



# 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.

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**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                                                                                                                                                                                                                                                                                                                                              |
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| <b>Routine adapted from</b><br><a href="#">Between 2 Numbers</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Use the B2N #4 Superman question. This is a prompt to get them started using very large numbers.                                                                                                                                                                                                                                                                |
| <b>Rich Tasks</b><br>VDOE Rich Mathematical Task Grade 7<br><a href="#">7.1b Scientific Notation Rich Math Task</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 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.                                                                                                                                                                |
| <b>Games/Tech</b><br><a href="#">Scientific Notation Jeopardy Game - Math Play</a><br><br><a href="#">Desmos 7.1b Scientific Notation</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>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.</p> <p>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.</p> |
| <b>Other Resources:</b> <ul style="list-style-type: none"><li>• Desmos<ul style="list-style-type: none"><li>◦ <a href="#">Scientific Notation Desmos Activity</a></li><li>◦ <a href="#">7.1b – Scientific Notation</a></li></ul></li><li>• VDOE Mathematics Instructional Plans (MIPS)<ul style="list-style-type: none"><li>◦ 7.1b - Scientific Notation (Word) / <a href="#">PDF Version</a></li></ul></li><li>• VDOE Co-Teaching Mathematics Instruction Plans (MIPS)<ul style="list-style-type: none"><li>◦ 7.1b - Scientific Notation (Word) / <a href="#">PDF Version</a></li></ul></li><li>• VDOE Algebra Readiness Formative Assessments<ul style="list-style-type: none"><li>◦ <a href="#">SOL 7.1b</a> (Word) / <a href="#">PDF</a></li></ul></li><li>• VDOE Algebra Readiness Remediation Plans<ul style="list-style-type: none"><li>◦ <a href="#">Beyond a Million</a> (Word) / <a href="#">PDF</a></li><li>◦ <a href="#">Index Card Game</a> (Word) / <a href="#">PDF</a></li><li>◦ <a href="#">Order Scientific Notation</a> (Word) / <a href="#">PDF</a></li><li>◦ <a href="#">Scientific Notation</a> (Word) / <a href="#">PDF</a></li></ul></li><li>• VDOE Word Wall Cards: Grade 7 (<a href="#">Word</a>)   (<a href="#">PDF</a>)<ul style="list-style-type: none"><li>◦ Scientific Notation</li><li>◦ Comparing Numbers in Scientific Notation</li></ul></li><li>• Other VDOE Resources<ul style="list-style-type: none"><li>◦ <a href="#">7.1b – Scientific Notation [eMediaVA]</a> [Slides 1 and 2]</li></ul></li></ul> |                                                                                                                                                                                                                                                                                                                                                                 |

**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 \(SOL\)](#)