



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework](#)

Standard of Learning (SOL) 4.1b Compare and order whole numbers expressed through millions.



Student Strengths	Bridging Concepts	Standard of Learning
Students can compare 4 digit numbers. Students can order no more than three whole numbers with 4 digits or less.	Students are able to identify the place and value of each digit. Students can represent numbers in a variety of ways including base ten blocks and number lines.	Students can compare and order whole numbers expressed through millions.

Understanding the Learning Trajectory

Big Ideas:

- When comparing numbers, students need to develop a sense of the relative size of numbers. For example, understanding that 185 is greater than 15, but less than 1,219 and is about the same as 179. (Van de Walle et al., 2018)
- Number sense is flexible thinking about numbers and their relationships. Numbers are related to each other in a variety of ways. The number 67 is more than 50, 3 less than 70, and composed of 60 and 7 as well as 50 and 17. When thinking about the number 67 in a variety of forms, we are able to apply these skills to estimation and computation. (Teaching Student-Centered Mathematics)
- Knowing the value of each place and the period of a number helps students when determining the value of digits in any number and is important to understand when comparing and ordering numbers. (VDOE Grade 4 Curriculum Framework)

Formative Assessment:

- VDOE Just in time Quick Check SOL 4.1b [PDF](#) / [Desmos](#)

Important Assessment Look Fors:

- Students can compare numbers with a variety of different place value digits.
- Students can use the symbols equal (=) and not equal ($\neq$) when comparing numbers in a variety of forms.
- The student can order numbers from least to greatest and/or greatest to least.
- The students can compare two whole numbers using the correct symbols and terms.

- The student can compare and/or order numbers where the digits in the greatest place value is equivalent, requiring students to compare the value of digits in a different place value.

Purposeful Questions:

- Can you explain why this number is greater? Can you explain why this number is less than?
- Can you create a number that is greater than the given number?
- What strategies did you use when ordering these numbers from least to greatest? Greatest to least?
- Explain the strategy you used to compare the two given numbers.
- Which symbol can be used when comparing these two numbers to make this statement true?

Bridging Activity to Support Standard	Instructional Tips								
Routine Clothesline Math	Clothesline Math is a number sense routine that students could explore when comparing and ordering whole numbers on a number line. The Clothesline is a manipulatable number line that encourages number sense and strategies when placing the numbers. Student or groups of students are given a set of numbers to be properly placed on a hanging number line. This number sense routine provides opportunities for class discussion and connects other place value skills. Example of Cards (students should folder on the dotted line in order to hang on the numbers on the clothesline) <table><tr><td></td><td></td><td></td><td></td></tr><tr><td>1,098,903</td><td>983,907</td><td>1,005,999</td><td>987,235</td></tr></table>					1,098,903	983,907	1,005,999	987,235
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Rich Tasks Ordering 4-Digit Numbers Adapted from Illustrative Mathematics task	Illustrative Mathematics created a task on ordering multi-digit numbers. It is a common misconception for students to just compare the first digit, then the second digit, and so on. This task includes three-digit numbers with large hundreds digits and four-digit numbers with small thousands digits so that students must infer the presence of a 0 in the thousands place in order to compare. It also includes numbers with strategically placed zeros and an unusual request to order them from greatest to least in addition to the more traditional least to greatest. This task would be great to use in the beginning of the unit.								
Games/Tech Build the greatest number game Desmos 4.1b Comparing Whole Numbers	See who can build the greatest number In this activity, students are asked to pick a number to put in the blank to make the statement true and explain their thinking. They are also asked to identify numbers that are greater or less than others and explain their thinking.								
Other Resources: • VDOE Mathematics Instructional Plans (MIPS) ◦ 4.1ab - Mystery Numbers: Number Sense (Word) / PDF Version • VDOE Word Wall Cards: Grade 4 (Word) (PDF) ◦ Place Value Position ◦ Less Than									

- Greater Than
- Equal To
- Equality
- Inequality

- [Virtual Manipulatives Base Ten Blocks](#)

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.
- Clements, D. H., & Sarama, J. (2019). Learning and teaching with learning trajectories [LT]2. Marsico Institute, Morgridge College of Education, University of Denver. <https://www.learningtrajectories.org/>
- 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.
- Richardson, K. (2012). How Children Learn Number Concepts: A Guide to Critical Learning Phases. Bellingham: Math Perspectives Teacher Development Center.
- 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 \(SOL\)](#)