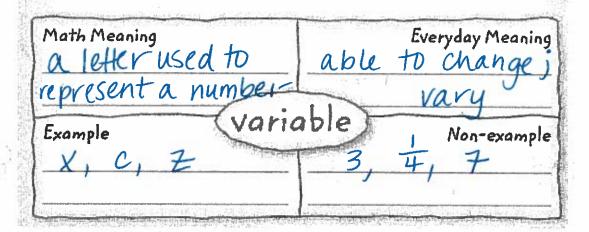**Notes**

Vocabulary

Vocabulary Start-Up

Algebra is a language of symbols including variables. A variable is a symbol, usually a letter, used to represent a number.
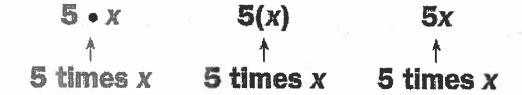
Scan the lesson to complete the graphic organizer.

Math Meaning	Everyday Meaning
a letter used to represent a number	able to change; vary
Example	**Non-example**
x, c, z	3, $\frac{1}{4}$, 7

(center) **variable**

Algebra – a language of symbols including variables.

Variable – a symbol, usually a **letter**, used to represent a number.

Evaluate – to find the value of an **expression** (Work the problem out.)

Algebraic Expressions – A combination of numbers, letters, and at least one **operation** sign.

> Any letter can be used as a variable. $\cdots\!\!\rightarrow$ $n + 2$

The letter x is often used as a variable. To avoid confusion with the symbol $\times$, there are other ways to show multiplication.

$$5 \cdot x \qquad 5(x) \qquad 5x$$
$$\uparrow \qquad\quad \uparrow \qquad\quad \uparrow$$
$$5 \text{ times } x \qquad 5 \text{ times } x \qquad 5 \text{ times } x$$

The variables in an expression can be replaced with any number. Once the variables have been replaced, you can **evaluate**, or find the value of, the algebraic expression.

Notes

Guided Practice

Evaluate each expression if $m = 4$, $z = 9$, and $r = \dfrac{1}{6}$

1.) $3 + m$

$3 + 4$

$\boxed{7}$

2.) $z - m$

$9 - 4$

$\boxed{5}$

3.) $12r$

$\dfrac{\overset{2}{\cancel{12}}}{1} \cdot \dfrac{1}{\cancel{6}_1}$

$\boxed{2}$

4.) $4m - 2$

$4 \cdot 4 - 2$

$16 - 2$

$\boxed{14}$

5.) $60r - 4$

$60 \cdot \dfrac{1}{6} - 4$

$10 - 4$

$\boxed{6}$

6.) $3r^2$

$3 \cdot \dfrac{1}{6}^2$

$3 \cdot \dfrac{1}{36}$

$\dfrac{3}{36} = \boxed{\dfrac{1}{12}}$

7.) The amount of money that remains for a 20 dollar bill after Malina buys 4 party favors for p dollars each is $20 - 4p$. Find the amount remaining if each party favor costs $3.

$20 - 4p$

$20 - 4 \cdot 3$

$20 - 12$

8

$\boxed{\$8}$

Partner Talk

Why is the following expression an "<u>Algebraic Expression?</u>"   **3x + 16**

it includes <u>letters</u> (variables)

Building on the Essential Question – How are <u>numerical expressions</u> and <u>algebraic expressions</u> different?

∗ <u>Numerical expressions</u> include only numbers and operation signs.

∗ Algebraic expressions include <u>letters</u>, numbers, and operation signs.

Rate Yourself – Are you ready to move on? Shade the section that applies.

YES   ?   NO