Grade 8 - Unit 1 Square Roots and Pythagorean Theorem

N02 Students will be expected to determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).

Performance Indicators

N02.01 Estimate the square root of a given number that is not a perfect square, using materials such as square shapes and graph paper and strategies such as using the roots of perfect squares as benchmarks.

N02.02 Approximate the square root of a given number that is not a perfect square using technology (e.g., a calculator or a computer).

N02.03 Explain why the square root of a number shown on a calculator may be an approximation.

N02.04 Identify a number with a square root that is between two given numbers.

Limited	Developing	Competent	In-Depth
Student can draw and find the area of a square, given the side length.	Student can draw squares to help visualize an estimate of a square root between two squares.	Student can estimate the square root of a given number that is not a perfect square, using materials such as square shapes and graph paper and strategies such as using the roots of perfect squares as benchmarks.	Student can explain why square numbers get further apart on the number line as the numbers increase in value.
Student can build the square with the largest area possible given a number of square tiles (e.g. given 22 tiles, Student can build a square with an area of 16 with 6 tiles left over).	Student can differentiate between whole numbers that are perfect squares and non- perfect squares.	Student can approximate the square root of a given whole number that is not a perfect square using technology (e.g., a calculator or a computer) and explain why it is an approximation.	
Student knows that a perfect square is the product of two identical factors.	Student can list the perfect square benchmarks from 1 to 144 and their square roots.	Student can identify a number with a square root that is between two given numbers.	