LESSON MAKER PRO

Double and Halve

Change the factors, keep the product.

GRADE 4 · 4.NOS.B.5.c

4.NOS.B.5.c "Use properties of operations (e.g., use doubling and halving strategy to think of 12 × 32 as 6 × 64) to multiply."

NAME _____ DATE _____

THE BIG IDEA

When you halve one factor and double the other, the product stays the same. Use this move to make a multiplication problem easier.

WORKED EXAMPLE

Find 18 × 25 by doubling and halving.

1. Halve 18 to get 9.
2. Double 25 to get 50.
3. Multiply: 9 × 50 = 450.

Answer: 450

PRACTICE 6 problems

1 Use doubling and halving to find 12 × 35.

ANSWER _____

2 Use doubling and halving to find 16 × 45.

ANSWER _____

3 Use doubling and halving to find 14 × 32.

ANSWER _____

4 Use doubling and halving to find 24 × 15.

ANSWER _____

5 Complete the equation, then find the product: 28 × 35 = ___ × 70 = ___.

ANSWER _____

6 Which equals 36 × 45: 18 × 90 or 18 × 45? Find the product.

ANSWER _____

APPLY IT Show your work

1 At a game club, each of 35 players gets 26 trading cards. How many cards do the players get in all? Use doubling and halving.

WORK SPACE

ANSWER _____

2 A class orders 15 boxes of glow bracelets for a school fair. Each box holds 48 bracelets. How many bracelets does the class order? Use doubling and halving.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student says 48 × 35 = 12 × 70 because they halved 48 twice and doubled 35 once. Is the student correct? Write an equal multiplication expression by halving 48 twice, then find the product.

WORK SPACE AND ANSWER

ANSWER KEY

Double and Halve

GRADE 4 · 4.NOS.B.5.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use doubling and halving to find 12 × 35.	**420**
2	Use doubling and halving to find 16 × 45.	**720**
3	Use doubling and halving to find 14 × 32.	**448**
4	Use doubling and halving to find 24 × 15.	**360**
5	Complete the equation, then find the product: 28 × 35 = ___ × 70 = ___.	**14; 980**
6	Which equals 36 × 45: 18 × 90 or 18 × 45? Find the product.	**18 × 90; 1,620**

PART 2 · APPLY IT

1. **910 trading cards** Halve 26 and double 35 to get 13 × 70 = 910.
2. **720 glow bracelets** Halve 48 and double 15 to get 24 × 30 = 720.

CHALLENGE

No. Halving 48 twice gives 12, so 35 must be doubled twice to get 140. The equal expression is 12 × 140, and the product is 1,680.

Accept other correct uses of doubling and halving. In the challenge, students must show that halving one factor twice requires doubling the other factor twice.