



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework](#)

Standard of Learning (SOL) 4.6b Solve single-step and multistep practical problems involving addition and subtraction with decimals



Student Strengths	Bridging Concepts	Standard of Learning
Students can estimate and determine the sum or difference of two whole numbers. Students can create and solve single-step and multistep practical problems involving sums or differences of two whole numbers, each 9,999 or less.	Students can understand decimal place value and the role of the decimal point.	Students can solve single-step and multistep practical problems involving addition and subtraction with decimals.

Understanding the Learning Trajectory

Big Ideas:

- In mathematics, emphasis should be placed on representing the problem and applying reasoning to understand it rather than relying on keywords. (See [Grade 4 VDOE Standards of Learning Document](#) p.24)
- Addition and subtraction with decimals are based on the fundamental concept of adding and subtracting the numbers in like position values- a simple extension from whole numbers (Van de Walle et al., 2018).
- The problem-solving process is enhanced when students create and solve their own practical problems and model problems using manipulatives and drawings. (See [Grade 4 VDOE Standards of Learning Document](#) p.24) [Math Strength Instructional Video 4.6b](#)

Formative Assessment:

- [Just in Time Mathematics Quick Check 4.6b PDF](#)
- [Just in Time Mathematics Quick Check 4.6b Desmos](#)

Important Assessment Look Fors:

- Student creates a problem using the given information.
- Student represents the problem they created and the representation matches the way they solved it.
- Student work shows that they understand the problem because they have planned an approach to solve the

problem and/or a way to represent their thinking.

- Student work shows that they understand what each number in the problem represents.
- Student work shows that they understand what operations can be used, the meaning behind the operation or how the operations are related.
- Student work demonstrates an understanding of decimal place value.

Purposeful Questions:

- How did you represent your thinking? How do you know it matches the story?
- Is there another way that you could solve this problem?
- Does your solution make sense? Explain your answer.
- What equation/number sentence matches your thinking?
- What operations did you decide to use? Why?
- Why is place value important when adding or subtracting whole numbers and decimal numbers?

Bridging Activity to Support Standard	Instructional Tips
Routines: Notice and Wonder Math in Our World: Pedaling Power Same & Different: Race Results Math Learning Center	Notice and Wonder is a routine where you display an image and ask student's "what do you notice?" Allow time for students to think about and respond to the question, then ask "what do you wonder?" Questions to ask students: • What do you notice? What do you wonder? • Use pictures, models or numbers to show what you know about the situation. • What mathematical questions can you ask about this situation? Click here for more information: Notice and Wonder routine In Same & Different, display pictures A and B and ask students to think about how they are the same and how are they different. Provide students with time to think. Then have the student share their thinking while the teacher records students' ideas on the board using a T-chart. The discussion should lead to the idea of decimal place value and the importance of each digit. This game prepares students for the game Close to 1. Click here for more information: Same and Different routine
Rich Tasks: Applying Whole Number Addition and Subtraction Strategies Fairfax County Public Schools Lunch at Leonardo's	The Applying Whole Number Strategies task helps students see the relationship between adding and subtracting whole numbers and adding and subtracting decimal numbers. In the Lunch at Leonardo's task, students will use estimation and operations with decimal numbers to plan a lunch purchase, calculate the actual cost of the lunch purchase, and determine the amount of change received after the purchase
Games/Tech: Close to 1 Investigations	In Close to 1, players deal out 5 cards. Both players look at the 5 cards to make a total that is as close to 1 as possible. Players will then find their score by taking the difference between their sum and 1. The winner is the player who has the lowest score after 5 rounds.

Fill Two Investigations Desmos 4.6b Decimal Contexts and Models	This game leads students to focus on the value of the digit in the tenths place as a way of estimating which cards to choose before doing the actual calculations. It is helpful to practice a few hands of the game together and discuss the following strategies (among others) before students play with partners: • Using the decimal point to line up the place values • Paying close attention to the digit in the tenths place. • Writing zeros in place values where there isn't a digit • How to find the difference between the number created and 1. In Fill Two, the goal is to shade in two of the squares as completely as possible. To start, each player is given 4 cards. On a turn, the player will choose one card to use, shade their grid and then discard to the “used card” pile. The game is over when neither player can play a card. Players will add up all of the decimal numbers they used. The winner is the player whose final sum is closer to 2. This Desmos activity explores a variety of contexts and models to solve decimal word problems. Students critically think about the model, operation, and equation that matches the given story context. They compare and contrast problems to gain a deeper understanding of each operation.
Other Resources: • Additional Routines: ◦ Which One Doesn't Belong: At the Farmer's Market ◦ Notice and Wonder: Hiking Wells Reserve ◦ Same & Different: Rainbow of Fruit • Additional Games: ◦ Lunch Lady ◦ Fill Two 2 • VDOE Mathematics Instructional Plans (MIPS) ◦ 4.6ab - Decimal Sums and Differences (Word) and PDF Version ◦ 4.6b - Solving Contextual Problems: Adding and Subtracting Decimals (Word) and PDF Version • VDOE Algebra Readiness Remediation Plans • Problem Solving – Strategies for Finding the Hidden Questions (Word) and PDF Version • VDOE Word Wall Cards: Grade 4 (Word and PDF) ◦ Decimal Place Value Position ◦ Addition ◦ Subtraction Learning Trajectory Resources: Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. <i>Journal of Mathematics Education Leadership</i>, 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. 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). <i>Elementary and Middle School Mathematics: Teaching Developmentally</i>. (10th edition) New York: Pearson (2019:9780134802084) VDOE Curriculum Framework for All Grades - Standard of Learning Curriculum Framework (SOL)	

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