Curriki Geometry Glossary

The following terms are used throughout the Curriki Geometry projects and represent the core vocabulary and concepts that students should know to meet Common Core State Standards.

Term	Definition
Acute triangle	A triangle for which all interior angles are acute, or less than 90 degrees. (see also *obtuse triangle*, *right triangle*)
Alternate exterior angles	Exterior angles on alternate sides of the transversal (not on the same parallel line)
Alternate interior angles	Interior angles on alternate sides of the transversal (not on the same parallel line)
Altitude of a triangle	A straight line through a vertex and perpendicular to (i.e. forming a right angle with) a line containing the base (the opposite side) of a triangle
Angle bisector theorem	Concerned with the relative lengths of the two segments that a triangle's side is divided into by a line that bisects the opposite angle. It equates their relative lengths to the relative lengths of the other two sides of the triangle.
Angle bisector theorem, converse	If a point is equidistant from the sides of an angle, then it is on the angle bisector.
Angle	Formed by two rays, called the sides of the angle, sharing a common endpoint, called the vertex of the angle
Arc	A closed segment (symbol: $\frown$) of a differentiable curve in the two-dimensional plane
Area	Any particular extent of space or surface
Bisector	A line that divides something into two equal parts
Center of a polygon	In a rotation, the point that does not move. The rest of the plane rotates around this one fixed point.
Centroid of a triangle	The point where the three medians of the triangle intersect
Circumcenter of a triangle	The point where the three perpendicular bisectors of a triangle meet
Circumference (circles)	A complete circular arc; also the distance around the outside of a circle
Circumscribed	A geometric figure that is drawn around another geometric figure so as to touch all its vertices
Combination	A way of selecting several things out of a larger group, where (unlike permutations) order does not matter.
Common parts	Informal language that describes similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length) of two- and three-dimensional shapes, in different sizes and orientations
Compass	An instrument for drawing circles and arcs and measuring distances between points, consisting of two arms linked by a movable joint.
Complement probability	In probability theory, the complement of any event A is the event [not A], i.e. the event that A does not occur. (see also *conditional probability*, *experimental probability*, *probability*, *theoretical probability*)
Complementary angle	Two angles that add up to 90 degrees (ie they form a right angle)
Composition	The combining of distinct parts or elements to form a whole

Compound event	An event whose probability of occurrence depends upon the probability of occurrence of two or more independent events
Compression	To reduce a shape in size while retaining proportions
Conditional probability	The probability that an event will occur, when another event is known to occur or to have occurred (see also *complement probability*, *experimental probability*, *probability*, *theoretical probability*)
Conditional probability formula	The conditional probability of A given B is denoted by P(A|B) and defined by the formula P(A|B) = P(AB) P(B) , provided P(B) > 0. (see also *probability formula*)
Congruency by AAS, ASA, SAS, SSS	Triangles are congruent if any pair of corresponding sides and their included angles are equal in both triangles.
Congruent	Identical in form; coinciding exactly when superimposed
Construction	The drawing of various shapes using only a compass and straightedge or ruler. No measurement of lengths or angles is allowed.
Coordinates	On the coordinate plane, the pair of numbers giving the location of a point (ordered pair). In three-dimensional coordinates, the triple of numbers giving the location of a point (ordered triple). In *n*-dimensional space, a sequence of *n* numbers written in parentheses.
Corresponding angles	The angles in matching corners when two lines are crossed by another line (which is called the transversal)
Dependent events	When the outcome of one event affects the outcome of another (see also *independent events, mutually exclusive events*)
Dilation	A transformation that grows or shrinks a polygon by a given proportion about a center point
Equidistant	Distant by equal amounts from two or more places
Endpoint	Either of two points marking the end of a line segment (see also *midpoint*)
Events	A set of outcomes of an experiment (a subset of the sample space) to which a probability is assigned
Experimental probability	The ratio of the number of times the event occurs to the total number of trials (see also *complement probability*, *conditional probability*, *probability*, *theoretical probability*)
Exterior angle	The angle between any side of a polygon and an extended adjacent side (see also *interior angle*)
Frequency table	Lists items and uses tally marks to record and show the number of times they occur
Fundamental counting principle	When there are *m* ways to do one thing, and *n* ways to do another, then there are *m*×*n* ways of doing both.
Glide reflection	A transformation in which a graph or geometric figure is picked up and moved to another location without any change in size or orientation (see also *reflection*).
Glide reflectional symmetry	The symmetry that a figure has if it can be made to fit exactly onto the original when it is translated a given distance at a given direction and then reflected over a line. (see also *reflectional symmetry*, *rotational symmetry*, *symmetry*)
Horizontal line	A constructive line, either drawn or imagined, which passes through the point of sight, and is the chief line in the projection upon which all verticals are fixed, and upon which all vanishing points are found
Hypotenuse	The longest side of a right-angled triangle; the side opposite of the right angle
Hypotenuse-leg theorem (HL theorem)	If the hypotenuse and leg of a right triangle are congruent to the hypotenuse and leg of another right triangle, then the triangles are congruent.

Image	An optically formed duplicate, counterpart, or other representative reproduction of an object, especially an optical reproduction formed by a lens or mirror
Incenter of a triangle	The point where the three angle bisectors of a triangle meet
Included angle	The angle made by two lines with a common vertex
Independent events	When the outcome of one event does not influence the outcome of the second event (see also *dependent events, mutually exclusive events*)
Inscribed in (the triangle)	Drawing one shape inside a triangle so that it just touches the sides of the triangle
Interior angle	Any of the four angles formed between two straight lines intersected by a third straight line (see also *exterior angle*)
Intersection	The probability that events A and B both will occur
Isometry	A transformation that is invariant with respect to distance. That is, the distance between any two points in the pre-image must be the same as the distance between the images of the two points.
Isosceles triangle theorem	The angles opposite the two equal sides of an isosceles triangle are equal.
Isosceles triangle theorem, converse	If two angles of an isosceles triangle are congruent, the sides opposite them are congruent.
Leg	Either of the sides in a right triangle opposite an acute angle
Line of symmetry	The line of symmetry of a two-dimensional figure is a line such that, for each perpendicular constructed, if the perpendicular intersects the figure at a distance *d* from the axis along the perpendicular, then there exists another intersection of the figure and the perpendicular, at the same distance *d* from the axis, in the opposite direction along the perpendicular. (see also *point of symmetry*)
Median of a triangle	A line segment joining a vertex of a triangle to the midpoint of the opposing side
Midpoint	A point at or near the middle of, or equidistant from, both ends, as of a line, the midpoint of a boundary (see also *endpoint*)
Midpoint formula in the coordinate plane	The point halfway between the endpoints of a line segment is called the midpoint. A midpoint divides a line segment into two equal segments.
Midsegment of a triangle	The segment joining the midpoints of two sides of a triangle
Mutually exclusive events	Two events that cannot occur at the same time (see also *dependent events, independent events*)
n factorial	The factorial of a natural number *n* is the product of the positive integers less than or equal to *n*.
Non-included angle	The side of a triangle that is not included by two given angles
Obtuse triangle	A triangle which has an obtuse angle (an angle greater than 90 degrees but less than 180 degrees) as one of its interior angles (see also *acute triangle*, *right triangle*)
Ordered pair	Two numbers written in the form (*x*, *y*) (see also *ordered triple*, *n-tuple*)
Ordered triple	Three numbers written in the form (*x*, *y*, *z*) (see also *ordered pair*, *n-tuple*)
n-tuple	*n* numbers written in the form (x1, x2, x3, . . . , x*n*) (see also *ordered pair*, *ordered triple*)
Orthocenter of a triangle	The point where the three altitudes of a triangle intersect
Outcome	The result of an experiment in probability theory
Overlap	Similar triangles in which one triangle is on top of (overlapping) another triangle
Parallel	Two lines on a plane that never meet. They are always the same distance

	apart.
Permutation	All possible arrangements of a collection of things, where the order is important
Perpendicular	A straight line at an angle of 90 degrees to a given line, plane, or surface
Perpendicular bisector	A line or a ray that cuts another line segment into two equal parts at 90 degrees
Perpendicular bisector theorem	The perpendicular bisector of a line segment is the locus of all points that are equidistant from its endpoints.
Perpendicular bisector theorem, converse	If a point is equidistant from the endpoints of a segment, then it is on the perpendicular bisector of the segment.
Point of concurrency	The point where three or more lines intersect
Point of symmetry	A special center point for certain kinds of symmetric figures or graphs. If a figure or graph can be rotated 180° about a point *P* and end up looking identical to the original, then *P* is a point of symmetry. (see also *line of symmetry*)
Polygon angle-sum theorem	The sum of the measures of the angles of an *n*-gon is (*n*–2)180
Polygon angle-sum theorem, corollary	The measure of each interior angle of a regular *n*-gon is 180*(*n*–2)/*n*)
Polygon exterior angle-sum theorem	If a polygon is convex, then the sum of the measures of the exterior angles, one at each vertex, is 360.
Preimage	The original figure prior to a transformation.
Probability	The chance that something will happen or how likely it is that some event will happen (see also *complement probability*, *conditional probability*, *experimental probability*, *theoretical probability*)
Probability distribution	A graph, table, or formula that gives the probability for each value of the random variable
Probability formula	The number of ways an event can occur divided by the total number of possible outcomes (see also *conditional probability formula*)
Isosceles triangle	A triangle with two equal sides and two equal angles
Proportions	Comparative relation between things or magnitudes as to size, quantity, number, etc.
Pythagorean theorem	An equation relating the lengths of the sides of a right triangle. The sum of the squares of the legs of a right triangle is equal to the square of the hypotenuse. The formula is $a^2 + b^2 = c^2$.
Ratios	The result of dividing one number or expression by another. Sometimes a ratio is written as a proportion, such as 3:2 (three to two). More often, though, ratios are simplified according to the standard rules for simplifying fractions or rational expressions. Note: The word *rational* indicates that a ratio (in the second sense) is involved. The word *rate* also indicates a ratio is involved, as in instantaneous rate of change or average rate of change.
Ray	A part of a line that begins at a particular point (called the endpoint) and extends endlessly in one direction
Reflection	A transformation that creates a mirror image of a shape (see also *glide reflection*).
Reflectional symmetry	The descriptive term for an object or figure that is indistinguishable from its transformed image (see also *glide reflectional symmetry*, *rotational symmetry*, *symmetry*)
Reflexive property of equality	Anything is equal to itself
Relative frequency	The ratio of the actual number of favorable events to the total possible

	number of events; often taken as an estimate of probability
Remote interior angles	The two angles of a triangle that are not adjacent to the exterior angle, which is drawn by extending one of the sides.
Right triangle	A triangle which has a right (90 degree) interior angle (see also *acute triangle*, *obtuse triangle*)
Rigid motion	The variance in position and orientation when a rigid body moves
Rotation	A transformation in which a plane figure turns around a fixed center point. In other words, one point on the plane, the center of rotation, is fixed and everything else on the plane rotates about that point by a given angle.
Rotational symmetry	When an object that looks the same after a certain amount of rotation (see also *glide reflectional symmetry*, *reflectional symmetry*, *symmetry*)
Same-side exterior angles	Exterior angles are created where a transversal crosses two (usually parallel) lines. Each pair of these angles is outside the parallel lines, and on the same side of the transversal.
Same-side interior angles	When two parallel lines are intersected by a transversal, one type of angle formed is same-side interior angles. Same side interior angles are pairs of angles that are found on the same side of the transversal.
Sample space	In probability theory, the set of all possible outcomes or results of an experiment
Segments	A line segment is a part of a line that is bounded by two distinct end points, and contains every point on the line between its end points.
Slope	The tangent of the angle between a given straight line and the *x*-axis of a system of Cartesian coordinates
Straightedge	A bar or piece of material (wood, metal, plastic, etc) with a straight edge for testing straight lines and surfaces or for cutting along or drawing straight lines
Supplementary angles	Two angles that add up to 180 degrees
Symmetry	Illustrated by a geometric figure or a graph consisting of two parts that are congruent to each other (see also *glide reflectional symmetry*, *reflectional symmetry*, *rotational symmetry*)
Tessellation	A plane with identically shaped pieces that do not overlap or leave blank spaces. The pieces do not have to be oriented identically. A tessellation may use tiles of one, two, three, or any finite number of shapes.
Theoretical probability	The likelihood of an event happening based on all the possible outcomes (see also *complement probability*, *conditional probability*, *experimental probability*, *probability*)
Transformation	Operations that alter the form of a figure. The standard transformations are translations, reflections, dilations (stretches), compressions (contractions or shrinks), and rotations.
Translation	A transformation in which a graph or geometric figure is picked up and moved to another location without any change in size or orientation
Transversal	A line intersecting two or more lines
Tree diagram	A representation of a tree structure in which the probability of each branch is written on the branch and the outcome is written at the end of the branch
Triangles	A closed plane figure having three sides and three angles
Vertex	The point about which an angle is measured
Vertical angles	One of two opposite and equal angles formed by the intersection of two lines
Volume (prisms, cylinders, pyramids, cones, spheres)	The total amount of space enclosed in a solid