Figure 1.3

Sample Unit Progression for Eighth-Grade Geometry

Unit Plan: Twenty Instructional Days				
Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
8.G.1: I can verify experimentally the properties of rotations, reflections, and translations. Exploration Using Geometry Software Students will manipulate shapes through translations and reflections to make conjectures about their observations.	**8.G.1:** I can verify experimentally the properties of rotations, reflections, and translations. Exploration Using Geometry Software Students will manipulate shapes through rotations to make conjectures about their observations.	**8.G.1:** I can verify experimentally the properties of rotations, reflections, and translations. Informal Assessment Students create a transformation to prove the properties of transformations.	**8.G.1:** I can verify experimentally the properties of rotations, reflections, and translations. Students will engage in a final vocabulary activity using the Frayer Model to finalize understanding about the properties of transformations.	**8.G.2:** I can demonstrate the congruence of two-dimensional figures using the properties of rotations, reflections, and translations. Students will discuss congruence and begin creating congruent figures through translations.
Day 6	**Day 7**	**Day 8**	**Day 9**	**Day 10**
8.G.2: I can demonstrate the congruence of two-dimensional figures using the properties of rotations, reflections, and translations. Students will explore congruent figures that are reflected over the *x*-axis and *y*-axis.	**8.G.2:** I can demonstrate the congruence of two-dimensional figures using the properties of rotations, reflections, and translations. Students will explore congruent figures that are reflected over other lines.	**8.G.2:** I can demonstrate the congruence of two-dimensional figures using the properties of rotations, reflections, and translations. Students will explore rotations of shapes and identify if they are congruent.	**8.G.2:** I can demonstrate the congruence of two-dimensional figures using the properties of rotations, reflections, and translations. Students will create rotations that result in congruent figures and noncongruent figures using physical models and geometry software.	**8.G.2:** Informal Assessment I can demonstrate the congruence of two-dimensional figures using the properties of rotations, reflections, and translations. Students will create a sequence of transformations for a peer to decide if they are congruent.

Day 11	Day 12	Day 13	Day 14	Day 15
8.G.3: I can describe the effect of translations, rotations, and reflections on two-dimensional figures using coordinates. Students will apply their knowledge of transformations and learn how to use coordinates to describe a transformation or a series of transformations.	**8.G.3:** I can describe the effect of translations, rotations, and reflections on two-dimensional figures using coordinates. Students will apply their knowledge of transformations and learn how to use coordinates to describe a transformation or a series of transformations.	**8.G.4:** I can demonstrate that two figures are similar by using the properties of dilations, rotations, reflections, and translations of two-dimensional figures. Students will begin to explore the meaning of similar figures and the difference between similar and congruent.	**8.G.4:** I can demonstrate that two figures are similar by using the properties of ~~dilations, rotations~~, reflections, and translations of two-dimensional figures. Students will discuss how two figures can be similar using reflections and translations. They will examine examples and nonexamples.	**8.G.4:** I can demonstrate that two figures are similar by using the properties of ~~dilations~~, rotations, reflections, and translations of two-dimensional figures. Students will discuss how two figures can be similar using rotations, reflections, and translations. They will examine examples and nonexamples.
Day 16	**Day 17**	**Day 18**	**Day 19**	**Day 20**
8.G.3 (Part 2): I can describe the effect of dilations on two-dimensional figures using coordinates. Students will explore the effect of dilations on coordinates for two-dimensional figures using models and geometry software. Students will establish generalizations about effects.	**8.G.3 (Part 2) and 8.G.4:** I can describe the effect of dilations on two-dimensional figures using coordinates. Students will continue building their knowledge of dilations and how to represent the effect of a dilation using coordinates through various tasks.	**8.G.4:** I can describe a sequence of transformations between two figures that exhibits the similarity between them. Students will be given and will create a sequence of transformations between two figures and describe the sequence.	**Review for Unit 1** Students will combine all standards together.	**Assessment for Unit 1**

Notes for Unit 1

When working through each standard, we may not need to break up the learning targets by each transformation; however, it may also help students to take an in-depth look at each transformation. This is something we will monitor throughout the unit and make notes on for next year. Also, 8.G.1 will continue to be embedded throughout instruction in this unit. Before moving on to similarity, we will ensure all students have a solid understanding of congruence and how it relates to transformations. Most work and dialogue during this unit will occur in teams of four. Students will present their thinking and listen to the thinking and reasoning of others to fully develop their understanding and their demonstration for the overarching unit, Mathematical Practices 1, "Make sense of problems and persevere in solving them," and 4, "Model with mathematics."

Note: Crossed-out text indicates that only a certain portion of the standard is the focus.
Source: Adapted with permission from Aptakisic-Tripp CCSD 102, Buffalo Grove, Illinois.
Source for standards: National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common Core State Standards for mathematics. *Washington, DC: Authors. Accessed at www.corestandards.org/assets/CCSSI_Math%20Standards.pdf on February 7, 2014, pp. 55–56.*