LESSON MAKER PRO

Break It Apart

Multiply and divide using place value.

GRADE 5 · 5.NOS.B.7.c

5.NOS.B.7.c "Use strategies based on place value (e.g., partial products, partial quotients) to multiply and divide."

NAME _____ DATE _____

USE PLACE-VALUE PARTS

To multiply, split each factor into tens and ones. Multiply each part, then add the partial products. To divide, subtract easy multiples of the divisor and add those partial quotients.

WORKED EXAMPLE

Find 32 x 17.

1. Split the factors: 32 = 30 + 2 and 17 = 10 + 7.
2. Multiply 30 by each part: 30 x 10 = 300 and 30 x 7 = 210.
3. Multiply 2 by each part: 2 x 10 = 20 and 2 x 7 = 14.
4. Add the partial products: 300 + 210 + 20 + 14 = 544.

Answer: 544

PRACTICE 6 problems

1 Use place-value parts to find 47 x 23.

ANSWER _____

2 Use place-value parts to find 62 x 14.

ANSWER _____

3 Use place-value parts to find 38 x 15.

ANSWER _____

4 Use partial quotients to find 936 / 24.

ANSWER _____

5 Use partial quotients to find 918 / 18.

ANSWER _____

6 Use partial quotients to find 756 / 21.

ANSWER _____

APPLY IT Show your work

1 A sticker club orders 46 packs with 28 stickers in each pack. How many stickers does the club order? Use partial products to solve.

WORK SPACE

ANSWER _____

2 A game club has 1,152 cards. Each player gets a set of 16 cards. How many complete sets can the club make? Use partial quotients to solve.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Find 1,456 / 28. Show two partial quotients and explain why adding them gives the answer.

WORK SPACE AND ANSWER

Break It Apart

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use place-value parts to find 47 x 23.	**1,081**
2	Use place-value parts to find 62 x 14.	**868**
3	Use place-value parts to find 38 x 15.	**570**
4	Use partial quotients to find 936 / 24.	**39**
5	Use partial quotients to find 918 / 18.	**51**
6	Use partial quotients to find 756 / 21.	**36**

PART 2 · APPLY IT

1. **1,288 stickers** Split 46 into 40 + 6 and 28 into 20 + 8. Add the partial products: 800 + 320 + 120 + 48 = 1,288.
2. **72 sets** Subtract 16 x 70 = 1,120 from 1,152, leaving 32. Since 16 x 2 = 32, add the partial quotients: 70 + 2 = 72.

CHALLENGE

52. Since 28 x 50 = 1,400, subtracting leaves 56. Then 28 x 2 = 56, so the partial quotients 50 and 2 account for all 1,456. Their sum is 52.

Accept any correct place-value split or set of partial quotients. In the challenge, the explanation must show that the chosen multiples account for the entire dividend.