Factoring Algebraic Expressions

Notes	Video Links & Practice Space
Vocabulary 1. **Common Factor:** a factor that all terms in an _____ have in common 2. **Distributive Property:** any number _____ to a sum or difference of numbers equals the sum or difference of the _____ 3. **Factor:** one of the numbers or variables that are _____ together to produce a product 4. **Factoring:** taking a number or expression _____ and writing it as a _____ of two or more factor 5. **Greatest Common Factor (GCF):** the _____ expression that evenly _____ the given expressions	
Steps to Rewrite Algebraic Expressions with Two Terms Using a Common Factor **Step 1:** Find a _____ _____ **Step 2:** _____ each term by the common _____ **Step 3:** Rewrite using the common _____. Write the common factor in front of the _____. Then place each of the new _____ inside the parentheses with an addition or subtraction sign _____ between them	 Expression $6x + 9$ Terms $6x$ $\qquad$ 9 Factors $\begin{cases} \mathbf{1}, 6x \\ 2, 3x \\ \mathbf{3}, 2x \\ 6, x \end{cases}$ $\qquad$ $\mathbf{1}, \mathbf{3}, 9 \Big\}$ Factors

Practice Problem

24x + 64

Important Note: Should you choose to use 1 as the common factor?

All terms will have a factor of 1 in common. Dividing by 1 will not change any of the values since anything divided by 1 is itself. So you will not choose 1 as a common factor unless it's the only common factor.

Practice (2:19)

Rewrite Using a Fraction

You will find factors of the numerator and denominator _____ for each fraction.

$$\frac{5}{12}x \ + \ \frac{3}{8}$$

Rewrite using a Fraction (3:19)

Rewrite Expressions with a Variable

$9x + 12x$

$5x^2 + 10x^3$

Rewrite with a Variable (3:45)

Factor with Multiple Variables

How do you know if you have used the GCF? The new terms inside the parentheses will _____ have any _____ _____!

Rewrite $\frac{2}{5}x^2y + \frac{3}{5}x^3y^2$

Factor with Multiple Variables (4:06)

Practice Problems

Rewrite $x^3y^4 - 3x^2y^3$

Practice 1 (2:48)

Practice Problems	**Practice 2 (3:35)**
Factor $45x^3y^4 - 35x^2y^2$	