Name _____

Add Fractional Parts of 10 and 100

Essential Question How can you add fractions when the denominators are 10 or 100?

🔑 Unlock the Problem · Real World

The fourth grade classes are painting designs on tile squares to make a mural. Mrs. Kirk's class painted $\frac{3}{10}$ of the mural. Mr. Becker's class painted $\frac{21}{100}$ of the mural. What part of the mural is painted?

You know how to add fractions with parts that are the same size. You can use equivalent fractions to add fractions with parts that are not the same size.

🔑 Example 1 Find $\frac{3}{10} + \frac{21}{100}$.

STEP 1 Write $\frac{3}{10}$ and $\frac{21}{100}$ as a pair of fractions with a common denominator.

Think: 100 is a multiple of 10. Use 100 as the common denominator.

$$\frac{3}{10} = \frac{3 \times \boxed{}}{10 \times \boxed{}} = \frac{\boxed{}}{100}$$

Think: $\frac{21}{100}$ already has 100 in the denominator.

So, $\frac{\boxed{}}{100}$ of the mural is painted.

STEP 2 Add.

Think: Write $\frac{3}{10} + \frac{21}{100}$ using fractions with a common denominator.

$$\frac{30}{100} + \frac{21}{100} = \frac{\boxed{}}{100}$$

Math Talk

MATHEMATICAL PRACTICES ⑧

Draw Conclusions When adding tenths and hundredths, can you always use 100 as a common denominator? Explain.

Try This! Find $\frac{4}{100} + \frac{1}{10}$.

A Write $\frac{1}{10}$ as $\frac{10}{100}$.

$$\frac{1}{10} = \frac{1 \times \boxed{}}{10 \times \boxed{}} = \frac{\boxed{}}{100}$$

B Add.

$$\frac{\boxed{}}{100} + \frac{10}{100} = \frac{\boxed{}}{100}$$

So, $\frac{4}{100} + \frac{10}{100} = \frac{14}{100}$.

🔑 Example 2 Add decimals.

Sean lives 0.5 mile from the store. The store is 0.25 mile from his grandmother's house. Sean is going to walk to the store and then to his grandmother's house. How far will he walk?

Find 0.5 + 0.25.

STEP 1 Write 0.5 + 0.25 as a sum of fractions.

Think: 0.5 is 5 tenths.   **Think:** 0.25 is 25 hundredths.

$$0.5 = \frac{\boxed{}}{\boxed{}} \qquad 0.25 = \frac{\boxed{}}{\boxed{}}$$

Write 0.5 + 0.25 as $\dfrac{\boxed{}}{\boxed{}} + \dfrac{\boxed{}}{\boxed{}}$

STEP 2 Write $\frac{5}{10} + \frac{25}{100}$ as a sum of fractions with a common denominator.

Think: Use 100 as a common denominator. Rename $\frac{5}{10}$.

$$\frac{5}{10} = \frac{5 \times \boxed{}}{10 \times \boxed{}} = \frac{\boxed{}}{100}$$

Write $\frac{5}{10} + \frac{25}{100}$ as $\dfrac{\boxed{}}{\boxed{}} + \dfrac{\boxed{}}{\boxed{}}$.

STEP 3 Add.

$$\frac{50}{100} + \frac{25}{100} = \frac{\boxed{}}{\boxed{}}$$

STEP 4 Write the sum as a decimal.

$$\frac{75}{100} = \underline{}$$

So, Sean will walk _____ mile.

Math Talk **MATHEMATICAL PRACTICES ⑦**

Identify Relationships
Explain why you can think of $0.25 as either $\frac{1}{4}$ dollar or $\frac{25}{100}$ dollar.

Try This! Find $0.25 + $0.40.

$0.25 + $0.40 = _____

Remember

A money amount less than a dollar can be written as a fraction of a dollar.

Name _____

1. Find $\frac{7}{10} + \frac{5}{100}$.

Think: Write the addends as fractions with a common denominator.

$$\frac{}{100} + \frac{}{100} = \frac{}{}$$

Find the sum.

2. $\frac{1}{10} + \frac{11}{100} =$ _____

3. $\frac{36}{100} + \frac{5}{10} =$ _____

4. $0.16 + $0.45 = $_____

5. $0.08 + $0.88 = $_____

On Your Own

6. $\frac{6}{10} + \frac{25}{100} =$ _____

7. $\frac{7}{10} + \frac{7}{100} =$ _____

8. $0.55 + $0.23 = $_____

9. $0.19 + $0.13 = $_____

MATHEMATICAL PRACTICE ② **Reason Quantitatively** **Algebra** Write the number that makes the equation true.

10. $\frac{20}{100} + \frac{}{10} = \frac{60}{100}$

11. $\frac{2}{10} + \frac{}{100} = \frac{90}{100}$

12. **GO DEEPER** Jerry had 1 gallon of ice cream. He used $\frac{3}{10}$ gallon to make chocolate milkshakes and 0.40 gallon to make vanilla milkshakes. How much ice cream does Jerry have left after making the milkshakes?

_____

Problem Solving • Applications (Real World)

Use the table for 13–16.

Paving Stone Center	
Style	**Length (in meters)**
Rustic	$\frac{15}{100}$
Teakwood	$\frac{3}{10}$
Buckskin	$\frac{41}{100}$
Rainbow	$\frac{6}{10}$
Rose	$\frac{8}{100}$

13. **THINK SMARTER** Dean selects Teakwood stones and Buckskin stones to pave a path in front of his house. How many meters long will each set of one Teakwood stone and one Buckskin stone be?

_____

14. The backyard patio at Nona's house is made from a repeating pattern of one Rose stone and one Rainbow stone. How many meters long is each pair of stones?

_____

15. **GO DEEPER** For a stone path, Emily likes the look of a Rustic stone, then a Rainbow stone, and then another Rustic stone. How long will the three stones in a row be? Explain.

_____

_____

16. **WRITE** ▸ *Math* Which two stones can you place end-to-end to get a length of 0.38 meter? Explain how you found your answer.

_____

_____

17. **THINK SMARTER** Christelle is making a dollhouse. The dollhouse is $\frac{6}{10}$ meter tall without the roof. The roof is $\frac{15}{100}$ meter high. What is the height of the dollhouse with the roof? Choose a number from each column to complete an equation to solve.

$$\frac{6}{10} + \frac{15}{100} = \boxed{\begin{array}{c} \frac{6}{100} \\ \frac{60}{100} \\ \frac{61}{100} \end{array}} + \boxed{\begin{array}{c} \frac{15}{10} \\ \frac{5}{100} \\ \frac{15}{100} \end{array}} = \boxed{\begin{array}{c} \frac{65}{100} \\ \frac{7}{10} \\ \frac{75}{100} \end{array}} \text{ meter.}$$

Name _____

Add Fractional Parts of 10 and 100

Find the sum.

1. $\frac{2}{10} + \frac{43}{100}$

$\frac{20}{100} + \frac{43}{100} = \frac{63}{100}$

_____ $\frac{63}{100}$ _____

Think: Write $\frac{2}{10}$ as a fraction with a denominator of 100:

$\frac{2 \times 10}{10 \times 10} \times \frac{20}{100}$

2. $\frac{17}{100} + \frac{6}{10}$

3. $\frac{9}{100} + \frac{9}{10}$

4. $\$0.25 + \$0.34$

Problem Solving · Real World

5. Ned's frog jumped $\frac{38}{100}$ meter. Then his frog jumped $\frac{4}{10}$ meter. How far did Ned's frog jump?

_____

6. Keiko walks $\frac{5}{10}$ kilometer from school to the park. Then she walks $\frac{19}{100}$ kilometer from the park to her home. How far does Keiko walk?

_____

7. **WRITE** ▸*Math* Explain how you would use equivalent fractions to solve $0.5 + 0.10$.

_____

_____

_____

_____

1. In a fish tank, $\frac{2}{10}$ of the fish were orange and $\frac{5}{100}$ of the fish were striped. What fraction of the fish were orange or striped?

   _____

2. Greg spends $0.45 on an eraser and $0.30 on a pen. How much money does Greg spend?

   _____

Spiral Review (4.NF.A.1, 4.NF.B.3d, 4.MD.A.2)

3. Phillip saves $8 each month. How many months will it take him to save at least $60?

   _____

4. Ursula and Yi share a submarine sandwich. Ursula eats $\frac{2}{8}$ of the sandwich. Yi eats $\frac{3}{8}$ of the sandwich. How much of the sandwich do the two friends eat?

   _____

5. A carpenter has a board that is 8 feet long. He cuts off two pieces. One piece is $3\frac{1}{2}$ feet long and the other is $2\frac{1}{3}$ feet long. How much of the board is left?

   _____

6. Jeff drinks $\frac{2}{3}$ of a glass of juice. Write a fraction that is equivalent to $\frac{2}{3}$.

   _____

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Personal Math Trainer