

NAME \_\_\_\_\_

Module 5    Decimal Operations, Exponents, and Powers  
Lesson 4    Multiplying Decimals

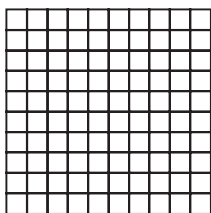
### Lesson Objectives

- Estimate products using rounding and compatible numbers.
- Model multiplication of decimals using diagrams and/or illustrations of manipulatives.
- Develop and use algorithms to multiply decimals (hundredths  $\times$  tenths up to thousandths  $\times$  thousandths).

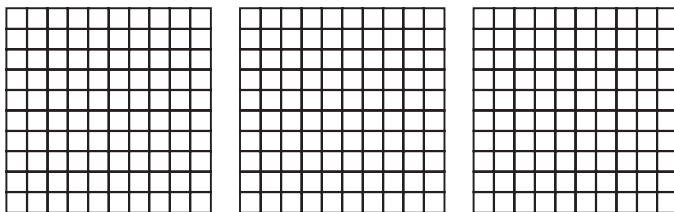
### Subtopic 1    Model Multiplication of Decimals

Use a model to solve.

1  $0.5 \times 0.6$

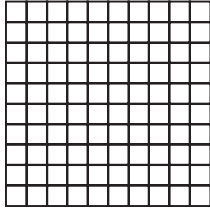


2  $6 \times 0.5$



3

$6 \times 0.05$



### Subtopic 2 Multiply Decimals by Powers of Ten

#### Multiplying a decimal by a Power of Ten

- Move the decimal point in the decimal factor as many places to the \_\_\_\_\_ as there are \_\_\_\_\_ in the power of ten.
- Add zeros as \_\_\_\_\_ in the product, if necessary.

**Multiply.**

4

$1.29 \times 100$

$0.321 \times 10$

$12.304 \times 1,000$

### Subtopic 3 Estimating Decimal Products

#### Estimating decimal products

- Round \_\_\_\_\_ or \_\_\_\_\_ factor(s).
- Multiply.
- Total the number of \_\_\_\_\_ in the factors.
- Place the decimal in the product according to that \_\_\_\_\_.

NAME \_\_\_\_\_

**Module 5**    **Decimal Operations, Exponents, and Powers**  
**Lesson 4**    **Multiplying Decimals**

**Estimate before multiplying.**

**5**  $21.103 \times 0.85$

**6**  $27.9 \times 3.45$

**Subtopic 4**    **Multiplying Decimals Using the Standard Method**

**Multiply decimals**

- Write the problem \_\_\_\_\_.
- Align \_\_\_\_\_ on the right.
- Multiply as with \_\_\_\_\_ numbers.
- Count and total the number of decimal places in the \_\_\_\_\_.
- Place the decimal in the \_\_\_\_\_ according to that total.
- Write \_\_\_\_\_ to the left of the nonzero digits in the product as \_\_\_\_\_, if necessary.

**7** Gas costs \$3.99 per gallon. Myrna's gas tank holds 12.2 gallons. How much would it cost to fill an empty tank?

**Multiply.**

**8**  $0.003 \times 0.002$