

Math Formulas Grades 3-8

Mathematical fluency occurs when a student can efficiently, flexibly and accurately produce answers **and** explain the methods they use.

Fluency is the end point of a learning progression.

The chart below outlines the formulas that occur in the Measurement and Data and Geometry Standards for grades 3-8. When instructional practices concentrate on the focus areas for each grade level, students will have the conceptual understanding needed to progress and perform successfully with the content in the next grade.

Grade	Standard	Formula
3	3.MD.9	Area of a rectangle: $A = \ell \cdot w$
	3.MD.10	Perimeter: regular polygons, find missing length
4	4.MD.3	Area of a rectangle: $A = \ell \cdot w$ Perimeter of a rectangle: $P = 2\ell + 2w$
5	5.MD.6	Volume of a right rectangular prism: $V = \ell \cdot h \cdot w$
6	6.G.1	Area of right triangle: $A = 1/2b \cdot h$
	6.G.2	Volume of prisms and cylinders: $V = B \cdot H$ <ul style="list-style-type: none"> B is the area of the base of the prism or cylinder
7	7.G.4	Area of a circle: $A = \pi \cdot r^2$ Circumference of a circle: $A = \pi \cdot d$
	7.G.6	Area, volume and surface area of two- and three-dimensional objects <ul style="list-style-type: none"> Triangles, quadrilaterals, polygons, cubes and right prisms
8	8.G.6-8	Pythagorean Theorem: $a^2 + b^2 = c^2$
	8.G.9	Volume of: <ul style="list-style-type: none"> Cones: $V = 1/3\pi \cdot r^2 \cdot h$ Cylinders: $V = (\pi \cdot r^2) \cdot h$ Spheres: $V = 4/3\pi \cdot r^3$