Can I identify and interpret parts of an expression?

Week 2, Lesson 1

1. Warm Up
2. Notes
3. ICA

Expressions

1. What is the sum of $\sqrt{4}$ and $\sqrt{7}$?
   Is it rational or irrational?
   A. $\sqrt{4}$, rational
   B. $\sqrt{7}$, irrational
   C. $\sqrt{11}$, rational
   D. $\sqrt{14}$, irrational

2. What is the product of $\frac{2}{3}$ and $\frac{3}{14}$?
   Is it rational or irrational?
   A. $\frac{11}{17}$, rational
   B. $\frac{11}{17}$, irrational
   C. $\frac{5}{3}$, rational
   D. $\frac{5}{3}$, irrational

3. What is the product of $-\frac{5}{12}$ and $\frac{9}{14}$?

4. What is the product of $-\frac{7}{12}$ and $\frac{5}{9}$?
Fold-ables!

Fold the TOP down to the middle black line
Fold the bottom up to the middle black line

Fill in the terms in for each section...
...Then cut on the dotted lines

Write in the definition AND example from our notes for each vocabulary set.

Make sure you are writing the correct definition under the correct vocabulary word

Using 2, 1 inch pieces of tape on each side, attach this to the right side of your notes

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Expressions

Polynomial
An expression of coefficients, variables and exponents separated by + and → $2x^2 - 5x^2 + x + 9$

Terms
$\#'$s and letters separated by + (addition) and - (subtraction)

Coefficient
$\alpha$

Constant
Constants are all by themselves (no variable attached)

Exponent
$^2$

Base

Binomial
When there are two terms, it's a binomial:

Trinomial
A polynomial with 3 terms

Notes
ICA:

Binomial

Identify Each Part using today’s vocab

10x² - 7x + 5

2ab³ - 6ab² - 8ab

5x³ + 2y²

5y² - 6y + 3

ICA:

In each expression, Identify the constant and the variable

n² - 10n + 9

n² + 4n - 12

m² + 2m - 24

b² + 16b + 64

k² - 13k + 40

a² + 11a + 18

How many terms are in each expression?

4ab + 3b - 2a + 40

4x² - 11

7a + 4b - 3cd + 13x - 10

What is the coefficient in each expression?

42x² - 10

16x²

x² - 9

-10x² + 23
What parts can be found in an expression?

Give an example of each using the expression below

Exponent: $2$
Coefficient: 4
Term: $x$
Constant: 10

$4x^2 - 10x + 14$

Is this expression a binomial or trinomial?

In each expression, identify a constant, a variable, an exponent and label binomial or trinomial

$2(a - b^2)$
$\sqrt{3} + 15$
$(x + 2)^3 - 9$

$2x - 3$
$t^2 + 2t + 3$
$-3x$
"What's an Expression?"

**Week 2, Lesson 2**

1. Warm Up
2. Quiz

**What's an Expression - QUIZ**

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**Identify each part of the expression listed below. Then identify the type of polynomial as either a binomial or trinomial**

\[3x - 17\]
\[\text{Terms:}\]
\[\text{Coefficients:}\]
\[\text{Variable(s):}\]
\[\text{Constant:}\]
\[\text{Exponents:}\]
\[\text{Type of Polynomial:}\]

\[2a^3 + 6b - 102\]
\[\text{Terms:}\]
\[\text{Coefficients:}\]
\[\text{Variable(s):}\]
\[\text{Constant:}\]
\[\text{Exponents:}\]
\[\text{Type of Polynomial:}\]

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**Check Point Quiz**

- You CAN use your notebook
- You CAN'T use your neighbor
- Complete each section, front and back

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**Summary:**

- Essential Question
- Identify each part of the expression listed below. Then identify the type of polynomial as either a binomial or trinomial.
- ASSE.1a and NR-N.3 Quiz.docx
- What's an Expression.docx
Work with the examples and use examples from. Make sure every expression unique with your group and write your definitions in an expression.

<table>
<thead>
<tr>
<th>Example</th>
<th>Variable</th>
<th>Constant</th>
<th>Coefficient</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>2x + 3y</td>
<td>2</td>
<td>3</td>
<td>2x</td>
</tr>
<tr>
<td>Example</td>
<td>4m - 5n</td>
<td>-5</td>
<td>4</td>
<td>-5n</td>
</tr>
<tr>
<td>Example</td>
<td>7a^2 + 3b</td>
<td>7</td>
<td>3</td>
<td>a^2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example</th>
<th>Expression</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>2x + 3y</td>
<td>Variables: x, y</td>
</tr>
<tr>
<td>Example</td>
<td>4m - 5n</td>
<td>Constant: -5n</td>
</tr>
<tr>
<td>Example</td>
<td>7a^2 + 3b</td>
<td>Coefficient: 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example</th>
<th>Number</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>√2</td>
<td>Rational</td>
</tr>
<tr>
<td>Example</td>
<td>0.5</td>
<td>Rational</td>
</tr>
<tr>
<td>Example</td>
<td>3/4</td>
<td>Rational</td>
</tr>
</tbody>
</table>

**ASSE.1a** Identify the parts of this polynomial:

\[ 5y^2 - 3x + 11 \]

Terms:
- Coefficient:
- Variables:
- Constant:
- Exponents:
- Type of Polynomial: Polynomial
**Warm-Up**
1. 2(7 - 4)
2. 17 - 20 + 3 + 9
3. 6(6 - 10)

**Order of Operations**

1. **Simplify**: 2(7 - 4)
2. **Simplify**: 17 - 20 + 3 + 9
3. **Simplify**: 6(6 - 10)
4. **Simplify**: (5 - 3)(21 - 7)
5. **Simplify**: (21 ÷ 7) + 93
6. **Simplify**: 7 + (30 - 14)

**Order of Operations - PEMDAS**

- **Please** (Parenthesis)
  - Simplify INSIDE any parenthesis
  - 2(5 - 2)² - 3

- **Excuse** (Exponents)
  - Simplify any EXPONENTS
  - 2(3)² - 3

- **My Dear** (Multiply or Divide)
  - Simplify any MULTIPLICATION or DIVISION
  - 2(9) - 3

- **Add** or **Subtract**
  - Simplify any ADDITION or SUBTRACTION
  - 18 - 3

**Summary:**
15
ICA: Simplify

1. \(72 \div 9 + 9\)
2. \(10 - 2 \cdot 4\)
3. \(7 + 88 \div 11 + 14 - 3\)
4. \(35 \div 7 - 4 + 3\)
5. \(2(6 - 4) + 11\)
6. \((10 - 3) \div 7 + 13\)
7. \(18 \div (3 + 6)(13 - 2)\)
8. \(2 - 12(5 - 6) + 10\)

ICA: Simplify

1. \(2^2 + 7\)
2. \((5 - 1)^2 - 11\)
3. \(6^2 + 5^2\)
4. \((13 - 9)^2\)
5. \(2(11 - 6)^2 + 34\)
6. \(56 + 2(7 - 4)^2\)
7. \(34 - (7 - 10)^2 + 13\)
8. \(2(17 + 3)^2 - 7(14 - 4)^2\)
### ICA: Evaluate each expression when $x = 3$ and $y = 4$

1. $(x + y)^2$
2. $2(y - x)^2$
3. $3 + (x + 1)^2$
4. $16(y + 2)^2$
5. $(x + 2)^2(y + 3)^2$
6. $4(y - 1)^2 - 4(y - 2)^2$

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### When solving a math problem, in what order do we complete each operation?

- **Left Side:**
  - $2(14 - 3)^2 + 8$

- **Right Side:**
  - Simplify
Evaluate each expression when 
\[ x = 5 \quad \text{and} \quad y = 2 \]

\[ 4 + (x + 2)^2 \]
\[ 3(x - y)^2 \]
\[ 2(y + 1)^2 - 3(y + 2)^2 \]

What words help us identify the math practices we need to solve a problem?

**Week 2, Lesson 4**

1. Warm Up
2. Notes
3. ICA

**Translating Expressions**

1. \[ 6(7 + 3) + 8 \div 2 \]
2. \[ 15 \div 3 + 7(8 + 1) - 6 \]
3. \[ \frac{5 + 30}{7} + 6^2 - 18 \div 9 \]
4. \[ \frac{9}{3} + 5 \cdot 3^2 - 2(14 - 5) \]
Summary:

**Translating Expressions**

Words that mean...

<table>
<thead>
<tr>
<th>Addition</th>
<th>Subtraction</th>
<th>Multiplication</th>
<th>Division</th>
</tr>
</thead>
</table>

Notes

ICA:

1. Write algebraic expressions for each of the following:
   - a. 3 less than 10 times a number.
   - b. Add 4 to a then multiply by 5.
   - c. Subtract 4 from a then divide by 5.
   - d. 2 more than 4 times a number.

2. Match the word problems on the right with the math operation used to solve it on the left:
   - a. Lin has 3 sets of dishes. If each set has 8 dishes, how many dishes does Lin have?
   - b. Amy bought a dress for $18.99. She paid with a $20 bill. How much change did she receive?
   - c. Erin bought 10 roses and 13 daisies. How many flowers did she buy?
   - d. Seven students share 35 candies equally. How many candies does each student get?

3. At the museum, a child pays $c dollars for a ticket and an adult pays $a dollars. Explain in words the meaning of $a = 3c$.

4. In a flower shop, a rose costs $r$ dollars and a tulip costs $t$ dollars. Explain the meaning of $2r + 2t = 9$.

5. In the cafeteria, burgers cost $b$ dollars and French fries cost $f$ dollars. Explain in words the meaning of $4f = b$. 

ICA
ICA:

7. Explain whether $6x^2 + 7$ will be positive or negative if $x$ is positive.

Is this always true?

ICA:

8. Isabel reads 2 books from the library each month for $m$ months in a row.
   a) Write an expression to show how many books Isabel read in all.

   b) Find the number of books Isabel read if she read for 4 months.

ICA:

9. At the basketball game, the number of people entering through Gate A is $2(x + 5)$ and the number of people entering through Gate B is $(2x + 5)$ in $x$ minutes. Compare the number of people using Gate A with those using Gate B.

<table>
<thead>
<tr>
<th>$x$</th>
<th>Gate A ($2(x + 5)$)</th>
<th>Gate B $(2x + 5)$</th>
<th>Whose gate had more people enter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$2(1 + 5)$</td>
<td>$2(1) + 5$</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>$2(2 + 5)$</td>
<td>$2(2) + 5$</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$2(10 + 5)$</td>
<td>$2(10) + 5$</td>
<td></td>
</tr>
</tbody>
</table>

   What conclusions can you make?
What words help us identify the math practices we need to solve a problem?

Left Side...

Evaluate the expression \((x + y)^2\) when \(x = -3\) and \(y = 6\).

Evaluate the expression \(a(5 - b)^2 + 6\) when \(a = 10\) and \(b = 3\).

Right Side...

At a dodge ball tournament, the number of students entering through the North entrance is \(3(x+2)\) and the number of students entering through the South entrance is \(3x+2\).

Which gate had more people come through it if \(x=10\)?