Bridging for Math Strength Resources

Standards of Learning Curriculum Framework(SOL)

Bridging Standards of Learning (SOL) for Grade 7

Standard of Learning (SOL) 7.1c Compare and order rational numbers

Student Strengths	Bridging Concepts	Standard of Learning
Students can compare and order fractions, mixed numbers, and/or decimals, in a given set from least to greatest and greatest to least.	Students can compare and order positive rational numbers.	Students can compare and order rational numbers without the use of a calculator.

Understanding the Learning Trajectory

Big Ideas:

- Rational numbers may be expressed as positive and negative fractions or mixed numbers, positive and negative decimals, integers and percents.
- Equivalent relationships among fractions, decimals, and percents may be determined by using concrete materials and pictorial representations.
- Since fractions, decimals and percents are essentially the same numbers in different forms, they can be compared and ordered. Fractions, decimals, and percents can be compared and ordered using a variety of strategies including using benchmarks (0, halves, wholes), naming equivalencies, and other reasoning strategies.
- Negative numbers lie to the left of zero and positive numbers lie to the right of zero on a number line. Smaller numbers always lie to the left of larger numbers on the number line. Rational numbers can be compared using greater than, less than, or equal.

Formative Assessment:

- Just in Time Mathematics Quick Check 7.1c Word
- Just in Time Mathematics Quick Check 7.1c Desmos
- Just in Time Mathematics Quick Check 7.1c PDF

Important Assessment Look Fors:

- The student is able to compare rational numbers using greater than, less than, or equal to symbols.
- The student is able to compare negative rational numbers.
- The student can use a model to help show the relationship between equivalent rational numbers.
- The student can determine the relationship between rational numbers and their location on the number line.

Purposeful Questions:

- How is it possible to compare/order numbers that are represented in different formats?
- How can you determine whether a number is equivalent to, greater than, or less than another number?
- How can understanding benchmark numbers, such as ½, help when comparing rational numbers?
- Where might you place these numbers on the number line?

Bridging Activity to Support Standard	Instructional Tips
Routine Clothesline Math	Clothesline is a manipulatable number line that makes the facilitation of class discourse on number sense. Since rational numbers may be expressed as positive and negative fractions or mixed numbers, positive and negative decimals, integers and percents, make cards that represent these different forms of rational numbers to compare on the number line and have students agree, disagree and move cards on the number line based on class discussion.
Rich Tasks Battery Problem	Students will use the context of a smartphone battery to estimate, explore, and learn equivalencies of percents, decimals, and fractions.
Games/Tech Fractions, Decimals and Percents Desmos Activity Desmos 7.1c Order Rational Numbers	In this activity, students sort models, fractions, decimals and percents. Students will also order fractions, decimals, and percents. In this activity, students sort sets of rational numbers on a number line to build relationships between the values of rational numbers

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
  - 7.1c - Ordering Fractions, Decimals, and Percents (Word) / PDF Version
- VDOE Algebra Readiness Formative Assessments
  - SOL 7.1c (Word) / PDF
- VDOE Algebra Readiness Remediation Plans
  - Zero, Half, Whole? (Word) / PDF
- VDOE Word Wall Cards: Grade 7 (Word) | (PDF)
  - Rational Numbers
  - Comparing Rational Numbers
- Other VDOE Resources
  - 7.1c – Rational Numbers on the Number Line [eMediaVA] [Slides 3 and 4]

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)