



Topic C:

The Pythagorean Theorem

8.G.B.6, 8.G.B.7, 8.G.B.8

Focus Standard:	8.G.B.6	Explain a proof of the Pythagorean Theorem and its converse.
	8.G.B.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
	8.G.B.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
Instructional Days:	4	
	Lesson 15: Pythagorean Theorem, Revisited (S) ¹	
	Lesson 16: Converse of the Pythagorean Theorem (S)	
	Lesson 17: Distance on the Coordinate Plane (P)	
	Lesson 18: Applications of the Pythagorean Theorem (E)	

In Lesson 15, students engage with another proof of the Pythagorean Theorem. This time, students compare the areas of squares that are constructed along each side of a right triangle in conjunction with what they know about similar triangles. Now that students know about square roots, students can determine the approximate length of an unknown side of a right triangle even when the length is not a whole number. Lesson 16 shows students another proof of the converse of the Pythagorean Theorem based on the notion of congruence. Students practice explaining proofs in their own words in Lessons 15 and 16 and apply the converse of the theorem to make informal arguments about triangles as right triangles. Lesson 17 focuses on the application of the Pythagorean Theorem to calculate the distance between two points on the coordinate plane. Lesson 18 gives students practice applying the Pythagorean Theorem in a variety of mathematical and real-world scenarios. Students determine the height of isosceles triangles, determine the length of the diagonal of a rectangle, and compare lengths of paths around a right triangle.

¹ Lesson Structure Key: **P**-Problem Set Lesson, **M**-Modeling Cycle Lesson, **E**-Exploration Lesson, **S**-Socratic Lesson