$\qquad$

## Divide Using Partial Quotients

Essential Question How can you use partial quotients to divide by 1 -digit divisors?

MATHEMATICAL PRACTICES MP2, MP7, MP8

## Unlock the Problem

At camp, there are 5 players on each lacrosse team. If there are 125 people on lacrosse teams, how many teams are there?

- Underline what you are asked to find.
- Circle what you need to use.
- What operation can you use to find the number of teams?


## (1 )One Way Use partial quotients.

In the partial quotient method of dividing, multiples of the divisor are subtracted from the dividend and then the partial quotients are added together.
Divide. $125 \div 5 \quad$ Write. $5 \longdiv { 1 2 5 }$

## STEP 1

Start by subtracting a greater multiple, such as 10 times the divisor. For example, you know that you can make at least 10 teams of 5 players.

Continue subtracting until the remaining number is less than the multiple, 50.

## STEP 2

Subtract smaller multiples, such as 5,2 , or 1 times the divisor until the remaining number is less than the divisor. In other words, keep going until you no longer have enough players to make a team.

Then add the partial quotients to find the quotient.

So, there are $\qquad$ lacrosse teams.

Partial
Quotients
$5 \longdiv { 1 2 5 }$

$\qquad$

$10 \times$ $\qquad$


MATHEMATICAL PRACTICES 8
Use Repeated Reasoning How did you use partial quotients to solve the problem?

## (1) Another Way Use rectangular models to record the partial quotients.

Jarod and Ana also found the number of teams using partial quotients. They recorded the partial quotients using rectangular models. They each still had 25 as the quotient.
$10+10+5=$ $\qquad$

$20+5=$ $\qquad$

MATHEMATICAL PRACTICES (2)
Reason Abstractly Why might you prefer to use one method rather than the other?

1. Lacrosse is played on a field 330 ft long. How many yards long is a lacrosse field? ( 3 feet $=1$ yard )

Divide. Use partial quotients.


So, the lacrosse field is $\qquad$ yards long.
$\qquad$

Divide. Use partial quotients.
2. $3 \longdiv { 2 2 5 }$

Divide. Use rectangular models to record the partial quotients.
3. $428 \div 4=$ $\qquad$ Math
Talk

MATHEMATICAL PRACTICES ©
Make Connections How could you solve Problems 2 and 3 a different way?
Divide. Use partial quotients.
4. $7 \longdiv { 2 2 4 }$
5. $7 \longdiv { 2 5 9 }$
6. $8 \longdiv { 8 6 4 }$
7. $6 \longdiv { 7 3 8 }$

Divide. Use rectangular models to record the partial quotients.
8. $328 \div 2=$ $\qquad$
9. $475 \div 5=$ $\qquad$
10. $219 \div 3=$ $\qquad$
11. $488 \div 4=$
$\qquad$
12. Manityaical (2) Use Reasoning What is the least number you can divide by 5 to get a three-digit quotient? Explain how you found your answer.

## Problem Solving • Applications (acald

## Use the table for 13-15.

13. Rob wants to put 8 baseball cards on each page in an album. How many pages will he fill?
14. GODEEPER Rob filled 5 plastic boxes with hockey cards. There were the same number of cards in each box. How many cards did he put in each box? How many cards were left over?

15. GODEEPER Marshall can buy 5 T -shirts for $\$ 60$. If each shirt costs the same amount, what is the cost of 4 T-shirts?
$\qquad$
16. THINK SMARTER Use partial quotients. Fill in the blanks.
$5 \longdiv { 4 8 5 }$


## Divide Using Partial Quotients

## Commo <br> Core

COMMON CORE STANDARD—4.NBT.B. 6
Use place value understanding and properties of operations to perform multi-digit arithmetic.

## Divide. Use partial quotients.

1. $8 \longdiv { 1 8 4 }$
2. $6 \longdiv { 2 5 8 }$
3. $5 \longdiv { 6 3 0 }$

| $-\frac{80}{104}$ | $10 \times 8$ | 10 |
| ---: | ---: | ---: |
| $-\frac{80}{24}$ | $10 \times 8$ | 10 |
| $-\frac{24}{0}$ | $3 \times 8 \frac{+3}{23}$ |  |

Divide. Use rectangular models to record the partial quotients.
4. $246 \div 3=$ $\qquad$ 5. $126 \div 2=$
6. $605 \div 5=$ $\qquad$

Divide. Use either way to record the partial quotients.
7. $492 \div 3=$ $\qquad$
8. $198 \div 9=$ $\qquad$
9. $692 \div 4=$ $\qquad$

## Problem Solving

10. Allison took 112 photos on vacation. She wants to put them in a photo album that holds 4 photos on each page. How many pages can she fill?
11. WRITE Math Explain how to use partial quotients to divide 235 by 5 .

## Lesson Check (4.мвт.в.6)

1. Annaka used partial quotients to divide $145 \div 5$. What could be the partial quotients Annaka used?

## Spiral Review (4.мвт..5. а..евт..б)

3. What are the partial products of $42 \times 5$ ?
4. Use the area model to find the product of $28 \times 32$.

5. Mel used partial quotients to find the quotient of $378 \div 3$. What could be the partial quotients that Mel found?
$\qquad$
6. Mr. Watson buys 4 gallons of paint that cost $\$ 34$ per gallon. How much does Mr. Watson spend on paint?
7. An adult male lion eats about 108 pounds of meat per week. About how much meat does an adult male lion eat in one day?
