

Name _____

Apply Properties of Multiplication to Decimals

I Can use properties of multiplication to solve problems.

You can use the properties of multiplication to help you evaluate numerical expressions more easily.

Florida's B.E.S.T.

- Number Sense & Operations 5.NSO.2.4, 5.NSO.2.5
- Mathematical Thinking & Reasoning MTR.1.1, MTR.2.1, MTR.3.1, MTR.5.1

Properties of Multiplication

Commutative Property of Multiplication If the order of factors changes, the product stays the same.	$3.6 \times 4.25 = 4.25 \times 3.6$
Associative Property of Multiplication If the grouping of factors changes, the product stays the same.	$1.2 \times (3 \times 5.64) = (1.2 \times 3) \times 5.64$
Identity Property of Multiplication The product of any number and 1 is that number.	$7.982 \times 1 = 7.982$
Zero Property of Multiplication The product of any number and 0 is 0.	$9.6 \times 0 = 0$



UNLOCK the Problem Real World

Kalea purchases 1.5 rows of seats for the play. Each row has 8 seats. If every seat costs \$6.25, how much did she pay?

Use properties to find $8 \times 6.25 \times 1.5$.

$$8 \times 6.25 \times 1.5 = 6.25 \times \underline{\hspace{1cm}} \times 1.5$$

Use the _____ Property to reorder the factors.

$$= 6.25 \times (8 \times \underline{\hspace{1cm}})$$

Use the _____ Property to group the factors.

$$= 6.25 \times \underline{\hspace{1cm}}$$

Use mental math to multiply.

$$= \underline{\hspace{1cm}}$$

Kalea pays \$ _____ for the seats.



Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain why grouping 8 and 1.5 makes the problem easier to solve.

Distributive Property	
Multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.	$1.3 \times (3.58 + 9.1) = (1.3 \times 3.58) + (1.3 \times 9.1)$
The Distributive Property can also be used with multiplication and subtraction.	$4.57 \times (6.8 - 2.9) = (4.57 \times 6.8) - (4.57 \times 2.9)$

One Way Use addition.

Write 3.6 as a sum of a whole number and a decimal.

Use the Distributive Property.

Use mental math to multiply.

Use mental math to add.

Write 3.6 as a difference of a whole number and a decimal.

Use the Distributive Property.

Use mental math to multiply.

Use mental math to subtract.

B $8.49 \times 2.7 = 2.7 \times$ _____

Think: Changing the order of factors does not change the product.

Property: _____



**Math
Talk**

MTR Engage in discussions on mathematical thinking.

Explain how to use the Distributive Property to find the product 6×7.99 .