

## Square Roots and Pythagorean Theorem (MMS Unit 1)

SCO: **N1: Demonstrate an understanding of perfect squares and square roots, concretely, pictorially and symbolically (limited to whole numbers).**

### ACHIEVEMENT INDICATORS

- Represent a given perfect square as a square region using materials, such as grid paper or square shapes.
- Determine the factors of a given perfect square, and explain why one of the factors is the square root and the others are not.
- Determine whether or not a given number is a perfect square using materials and strategies, such as square shapes, grid paper or prime factorization, and explain the reasoning.
- Determine the square root of a given perfect square and record it symbolically.
- Determine the square of a given number.

SCO: **N2: Determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).**

### ACHIEVEMENT INDICATORS

- Estimate the square root of a given number that is not a perfect square using the roots of perfect squares as benchmarks.
- Approximate the square root of a given number that is not a perfect square using technology, e.g., calculator, computer.
- Explain why the square root of a number shown on a calculator may be an approximation.
- Identify a number with a square root that is between two given numbers.

SCO: **SS1: Develop and apply the Pythagorean Theorem to solve problems.**

### ACHIEVEMENT INDICATORS

- Model and explain the Pythagorean Theorem concretely, pictorially or using technology, and symbolically.
- Explain, using examples, that the Pythagorean Theorem applies only to right triangles.
- Determine whether or not a given triangle is a right triangle by applying the Pythagorean Theorem.
- Determine the measure of the third side of a right triangle, given the measures of the other two sides, to solve a given problem.  
Solve a given problem that involves Pythagorean triples, e.g., 3, 4, 5 or 5, 12, 13.