

# Unit 5 Lesson 5: Decimal Points in Products

## 1 Multiplying by 10 (Warm up)

### Student Task Statement

1. In which equation is the value of  $x$  the largest?

$$x \cdot 10 = 810$$

$$x \cdot 10 = 81$$

$$x \cdot 10 = 8.1$$

$$x \cdot 10 = 0.81$$

2. How many times the size of 0.81 is 810?

## 2 Fractionally Speaking: Powers of Ten

### Student Task Statement

Work with a partner. One person solves the problems labeled "Partner A" and the other person solves those labeled "Partner B." Then compare your results.

1. Find each product or quotient. Be prepared to explain your reasoning.

Partner A

a.  $250 \cdot \frac{1}{10}$

b.  $250 \cdot \frac{1}{100}$

c.  $48 \div 10$

d.  $48 \div 100$

Partner B

a.  $250 \div 10$

b.  $250 \div 100$

c.  $48 \cdot \frac{1}{10}$

d.  $48 \cdot \frac{1}{100}$

2. Use your work in the previous problems to find  $720 \cdot (0.1)$  and  $720 \cdot (0.01)$ . Explain your reasoning.

Pause here for a class discussion.

3. Find each product. Show your reasoning.

a.  $36 \cdot (0.1)$

b.  $(24.5) \cdot (0.1)$

c.  $(1.8) \cdot (0.1)$

d.  $54 \cdot (0.01)$

e.  $(9.2) \cdot (0.01)$

4. Jada says: "If you multiply a number by 0.001, the decimal point of the number moves three places to the left." Do you agree with her? Explain your reasoning.

### 3 Fractionally Speaking: Multiples of Powers of Ten

#### Student Task Statement

1. Select **all** expressions that are equivalent to  $(0.6) \cdot (0.5)$ . Be prepared to explain your reasoning.
  - a.  $6 \cdot (0.1) \cdot 5 \cdot (0.1)$
  - b.  $6 \cdot (0.01) \cdot 5 \cdot (0.1)$
  - c.  $6 \cdot \frac{1}{10} \cdot 5 \cdot \frac{1}{10}$
  - d.  $6 \cdot \frac{1}{1,000} \cdot 5 \cdot \frac{1}{100}$
  - e.  $6 \cdot (0.001) \cdot 5 \cdot (0.01)$
  - f.  $6 \cdot 5 \cdot \frac{1}{10} \cdot \frac{1}{10}$
  - g.  $\frac{6}{10} \cdot \frac{5}{10}$
2. Find the value of  $(0.6) \cdot (0.5)$ . Show your reasoning.
3. Find the value of each product by writing and reasoning with an equivalent expression with fractions.
  - a.  $(0.3) \cdot (0.02)$
  - b.  $(0.7) \cdot (0.05)$