

Math Learning Goal Graphic Organizer

THE HOW - Recognizing & Monitoring Serve as a guidepost for teachers to make instructional decisions during the enactment of the lesson	THE WHAT - Content based decisions (complexity) Help teachers make instructional content-based decisions before stepping into the classroom
How will students understand? Use manipulatives to explore right triangles Solve for a missing side length of a right triangle given the other two	Original Learning Goal: Students will understand the Pythagorean Theorem. What about the Pythagorean Theorem? $a^2+b^2=c^2$
How will students use manipulatives? In triads To determine what side lengths form right triangles How will students show their work? Use pictures/diagrams, words, and equations	Students will use manipulatives to explore the relationship between the three sides of a right triangle. Students will use $a^2+b^2=c^2$ to find a missing side length of a right triangle. Students will show their work. What about the relationship between three sides of a right triangle? x^2 represents a square with side length x The area of the square built on the hypotenuse of a right triangle is equal to the sum of the areas of the squares built on the legs.
Revised Learning Goal: Student triads will use manipulatives to investigate which combinations of side lengths form right triangles and then extend their explorations to include right triangles they cannot build. Students will then develop a conjecture that the area of the square built on the hypotenuse of a right triangle is equal to the sum of the areas of the squares built on the legs. They will use words, pictures/diagrams, and equations to justify their strategies and make sense of others' solutions.	

Note. Learning goal adapted from *5 Practices for Orchestrating Productive Mathematics Discussions* (2nd ed., pp. 25–26), by M. S. Smith and M. K. Stein, 2018, National Council of Teachers of Mathematics.