Chapter 3	Expressions (no equal sign) and Equations (equal sign)
MAFS.7.EE.1.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."
Essential Question	What are terms and like terms and how do you identify them? In this lesson, I am *identifying terms and like terms in an expression by first writing the expression as a sum of its terms* so I can *later apply this to adding/subtracting expressions and solving equations.*
3.1 Algebraic Expressions	Terms: parts of an algebraic expression separated by a plus or minus Like Terms: terms that have the same variable raised to the same exponent Constant Terms: like terms without variables Simplest Form: an expression with no like terms and no parenthesis
Homework 3.1 Practice A #1-3	**Identify the terms and like terms in the expression.** **1.** $y + 10 - \frac{3}{2}y$ **2.** $2r^2 + 7r - r^2 - 9$ **3.** $7 + 4p - 5 + p + 2q$
Homework 3.1 Practice A #4-11	**Simplify the expression.** **4.** $14 - 3z + 8 + z$ **5.** $2.5x + 4.3x - 5$ **6.** $\frac{3}{8}b - \frac{3}{4}b$
Homework 3.1 Practice A #4-11	**Simplify the expression.** **7.** $3(q + 1) - 4$ **8.** $-2(g + 4) + 7g$ **9.** $7 - 4\left(\frac{3}{4}x - \frac{1}{4}\right)$

MAFS.7.EE.1.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
Essential Question	How can you simplify linear expressions? In this lesson, *I will add or subtract linear expressions using a vertical or horizontal method of combining like terms* so I can *simplify the expression down to a variable term and constant term.*
3.2 Adding and Subtracting Linear Expressions	Linear expression: is an algebraic expression in which the exponent of the variable is 1.
Homework 3.2 Practice A #1-8	**Find the sum.** **1.** $(x + 3) + (2x - 1)$ **2.** $(-8z + 4) + (8z - 7)$ **3.** $(4 - n) + 2(-5n + 3)$ **4.** $\frac{1}{2}(w - 6) + \frac{1}{4}(w + 12)$
Homework 3.2 Practice A #10-15	**Find the difference.** **5.** $(m - 3) - (-m + 12)$ **6.** $-2(c + 2.5) - 5(1.2c + 4)$
	What is the sum of the two expressions? $\left(\frac{2}{5}x + 3\right) + \left(\frac{1}{5}x - 1\right)$

Find the difference of the two expressions.

$$\left(\frac{2}{5}x + 5\right) - \left(\frac{1}{5}x - 3\right)$$

An expression is shown.

$$2\left(\frac{3}{5}x + 3\right) - \left(\frac{2}{3}x - 1\right)$$

Create an equivalent expression without parentheses.

Factoring Expressions	Factoring means writing the expression as a product of its factors by dividing each term by the greatest common factor.

Homework 3.2 extension #1-9

Factor the expression using the GCF.

1. $9 + 21$
2. $32 - 48$
3. $8x + 2$
4. $3y - 24$

5. $20z - 8$
6. $15w + 65$
7. $36a + 16b$
8. $21m - 49n$

Homework 3.2 extension #10-17

Factor out the coefficient of the variable.

9. $\frac{1}{3}b - \frac{1}{3}$
10. $\frac{3}{8}d + \frac{3}{4}$
11. $2.2x + 4.4$
12. $4h - 3$

MAFS.7.EE.2.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations to solve problems by reasoning about the quantities.
Essential Question	How can you solve a one-step equation using addition/subtraction? In this lesson, *I will use addition/subtraction properties of equality* so I can solve *one-step equations.*
3.3 Solving Equations using Addition or Subtraction	Two equations are equivalent (equal) equations if they have the same solutions. The Addition Property of Equality: adding the same number to both sides of an equation produces an equivalent equation. The Subtraction Property of Equality: subtracting the same number to both sides of an equation produces an equivalent equation.
Homework 3.3 Practice A #1-12	**Solve the equation. Check your solution.** 1. $p - 5 = -2$ 2. $w + 13.2 = 10.4$ 3. $x - \dfrac{5}{6} = -\dfrac{1}{6}$
	4. A company has a profit of $120.50 today. This profit is $145.25 less than the profit P yesterday. Write an equation that can be used to find P. 5. **WHAT IF?** You have -12 points after Level 1. Your score is 27 points less than your friend's score. What is your friend's score?

MAFS.7.EE.2.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations to solve problems by reasoning about the quantities.
Essential Question	How can you solve a one-step equation using multiplication/division? In this lesson, *I will use multiplication/division properties of equality* so I can solve *one-step equations.*
3.4 Solving Equations using Multiplication or Division	The Multiplication Property of Equality: multiplying the same number to both sides of an equation produces an equivalent equation.

The Division Property of Equality: dividing the same number to both sides of an equation produces an equivalent equation. |
| Homework 3.4 Practice A #1-6 | **Solve the equation. Check your solution.**

1. $\dfrac{x}{5} = -2$ 2. $-a = -24$ 3. $3 = -1.5n$ |
| Homework 3.4 Practice A #7-12 | **Solve the equation. Check your solution.**

4. $-14 = \dfrac{2}{3}x$ 5. $-\dfrac{8}{5}b = 5$ 6. $\dfrac{3}{8}h = -9$ |
| | 7. The record low temperature in Hawaii is –0.15 times the record low temperature in Alaska. The record low temperature in Hawaii is 12°F. What is the record low temperature in Alaska? |

MAFS.7.EE.2.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically.
Essential Question	How can you solve a two-step equation? *In this lesson, I will use properties of equality so I can solve two-step equations.*

3.5 Solving Two-Step Equations **Homework** 3.5 Practice A #1-9	**Solve the equation. Check your solution.** **1.** $2x + 12 = 4$ **2.** $-5c + 9 = -16$ **3.** $3(x - 4) = 9$
Homework 3.5 Practice A #10-12	**Solve the equation. Check your solution.** **4.** $\dfrac{m}{2} + 6 = 10$ **5.** $-\dfrac{z}{3} + 5 = 9$ **6.** $\dfrac{2}{5} + 4a = -\dfrac{6}{5}$
Homework 3.5 Practice A #16-18	**Solve the equation. Check your solution.** **7.** $4 - 2y + 3 = -9$ **8.** $7x - 10x = 15$ **9.** $-8 = 1.3m - 2.1m$