

## NJDOE MODEL CURRICULUM PROJECT

CONTENT AREA: Mathematics	Course: Geometry	UNIT #: 2	UNIT NAME: Similarity and Proof
---------------------------	---------------------	-----------	---------------------------------

#	STUDENT LEARNING OBJECTIVES	CORRESPONDING CCSS
<b>1</b>	Generate proofs that demonstrate that all circles are similar.	<b>G.C.1</b>
<b>2</b>	Justify the properties of dilations given by a center and a scale factor. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged (the dilation of a line segment is longer or shorter in the ratio given by the scale factor).	<b>G.SRT.1</b>
<b>3</b>	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	<b>G.SRT.2</b>
<b>4</b>	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	<b>G.SRT.3</b>
<b>5</b>	Prove theorems about triangles.	<b>G.CO.10, G.SRT.4</b>
<p>G.CO.10 (Triangles): <i>Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i></p> <p>G.SRT.4 (Triangles): <i>Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.</i></p>		

**Major Content** **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

**Bold type indicates grade level fluency requirements.** (Identified by PARCC Model Content Frameworks).

## NJDOE MODEL CURRICULUM PROJECT

CONTENT AREA: Mathematics	Course: Geometry	UNIT #: 2	UNIT NAME: Similarity and Proof
---------------------------	---------------------	-----------	---------------------------------

### Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. **Reason abstractly and quantitatively.**  
SLO 1 Proof of the similarity of specific circles used to reason about the similarity of all circles.
3. **Construct viable arguments and critique the reasoning of others.**  
SLO 5 Construct proofs about triangles using assumptions, definitions, and previously established theorems.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. **Look for and make use of structure.**  
SLO 3 Use the definition of rigid transformations to determine if two figures are similar.
8. Look for and express regularity in repeated reasoning.

*\*All of the content presented in this course has connections to the standards for mathematical practices.*

***Bold type identifies possible starting points for connections to the SLOs in this unit.***

Code #	Common Core State Standards
G.C.1	Prove that all circles are similar.
G.SRT.1	Verify experimentally the properties of dilations given by a center and a scale factor. <ol style="list-style-type: none"> <li>a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.</li> <li>b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.</li> </ol>
G.SRT.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

## NJDOE MODEL CURRICULUM PROJECT

CONTENT AREA: Mathematics	Course: Geometry	UNIT #: 2	UNIT NAME: Similarity and Proof
---------------------------	---------------------	-----------	---------------------------------

<b>G.SRT.3</b>	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
<b>G.SRT.4</b>	Prove theorems about triangles. <i>Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.</i>
<b>G.CO.10</b>	Prove theorems about triangles. <i>Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i>

**Major Content** **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).  
**Bold type indicates grade level fluency requirements.** (Identified by PARCC Model Content Frameworks).