

ZMATH 2016d.00694

Wiesman, Jeff L.

Enhancing students' understanding of square roots.

Math. Teach. Middle Sch. 20, No. 9, 556-558 (2015).

Summary: Students enrolled in a middle school prealgebra or algebra course often struggle to conceptualize and understand the meaning of radical notation when it is introduced. For example, although it is important for students to approximate the decimal value of a number such as $\sqrt{30}$ and estimate the value of a square root in the form of $a\sqrt{b}$, many would struggle with such assignments. Similarly, students frequently have difficulties understanding, remembering, and applying the properties of radicals. As a result, Jeff Wiesman developed an engaging and interactive activity to improve students' knowledge of this foundational mathematical principle. This activity provides an opportunity for students to strengthen their number sense and their ability to estimate, which are skills valued by the Common Core State Standards for Mathematics (CCSSM), NCTM Standards, and local curricula. To be sure, CCSSM standards for eighth-grade mathematics include truncating the decimal expansion of a square root, comparing the size of irrational numbers with rational numbers, and locating an irrational number on a number line. Students enjoy this lesson because it includes a competitive component, which often enhances student motivation. By using an innovative technique to develop students' conceptual understanding of radicals, Wiesman is also able to promote situational interest and, therefore, improve students' intrinsic motivation to learn. Finally, this activity can be used to provide additional practice, feedback, and clarification, which can all help to develop more efficacious students. (ERIC)

Classification: H20 F50 D70

Keywords: square roots; understanding; misconceptions; student errors

<http://www.nctm.org/Publications/Mathematics-Teaching-in-Middle-School/2015/Vol20/Issue9/Enhancing-Students-Understanding-of-Square-Roots/>