LESSON MAKER PRO

Decimal Product Detectives

Estimate, multiply, and place each decimal carefully.

GRADE 5 · 5.CE.3.b.i

5.CE.3.b.i "Estimate and determine the product of two numbers using strategies and algorithms, including the standard algorithm, when given: a two-digit factor and a one-digit factor (e.g., 2.3 × 4; 0.08 × 0.9;.16 × 5);*"

NAME _____ DATE _____

MULTIPLY WITH DECIMALS

First, estimate by rounding the two-digit factor to its greatest place value. Then use standard multiplication as if the numbers were whole numbers. Count the total decimal digits in the factors to place the decimal point in the product.

WORKED EXAMPLE

Estimate, then find 6.8 × 4.

1. Round 6.8 to 7. Estimate: 7 × 4 = 28.
2. Ignore the decimal point: 68 × 4 = 272.
3. 6.8 has one digit after the decimal point, and 4 has none. Place one decimal digit in 272 to get 27.2.

Answer: Estimate: 28; Product: 27.2

PRACTICE 6 problems

1 Estimate, then find 24 × 3.

ANSWER _____

2 Estimate, then find 5.2 × 4.

ANSWER _____

3 Estimate, then find 0.63 × 7.

ANSWER _____

4 Estimate, then find 18 × 5.

ANSWER _____

5 Estimate, then find 7.5 × 8.

ANSWER _____

6 Estimate, then find 0.48 × 6.

ANSWER _____

APPLY IT Show your work

1 Mia bikes 2.4 kilometers on each lap of a park trail. She rides 3 laps. Estimate how many kilometers she rides. Then find the exact distance.

WORK SPACE

ANSWER _____

2 The school garden gives each of 4 tomato plants 0.85 liters of water. Estimate how many liters are used. Then find the exact amount.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Estimate and find 0.36 × 0.8. Explain how you know where to place the decimal point in your exact product.

WORK SPACE AND ANSWER

ANSWER KEY

Decimal Product Detectives

GRADE 5 · 5.CE.3.b.i

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Estimate, then find 24 × 3.	**Estimate: 60; Product: 72**
2	Estimate, then find 5.2 × 4.	**Estimate: 20; Product: 20.8**
3	Estimate, then find 0.63 × 7.	**Estimate: 4.2; Product: 4.41**
4	Estimate, then find 18 × 5.	**Estimate: 100; Product: 90**
5	Estimate, then find 7.5 × 8.	**Estimate: 64; Product: 60**
6	Estimate, then find 0.48 × 6.	**Estimate: 3; Product: 2.88**

PART 2 · APPLY IT

1. **Estimate: 6 kilometers; Exact distance: 7.2 kilometers** Round 2.4 to 2, so 2 × 3 = 6. Multiply 24 × 3 = 72, then place 1 decimal digit to get 7.2.
2. **Estimate: 3.6 liters; Exact amount: 3.4 liters** Round 0.85 to 0.9, so 0.9 × 4 = 3.6. Multiply 85 × 4 = 340, then place 2 decimal digits to get 3.40, or 3.4.

CHALLENGE

Estimate: 0.32; Product: 0.288. Round 0.36 to 0.4, so 0.4 × 0.8 = 0.32. Since 0.36 has 2 decimal digits and 0.8 has 1 decimal digit, the product has 3 decimal digits.

Accept equivalent exact products with trailing zeros, such as 3.40 for 3.4. Accept the listed estimates when students round to the greatest place value of each factor.