

## Math Live – Addition and Subtraction of Decimals: Assessment Task

Grade: 4      Strand: Number      Outcome: 11

### SPECIFIC LEARNER OUTCOME – Number

N11	Demonstrate an understanding of addition and subtraction of decimals (limited to hundredths) by: <ul style="list-style-type: none"><li>• using personal strategies to determine sums and differences</li><li>• estimating sums and differences</li><li>• using mental mathematics strategies to solve problems.</li></ul>
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### PROCESSES

Communication (C), Connections (CN), Mental Mathematics and Estimation (ME), Problem Solving (PS), Reasoning (R), Technology (T), Visualization (V)

C, ME, PS, R, V

**EVIDENCE** the student has achieved the outcomes

Each student will:

- model decimals to hundredths using base-ten blocks.
- use concrete materials (manipulatives) to show the process of addition and subtraction of decimals to hundredths.
- use drawings and words to show understanding of place value and regrouping with decimal numbers.
- represent the solution to word problems involving decimals using mathematical symbols.
- connect the concrete/pictorial models of an addition/subtraction problem to the symbolic representation.

### TEACHER NOTE

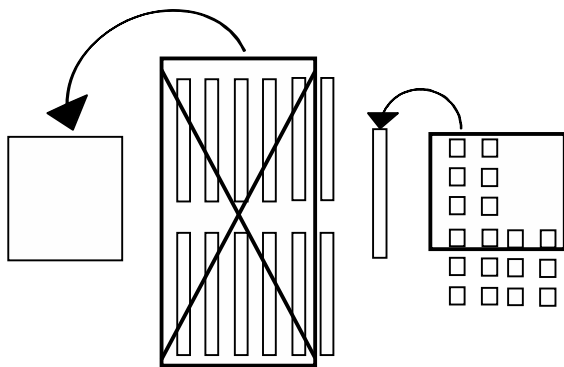
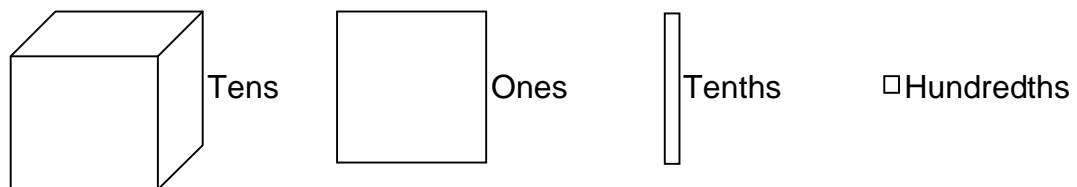
- In this assessment task, students will be asked to demonstrate their understanding of adding and subtracting decimals to hundredths. They will first estimate the answer (to the nearest whole number) to a word problem involving decimals. Then students will model and draw the solution to the problem using base-ten blocks and graph paper. Finally, students will find the difference between their estimate and their exact answer by subtracting.
- Early finishers can create other problems involving decimals (money, track times, etc.) for the class to solve.

## Math Live – *Addition and Subtraction of Decimals:* Assessment Task

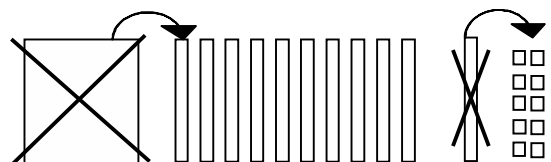
Rick wanted to keep track of his time in preparing for the 200 m sprint. At the beginning of the season, his coach used a stopwatch and timed Rick at 40.8 seconds. Later on in the season, Rick's coach wanted to be more accurate, so he used a stopwatch and recorded a time of 36.55 seconds.

- a) Estimate the difference in Rick's two recorded times. Show how you arrived at your estimate.

For the next two parts of this task, use base-ten blocks and the key below to show your work.



For addition, show your regrouping like this



For subtraction, show your regrouping like this

- b) Exactly how many seconds did Rick cut off his time for the sprint from the beginning of the season?
- Model this problem using base-ten blocks.
  - Draw a representation below using pictures of base-ten blocks to show how you found the difference in Rick's sprint times.

Tens	Ones	Tenths	Hundredths

- Record your work below using math symbols. Show any regrouping required.
- Write your answer to the problem in a complete sentence.

Using math symbols:

My answer in a sentence:

- c) Rick wanted to set a goal for the 400 m sprint he will prepare for when he gets into junior high. He decided to double his best time (36.55 s) for the 200 m to set his goal. Show how Rick calculated his target time for the 400 m sprint.
- Model this problem below using base-ten blocks.
  - Draw a representation below using pictures of base-ten blocks to show how you found the solution.

Tens	Ones	Tenths	Hundredths

- Record your work using math symbols. Show any regrouping required.
- Write your answer in a complete sentence.

Using math symbols:

My answer in a sentence:

## Math Live – *Addition and Subtraction of Decimals: Scoring Guide*

Level Criteria	Creates pictorial models of the processes of addition and subtraction of decimal numbers	Transfers a pictorial model of the processes of addition and subtraction of decimals into symbolic form
<b>Wow!</b>	The student uses base-ten blocks to show the processes of addition and subtraction of decimal numbers in a logically organized and accurate manner.	The student represents the addition and subtraction of decimals symbolically (including regrouping) and shows a complete understanding of place value.
<b>Yes</b>	The student uses base-ten blocks to show the processes of addition and subtraction of decimal numbers with accuracy.	
<b>Yes, but...</b>	The student uses base-ten blocks to show the processes of addition and subtraction of decimal numbers with minor errors.	The student represents the addition and subtraction of decimals symbolically without showing all regrouping and/or shows a partial understanding of place value by writing <u>Q</u> 4.25.
<b>No, but...</b>	The student uses base-ten blocks to show the processes of addition and subtraction of decimal numbers with little or no mathematical accuracy or simply models the terms involved without showing addition or subtraction.	The student represents the addition and subtraction of decimals with major errors in regrouping and/or shows a misunderstanding of place value.
<b>Insufficient / Blank</b>	No score is awarded due to insufficient evidence of student learning based on the requirements of the assessment task	No score is awarded due to insufficient evidence of student learning based on the requirements of the assessment task

*Exemplars are not available for this task.*