



5.CA.10 Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths including problems that involve money in decimal notation (e.g., by using equations, models or drawings, and strategies based on place value or properties of operations to represent the problem). (E)

Reporting Category: Computation and Algebraic Thinking

Subdomain: Computing with Decimals and Fractions

5.CA.10 Instructional Framework

Assessed On:

☐ Checkpoint 1

☒ Checkpoint 2

☐ Checkpoint 3

☒ Summative

Content Limits:

- Limit all decimals to the hundredth place.
- Models may include number lines, place value blocks or frames, area models, or decimal squares.
- Specific strategies should not be tested.

Clarifications:

- Provide a variety of problem-solving structures such as those included in the [Common Addition and Subtraction Structures](#) and [Common Multiplication and Division Structures](#) documents.
- The keypad in the ILEARN testing system does not allow students to enter a comma between each period in a multi-digit number. (Example: 13,323 would be entered as 13323.)

Calculator Availability: Not Allowed

Expected Academic Vocabulary: decimal, tenth, hundredth, sum, difference, product, quotient

Examples of Context and Varying Difficulty Levels

Context: Easy

Limit decimals to the tenth place.
Include values that do not require regrouping.

Context: Medium

Decimals to the hundredth place.
Include values that require limited regrouping.

Context: Difficult

Use multiple operations in the item.
Includes values that require a significant amount of regrouping.

Proficiency Level Descriptors and Example Items

Looking Back:

This concept is not specifically addressed in the Indiana Academic Standards prior to this grade level.

Looking Ahead:

[6.NS.4 ILEARN Item Specification](#)



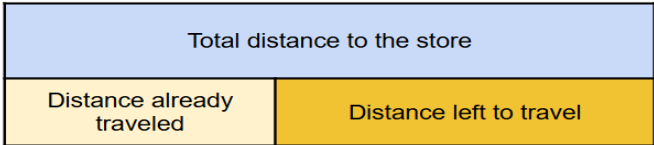
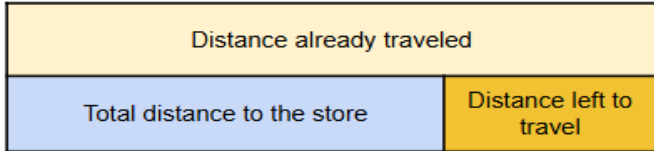
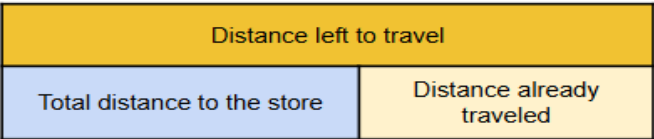
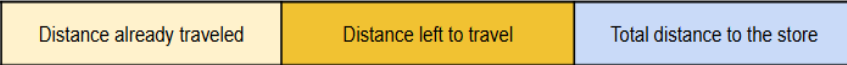
Below Proficiency: Make a plan and solve a given real-world problem involving addition or subtraction of decimals to the hundredths using models or drawings.

A man traveled 1.14 miles on his way to the store. The total distance to the store is 2.75 miles.

How much further does the man still need to travel to get to the store?

Part A

Which model represents the situation?

- a. 
- b. 
- c. 
- d. 

Answer: a

Part B:

How much further does the man need to travel to get to the store?

miles

Answer: 1.61 miles

This is a DOK 2 item because students must make sense of a situation, match it with a model that can be used to represent that situation, and solve the problem.

This is medium difficulty because it includes decimals to the hundredth place.

A school made bead bracelets for a community service project.

- Franklin contributed 0.63 pounds of beads.

This is a DOK 2 item because students must



- Jose contributed 3.25 pounds of beads.
- Shelly contributed 0.28 pounds of beads.

How many pounds of beads did Shelly and Franklin contribute?

Part A:

Which model represents the situation?

- a.
- b.
- c.
- d.

Answer: d

Part B

How many pounds of beads did Shelly and Franklin contribute?

pounds

Answer: 0.91

make sense of a situation, match it with a model that can be used to represent that situation, and solve the problem.

This is medium difficulty because it includes decimals to the hundredth place.

Approaching Proficiency: Make a plan and solve a given real-world problem involving multiplication and division of decimals to the hundredths using models or drawings.

A student makes sugar cookies. The recipe requires 1.23 pounds of powdered sugar. The student triples the recipe to make sure she has enough cookies for all of her classmates.

How many pounds of powdered sugar does the student need?

This is a DOK 2 item because students must make sense of a situation, match it with a model that can be



Part A

Which model represents the situation?

- a.
- b.
- c.
- d.

Answer: a

Part B

How many pounds of powdered sugar does the student need?

pounds

used to represent that situation, and solve the problem.

This is medium difficulty because it includes decimals to the hundredth place.



Answer: 3.69

An artist bought 11.43 pounds of modeling clay to give evenly to his 9 art students.

How many pounds of modeling clay did each student receive?

Part A

Which model represents the situation?

- a.

Total	
x	x
- b.

Total	
x	x
- c.

Total								
x	x	x	x	x	x	x	x	x
- d.

Total								
x	x	x	x	x	x	x	x	x

Answer: c

Part B

How many pounds of modeling clay did each student receive?

pounds

Answer: 1.27

This is a DOK 2 item because students must make sense of a situation, match it with a model that can be used to represent that situation, and solve the problem.



This is medium difficulty because it includes decimals to the hundredth place.

At Proficiency: Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to the hundredths with two or three steps.

At the farmer's market, eight peaches cost \$6.24, and six bananas cost

This is a DOK 3 item



<p>\$5.58.</p> <div><p>8 peaches, price: \$6.24</p></div> <div><p>6 bananas, price: \$5.58</p></div> <p>What is the price difference between one peach and one banana?</p> <p>\$ <input type="text"/></p> <p>Answer: \$0.15</p>	<p>because students must make sense of a multi-step problem, determine a strategy for solving, and find a solution.</p> <p>This is medium difficulty because it includes decimals to the hundredth place.</p>
<p>A librarian has 3 books.</p> <ul style="list-style-type: none">• One book weighs 14.57 ounces.• The second book weighs 17.49 ounces.• The third book weighs 3.5 ounces less than the total of the first two books. <p>What is the weight, in ounces, of the third book?</p> <p><input type="text"/> ounces</p> <p>Answer: 28.56</p>	<p>This is a DOK 3 item because students must make sense of a multi-step problem, determine a strategy for solving, and find a solution.</p> <p>This is medium difficulty because it includes decimals to the hundredth place.</p>
<p>A chef combines cucumbers and tomatoes to make a salad.</p> <ul style="list-style-type: none">• She divides 7.32 ounces of cucumbers equally into 4 bowls.• She then adds 1.24 ounces of tomatoes to each bowl. <p>What is the total weight, in ounces, of the cucumbers and tomatoes in each salad bowl?</p> <p>a. 8.56 ounces</p> <p>b. 6.08 ounces</p> <p>c. 1.83 ounces</p> <p>d. 3.07 ounces</p> <p>Answer: d</p>	<p>This is a DOK 3 item because students must make sense of a multi-step problem, determine a strategy for solving, and find a solution.</p> <p>This is difficult because it uses multiple operations in the item.</p>



Above Proficiency: Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to the hundredths with more than three steps. Evaluate and critique a given solution to a real-world problem.

A student went to the movies with two of her friends.

- Her mom gave her \$50.00 to spend on snacks at the movie.
- She bought three bags of popcorn, two boxes of candy, and three drinks.

Food Item	Price
popcorn	\$6.75
candy	\$2.35
drink	\$4.25

How much money did the student have leftover?

\$

Answer: \$12.30

This is a DOK 3 item because students must make sense of a multi-step problem, determine a strategy for solving, and find a solution.

This is difficult because it uses multiple operations in the item.

A student collects nickels and places them in two containers.

- The first container has \$14.60 in nickels.
- The second container has \$25.80 in nickels.
- There are 516 nickels in the second container.
- There are 20 nickels in \$1.00

The student wants to calculate how many nickels he has in total. He writes these steps to solve the problem.

Step 1: $20 \times 14 = 280$ nickels

Step 2: $0.40 \times 0.05 = 2$ nickels

Step 3: $280 + 2 = 282$ nickels

Step 4: $282 + 516 = 798$ nickels

Part A:

There is a mistake in the calculation. In which step did the student make his first mistake?

- a. Step 1

This is a DOK 3 item because students must critique the work of another and communicate their critique.

This is difficult because it uses multiple operations in the item.



b. Step 2

c. Step 3

d. Step 4

Answer: b

Part B:

The total number of nickels that the student has is actually 808. Evaluate the calculations in Part A, explain the student's mistake, and show how to correct the mistake.

Answer: Student responses may vary.

Example Response: Step 1 is correct, because the student is finding the number of nickels in 14 dollars (20×14). Now the student needs to find out how many nickels are in 60 cents. This is where he goes wrong. Instead of saying 0.40 times 0.05, he needs to divide 60 cents by 5 cents, which is 12 more nickels. Then take $280 + 12 + 516 = 808$ to find the correct total.