Lesson
2-6A

Common Core

5.NBT.7 Add, subtract… decimals to hundredths, using concrete models or drawings…

Modeling Addition and Subtraction of Decimals

Hands-On
grid paper

How do you add decimals using grids?

Use the table at the right to find the total monthly cost of using the dishwasher and the DVD player.

Data

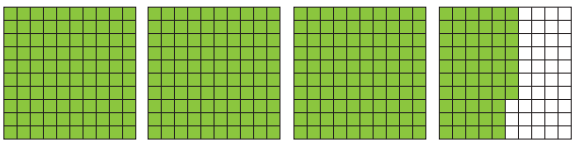
Device	Cost/month
DVD player	$0.40
Microwave oven	$3.57
Ceiling light	$0.89
Dishwasher	$0.85

Another Example How do you subtract decimals with grids?

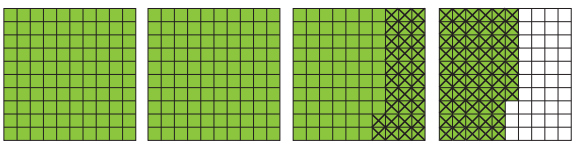
Find the difference between the cost per month to run the microwave oven and the ceiling light.

Use hundredths grids to subtract 3.57 – 0.89.

Step 1 Shade three grids and 57 squares to show 3.57.



Step 2 Cross out 8 columns and 9 squares of the shaded grid to show 0.89 being subtracted from 3.57.



Count the squares that are shaded but not crossed out to find the difference.
3.57 – 0.89 = 2.68

Explain It

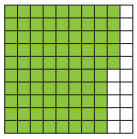
1. **Reasonableness** How could you use the grids to check your answer above?

2. How would the grid above be different if the cost per month to run the microwave were $2.57?

Step 1

Use hundredths grids to add \$0.85 + \$0.40.

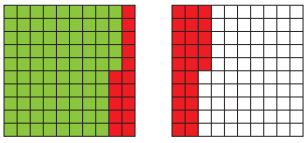
It costs \$0.85 to use the dishwasher per month.



Shade 85 squares to show \$0.85.

Step 2

It costs \$0.40 to use the DVD player per month.



Use a different color and shade 40 more squares to show \$0.40. Count all of the shaded squares to find the sum.

\$0.85 + \$0.40 = \$1.25

The monthly cost of using the dishwasher and DVD player is \$1.25.

Guided Practice

MATHEMATICAL PRACTICES

Do you know HOW?

In **1** through **6**, use hundredths grids to add or subtract.

1. 1.22 + 0.34

2. 0.63 + 0.41

3. 2.73 − 0.94

4. \$1.38 − \$0.73

5. 0.47 − 0.21

6. 2.02 + 0.8

Do you UNDERSTAND?

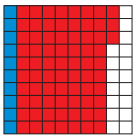
7. If you were to shade 40 squares first, and then shade 85 more, would the answer be the same as shading 85 squares and then 40 more?

8. **Model** Show the difference between the monthly cost of using the DVD player and the dishwasher.

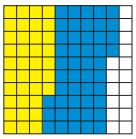
Independent Practice

In **9** through **18**, add or subtract. Use hundredths grids to help.

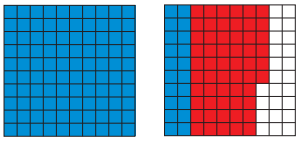
9. 0.1 + 0.73



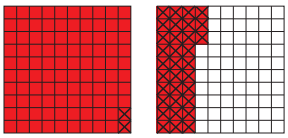
10. \$0.37 + \$0.47



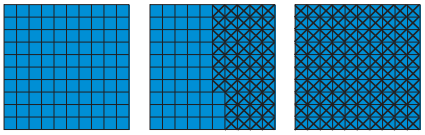
11. 1.2 + 0.56



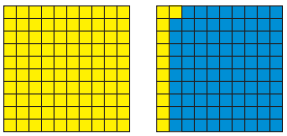
12. \$1.33 − \$0.35



13. 3.0 − 1.47



14. \$1.11 + \$0.89



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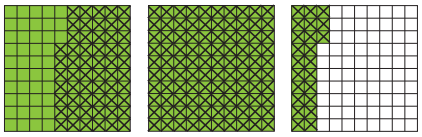
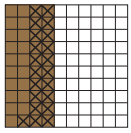
Independent Practice

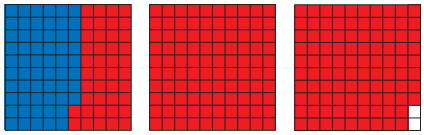
15. 2.23 − 1.8



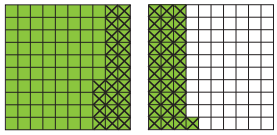
16. 0.4 − 0. 21



17. 0.58 + 2.4



18. 1.31 − 0.55



Problem Solving

MATHEMATICAL PRACTICES

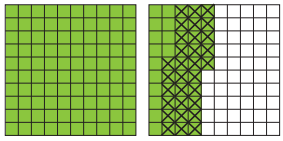
19. Construct Arguments How is adding 4.56 + 2.31 similar to adding \$2.31 + \$4.56?

20. Do you think the difference of 1.4 − 0.95 is less than one or greater than one? Explain.

21. Use Tools Is the sum of 0.46 + 0.25 less than or greater than one? Explain.

22. Reasonableness Estimate to decide if the sum of 314 + 175 is more or less than 600.

23. Model Which expression is represented by the model below?



A 2.00 + 0.31

B 1.76 − 0.31

C 1.76 − 1.45

D 1.45 − 0.31

24. Which expression shows 2^3?

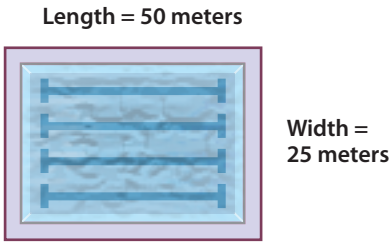
A 2 + 2 + 2

B 2 × 2 × 2

C 2 + 3

D 2 × 3

25. Think About the Structure Which expression can be used to find the perimeter of the pool shown to the right? Remember, perimeter = the distance around a figure.



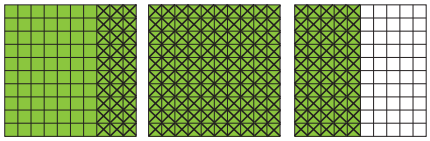
A 50 + 25

B 25 + 25 + 25 + 25

C 50 + 50 + 25 + 25

D 50 + 50 + 50 + 50

26. Write the number sentence that is shown by the hundredths grids to the right.



Going Digital

Reasonableness of Differences

Estimate 4.72 − 2.85. Use a calculator to subtract. Then explain whether or not the sum you found is reasonable.

Step 1 Estimate 4.72 − 2.85.

5 − 3 = 2

Step 2 Use a calculator to subtract.

Press: 4.72 [−] 2.85 [ENTER =]

Display: 1.87

Step 3 Explain whether or not the difference is reasonable.

Since 1.87 is close to the estimate of 2, the difference is reasonable.

Press [Clear] before starting a new problem.

Estimate 7.51 − 6.49 and use a calculator to subtract. Explain the difference between the estimation and the calculator result.

The estimated difference is 2, and the calculator result is 1.02. The two answers have a difference of about 1, because the first number rounded up and the second number rounded down.

Practice

Estimate each difference. Find the difference on a calculator. Then explain whether or not the difference is reasonable.

1. 28.34 − 7.85

2. 6.86 − 2.18

3. 5.2 − 0.74

4. 1.73 − 0.8

5. 14.97 − 12.39

6. 9.05 − 5.92

7. 2.4 − 0.56

8. 65.47 − 38.19

9. 16.15 − 3.9

10. 3.7 − 1.2

11. 2.82 − 1.21

12. 5.76 − 3.21

13. 8.47 − 7.08

14. 6.59 − 6.03

15. 8.88 − 3.84