

8th Grade Unit 1 Information

Transformations, Congruence, & Similarity

CRCT Domain & Weight: Geometry 17%

[Flip Book - Geometry](#)

[Overview of Unit 1](#)

[Prerequisites: Unit 1](#)

Unit Length: Approximately 23 days

[Checklist for Unit 1](#)

[Study Guide for Unit 1](#)

[Study Guide KEY for Unit 1](#)

Calculators may be used in this unit, but students must know how to compute answers without calculators as well as with.

Click on the links below for resources by Concept:

[Concept One: Rotations, Reflections, and Translations](#)

[Concept Two: Exhibiting Congruence of Figures Through Transformations](#)

[Concept Three: Dilations in the Coordinate Plane](#)

[Concept Four: Scale Factor, Length Ratios, and Area Ratios](#)

[Concept Five: Angle Sum in Triangles & Parallel Lines cut by Transversals](#)

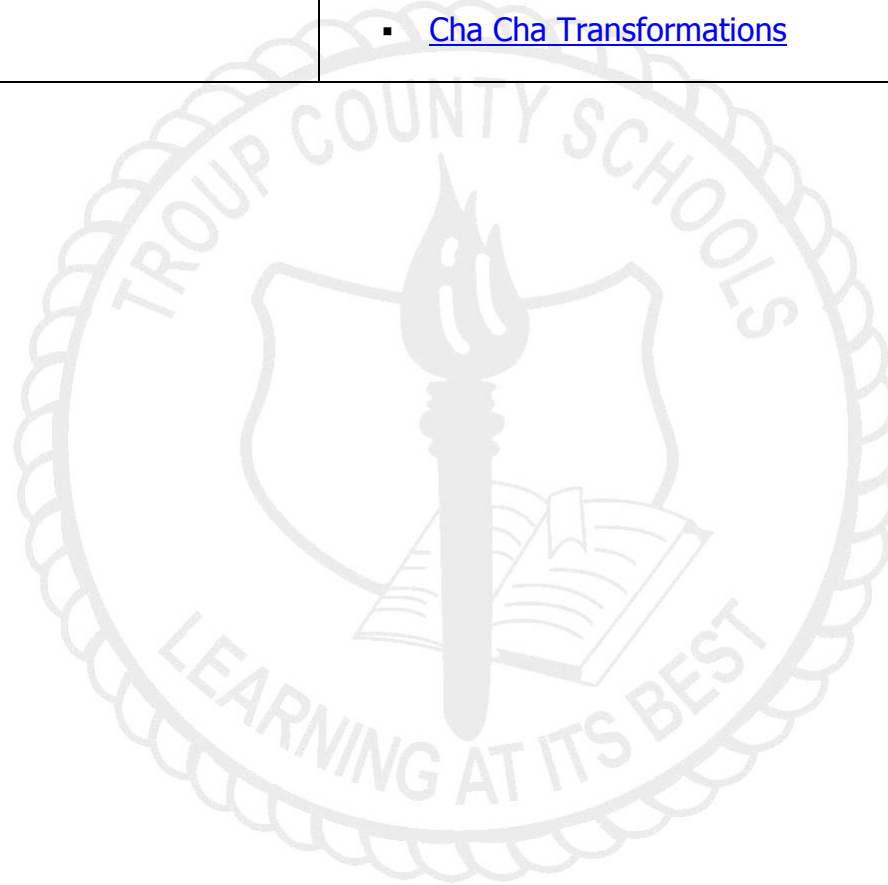
TCSS ~ Transformations, Congruence, & Similarity

Concept One: Rotations, Reflections, Translations			
Standard(s) & Essential Questions	Vocabulary	Resources	Assessment Examples
<p>MGSE8.G.1 Verify experimentally the congruence properties of rotations, reflections, and translations: lines are taken to lines and line segments to line segments of the same length; angles are taken to angles of the same measure; parallel lines are taken to parallel lines.</p> <p>EQ: What is the relationship between reflections, rotations, and translations?</p>	<ul style="list-style-type: none"> ▪ Angle of rotation ▪ Reflection ▪ Reflection line ▪ Rotation ▪ Transformation ▪ Translation 	<p>Activator – “Gangnam Style” https://www.youtube.com/watch?v=NKtJd1hkI9k</p> <ul style="list-style-type: none"> ▪ Eureka Math (2014 Common Core) License Concept One ~ TE SE ▪ CCGPS Frameworks: Introduction into Reflections, Translations, and Rotations ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) -Translations - p. 453-454; 455(omit #3); 456; 457(omit #5 & 6); 458-460 ▪ Translation Practice Worksheet ▪ Differentiated Translations: Use p. 460 18-20 Formative Assessment <ul style="list-style-type: none"> ○ Support/On Target SE TE ○ Extend ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) - Reflections - p. 461-462; 463(omit #3); 464(only #1 & 3); 465-467(omit #17); 468-472(assess) ▪ Reflection Practice Worksheet ▪ Differentiated Reflections: <ul style="list-style-type: none"> ○ Extend Reflections ○ Support/OnTarget Reflections <p>Continued on page 2...</p>	<p>MGSE.8.G.1</p> <p>Return to TOP</p>

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Concept One: Rotations, Reflections, Translations

Standard(s) & Essential Questions	Vocabulary	Resources	Assessment Examples
		<ul style="list-style-type: none"><li>▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) - Rotations - p. 475-478; 479(omit #3 & 5); 480-482(omit # 6 & 12)<li>▪ Cha Cha Transformations	



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Concept Two: Exhibiting Congruence of Figures Through Transformations			
Standard(s) & Essential Questions	Vocabulary	Resources	Assessment Examples
<p>MGSE8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.</p> <p>EQ: What information is necessary before I can conclude two figures are congruent?</p>	<ul style="list-style-type: none"> ▪ similar figures ▪ corresponding sides ▪ corresponding angles ▪ congruent figures 	<ul style="list-style-type: none"> ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 509 – 528 ▪ Rotation Practice Worksheet ▪ Differentiation Opportunity: <ul style="list-style-type: none"> ○ Shell FAL:Represent Transformations ▪ Patty Paper Geometry by Michael Serra, Key Curriculum Press (1994) pages 145-151 ▪ Differentiated Rotations: <ul style="list-style-type: none"> ○ Support SE TE ▪ Multiple Transformations Worksheet <ul style="list-style-type: none"> ○ May be done in pairs or individually ▪ Problem Solving Translations SE TE 	<p>MGSE.8.G.2</p> <p>Return to TOP</p>

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Concept Three: Dilations in the Coordinate Plane

Standard(s) & Essential Questions	Vocabulary	Resources	Assessment Examples
<p>MGSE8.G.3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.</p> <p>EQ: What is a dilation and how does this transformation affect a figure in the coordinate plane?</p>	<ul style="list-style-type: none"> ▪ Dilation 	<p>Activator – “Honey I Shrunk the Kids” video questions</p> <ul style="list-style-type: none"> • Eureka Math (2014 Common Core) License Concept Three ~ TE SE ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) - Dilations - p. 487-494 ▪ Differentiated Dilations: <ul style="list-style-type: none"> ○ Support Dilations SE TE ○ Extend Dilations SE TE ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 498 (FL5 for Foldable); p. 499-500 ▪ Station Activity Book ~ Transformations ▪ Dilations Worksheet ▪ CCGPS Frameworks: Coordinating Reflections SE TE ▪ CCGPS Frameworks: Coordinating Translations SE TE 	<p>MGSE.8.G.3</p> <p>Return to TOP</p>

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Concept 4: Scale Factor, Length Ratios, and Area Ratios			
Standard(s) & Essential Questions	Vocabulary	Resources	Assessment Examples
<p>MGSE8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.</p> <p>EQ: In what ways can I represent the relationships that exist between similar figures using the scale factors, length ratios, & and area ratios?</p>	<ul style="list-style-type: none"> ▪ scale Factor ▪ similar figures ▪ corresponding sides ▪ corresponding angles 	<ul style="list-style-type: none"> ▪ Eureka Math (2014 Common Core) License Concept Four ~ TE SE ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 537-544 ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 545-552 (<i>Notice it references dilations to prove similarity or asks us to determine how it was transformed. They should not spend a lot of time doing random similar figures. They should be tied to dilations & transformations.</i>) ▪ CCGPS Frameworks: Changing Shapes SE Changing Shapes TE ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 553-560 (<i>Approach these from the view of what they've learned about dilated figures.</i>) 	<p style="text-align: center;"><u>MGSE.8.G.4</u></p> <p style="text-align: center;"><u>Return to TOP</u></p>

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Concept Five: Angle Sum in Triangles & Parallel Lines cut by Transversals			
Standard(s) & Essential Questions	Vocabulary	Resources	Assessment Examples
<p>MGSE8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. <i>For example, arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so.</i></p> <p>EQ: When I draw a transversal through parallel lines, what are the special angle and segment relationships that occur?</p>	<p>Alternate Exterior Angles</p> <p>Alternate Interior Angles</p> <p>Linear pair</p> <p>Same-Side Interior Angles</p> <p>Same-Side Exterior Angles</p> <p>Transversal</p>	<ul style="list-style-type: none"> ▪ Eureka Math (2014 Common Core) License Concept Five ~ TE SE ▪ Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 369-396 ▪ Using Equations to Solve for Angle Relationships ▪ Station Activities Grade 8 ~ Angles ▪ Station Activities Grade 8 ~ Transversals ▪ Coach GPS Book Lesson 8 ▪ Angle Activity ▪ CCGPS Frameworks: Similar Triangles SE TE ▪ Equations to Find Angle Measurement ▪ GIFTED: Glencoe CCGPS Math Text (McGraw-Hill, 2013) p. 397-404 ▪ Transversals & Sticky Notes ▪ Tessellation Project 	<p style="text-align: center;"><u>MGSE.8.G.5</u></p> <p style="text-align: center;"><u>Return to TOP</u></p>