



Bridging for Math Strength Resources

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

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

Standard of Learning (SOL) 7.1b Compare and order numbers greater than zero written in scientific notation



Student Strengths	Bridging Concepts	Standard of Learning
Students can compare and order positive rational numbers.	Students can convert between numbers in scientific notation and standard form.	Students can compare and order numbers greater than zero written in scientific notation.

Understanding the Learning Trajectory

Big Ideas:

- Students develop the understanding that scientific notation should be used whenever the situation calls for use of very large or very small numbers.
- A number written in scientific notation is the product of two factors — a decimal greater than or equal to 1 but less than 10, and a power of 10.
- Smaller numbers always lie to the left of larger numbers on the number line.

[Math Strength Instructional Video 7.1b](#)

Formative Assessment:

- [Just in Time Mathematics Quick Check 7.1b Word](#)
- [Just in Time Mathematics Quick Check 7.1b Desmos](#)
- [Just in Time Mathematics Quick Check 7.1b PDF](#)

Important Assessment Look Fors:

- The student correctly compared numbers written in scientific notation that had the same exponents.
- The student correctly compared numbers written in scientific notation that had negative exponents.
- The student was able to justify their reasoning.

Purposeful Questions:

- How are numbers written in scientific notation with positive powers of ten different than those with negative powers of ten?
- How did you know which was the smallest number?
- How did you know which was the largest number?
- Are powers of ten with a negative exponent negative or positive numbers? Explain how you know.

Bridging Activity to Support Standard	Instructional Tips
Routine adapted from Between 2 Numbers	Use the B2N #4 Superman question. This is a prompt to get them started using very large numbers.
Rich Tasks VDOE Rich Mathematical Task Grade 7 7.1b Scientific Notation Rich Math Task	This task is designed to deepen understanding of converting between numbers written in standard form and scientific notation, and comparing and ordering numbers written in scientific notation.
Games/Tech Scientific Notation Jeopardy Game - Math Play Desmos 7.1b Scientific Notation	This game allows students to rehearse converting between numbers written in standard form and scientific notation and can be played with multiplayer or alone and get immediate feedback. Students are introduced to scientific notation and asked to sort and order sets of very large or very small numbers, and then a combination of the two.
Other Resources: • Desmos ◦ Scientific Notation Desmos Activity ◦ 7.1b – Scientific Notation • VDOE Mathematics Instructional Plans (MIPS) ◦ 7.1b - Scientific Notation (Word) / PDF Version • VDOE Co-Teaching Mathematics Instruction Plans (MIPS) ◦ 7.1b - Scientific Notation (Word) / PDF Version • VDOE Algebra Readiness Formative Assessments ◦ SOL 7.1b (Word) / PDF • VDOE Algebra Readiness Remediation Plans ◦ Beyond a Million (Word) / PDF ◦ Index Card Game (Word) / PDF ◦ Order Scientific Notation (Word) / PDF ◦ Scientific Notation (Word) / PDF • VDOE Word Wall Cards: Grade 7 (Word) (PDF) ◦ Scientific Notation ◦ Comparing Numbers in Scientific Notation • Other VDOE Resources ◦ 7.1b – Scientific Notation [eMediaVA] [Slides 1 and 2]	

Learning Trajectory Resources:

Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. *Journal of Mathematics Education Leadership*, 7(3), NCSM.

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.

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and Middle School Mathematics: Teaching Developmentally*. (10th edition) New York: Pearson (2019:9780134802084)

VDOE Curriculum Framework for All Grades - [Standard of Learning Curriculum Framework \(SOL\)](#)