



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework \(SOL\)](#)

[Bridging Standards of Learning \(SOL\) for Grade 7](#)

Standard of Learning (SOL) 7.1d Determine square roots of perfect squares



Student Strengths	Bridging Concepts	Standard of Learning
Students can recognize and represent patterns with perfect squares.	Students can understand the connection between a geometric square, a perfect square, and a square root.	Students can determine square roots of perfect squares.

Understanding the Learning Trajectory
Big Ideas: - A perfect square is a whole number whose square root is an integer. - A square root of a number is a number which, when multiplied by itself, produces the given number. - The square root of a number can be represented geometrically as the length of a side of a square.
Formative Assessment: Just in Time Mathematics Quick Check 7.1d Word Just in Time Mathematics Quick Check 7.1 PDF Just in Time Mathematics Quick Check 7.1 Desmos
Important Assessment Look Fors: - The student correctly determined the values that are perfect squares. - The student correctly determined the values that are not perfect squares. - The student justifies reasoning for determining whether the values were perfect squares or not. - The student justifies reasoning using connections to the area of a geometric square and its square roots.
Purposeful Questions: - How did you determine the missing value for the perfect square or square root? - Can you justify using a picture? - How would you justify your answers using words?

Bridging Activity to Support Standard	Instructional Tips
Routine Which one doesn't belong? Number 1 Activity	The purpose is to make sure they understand perfect squares and their square roots. They need to justify their answers.
Rich Tasks Odd Numbers task From the MARS Task Collection p. 52-54	The Odd Numbers Task document includes the student task and teacher notes with a rubric for grading. These formative performance assessment tasks were designed by the Mathematics Assessment Resource Service (MARS) , a project of UC Berkeley, Michigan State, and the Shell Centre in Nottingham England.
Games/Tech MathKite Math-Play Concentration Desmos 7.1d Squares and Square Roots	The first game includes the concept of the factors of square numbers. The second game is a concentration game where the students match the square root with the perfect square. In this activity, students will explore the relationship between the area and side length of a square, then match squares to square roots.
Other Resources: • VDOE Mathematics Instructional Plans (MIPS) ◦ 7.1d - Square Roots (Word) / PDF Version • VDOE Algebra Readiness Formative Assessments ◦ SOL 7.1d (Word) / PDF • VDOE Algebra Readiness Remediation Plans ◦ Square Roots (Word) / PDF • VDOE Word Wall Cards: Grade 7 (Word) (PDF) ◦ Perfect Squares ◦ Square Root • Desmos Activity ◦ Squares and Square Roots Learning Trajectory Resources Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). <i>Elementary and Middle School Mathematics: Teaching Developmentally</i> . (10th edition) New York: Pearson(2019:9780134802084) Curriculum Framework for All Grades - Standard of Learning Curriculum Framework (SOL) Common Core Standards Writing Team. (2019). Progressions for the Common Core State Standards for Mathematics . Tucson, AZ: Institute for Mathematics and Education, University of Arizona. Charles, R., (2005). Big Ideas and Understandings as the Foundation for Elementary and Middle School Mathematics . <i>Journal of Mathematics Education Leadership</i> , 7,(3), NCSM.	