Name _____

Relate Fractions, Decimals, and Money

Essential Question How can you relate fractions, decimals, and money?

🔑 Unlock the Problem (Real World)

Together, Julie and Sarah have $1.00 in quarters. They want to share the quarters equally. How many quarters should each girl get? How much money is this?

> **Remember**
> 1 dollar = 100 cents
> 1 quarter = 25 cents
> 1 dime = 10 cents
> 1 penny = 1 cent

Use the model to relate money, fractions, and decimals.

4 quarters = 1 dollar = $1.00

$0.25 $0.25 $0.25 $0.25

1 quarter is $\frac{25}{100}$, or $\frac{1}{4}$ of a dollar.

2 quarters are $\frac{50}{100}$, $\frac{2}{4}$, or $\frac{1}{2}$ of a dollar.
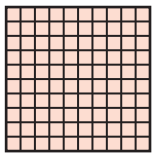
$\frac{1}{2}$ of a dollar = $0.50, or 50 cents.

Circle the number of quarters each girl should get.
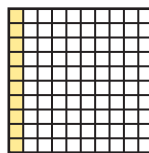
So, each girl should get 2 quarters, or $ _____.

💡 Examples Use money to model decimals.

1 dollar	10 dimes = 1 dollar	100 pennies = 1 dollar
$1.00, or	1 dime = $\frac{1}{10}$, or 0.10 of a dollar	1 penny = $\frac{1}{100}$, or 0.01 of a dollar
_____ cents	$ _____, or 10 cents	$ _____, or 1 cent
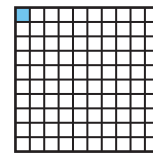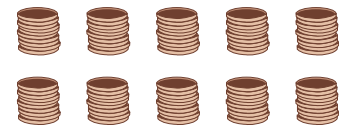
Math Talk

MATHEMATICAL PRACTICES ④

Model Mathematics Model 68 pennies. What part of a dollar do you have? Explain.

Relate Money and Decimals Think of dollars as ones, dimes as tenths, and pennies as hundredths.

$1.56

Dollars	.	Dimes	Pennies
1	.	5	6

Think: $1.56 = 1 dollar and 56 pennies

There are 100 pennies in 1 dollar.
So, $1.56 = 156 pennies.

1.56 dollars

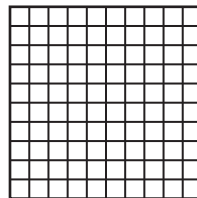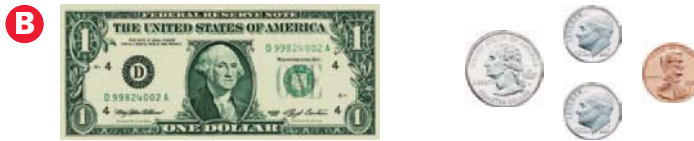| Ones	.	Tenths	Hundredths
1	.	5	6

Think: 1.56 = 1 one and 56 hundredths

There are 100 hundredths in 1 one.
So, 1.56 = 156 hundredths.

🔓 More Examples Shade the decimal model to show the money amount. Then write the money amount and a fraction in terms of dollars.

A
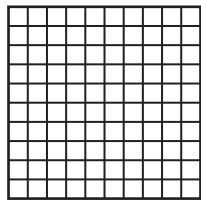
_____, or $\frac{21}{100}$ of a dollar

B

$1.46, or $1\frac{}{100}$ dollars

Try This! Complete the table to show how money, fractions, mixed numbers, and decimals are related.

$ Bills and Coins	Money Amount	Fraction or Mixed Number	Decimal
	$0.03		0.03
	$0.25	$\frac{25}{100}$, or $\frac{1}{4}$	
2 quarters 1 dime		$\frac{60}{100}$, or $\frac{6}{10}$	
2 $1 bills 5 nickels			

Math Talk

MATHEMATICAL PRACTICES ②

Reason Abstractly Would you rather have $0.25 or $\frac{3}{10}$ of a dollar? Explain.

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Name _____

1. Write the amount of money as a decimal in terms of dollars.

5 pennies = $\frac{5}{100}$ of a dollar = _____ of a dollar.

Write the total money amount. Then write the amount as a fraction or a mixed number and as a decimal in terms of dollars.

2.

_____ _____ _____

✓ **3.**

_____ _____ _____

Write as a money amount and as a decimal in terms of dollars.

4. $\frac{92}{100}$ _____ _____

5. $\frac{7}{100}$ _____ _____

6. $\frac{16}{100}$ _____ _____

✓ **7.** $\frac{53}{100}$ _____ _____

Math Talk

MATHEMATICAL PRACTICES ⑥

Make Connections How are $0.84 and $\frac{84}{100}$ of a dollar related?

On Your Own

Write the total money amount. Then write the amount as a fraction or a mixed number and as a decimal in terms of dollars.

8.

_____ _____ _____

9.

_____ _____ _____

Write as a money amount and as a decimal in terms of dollars.

10. $\frac{27}{100}$ _____ _____

11. $\frac{4}{100}$ _____ _____

12. $\frac{75}{100}$ _____ _____

13. $\frac{100}{100}$ _____ _____

Write the total money amount. Then write the amount as a fraction and as a decimal in terms of dollars.

14. 1 quarter 6 dimes 8 pennies

15. 3 dimes 5 nickels 20 pennies

_____ _____ _____

_____ _____ _____

MATHEMATICAL PRACTICE 6 **Make Connections** **Algebra** **Complete to tell the value of each digit.**

16. $1.05 = _____ dollar + _____ pennies, 1.05 = _____ one + _____ hundredths

17. $5.18 = _____ dollars + _____ dime + _____ pennies

5.18 = _____ ones + _____ tenth + _____ hundredths

Problem Solving • Applications (Real World)

Use the table for 18–19.

18. The table shows the coins three students have. Write Nick's total amount as a fraction in terms of dollars.

_____

Pocket Change				
Name	Quarters	Dimes	Nickels	Pennies
Kim	1	3	2	3
Tony	0	6	1	6
Nick	2	4	0	2

19. **THINK SMARTER** Kim spent $\frac{40}{100}$ of a dollar on a snack. Write as a money amount the amount she has left.

_____

20. **GO DEEPER** Travis has $\frac{1}{2}$ of a dollar. He has at least two different types of coins in his pocket. Draw two possible sets of coins that Travis could have.

21. **THINK SMARTER** Complete the table.

$ Bills and Coins	Money Amount	Fraction or Mixed Number	Decimal
6 pennies		$\frac{6}{100}$	0.06
	$0.50		0.50
		$\frac{70}{100}$ or $\frac{7}{10}$	0.70
3 $1 bills 9 pennies			3.09

Relate Fractions, Decimals, and Money

Write the total money amount. Then write the amount as a fraction or a mixed number and as a decimal in terms of dollars.

1.

$0.18; $\frac{18}{100}$; 0.18

2.

Write as a money amount and as a decimal in terms of dollars.

3. $\frac{25}{100}$ **4.** $\frac{79}{100}$ **5.** $\frac{31}{100}$ **6.** $\frac{8}{100}$ **7.** $\frac{42}{100}$

Write the money amount as a fraction in terms of dollars.

8. $0.87   **9.** $0.03   **10.** $0.66   **11.** $0.95   **12.** $1.00

Write the total money amount. Then write the amount as a fraction and as a decimal in terms of dollars.

13. 2 quarters 2 dimes   **14.** 3 dimes 4 pennies   **15.** 8 nickels 12 pennies

Problem Solving Real World

16. Kate has 1 dime, 4 nickels, and 8 pennies. Write Kate's total amount as a fraction in terms of a dollar.

17. WRITE ▸*Math* Jeffrey says he has 6.8 dollars. How do you write the decimal 6.8 when it refers to money? Explain.

Lesson Check (4.NF.C.6)

1. Write the total amount of money shown as a fraction in terms of a dollar.

_____

_____

2. Crystal has $\frac{81}{100}$ of a dollar. What could be the coins Crystal has?

_____

_____

_____
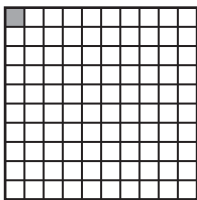
Spiral Review (4.NF.A.1, 4.NF.C.6)

3. Joel gives $\frac{1}{3}$ of his baseball cards to his sister. Write a fraction that is equivalent to $\frac{1}{3}$.

_____

4. Penelope bakes pretzels. She salts $\frac{3}{8}$ of the pretzels. Write a fraction that is equivalent to $\frac{3}{8}$.

_____

5. What decimal is shown by the shaded area in the model?

_____

6. Mr. Guzman has 100 cows on his dairy farm. Of the cows, 57 are Holstein. What decimal represents the portion of cows that are Holstein?

_____

FOR MORE PRACTICE GO TO THE
Personal Math Trainer