## Activity 31 Assessment Multiplication with 0.01 and 0.1

## Multiplication with 0.01 and 0.1

Explores and generalizes patterns using place-value relationships.

21 × 0.01 21 × 0.1 21 × 1 21 × 10 21 × 100

What patterns do you notice?

"I see a growing pattern. The multiplier is 10 times bigger than the previous multiplier each time." Uses place-value patterns and multiplication properties to solve equations.

 $21 \times 0.01 = ?$  $43 \times 0.1 = ?$ 

"I know that to multiply by 0.01, I move the digits two place-value positions to the right:

21 x 0.01 = 0.21.

To multiply by 0.1, I move the digits one place-value position to the right:  $43 \times 0.1 = 4.3$ ."

Uses mental math to solve multiplication problems.

Jeremiah wants to add a 20% tip to the bill. Use this equation to calculate how much money Jeremiah will leave as a tip: \$48 × 0.20 = ?

"I know how to multiply by 0.1, so I rewrote the equation as:  $$48 \times 0.1 \times 2$ .  $$48 \times 0.1 = $4.80$  and  $$4.80 \times 2 = $9.60$ . Jeremiah will leave \$9.60 as a tip."

Solves multiplication problems flexibly, using a variety of strategies.

Determine  $4 \times 0.6$ .

"I used doubles:  $4 \times 0.6 = 4 \times 0.3 \times 2$   $4 \times 0.3 = 1.2$   $1.2 \times 2 = 2.4$ So,  $4 \times 0.6 = 2.4$ "

## **Observations/Documentation**