MA.4.M.2.2

Overarching Standard: *MA4.M.2 Solve problems involving time and money.*

Benchmark of Focus

MA.4.M.2.2.: Solve one- and two-step addition and subtraction real-world problems involving money using decimal notation.

> *Example: An item costs $1.84. If you give the cashier $2.00, how much change should you receive? What coins could be used to give the change?*
> *Example: At the grocery store you spend $14.56. If you do not want any pennies in change, how much money could you give the cashier?*

Related Benchmark/Horizontal Alignment
- MA.4.NSO.2.7

Vertical Alignment

Previous Benchmarks	Next Benchmarks
MA.2.M.2.2	MA.5.M.2.1

Purpose and Instructional Strategies

The purpose of this benchmark is to connect money concepts to adding and subtracting decimals. This benchmark can be taught in tandem with the addition and subtraction of decimals to the hundredths (MA.4.NSO.2.7). Students solve problems within a real-world context using money (MTR.7.1).

- For instruction, students should have opportunities using multiplication to count collections of coins (e.g., How much money is 50 nickels?).
- When students solve problems, invite flexible strategies that students learned with whole number addition and subtraction. For example, when finding the change for $2.00 on an item that costs $1.84, students may count up $0.16 instead of subtracting $2.00 - $1.84.
- Students need to understand how different coins and bills relate to each other.

Common Misconceptions or Errors

- Students can add and subtract incorrectly when they do not add or subtract like place values.

**Strategies to Support Tiered Instruction**
- Instruction includes connecting place value to addition and subtraction of whole numbers, utilizing place value charts so that students can see where to line up values for the computation.

- o For example, $20.20 − $9.75 is going to require some regrouping. By placing the problem in a place value chart, students can line up the decimal and subtract like place values.

tens	ones	•	tenths	hundredths
$2	0		2	0
	$9		7	5

  - o
- Instruction includes relating decimal place values. Working with base ten blocks, students can build decimals and their equivalents.
  - o For example, building 0.2 "two tenths" and 0.20 "twenty hundredths" with base ten blocks. Students will notice that the numbers have the same value.

0.2   0.20
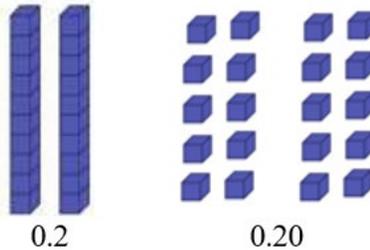
Questions to ask students:
- **Ask students how to correctly align an addition or subtraction problem involving a decimal (or money).**
- Sample answer that indicates understanding: I use place value to make sure the digits are correctly lined up. The whole dollars need to be aligned in the correct place before the decimal, and the numbers after the decimal need to line up by tenths and hundredths, representing the amount of cents.

- **What steps can I take to correctly determine the amount of change I should receive?**
- Sample answer that indicates understanding: Add the total cost of each object I am purchasing. Determine how much money I am going to pay the cashier, then subtract the total cost from the amount I actually paid.

- **What other ways can I show this amount of coins?**
- Sample answer that indicates understanding: Students can correctly show other combinations of coins to represent a certain amount.

Instructional Tasks
Instructional Task 1 Jordan was saving his money to buy a remote-control motorcycle. He saved $45.00 from his allowance and received two checks worth $10.00 each for his birthday. Jordan also has a half dollar coin collection with 30 coins in it. If the motorcycle costs $73.00, does Jordan have enough money to buy the motorcycle?

Instructional Items
Instructional Item 1 Maria went to the comic bookstore and bought a comic book for $5.34 and a comic book for $9.55. If she paid with a $20 bill, how much change would she get back?

Achievement Level Descriptors

Benchmark	Context	Assessment Limits
MA.4.M.2.2 Solve one- and two-step addition and subtraction real-world problems involving money using decimal notation. Example: An item costs $1.84. If you give the cashier $2.00, how much change should you receive? What coins could be used to give the change? Example: At the grocery store you spend $14.56. If you do not want any pennies in change, how much money could you give the cashier? **Also Assesses** MA.4.NSO.2.7 Explore the addition and subtraction of multi-digit numbers with decimals to the hundredths.	Real-world for MA.4.M.2.2 Mathematical for MA.4.NSO.2.7	Items assessing MA.4.M.2.2 are limited to values that are less than or equal to $100.

ALD 2	ALD 3	ALD 4	ALD 5
solves one-step addition problems involving money using decimal notation.	solves one-step addition and subtraction real-world problems involving money using decimal notation.	solves one- and two-step addition and subtraction real-world problems involving money using decimal notation. explores the addition and subtraction of multi-digit numbers with decimals to the hundredths.	identifies an error and solves two-step addition and subtraction real-world problems involving money using decimal notation. adds and subtracts multi-digit numbers with decimals to the hundredths.

Additional Resources:
CPALMS Resources

Khan Academy: Adding Decimals with hundredths

Khan Academy: Subtraction Strategies with Hundredths

YouTube Video: Two Step Word Problems Involving Money- Diane Lawson

Resources/Tasks to Support Your Child at Home:
Involve your child with money calculations when shopping or at a restaurant. Have them calculate total costs and determine the amount of change they should receive. Ask if they have enough money to purchase a certain item.

YouTube video: Adding and Subtracting Money- Turtlediary