Name _____

Another Look!

A builder is installing tiles at a restaurant.
The area of each tile is 0.25 square meter.
What is the area of 1,000 tiles?

$0.25 \times 10 = 0.25 \times 10^1 = 2.5$
$0.25 \times 100 = 0.25 \times 10^2 = 25$
$0.25 \times 1,000 = 0.25 \times 10^3 = 250$

So, the area of 1,000 tiles is 250 square meters.

Use patterns and place value to help you multiply a decimal by powers of 10.

In **1** and **2**, use patterns to find the products.

1. $0.057 \times 10 =$ _____

$0.057 \times 100 =$ _____

$0.057 \times 1,000 =$ _____

2. $2.148 \times 1 =$ _____

$2.148 \times 10 =$ _____

$2.148 \times 10^2 =$ _____

$2.148 \times 10^3 =$ _____

In **3–10**, find each product. Use place-value patterns to help you.

3. 0.62×10

4. 0.0063×100

Use the number of zeros or the exponent in the power of 10 to decide how to move the decimal point.

5. 19.212×10^2

6. $0.024 \times 1,000$

7. 92.3×10^4

8. 5.001×10^1

9. 1.675×1

10. 843.5×10^2

In **11–12**, find the missing exponent.

11. $0.936 \times 10^{\square} = 93.6$

12. $10^{\square} \times 12.35 = 12,350$

13. Jennifer planted a tree that was 0.17 meter tall. After 10 years, the tree was 100 times as tall as when she planted it. What is the height of the tree after 10 years?

14. Critique Reasoning Marco and Suzi each multiplied 0.721×10^2. Marco got 7.21 for his product. Suzi got 72.1 for her product. Which student multiplied correctly? How do you know?

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15. The table shows the distance a small motor scooter can travel using one gallon of gasoline. Complete the table to find the number of miles the scooter can travel for other amounts of gasoline.

Gallons	Miles
0.1	
1	118
10	

What pattern do you see in the table?
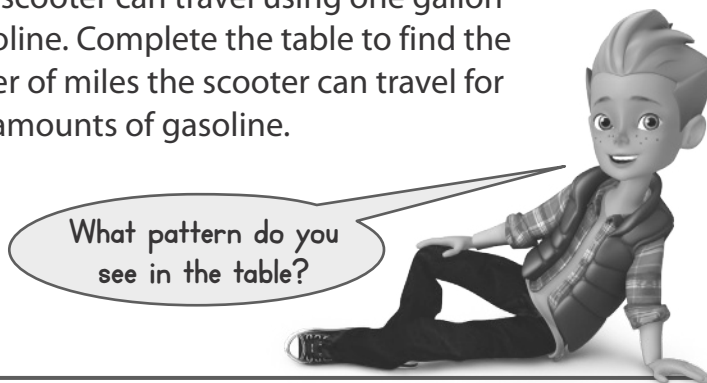
16. Give an example of two numbers that both have six digits, but the greater number is determined by the hundreds place.

17. Higher Order Thinking A store has a contest to guess the mass of 10,000 peanuts. If a peanut has a mass of about 0.45 gram, what would be a reasonable guess for the mass of 10,000 peanuts?

✓ **Assessment Practice**

18. Choose all equations that are **NOT** true.

☐ $360 \times 10^3 = 36,000$
☐ $0.36 \times 100 = 3,600$
☐ $360 \times 10^1 = 36.0$
☐ $0.036 \times 1,000 = 36$
☐ $3.6 \times 10^1 = 36$

19. Choose all equations that are true when 10^3 is placed in the box.

☐ $4.2 = \boxed{} \times 0.042$
☐ $420 = \boxed{} \times 0.42$
☐ $4,200 = \boxed{} \times 4.2$
☐ $0.042 = \boxed{} \times 42.0$
☐ $42 = \boxed{} \times 0.042$