Bridging for Math Strength Resources

Standards of Learning Curriculum Framework (SOL)

Bridging Standard of Learning (SOL) 4.3c Compare and order decimals.

Student Strengths	Bridging Concepts	Standard of Learning
Students can compare and order whole numbers with similar numbers of digits and/or smaller numbers.	Students use understanding of the ten-to-one base ten relationships to create decimal representations (i.e., base ten blocks, decimal circles/squares, etc.).	Students can compare and order decimals.

Understanding the Learning Trajectory

Big Ideas:

- This standard builds upon the work students did in previous grades in understanding place value and comparing and ordering whole numbers. In grade 4, in addition to comparing greater numbers, students began relating decimal fractions and decimal numbers and comparing decimals using visual models. The place value understanding that supports the ability to compare decimals also supports the understanding of rounding decimals, which is introduced in grade 5 as SOL 5.1.
- Concepts of whole numbers, fractions, and decimals are connected and applied when comparing and ordering.
- Using manipulatives to construct decimals helps students develop an understanding of the relative size of decimal numbers for comparing and ordering.
- It is important for students to connect decimal number sense concepts such as representations, decimals benchmarks, and/or fractions when comparing and ordering decimals.

Formative Assessment:

- VDOE Just in Time Mathematics Quick Check 4.3c (PDF)
- VDOE Just in Time Mathematics Quick Check 4.3c (Desmos)

Important Assessment Look Fors:

- The student can compare decimals with different amounts of digits. (Example 0.9 and 0.234)
- The student can justify which decimal is larger or smaller using a variety of strategies that focus on number sense such as models, decimal benchmarks and/or identifying the value of the greatest place value.
- The student can order decimals least to greatest or greatest to least.

- The student can apply a variety of strategies when ordering decimals with similar digits and/or different amounts of digits. (Example: 0.9; 0.901; 0.09; 0.009)

Purposeful Questions:

- How did you determine an equivalent decimal?
- What strategy did you use to determine which decimal is the greatest and which one is the least? Explain your thinking.
- Which decimal(s) can be placed in the space provided so that the decimals are in order from least to greatest? (Example: 0.142; 0.45 _____; 0.8)
- Compare the following decimals using two different strategies to justify which one is greater or least.

Bridging Activity to Support Standard	Instructional Tips
Routines: Clothesline Math	The Clothesline Math routine allows for a variety of decimals that can be given to a group of students or class. Each decimal should be strategically chosen based on benchmarks such as close to 0, half, or whole. The decimal can be written on folded paper and then properly placed on a hanging number line. Encourage class discussions on placements of decimals and strategies used to determine the order.
Decimal In Between from Howard County Public Schools	In the Decimal in Between routine, the teacher gives the students two decimals using the two numbers as endpoints on a number line. Each student must find a decimal number that falls between the two given numbers. Students are also asked to identify the location where their decimal would fall on the number line and justify their thinking. This activity can be modified to use two whole numbers, fractions, or combinations of these.
Close, Far, In Between from Teaching Student-Centered Mathematics (Van de Walle) posted by Howard County Public Schools	The Close, Far, In Between routine focuses on number sense development and relative magnitude. Three numbers are displayed for students to consider and use during the routine. Using these three numbers as referents, ask questions and encourage class discussions. Sample questions include: ● Which two are closest? Why? ● Which is closest to 1 whole? To ½ ? To 0? ● Name a fraction/decimal between ____ and _____.
Rich Tasks: Taco Tuesday from VDOE	In this task, students will compare distances (measured in fractions and decimals) between various locations. The purpose of this task is for students to represent and use benchmarks to compare fractions and decimals in a real world context, and to justify their reasoning.
Games: Decimal Compare Decimals In Between From Investigations	The Investigations website offers a variety of games that focus on decimal number sense such as comparing and ordering decimals.

Other Resources:

- Links to interactive manipulatives:
  - Base Ten Blocks
  - Decimal Strips

    - Decimal Place Value Disks
    - Decimal Place Value Mat
- VDOE Mathematics Instructional Plans (MIPS)
    - 4.3c - Comparing Decimals (Word) / PDF Version
- VDOE Word Wall Cards: Grade 4 (Word) | (PDF)
    - Decimal Place Value Position
    - Less Than
    - Greater Than
    - Equal To
    - Equality
    - Inequality

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)