LESSON MAKER PRO

Decimal Product Power

Estimate first, then multiply with care.

GRADE 5 · 5.CE.3.b.iii

5.CE.3.b.iii "Estimate and determine the product of two numbers using strategies and algorithms, including the standard algorithm, when given: a two-digit factor and a two-digit factor (e.g., 0.85 × 3.7, 14 × 1.6, 9.2 × 3.5).*"

NAME _____ DATE _____

MULTIPLY DECIMALS

To estimate a decimal product, round each factor to a nearby whole number and multiply. For an exact product, multiply as if the decimals are not there, then count the total decimal places in both factors and place the decimal in the answer.

WORKED EXAMPLE

Estimate, then find the exact product: 1.8 x 2.5

1. Round: 1.8 is about 2 and 2.5 is about 3, so the estimate is 6.
2. Multiply as whole numbers using the standard algorithm: 18 x 25 ---- 90 360 ---- 450
3. The factors have 2 decimal places total.
4. Place the decimal: 450 becomes 4.50, or 4.5.

Answer: Estimate: 6; exact product: 4.5

PRACTICE 6 problems

1 Round each factor to the nearest whole number. Estimate, then find the exact product: 3.4 x 2.7

ANSWER _____

2 Round each factor to the nearest whole number. Estimate, then find the exact product: 4.5 x 1.8

ANSWER _____

3 Round each factor to the nearest whole number. Estimate, then find the exact product: 2.6 x 5.3

ANSWER _____

4 Round each factor to the nearest whole number. Estimate, then find the exact product: 0.72 x 4.5

ANSWER _____

5 Round each factor to the nearest whole number. Estimate, then find the exact product: 16 x 2.3

ANSWER _____

6 Round each factor to the nearest whole number. Estimate, then find the exact product: 7.5 x 6.4

ANSWER _____

APPLY IT Show your work

1 A student is making 14 bead bracelets. Each bracelet needs 1.8 meters of cord. Estimate the total meters of cord needed by rounding each factor to the nearest whole number. Then find the exact total.

WORK SPACE

ANSWER _____

2 For a school game night, 16 teams each use 0.75 liter of fruit punch. Estimate the total liters by rounding each factor to the nearest whole number. Then find the exact total.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Jalen says that 2.4 x 1.5 = 36. He multiplied 24 x 15 = 360 and says he put the decimal back. Is Jalen correct? Explain where the decimal belongs and why.

WORK SPACE AND ANSWER

ANSWER KEY

Decimal Product Power

GRADE 5 · 5.CE.3.b.iii

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Round each factor to the nearest whole number. Estimate, then find the exact product: 3.4 x 2.7	**Estimate: 9; exact product: 9.18**
2	Round each factor to the nearest whole number. Estimate, then find the exact product: 4.5 x 1.8	**Estimate: 10; exact product: 8.1**
3	Round each factor to the nearest whole number. Estimate, then find the exact product: 2.6 x 5.3	**Estimate: 15; exact product: 13.78**
4	Round each factor to the nearest whole number. Estimate, then find the exact product: 0.72 x 4.5	**Estimate: 5; exact product: 3.24**
5	Round each factor to the nearest whole number. Estimate, then find the exact product: 16 x 2.3	**Estimate: 32; exact product: 36.8**
6	Round each factor to the nearest whole number. Estimate, then find the exact product: 7.5 x 6.4	**Estimate: 48; exact product: 48**

PART 2 · APPLY IT

1. **Estimate: 28 meters; exact total: 25.2 meters** Round 1.8 to 2, then multiply 14 x 2 to estimate 28. Multiply 14 x 1.8 to get 25.2.
2. **Estimate: 16 liters; exact total: 12 liters** Round 0.75 to 1, then multiply 16 x 1 to estimate 16. Multiply 16 x 0.75 to get 12.

CHALLENGE

No. There are 2 decimal places total in the factors, so 360 becomes 3.60, or 3.6.

Accept equivalent exact decimal forms, such as 4.50 for 4.5 and 3.60 for 3.6. For estimates, use the results from rounding each factor to the nearest whole number as directed.