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.

Standards **New** to Geometry

GEO-G.SRT.9 Justify and apply the formula A= $\frac{1}{2}$ ab sin (C) to find the area of any triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.

GEO-G.GPE.1b Graph circles given their equation. The center will be an ordered pair of integers and the radius a positive integer.

Standards **Moved** from Geometry

G-C.3 Standard has been removed, however content is covered in standards GEO-G.CO.12 (inscribed/circumscribed circles of a triangle) and GEO-G.C.2a (properties of angles for a quadrilateral inscribed in a circle).

Highlights/Instructional Considerations for Geometry

GEO-G.CO.2 This standard includes horizontal (transformation that changes only the horizontal length) and vertical (transformation that changes only the vertical length) stretches, and how dilations are a combination of both.

GEO-G.CO.4 (and 5) Both standards include point reflections. For standard GEO-G.CO.5, singular transformations that are equivalent to a sequence of transformations may be utilized, such as a glide reflection. However, glide reflections are not an expectation of the course. Sequence described needs to be reproducible. See additional notes.

GEO-G.CO.8 The criterion for triangle congruence include ASA, SAS, SSS, AAS and HL (Hypotenuse Leg).

GEO-G.CO.9 (10 and 11) Prove and apply theorems about lines, angles, triangles and parallelograms. Include multi-step proofs and algebraic problems built upon concepts.

GEO-G.CO.12 (and 13) Make, justify and apply formal geometric constructions. Includes constructions of transformations, see standard GEO-G.CO.5. Standard GEO-G.CO.12 is a fluency recommendation for Geometry.

GEO-G.SRT.3 The criterion for triangle similarity include AA , SAS and SSS .

GEO-G.SRT.4 Students will be proving and applying similarity theorems about triangles. This includes multi-step proofs and algebraic problems built upon these concepts, such as the centroid of a triangle dividing each median into segments that are in a ratio of 2:1.

GEO-G.SRT.5

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.

Highlights/Instructional Considerations (Cont.) for Geometry

GEO-G.GPE.5 Students will explore the proof for the relationship between the slopes of parallel lines and perpendicular lines and use the relationships to solve geometric problems. Explore requires the student to learn the concept through a variety of instructional activities, though mastery of the proof at this current level is not expected. Students will be expected to solve geometric problems based on the relationships explored. Fluency with the use of coordinates to establish geometric results is a fluency recommendation for Geometry.

GEO-G.GPE.6 The midpoint formula is a derivative of this standard (directed line segments).

GEO-G.GPE.7 Fluency with the use of coordinates to establish geometric results is a fluency recommendation for Geometry.

GEO-G.GMD.1 an expectation at this level, however still can be utilized for developing the formulas stated in the standard if a teacher so chooses.

GEO-G.GMD.4 Plane sections are not limited to being parallel or perpendicular t4i(p)-6(e)4(s o)-7(f)13( )-2(p)-6(a)4(ra)4(ll)-3(e)4(l)-4(li)9(n)-6(e)4(s a)3(ngg1 569.11 42re)4( )-4(