## Unit 5 Lesson 6: Methods for Multiplying Decimals

### 1 Equivalent Expressions (Warm up)

#### Student Task Statement

Write as many expressions as you can think of that are equal to 0.6. Do not use addition or subtraction.

### 2 Using Properties of Numbers to Reason about Multiplication

#### Student Task Statement

Elena and Noah used different methods to compute $\left(0.23\right)⋅\left(1.5\right)$. Both calculations were correct.



1. Analyze the two methods, then discuss these questions with your partner.
	* Which method makes more sense to you? Why?
	* What might Elena do to compute $\left(0.16\right)⋅\left(0.03\right)$? What might Noah do to compute $\left(0.16\right)⋅\left(0.03\right)$? Will the two methods result in the same value?
2. Compute each product using the equation $21⋅47=987$ and what you know about fractions, decimals, and place value. Explain or show your reasoning.
	1. $\left(2.1\right)⋅\left(4.7\right)$
	2. $21⋅\left(0.047\right)$
	3. $\left(0.021\right)⋅\left(4.7\right)$

### 3 Using Area Diagrams to Reason about Multiplication (Optional)

#### Images for Launch



#### Student Task Statement

1. In the diagram, the side length of each square is 0.1 unit.
	1. Explain why the area of each square is *not* 0.1 square unit.
	* 
	1. How can you use the area of each square to find the area of the rectangle? Explain or show your reasoning.
	2. Explain how the diagram shows that the equation $\left(0.4\right)⋅\left(0.2\right)=0.08$ is true.
2. Label the squares with their side lengths so the area of this rectangle represents $40⋅20$.
	1. What is the area of each square?
	2. Use the squares to help you find $40⋅20$. Explain or show your reasoning.
* 
1. Label the squares with their side lengths so the area of this rectangle represents $\left(0.04\right)⋅\left(0.02\right)$.
* Next, use the diagram to help you find $\left(0.04\right)⋅\left(0.02\right)$. Explain or show your reasoning.
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