New York State Next Generation Mathematics Learning Standards

This document is intended to help educators identify the key changes that have occurred to the content standards for this grade level/course and to assist with designing curriculum and lessons aligned to the NYS Next Generation Mathematics Learning Standards. This document does not contain the comprehensive list of learning standards for the grade level/course. The complete list of standards for the grade level/course can be found at NYS Next Generation Mathematics Learning Standards.

Grade 8 Snapshot

Standards **New** to Grade 8
No new standards.

Standards **Moved** from Grade 8
8.SP.4 Removed two-way frequency tables; concept is introduced in Algebra 1 (AI-S.ID.5).

Highlights/Instructional Considerations
NY-8.NS.1 Part of standard has been removed; students do not need to convert a decimal expansion which repeats eventually into a rational number.

NY-8.EE.2 Additional expectation that students will know square roots of perfect squares up to 225 and cube roots of perfect cubes up to 125 and that the square root of a non-perfect square is irrational.

NY-8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.

NY-8.EE.4 Operations with numbers expressed in scientific notation have been limited to multiplication and division.

NY-8.EE.7b When solving linear equations with rational number coefficients, this includes equations that contain variables on both sides of the equation.

NY-8.EE.8a Additional expectation when working with solving systems of two linear equations in two variables graphically; students need to be able to recognize when the system has one solution, no solution, or infinitely many solutions.

NY-8.EE.8b Systems of equations will be limited to integer coefficients with at least one equation containing at least one variable whose coefficient is 1. Algebraic solution methods include elimination and substitution.

NY-8.EE.8c Systems of equations will be limited to integer coefficients with at least one equation containing at least one variable whose coefficient is 1. Algebraic solution methods include elimination and substitution.

NY-8.F.1 Function notation is not required. The terms domain and range may be introduced at this level; however, these terms are formally introduced in Algebra I (AI-F.IF.1).

NY-8.F.3 Students need to recognize examples of functions that are linear and non-linear, no longer give examples.

NY-8.G.1 Students should see that a translation displaces every point in the plane by the same distance and can be described using a vector, that a rotation requires knowing the center (point) of rotation and the measure of the angle of rotation, and that a line reflection requires a line and the knowledge of perpendicular bisectors.

NY-8.G.2 Modified definition of congruency to include that two-dimensional figures are congruent if corresponding angles and corresponding sides are congruent. When given two congruent figures, students will be describing a sequence that maps the congruence between them on the coordinate plane.

NY-8.G.3 Lines of reflection are limited to both axes and lines of the form $y = k$ and $x = k$, where k is a constant. Rotations are limited to 90 and 180 degrees about the origin. Unless otherwise specified, rotations are assumed to be counterclockwise.

NY-8.G.4 Modified definition of similarity to include that two-dimensional figures are similar if the corresponding angles are congruent and the corresponding sides are proportional. When given two similar two-dimensional figures, students will be describing a sequence that maps the similarity between them on the coordinate plane. With dilations, the center and scale factor must be specified.

NY-8.G.5 This standard does not include formal geometric proof. Multiple representations may be used to demonstrate understanding.

NY-8.G.6 Students need to understand a proof of the Pythagorean Theorem and its converse.

NY-8.G.9 Students will be given the formulas for the volume of cones, cylinders, and spheres.