. 24 & Unit 11 p. 37)
This is also known as the Order Property of Addition. Changing the order of the addends does not change the sum. For example, $3 + 5 = 5 + 3 = 8$. Using variables, $n + m = m + n$.

Commutative Property of Multiplication (URG Unit 11 p. 37)
Changing the order of the factors in a multiplication problem does not change the result, e.g., $7 \times 3 = 3 \times 7 = 21$. (*See also* turn-around facts.)

Congruent (URG Unit 12 pp. 36, 37 & Unit 17 pp. 16, 18, 23; SG p. 168)
Figures with the same shape and size.

Convenient Number (URG Unit 6 p. 62)
A number used in computation that is close enough to give a good estimate, but is also easy to compute mentally, e.g., 25 or 30 is a convenient number for 27.

Coordinates (URG Unit 8 pp. 4, 5, 19; SG p. 97)
An ordered pair of numbers that locates points on a flat surface by giving distances from a pair of coordinate axes. For example, if a point has coordinates (4, 5) it is 4 units from the vertical axis and 5 units from the horizontal axis.

Counting Back (URG Unit 2 p. 6)
A strategy for subtracting in which students start from a larger number and then count down until the number is reached. For example, to solve $8 - 3$, begin with 8 and count down three, 7, 6, 5.

Counting Down (*See* counting back.)

Counting Up (URG Unit 2 p. 6)
A strategy for subtraction in which the student starts at the lower number and counts on to the higher number. For example, to solve $8 - 5$, the student starts at 5 and counts up three numbers (6, 7, 8). So $8 - 5 = 3$.

Cube (SG p. 270)
A three-dimensional shape with six congruent square faces.

Cubic Centimeter (cc) (URG Unit 16 pp. 4, 18; SG p. 236)
The volume of a cube that is one centimeter long on each edge.
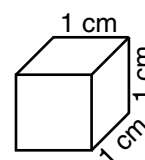
cubic centimeter

Cup (URG Unit 16 p. 44)
A unit of volume equal to 8 fluid ounces, one-half pint.

D

Decimal Fraction (URG Unit 15 p. 20)
A fraction written as a decimal. For example, 0.75 and 0.4 are decimal fractions and $\frac{75}{100}$ and $\frac{4}{10}$ are called common fractions. (*See also* fraction.)

Denominator (URG Unit 13 p. 18)
The number below the line in a fraction. The denominator indicates the number of equal parts in which the unit whole is divided. For example, the 5 is the denominator in the fraction $\frac{2}{5}$. In this case the unit whole is divided into five equal parts.

Density (URG Unit 16 p. 17)
The ratio of an object's mass to its volume.

Difference (URG Unit 2 pp. 67, 72, 73)
The answer to a subtraction problem.

Dissection (URG Unit 12 p. 4 & Unit 17 p. 18)
Cutting or decomposing a geometric shape into smaller shapes that cover it exactly.

Distributive Property of Multiplication over Addition (URG Unit 19 p. 4)
For any three numbers *a, b,* and *c, $a \times (b + c) = a \times b + a \times c$.* The distributive property is the foundation for most methods of multidigit multiplication. For example $9 \times (17) = 9 \times (10 + 7) = 9 \times 10 + 9 \times 7 = 90 + 63 = 153$.

E

Equilateral Triangle (URG Unit 7 p. 63)
A triangle with all sides of equal length and all angles of equal measure.

Estimate (URG Unit 5 p. 19 & Unit 6 p. 63)
1. (verb) To find *about* how many.
2. (noun) An approximate number.

Equivalent Fractions (SG p. 255)
Fractions that have the same value, e.g., $\frac{2}{4} = \frac{1}{2}$.

Extrapolation (URG Unit 7 p. 23)
Using patterns in data to make predictions or to estimate values that lie beyond the range of values in the set of data.

F

Fact Family (URG Unit 11 p. 59; SG p. 153)
Related math facts, e.g., $3 \times 4 = 12$, $4 \times 3 = 12$, $12 \div 3 = 4$, $12 \div 4 = 3$.

Factors (URG Unit 11 pp. 29, 47; SG p. 150)
1. In a multiplication problem, the numbers that are multiplied together. In the problem $3 \times 4 = 12$, 3 and 4 are the factors.
2. Whole numbers that can be multiplied together to get a number. That is, numbers that divide a number evenly, e.g., 1, 2, 3, 4, 6, and 12 are all the factors of 12.

Fewest Pieces Rule (URG Unit 4 pp. 23, 36 & Unit 6 p. 36; SG p. 47)
Using the least number of base-ten pieces to represent a number. (*See also* base-ten pieces.)

Flat (URG Unit 4 p. 32; SG p. 44)
A block that measures 1 cm $\times$ 10 cm $\times$ 10 cm. It is one of the base-ten pieces that is often used to represent 100. (*See also* base-ten pieces.)
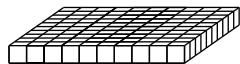
Flip (URG Unit 12 p. 37)
A motion of the plane in which a figure is reflected over a line so that any point and its image are the same distance from the line.

Fraction (URG Unit 15 p. 20)
A number that can be written as $\frac{a}{b}$ where a and b are whole numbers and b is not zero. For example, $\frac{1}{2}$, 0.5, and 2 are all fractions since 0.5 can be written as $\frac{5}{10}$ and 2 can be written as $\frac{2}{1}$.

Front-end Estimation (URG Unit 6 p. 63)
Estimation by looking at the left-most digit.

G

Gallon (gal) (URG Unit 16 p. 44)
A unit of volume equal to four quarts.

H

Hexagon (SG p. 170)
A six-sided polygon.

Horizontal Axis (SG p. 4)
In a coordinate grid, the *x*-axis. The axis that extends from left to right.

I

Interpolation (URG Unit 7 p. 23)
Making predictions or estimating values that lie between data points in a set of data.

J

K

L

Likely Event (SG p. 6)
An event that has a high probability of occurring.

Line of Symmetry (URG Unit 12 p. 34)
A line is a line of symmetry for a plane figure if, when the figure is folded along this line, the two parts match exactly.

Line Symmetry (URG Unit 12 p. 34; SG p. 169)
A figure has line symmetry if it has at least one line of symmetry.

Liter (l) (URG Unit 16 p. 4; SG p. 237)
Metric unit used to measure volume. A liter is a little more than a quart.

M

Making a Ten (URG Unit 2 p. 6)
Strategies for addition and subtraction that make use of knowing the sums to ten. For example, knowing $6 + 4 = 10$ can be helpful in finding $10 - 6 = 4$ and $11 - 6 = 5$.

Magic Square (URG Unit 2 p. 53)
A square array of digits in which the sums of the rows, columns, and main diagonals are the same.

Mass (URG Unit 9 pp. 4, 25 & Unit 16 p. 17; SG p. 114)
The amount of matter in an object.

Mean (URG Unit 5 p. 25)
An average of a set of numbers that is found by adding the values of the data and dividing by the number of values.

Measurement Division (URG Unit 7 p. 4)
Division as equal grouping. The total number of objects and the number of objects in each group are known. The number of groups is the unknown. For example, tulip bulbs come in packages of 8. If 216 bulbs are sold, how many packages are sold?

Measurement Error (URG Unit 9 pp. 5, 20)
The unavoidable error that occurs due to the limitations inherent to any measurement instrument.

Median (URG Unit 5 pp. 24, 25; DAB p. 91)
For a set with an odd number of data arranged in order, it is the middle number. For an even number of data arranged in order, it is the number halfway between the two middle numbers.

Meniscus (URG Unit 16 p. 18; SG p. 239)
The curved surface formed when a liquid creeps up the side of a container (for example, a graduated cylinder).

Meter (m)
The standard unit of length measure in the metric system. One meter is approximately 39 inches.

Milliliter (ml) (URG Unit 16 p. 4; SG p. 237)
A measure of capacity in the metric system that is the volume of a cube that is one centimeter long on each edge.

Multiple (URG Unit 3 p. 48 & Unit 11 p. 29)
A number is a multiple of another number if it is evenly divisible by that number. For example, 12 is a multiple of 2 since 2 divides 12 evenly.

N

Numerator (URG Unit 13 p. 18)
The number written above the line in a fraction. For example, the 2 is the numerator in the fraction $\frac{2}{5}$. (*See also* denominator.)

O

One-dimensional Object (URG Unit 18 p. 19; SG p. 266)
An object is one-dimensional if it is made up of pieces of lines and curves.

Ordered Pairs (URG Unit 8 p. 37)
A pair of numbers that gives the coordinates of a point on a grid in relation to the origin. The horizontal coordinate is given first; the vertical coordinate is given second. For example, the ordered pair (5, 3) tells us to move five units to the right of the origin and 3 units up.

Origin (URG Unit 8 pp. 5, 19, 20)
The point at which the *x*- and *y*-axes intersect on a coordinate plane. The origin is described by the ordered pair (0, 0) and serves as a reference point so that all the points on the plane can be located by ordered pairs.

P

Pack (URG Unit 4 p. 34; SG p. 44)
A cube that measures 10 cm on each edge. It is one of the base-ten pieces that is often used to represent 1000. (*See also* base-ten pieces.)
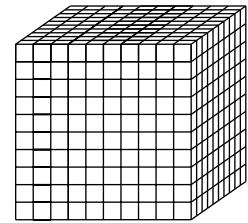
Palindrome (URG Unit 6 p. 79)
A number, word, or phrase that reads the same forward and backward, e.g. 12321.

Parallel Lines (URG Unit 18 p. 28)
Lines that are in the same direction. In the plane, parallel lines are lines that do not intersect.

Parallelogram (URG Unit 18 p. 28)
A quadrilateral with two pairs of parallel sides.

Partitive Division (URG Unit 7 p. 7)
Division as equal sharing. The total number of objects and the number of groups are known. The number of objects in each group is the unknown. For example, Frank has 144 marbles that he divides equally into 6 groups. How many marbles are in each group?

Perimeter (URG Unit 7 p. 63; DAB p. 123)
The distance around a two-dimensional shape.

Pint (URG Unit 16 p. 44)
A unit of volume measure equal to 16 fluid ounces, i.e., two cups.

Pentagon (SG p. 170)
A five-sided, five-angled polygon.

Population (URG Unit 1 p. 6; SG p. 8)
A collection of persons or things whose properties will be analyzed in a survey or experiment.

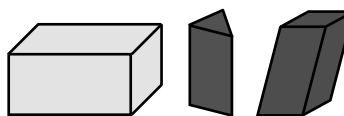**Prediction** (URG Unit 9 p. 5; SG p. 6)
Using data to declare or foretell what is likely to occur.
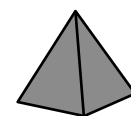
Prime Number (URG Unit 11 p. 37)
A number that has exactly two factors. For example, 7 has exactly two distinct factors, 1 and 7.

Prism
A three-dimensional figure that has two congruent faces, called bases, that are parallel to each other, and all other faces are parallelograms.

Prisms   Not a prism

Product (URG Unit 11 pp. 29, 47; SG p. 150; DAB p. 172)
The answer to a multiplication problem. In the problem
$3 \times 4 = 12$, 12 is the product.

Polygon
A two-dimensional connected figure made of line segments
in which each endpoint of every side meets with an end-
point of exactly one other side.

Q

Quadrilateral (URG Unit 18 p. 28)
A polygon with four sides.

Quart (URG Unit 16 p. 44)
A unit of volume equal to 32 fluid ounces; one quarter
of a gallon.

R

Rectangular Prism (URG Unit 18 p. 20; SG p. 268)
A prism whose bases are rectangles. A right rectangular
prism is a prism having all faces rectangles.

Recording Sheet (URG Unit 4 p. 31)
A place value chart used for addition and subtraction
problems.

Regular (URG Unit 7 p. 63; DAB p. 123)
A polygon is regular if all sides are of equal length and
all angles are equal.

Remainder (URG Unit 7 p. 50)
Something that remains or is left after a division problem.
The portion of the dividend that is not evenly divisible by
the divisor, e.g., $16 \div 5 = 3$ with 1 as a remainder.
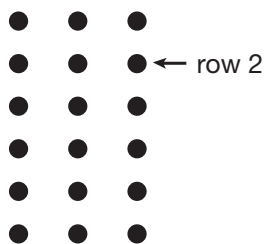
Right Angle (SG p. 166)
An angle that measures 90°.

Rotation (turn) (URG Unit 12 p. 37)
A transformation (motion) in which a figure is turned a
specified angle and direction around a point.

Row (URG Unit 11 pp. 5, 36)
In an array, the objects lined up horizontally.

Rubric (URG Unit 2 p. 5)
A written guideline for assigning scores to student work,
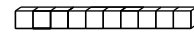for the purpose of assessment.

S

Sample (URG Unit 1 p. 6; SG p. 8)
A part or subset of a population.

Skinny (URG Unit 4 pp. 22, 31; SG p. 44)
A block that measures 1 cm $\times$ 1 cm $\times$ 10 cm. It is one
of the base-ten pieces that is often used to represent 10.
(*See also* base-ten pieces.)

Square Centimeter (sq cm) (SG p. 59)
The area of a square that is 1 cm long on each side.

Square Number (SG Unit 11 p. 147)
A number that is the product of a whole number multiplied
by itself. For example, 25 is a square number since
$5 \times 5 = 25$. A square number can be represented by a
square array with the same number of rows as columns.
A square array for 25 has 5 rows of 5 objects in each row
or 25 total objects.

Standard Masses (URG Unit 9 p. 19)
A set of objects with convenient masses, usually 1 g, 10 g,
100 g, etc.

Sum (URG Unit 2 p. 33; SG p. 16)
The answer to an addition problem.

Survey (URG Unit 14 p. 46; SG p. 203)
An investigation conducted by collecting data from a sam-
ple of a population and then analyzing it. Usually surveys
are used to make predictions about the entire population.

T

Tangrams (SG Unit 12 p. 158)
A type of geometric puzzle. A shape is given and it must be
covered exactly with seven standard shapes called tans.

Thinking Addition (URG Unit 2 p. 6)
A strategy for subtraction that uses a related addition prob-
lem. For example, $15 - 7 = 8$ because $8 + 7 = 15$.

Three-dimensional (URG Unit 18 p. 19; SG p. 267)
Existing in three-dimensional space; having length, width,
and height.

TIMS Laboratory Method (URG Unit 1 p. 5; SG p. 9)
A method that students use to organize experiments and
investigations. It involves four components: draw, collect,
graph, and explore. It is a way to help students learn about
the scientific method.

Turn (URG Unit 12 p. 37)
(*See* rotation.)

Turn-around Facts (URG Unit 2 p. 33 & Unit 11 p. 37; SG p. 146)
Addition facts that have the same addends but in a different order, e.g., 3 + 4 = 7 and 4 + 3 = 7. (*See also* commutative property of addition and commutative property of multiplication.)

Two-dimensional (URG Unit 18 p. 19; SG p. 266)
Having length and width.

Two-pan Balance (URG Unit 9 p. 19)
A device for measuring the mass of an object by balancing the object against a number of standard masses (usually multiples of 1 unit, 10 units, and 100 units, etc.)
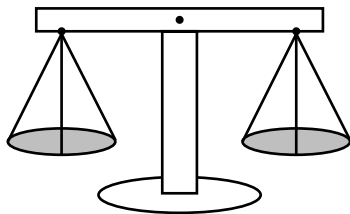
U

Unit (of measurement) (URG Unit 9 p. 19 & Unit 18 pp. 36, 37)
A precisely fixed quantity used to measure. For example, centimeter, foot, kilogram, and quart are units of measurement.

Using a Ten (URG Unit 2 p. 6)
1. A strategy for addition that uses partitions of the number 10. For example, one can find 8 + 6 by thinking 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14.
2. A strategy for subtraction that uses facts that involve subtracting 10. For example, students can use 17 − 10 = 7 to learn the "close fact" 17 − 9 = 8.

Using Doubles (URG Unit 2 p. 6)
Strategies for addition and subtraction that use knowing doubles. For example, one can find 7 + 8 by thinking 7 + 8 = 7 + 7 + 1 = 14 + 1 = 15. Knowing 7 + 7 = 14 can be helpful in finding 14 − 7 = 7 and 14 − 8 = 6.

V

Value (URG Unit 1 p. 22; SG p. 10)
The possible outcomes of a variable. For example, red, green, and blue are possible values for the variable *color*. Two meters and 1.65 meters are possible values for the variable *length*.

Variable (URG Unit 1 p. 22; SG p. 9)
1. An attribute or quantity that changes or varies.
2. A symbol that can stand for a variable.

Vertex (URG Unit 12 p. 35; SG pp. 166, 268)
The common endpoint of two rays or line segments.

Vertical Axis (SG p. 4)
In a coordinate grid, the *y*-axis. It is perpendicular to the horizontal axis.

Volume (URG Unit 16 pp. 4, 17; SG p. 236)
The measure of the amount of space occupied by an object.

Volume by Displacement (URG Unit 16 p. 4)
A way of measuring volume of an object by measuring the amount of water (or some other fluid) it displaces.

W

Weight (URG Unit 9 pp. 4, 25)
A measure of the pull of gravity on an object. One unit for measuring weight is the pound.

X

Y

Z