

Lesson 1: Exploring Polynomials | Unit 4 – Polynomials

(A) Lesson Context

BIG PICTURE of this UNIT:	<ul style="list-style-type: none"> Do mathematical operations transfer to polynomials? How can we apply polynomials to area and perimeter? 		
CONTEXT of this LESSON:	Where we've been Working with linear functions	Where we are Operations with polynomial expressions	Where we are heading Basic understanding of operations with polynomials put into context of area and perimeter

(B) Lesson Objectives:

- Work with Polynomial Expressions and operations with polynomials.
- Polynomial Addition and Subtraction
- “Who has...” Activity

(C) Warm-up

What do we consider “terms” in mathematical expressions?

How many terms does the expression $4x^2 - 3x + 1$ have?

Explain why can you not add $3x$ and 7 to create one term.

Change $3x$ or 7 so that you CAN add them to create one term.

What is $2(x - 7)$?

What is the square root of: 9 ? x^2 ? $9x^2$?

What is 4 less than 12?

What is $3x$ decreased by $-x$?

What is $8x + 5$ minus $3x - 3$?

What is $4x^2 - 3x$ plus $-2x^2 + 5x$?

“Who has...” Activity

1. Each student receives 2-3 cards.
2. The student with the card labeled “A” will start the activity.
3. The student reads to the class the “I have...” portion of their card and everyone writes the expression on their whiteboard.
4. Then the student reads to the class the “Who has...” portion of their card and everyone completes the math stated to find the next expression.
5. Students check their cards to see if they have the next expression in the “I have...” portion of their card.
6. Once someone says they have the required expression, repeat steps 3-5 until all cards have been found! 😊

“Who has...” Cards

<p>A</p> <p>I have $(5 + 2x)$.</p> <p>Who has an expression 3 LESS THAN my expression?</p>	<p>B</p> <p>I have $2x^2 + 2x + 5$.</p> <p>Who has my expression REDUCED by $2x^2$?</p>
<p>C</p> <p>I have $(2 + 2x)$.</p> <p>Who has an expression TWICE AS LARGE as my expression, PLUS x^2 ?</p>	<p>D</p> <p>I have $2x^2 + 5x - 8$.</p> <p>Who has an expression that is $(3x - 13)$ LESS THAN my expression?</p>
<p>E</p> <p>I have $(x^2 + 4x + 4)$.</p> <p>Who has an expression that is $(3x - 2)$ LESS THAN my expression?</p>	<p>F</p> <p>I have $-3x^2 - 5x$.</p> <p>Who has my expression MULTIPLIED by -1, MINUS $(x^2 + 8)$?</p>
<p>G</p> <p>I have $(x^2 + x + 6)$.</p> <p>Who has my expression PLUS $(2x^3 + 4x^2 + x - 5)$?</p>	<p>H</p> <p>I have $2x^3 - 6x^2 - 10x - 6$.</p> <p>Who has an expression HALF AS LARGE as my expression, plus $(-x^3 + 3)$?</p>

<p>I</p> <p>I have $(2x^3 + 5x^2 + 2x + 1)$.</p> <p>Who has my expression DECREASED by $(2x^2 + 2x + 2)$?</p>	<p>J</p> <p>I have $5x^3 - 2x^2 - 8x - 6$.</p> <p>Who has an expression that is $(3x^3 + 4x^2 + 2x)$ LESS THAN my expression?</p>
<p>K</p> <p>I have $(2x^3 + 3x^2 - 1)$.</p> <p>Who has my expression REDUCED by $(2x^3 - x^2 - 1)$?</p>	<p>L</p> <p>I have $-2x^2 - 6x + 5$.</p> <p>What has my expression PLUS the expression $(5x^3 - 2x - 11)$?</p>
<p>M</p> <p>I have $4x^2$.</p> <p>Who has the SQUARE ROOT of my expression?</p>	<p>N</p> <p>I have $x^2 - 2x - 2$.</p> <p>Who has my expression DECREASED by $(3x^2 + 4x - 7)$?</p>
<p>O</p> <p>I have $2x$.</p> <p>What has my expression PLUS the expression $(x^2 - 5x - 12)$?</p>	<p>P</p> <p>I have $2x^2 - 4x - 4$.</p> <p>Who has my expression DIVIDED by 2?</p>

<p>Q</p> <p>I have $(x^2 - 3x - 12)$</p> <p>Who has my expression MULTIPLIED by 3?</p>	<p>R</p> <p>I have -7.</p> <p>Who has my expression INCREASED by $(2x^2 - 4x + 3)$?</p>
<p>S</p> <p>I have $(3x^2 - 9x - 36)$.</p> <p>Who has my expression MINUS $(x^2 - 5x - 16)$?</p>	<p>T</p> <p>I have $(x^2 - 2x - 10)$.</p> <p>Who has my expression if $x = 3$?</p>
<p>U</p> <p>I have $(2x^2 - 4x - 20)$</p> <p>Who has my expression DIVIDED by 2?</p>	