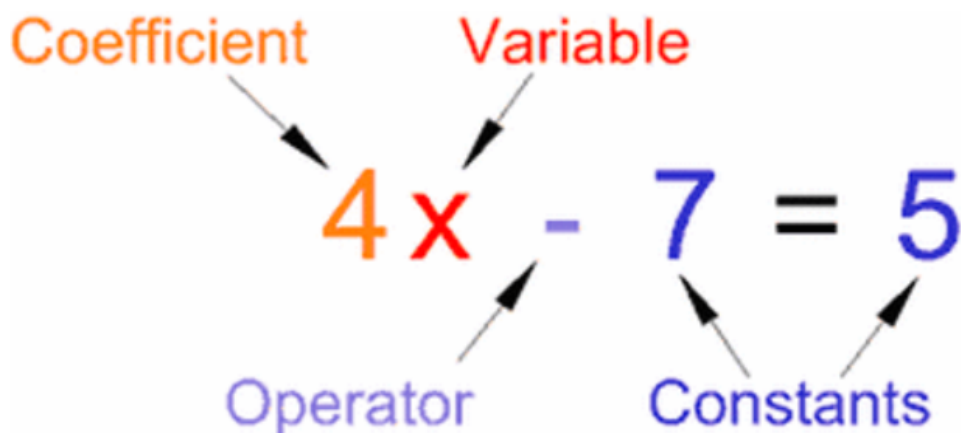# Equations and Expressions

During this unit, we will focus on the topic of equations and expressions in mathematics. We will become familiar with vocabulary associated with algebra,study properties of algebra, and inequalities. We will learn how to solve and write one-variable algebraic equations involving addition, subtraction, multiplication, and division. Quantitative relationships involving dependent and independent variables will be explored in the context of real-world problems.

Unit Priority Standards

- Apply and extend previous understandings of algebraic expressions
- Reason about and solve one-variable equations and inequalities
- Represent and analyse quantitative relationships between dependent and independent variables

Unit Transfer Goals

- Communicate and organise mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate in a professional manner
- Apply mathematics to problems that arise in everyday life, society, and the workplace.

Unit Essential questions
1. How can we represent real life relationships using numbers and variables? 2. How do I write and solve algebraic equations that represent real-world problems ? 3. How do I write and solve inequalities?

Acquisition of Knowledge Skill	
Students will know…	*Students will be skilled at…I can...*
1.Algebraic expressions are separated into parts called terms with a variable, coefficient, and constant. 2. The distributive property is applied to combine like terms and simplify algebraic expressions. 3. To solve equations and inequalities, use inverse operations to undo each operation in reverse order of the order of operations. 4. That exponents are repeated multiplication	1. solve equations and inequalities 2. use order of operations 3. Graphing inequalities on a number line 4. Solving one-variable equations 5.Combining like terms in algebraic expressions

Unit Plan

Week 1: January 10th-14th (Online)	**What is an exponent?** **What role do letters play in mathematics?**
Learning Target(s):	L1: Evaluating Exponents L2: Numerical Expressions and vocabulary L3: Find the value of an algebraic expression given the value of the variable
Acquired Knowledge:	-Using and evaluation exponents -Understanding and applying algebraic vocabulary -Solving and writing algebraic expressions
Skills, Activities, Due Dates and Assessments:	-Desmos Math Activity on exponents(L1) -Kahoot (L2) -Digital Assignment on Algebraic expressions through google slides activity(L3) \ -Google form check in(L3)

Week 2: Dates: Jan 17-21(half online)	How can we represent real life situations using algebra? What are the properties of algebra?
Learning Target(s):	L1: Write and evaluate numerical and algebraic expressions L2: Express real life situation into algebraic expressions L3: Algebraic Properties
Acquired Knowledge:	
Skills, Activities, Due Dates and Assessments:	-Khan Academy Practice exercise(L1) -Illustrative Math Questions on exponents and expressions (L1) -Better lesson Corn Maze and What's my age problem(L2) -Digital Assignment on Algebraic expressions through google slides activity Part 2(L3) -Google form check in(L3)

Week 3: Dates: Jan 24-28	How can we tell if expressions are equal?
Learning Target(s):	L1: Distributive Property L2:Introduce inverse operations and teach strategies on how to use them to solve equations L3: Solve and write Addition and Subtraction Equations
Acquired Knowledge:	Solve algebraic equations involving all four operations
Skills, Activities, Due Dates and Assessments:	Textbook pages 495-508 Weekly Homework Weekly Check in(L3)

Week 4: Lunar Holiday Only Feb 3-4	How do you solve algebraic equations involving multiple operations?
Learning Target(s):	L1: Solve and write multiplication and division equations
Acquired Knowledge:	Solving algebraic equations involving all four operations
Skills, Activities, Due Dates and Assessments:	Fish game using chromebooks solving algebraic problems using software

Week 5: Feb 7-11	What is an inequality? How do we relate numbers using mathematical symbols?
Learning Target(s):	L1: Write and solve inequalities L2: Finding input and output in a function table L3:Graphing linear equations using a table of values
Acquired Knowledge:	Find the input and output for a function table. Find the rule of a sequence. Write an equation to represent a function. Graph inequalities on a number line
Skills, Activities, Due Dates and Assessments:	Weekly Homework Weekly Check in **Formative project introduction:** Coffee Shop Project

Week 6 Feb 14-18	**How you determine if two numbers or expressions are equal?** **What**
Learning Target(s):	L1: Write and represent functions using words, tables, equations, and graphs L2:Write and represent functions using words, tables, equations, and graphs(cont) L3: Review
Acquired Knowledge:	Represent a real-world problem in the form of an equation, table, and graph. Determine the solution of an inequality. Write inequalities and graph solutions on a number line. Solve inequalities and graph solutions on a number line.
Skills, Activities, Due Dates and Assessments:	Check in(L3) Weekly Homework Review for test during following week including study guide and atlas review questions

Try to have consistent formatting over your weeks. The first two weeks are formatted with lists and the others are not.

Assessment Details

Evidence
I will check students' understanding throughout the unit by...

Summative	Formative

Summative
 	
Weekly Check ins
 	
[Coffee Shop summative project:](#)
Students will set up a coffee shop in the classroom, they will solve inequalities and equations to solve and plan their coffee shop
 	
Final Unit Test (Feb 21)
	Formative
	Daily warm up questions
	    ● Daily bell ringer questions will be used as a way to review and go over previous lessons content. This will act as formative
	
	Weekly homework (self grading in class)
	    ● Weekly homework will be assigned and corrected on the first day of each week. They will have one week to complete it.