Park Hill School District

Building Successful Futures • Each Student • Every Day

Summer School 7th Grade Mathematics Curriculum

Scope and Sequence:

Timeframe	Unit	Instructional Topics
2 days	Unit 1: Numerical Expressions and Factors	● Order of Operations ● Least Common Multiple
3 days	Unit 2: Fractions	● Multiplying and Dividing Fractions and Mixed Numbers
2 days	Unit 3: Ratios and Rates	● Ratios, Rates, and Unit Rates
5 days	Unit 4: Percents	● Convert and Order Fractions, Decimals, and Percents ● Solve Percent Problems
3 days	Unit 5: Algebraic Expressions and Properties	● Write and Evaluate Algebraic Expressions ● Distributive Property ● Factoring
2 days	Unit 6: Equations	● Write equations in one variable ● Solve one step equations

4 days	Unit 7: Integers & Number Lines	● Integers
		● Rational Numbers
		● Inequalities
		   ○ Write and determine if a number a solution
		   ○ Solving one-step inequalities

1 day	Unit 8: Statistical Measures	● Mean, Median, Mode, and Range

There are only 22 out of 24 days accounted for above. Day 1 is a get to know you activity and Day 24 is a summary activity, both which are outlined in the Daily Lesson Plans.

Summer School Unit: Numerical Expressions and Factors

Name of Unit 1: Numerical Expressions and Factors

Length of Unit: 2 days

Overview of Unit: Chapter 1 includes the order of operations, which is an essential understanding for work in mathematics. Students should be familiar with prime and composite numbers, and know the difference between factors and multiples. A factor tree is introduced as a tool for finding the prime factorization of a number. Prime factorizations will be used to find the greatest common factor (GCF) and least common multiple (LCM) of two numbers. Contextual applications of the GCF and the LCM will also be explored in this chapter.

Priority Standards for unit:
- 6.EEI.A.1 Describe the difference between an expression and an equation.
- 6.EEI.A.2 Create and evaluate expressions involving variables and whole number exponents.
    - b. Evaluate expressions at specific values of the variables.
    - c. Evaluate non-negative rational number expressions

Supporting Standards for unit:
- ISTE-COMPUTATIONAL THINKER. 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
- 6.NS.B.4 Find common factors and multiples.
    - a. Find the greatest common factor (gcf) and the least common multiple (lcm).
    - b. Use the distributive property to express the sum of two whole numbers with a common factor as a multiple of two whole numbers.

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6.EEI.A.1	The expectation of the student is to describe the difference between an expression and an equation.	Describe	Knowledge	1
6.EEI.A.2	Create and evaluate expressions involving variables and whole number exponents.	Create	Create	4
6.EEIA.2b	Evaluate expressions at specific values of the variable	Evaluate	Evaluate	4
6.EEIA.2c	Evaluate non-negative rational number expressions.	Evaluate	Evaluate	4

Essential Questions:
1. How can you use Algebraic Expressions to make decisions?
2. What is prime factorization and how is it helpful?

Enduring Understanding/Big Ideas:
1. Evaluating Algebraic expressions allows you to compare situations and make decisions using replacement values that make sense in a real world situation.
2. The prime factorization of a composite number is the number written as the product of its prime factors. Using prime factorization will more quickly allow you to find the LCM or GCF of a set of numbers.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Equivalent Expression Evaluate Product	Base Common Factors Common Multiples Composition Factor Pair Factor Tree Greatest Common Factor Least Common Multiples Numerical Expression Order of Operations Prime Prime Factorization

Topic 1: Order of Operations

Engaging Experience 1

Title: Order of Operations

Suggested length: 1 day

Standards Addressed

> *Priority:*
>
> - 6.EEI.A.2 Create and evaluate expressions involving variables and whole number exponents.
>
>   b. Evaluate expressions at specific values of the variables.
>
>   c. Evaluate non-negative rational number expressions

Detailed description/ instructions: Discussion of operation, review anchor chart, puzzle activity

Bloom's Levels: Evaluate, Create

Webb's DOK: 4

Topic 2: Least Common Multiple

<u>Engaging Experience 1</u>

Title: Least Common Multiple (LCM)

Suggested length: 1 day

Standards Addressed

> *Priority:*
> - 6.NS.B.4 Find common factors and multiples.
>   - a. Find the greatest common factor (gcf) and the least common multiple (lcm).
>   - b. Use the distributive property to express the sum of two whole numbers with a common factor as a multiple of two whole numbers.

Detailed description/ instructions: Discuss a multiple, LCM notes, LCM MATH-O

Bloom's Levels: Apply

Webb's DOK: 4

Engaging Scenario

Each topic has its own Engaging Scenario:

Topic 1: Puzzle

Topic 2: MATH-O

Summer School Unit: Fractions and Decimals

Name of Unit: Fractions and Decimals

Length of Unit: 3 days

Overview of Unit: By the end of this unit, all students should be proficient in adding, subtracting, multiplying, and dividing fractions, including mixed numbers, and decimals.

Priority Standards for unit:
- 6.NS.A.1 Compute and interpret quotients of positive fractions
  - Solve problems involving division of fractions by fractions.
- 6.NS.B.3 Demonstrate fluency with addition, subtraction, multiplication and division of decimals.

Supporting Standards for unit:
- 5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 6.NS.B.3 The expectation for the student is to demonstrate fluency with addition, subtraction, multiplication and division of decimals. (*Fluency refers to accuracy and efficiency and does not equate to memorization.*)

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6.NS.A.1	Compute and interpret quotients of positive fractions	Compute	Apply	3
6.NS.A.1	Compute and interpret quotients of positive fractions	Interpret	Understand	2
6.NS.B.3	Demonstrate fluency with addition, subtraction, multiplication, and division of decimals	Demonstrate	Apply	3

Essential Questions:
1. How is dividing by a fraction like dividing by a whole number and how is it different?
2. How can the meaning of division be extended from whole numbers to fractions?
3. How can you extend the use of place value with whole number operations to decimal operations?

Enduring Understanding/Big Ideas:

1. You can use a number line model to show division of whole numbers or division of fractions: when you divide whole number, the quotient is always less than (or equal to) the dividend: when you divide fractions, the quotient can be greater than the dividend

2. When you divide whole numbers, the quotient is always less than or equal to the dividend. When you divide fractions, the quotient can be greater than the dividend.

3. Adding decimals is like adding whole numbers; in both situations you line up place values before you start. Multiplying decimals is like multiplying whole numbers, but you have to count up the number of decimal places in the factors and use that sum to place the decimal point in the product. Dividing decimals is like dividing whole numbers but if there is a decimal point in the divisor you have to multiply the divisor and the dividend by a power of ten before you start.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Compare Convert Contrast Equivalent Estimate Simplify	Denominator Dividend Divisor Factor Improper Fraction Mixed Number Multiplicative Inverses Numerator Product Quotient Reciprocal Reduce Simplest Form

Topic 1: Multiplying and Dividing Fractions and Mixed Numbers

Engaging Experience 1

Title: Multiplying and Dividing Fractions and Mixed Numbers

Suggested length: 3 days

Standards Addressed

Priority:

- 6.NS.A.1 Compute and interpret quotients of positive fractions
  - Solve problems involving division of fractions by fractions.
- 6.NS.B.3 Demonstrate fluency with addition, subtraction, multiplication and division of decimals.

Detailed description/ instructions: There are three days for this topic

Day 1: Review multiplying, practice, stations (Fraction Flip-It and I have...Who has...)?)

Day 2: Review dividing, practice, Super Six

Day 3: Review converting between improper and mixed fractions, practice, Ask the Expert

Bloom's Levels: Understand, Apply

Webb's DOK: 2, 3

Engaging Scenario

Each topic/day has its own Engaging Scenario

Topic 1: Stations: Fraction Flip-It and I have...Who has…?
Topic 2: Super Six
Topic 3: Ask the Expert

Summer School Unit: Ratios and Rates

Name of Unit 1: Ratios and Rates

Length of Unit: 2 days

Overview of Unit: This unit begins with introductory skills associated with writing and representing ratios. Once the concept of a ratio has been introduced, equivalent ratios can be used to solve a wide variety of problems.

Priority Standards for unit:
- 6.RP.A.2 Understand the concept of a unit rate associated with a ratio, and describe the meaning of unit rate.
- 6.RP.A.1 Understand a ratio as a comparison of two quantities and represent these comparisons.
- 6.RP.A.3 Solve problems involving ratios and rates.
  - a) Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane.
  - b) Solve unit rate problems.
  - d) Convert measurement units within and between two systems of measurement.

Supporting Standards for unit:
- ISTE-COMPUTATIONAL THINKER. 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DoK
6.RP.A.1	Understand a ratio as a comparison of two quantities and represent these comparisons	Understand	Understand	2
6.RP.A.2	Understand the concept of a unit rate associated with a ratio, and describe the meaning of unit rate	Understand	Understand	2
6.RP.A.3	Solve problems involving ratios and rates	Solve	Apply	3

6.RP.A.3.A	Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane.	Create	Create	4
6.RP.A.3.B	Solve unit rate problems.	Solve	Apply	3
6.RP.A.3.D	Convert measurement units within and between two systems of measurement	Convert	Understand	2

Essential Questions:

1. Which models are helpful in which situations?
2. How are models helpful in making comparisons?
3. Why might one representation be more useful than another?

Enduring Understanding/Big Ideas:

1. Usefulness of equivalent ratios/fractions for making predictions and scaling up and down. Usefulness of ratios as fractions for comparing terms of ratios. Usefulness of ratios as decimals for comparing ratios. A rate is a number that compares two quantities with different units. Comparing unit prices is helpful when you have to decide what to purchase. You can use rates to convert measurements from one unit to another.
2. Two ratios that are equivalent form a proportion. You can use tables, graphs, and equations to represent a proportional relationship and make comparisons. You can use a percent to represent a part to a whole ratio.
3. Being able to analyze a situation and communicate it effectively.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Bargain Shopping Equivalent Convervios	Conversion Factor Equivalent Rates Equivalent Ratios Metric System Ratios Ratio Table Tape Diagram Unit Analysis Unit Rate US Customary System Value of the Ratio

Topic 1: Ratios, Rates, and Unit Rates

<u>Engaging Experience 1</u>
Title: Ratios, Rates, and Unit Rates
Suggested length: 2 days
Standards Addressed

> *Priority:*
> - 6.RP.A.2 Understand the concept of a unit rate associated with a ratio, and describe the meaning of unit rate.
> - 6.RP.A.1 Understand a ratio as a comparison of two quantities and represent these comparisons.
> - 6.RP.A.3 Solve problems involving ratios and rates.
>   > a) Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane.
>   > b) Solve unit rate problems.
>   > d) Convert measurement units within and between two systems of measurement.

Detailed description/ instructions: There are two days for this topic

> **Day 1 - Ratios:** Anchor Chart and examples, practice, stations (Mini Marshmallow Ratios, Ratio Mania, Dice Ratio Game)
> **Day 2 - Rates and Unit Rates:** Anchor chart, practice, stations (Deal Finder, Draw a Plutonian)

Bloom's Levels: Understand, Apply, Create
Webb's DOK: 2, 3, 4

Engaging Scenario

Each topic has its own Engaging Scenario

Topic 1: Stations - Mini Marshmallow Ratios, Ratio Mania, and Dice Ratio Game
Topic 2: Stations - Deal Finder and Draw a Plutonian

Summer School Unit: Percents

Name of Unit 1: Percents

Length of Unit: 5 days

Overview of Unit: A major goal of this unit is to describe percents as another way of representing fractions and decimals. More specifically, because the term *percent* means *per one hundred*, you can write percents as fractions or decimals. The terminology and notation may be new to students but the concept is not.

Priority Standards for unit:
- 6.RP.A.3 Solve problems involving ratios and rates.
  - Solve percent problems.

Supporting Standards:
- 6.NS.C.8 Extend prior knowledge to generate equivalent representations of rational numbers between fractions, decimals and percentages (limited to terminating decimals and /or benchmark fractions of ⅓ and ⅔.
- ISTE-COMPUTATIONAL THINKER.5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6.RP.A.3	Find a percent of a quantity and solve percent problems	Find	Understand	2
6.RP.A.3	Find a percent of a quantity and solve percent problems	Solve	Apply	3

Essential Questions:
1. What are percents? What is the value of having a common language for comparing ratios?
2. How is a fraction used to represent a percent?

Enduring Understanding/Big Ideas:
1. Percents are a common language for comparing ratios. Having a common language helps situations be compared more easily. For example, it is is easier to compare 25% to 20 than to compare ¼ to ⅖

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2. A percent can be written as a fraction over 100, where 100 is the whole, (denominator) and the percent is the part, (numerator).

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Ascending Compare Descending Order	Base Ten Blocks Decimal Fraction Percent Whole Number

Topic 1: Convert and Order Fractions, Decimals, and Percents

<u>Engaging Experience 1</u>

Title: Convert and Order Fractions, Decimals, and Percents

Suggested length: 4 days

Standards Addressed

> *Priority:*
> - 6.RP.A.3 Solve problems involving ratios and rates.
>   - Solve percent problems.

Detailed description/ instructions: There are four days for this topic

> Day 1: Anchor chart and review, Practice, Decimal Dice Game
>
> Day 2: Anchor chart and review, Practice, Stations (BUMP, Match, Dots)
>
> Day 3: Anchor chart and review, Practice, Fraction to Percent Dominoes
>
> Day 4: Practice, Stations: Human Number Line, Scavenger Hunt, Connect Four

Bloom's Levels: Analyze

Webb's DOK: 4

Topic 2: Solve Percent Problems

Engaging Experience 1

Title: Solve Percent Problems

Suggested length: 1 day

Standards Addressed

> *Priority:*
> - 6.RP.A.3 Solve problems involving ratios and rates.
>   - Solve percent problems.

Detailed description/ instructions: Anchor chart, practice, Escape Room

Bloom's Levels: Understand, Apply

Webb's DOK: 2, 3

Engaging Scenario

Each topic has its own Engaging Scenario
Topic 1: Decimal Dice Game
Topic 2: Stations - BUMP, Match, Dots
Topic 3: Fraction to Percent Dominoes
Topic 4: Stations: Human Number Line, Scavenger Hunt, Connect Four
Topic 5: Escape Room

Summer School Unit: Algebraic Expressions and Properties

Name of Unit 1: Algebraic Expressions and Properties

Length of Unit: 3 days

Overview of Unit: Students will write and evaluate algebraic expressions, use properties with algebraic expressions, and factor expressions.

Priority Standards for unit:
- 6.EEI.A.2 Create and evaluate expressions involving variables and whole number exponents
  - Identify parts of an expression using mathematical terminology
  - Evaluate expressions at specific values of the variables.
  - Evaluate non-negative rational number expressions
  - Write and evaluate algebraic expressions
  - Understand the meaning of the variable in the context of the situation

Supporting Standards for unit:
- ISTE-COMPUTATIONAL THINKER. 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6.EEI.A.2	Evaluate algebraic expressions given values of their variables	Evaluate	Evaluate	4
6.EEI.A.2	Write algebraic expressions and solve problems involving algebraic expressions.	Solve	Apply	3

Essential Questions:
1. What is an advantage of using mathematical expressions?
2. What are properties? How are properties useful?

Enduring Understanding/Big Ideas:
1. When you don't know all of the information, a numerical expression isn't enough and you need to write an algebraic expression
2. They allow you to rewrite expression in different ways. Rewriting an expression allows you to see the problem in a new way, which can sometimes help you see a solution path, or a new way of looking at the problem

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Collect Factor Order	Algebraic Expression Associative Property of Addition Associative Property of Multiplication. Coefficient Commutative Property of Addition commutative Property of Multiplication Constant Distributive Property Equivalent Expressions Factoring the Expression Identity Property of Addition Identity Property of Multiplication Like Terms Term Variable Zero Property

Topic 1: Write and Evaluate Algebraic Expressions

<u>Engaging Experience 1</u>

Title: Write and Evaluate Algebraic Expressions

Suggested length: 1 day

Standards Addressed

> *Priority:*
> - 6.EEI.A.2 Create and evaluate expressions involving variables and whole number exponents
>   - Identify parts of an expression using mathematical terminology
>   - Evaluate expressions at specific values of the variables.
>   - Evaluate non-negative rational number expressions
>   - Write and evaluate algebraic expressions
>   - Understand the meaning of the variable in the context of the situation

Detailed description/ instructions: Anchor Chart, Practice, Stations: Language of Algebra Matching and Dice Substitution

Bloom's Levels: Apply, Evaluate

Webb's DOK: 3, 4

Topic 2: Distributive Property

Engaging Experience 1

Title: Distributive Property

Suggested length: 1 day

Standards Addressed

    Priority:

- 6.EEI.A.3 Identify and generate equivalent algebraic expressions using mathematical properties.

Detailed description/ instructions: Anchor Chart, Practice, Distributive Property Dice Game

Bloom's Levels: Create, Evaluate

Webb's DOK: 4

Topic 3: Factoring

Engaging Experience 1

Title: Factoring

Suggested length: 1 day

Standards Addressed

> *Priority:*
> - 6.EEI.A.3 Identify and generate equivalent algebraic expressions using mathematical properties.

Detailed description/ instructions: Anchor Chart, Practice, Stations (Tic-Tac-Toe and Board Game)

Bloom's Levels: Create

Webb's DOK: 4

Engaging Scenario

Each topic has its own Engaging Scenario

Topic 1: Stations: Language of Algebra Matching and Dice Substitution
Topic 2: Distributive Property Dice Game
Topic 3: Stations: Tic-Tac-Toe and Board Game

Summer School Unit: Equations

Name of Unit 1: Equations

Length of Unit: 2 days

Overview of Unit: The algebra strand continues in this unit as students learn to write and solve equations in one variable with nonnegative rational-number solutions. Students will also analyze the quantitative relationship between independent and dependent variables.

Priority Standards for unit:

- 6.EEI.B.4 Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.
- 6.EEIB.5 Understand that if any solution exist, the solution set for an equation or inequality consists of values that makes the equation or inequality true.
- 6.EEI.B.6 Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation.
- 6.EEI.B.7 Solve one-step linear equations in one variable involving non-negative rational numbers.
- 6.EEI.C.9 Identify and describe relationships between two variables that change in relationships to one another.
    - Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable.

Supporting Standards for unit:

- ISTE-COMPUTATIONAL THINKER. 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6.EEI.B.4	Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.	Determine	Analyze	4
6.EEI.B5	Understand that if any solution exist, the solution set for an equation or inequality consists of values that makes the equation or inequality true.	Understand	Understand	3

6.EEI.B.6	Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation.	Write and Solve	Apply	3
6.EEI.B.7	Solve one-step linear equations in one variable involving non-negative rational numbers.	Solve	Apply	3
6.EEI.C.9	Identify and describe relationships between two variables that change in relationships to one another.	Write	Apply	3

Essential Questions:

1. How are mathematical equations used to represent real-world situations?
2. How can you represent relationships that are equal?
3. How are two-variable relationships different from one-variable relationships? When do you need two variables?

Enduring Understanding/Big Ideas:

1. A lot of real world situation can be represented with numbers.
2. You can represent a relationship with a verbal description, math symbols, or you can draw a diagram. You can write an equation to represent an equal relationship.
3. Sometimes there are two unknown quantities in a problem situation, so you need two variables. In a two variable situation, a change in one quantity affects the other quantity. You can solve an equation with one variable by undoing operation, and the answer is usually a single number. Equations with two variables have many solutions, and you can find one of the solutions by substituting a value for one of the variables and solving for the other variable.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Balance Solve Unknown	Area Equation in two variables Dependent Variable Division Property of Equality Independent Variable Inverse Operations Perimeter Solution of an equation in two variables.

Topic 1: Write Equations in One Variable

Engaging Experience 1

Title: Write Equations in One Variable

Suggested length: 1 day

Standards Addressed

> *Priority:*
> - 6.EEI.B.6 Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation.

Detailed description/ instructions: Expressions vs. Equations, Practice, Writing Equations Puzzle

Bloom's Levels: Apply

Webb's DOK: 3

Topic 2: Solve One-Step Equations

Engaging Experience 1

Title: Solve One-Step Equations

Suggested length: 1 day

Standards Addressed

> *Priority:*
>
> - 6.EEI.B.7 Solve one-step linear equations in one variable involving non-negative rational numbers.

Detailed description/ instructions: Anchor chart, practice, Build-a-Monster

Bloom's Levels: Apply

Webb's DOK: 3

Engaging Scenario

Each topic has its own Engaging Scenario

Topic 1: Writing Equations Puzzle
Topic 2: One-Step Equations Build-a-Monster

Summer School Unit: Integers & Number Lines

Name of Unit 1: Integers & Number Lines

Length of Unit: 4 days

Overview of Unit: This unit brings together and extends two areas of previous study, the number system and work with equations. Students' understanding of decimals and fractions is applied to negative quantities and their understanding of equations is applied to inequalities.
 Understanding that negative numbers can represent quantities that have opposite directions or values is more difficult and representing negative numbers on a number line is often the most challenging. Temperatures and elevations are familiar applications for students and are both typically represented in a vertical form. When rational numbers are represented on a horizontal number line, students can become very confused.

Priority Standards for unit:

- 6.NS.C.5 Use positive and negative numbers to represent quantities.
- 6.NS.C.6 Locate a rational number as a point on the number line. Locate rational numbers on a horizontal or vertical number line.
- 6.NS.C.7 Understand that the absolute value of a rational number is its distance from 0 on the number line.
- 6.EEI.B.4 Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.
- 6.EEI.B.5 Understand that if any solution exist, the solution set for an equation or inequality consists of values that makes the equation or inequality true.
- 6.EEI.B.8 Recognize that inequalities may have infinitely many solutions.
  - Write an inequality of the forms X>c, X<C, X $\geq$ C or X$\leq$C to represent a constraint or condition.
  - Graph the solution set of an inequality.

Supporting Standards for unit:

- ISTE-COMPUTATIONAL THINKER.5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6.NS.C.5	Use positive and negative numbers to represent quantities.	Use	Apply	3

6.NS.C.6	Locate a rational number as a point on the number line. a. Locate rational numbers on a horizontal or vertical number line.	Locate	Knowledge	1
6.NS.C.7	Understand that the absolute value of a rational number is its distance from 0 on the number line.	Understand	Understand	2
6.EEI.B.4	Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.	Determine	Analyze	4
6.EEI.B.5	Understand that if any solution exist, the solution set for an equation or inequality consists of values that makes the equation or inequality true.	Understand	Understand	2
6.EEI.B.8	Recognize that inequalities may have infinitely many solutions.	Recognize and Graph	Create	4

Essential Questions:
1. What are integers?
2. What do integers allow you to do that whole numbers do not?
3. What does it mean for one negative number to be greater than another negative number?
4. How can you use that information?
5. How can you express the distance of any number from zero?
6. When might you might need to know the distance from zero?
7. How are integers used to express distances?

Enduring Understanding/Big Ideas:
1. Integers are the set of positive whole numbers, their opposites and zero.
2. Integers allow us to represent that are both greater than and less than zero. Whole numbers can only represent positive numbers and zero.
3. As with positive numbers, the greater negative number is located farther to the right on a number line.
4. This allows you to use a number line to compare and order integers so you can determine which is the greater or least.
5. The absolute value of any number expresses the distance of the number from zero.
6. The absolute value allows you to compare numbers on either side of zero to find which is

closest to or farthest from zero.

7. Positive integers and zero are used to measure distance. Negative integers can't be used to measure distances, but they can be used to indicate a position relative to another location.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Deposit Distance Greater than Horizontal Less Than Number Line Vertical Withdraw	Absolute Value Inequality Integers Opposites Order Pair Origin Negative Numbers Polygon Positive Numbers Quadrants Rational Numbers Reciprocal Reflection Solution of an inequality Solution Set

Topic 1: Integers

Engaging Experience 1

Title: Integers

Suggested length: 1 day

Standards Addressed

    Priority:

- 6.NS.C.5 Use positive and negative numbers to represent quantities.

Detailed description/ instructions: Anchor chart, practice, Stations (Human Number Line, Scavenger Hunt, Opposites Matching Game, Online Games)

Bloom's Levels: Apply

Webb's DOK: 3

Topic 2: Rational Numbers

Engaging Experience 1
Title: Rational Numbers
Suggested length: 1 day
Standards Addressed

Priority:

- 6.NS.C.6 Locate a rational number as a point on the number line. Locate rational numbers on a horizontal or vertical number line.

Detailed description/ instructions: Anchor Chart, practice, Digital Breakout
Bloom's Levels: Analyze
Webb's DOK: 3

Topic 3: Write & Graph Inequalities & Determine if Number is a Solution

Engaging Experience 1

Title: Writing and determine if a number a solution

Suggested length: 1 day

Standards Addressed

> *Priority:*
>> ● 6.EEI.B.4 Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.

Detailed description/ instructions: Anchor chart, practice, Inequalities Board Game

Bloom's Levels: Analyze

Webb's DOK: 4

Topic 4: Solve One-Step Inequalities

Engaging Experience 1

Title: Solving one-step inequalities

Suggested length: 1 day

Standards Addressed

Priority:

- 6.EEI.B.5 Understand that if any solution exist, the solution set for an equation or inequality consists of values that makes the equation or inequality true.
- 6.EEI.B.8 Recognize that inequalities may have infinitely many solutions.

Detailed description/ instructions: Anchor chart, practice, Stations (Task Cards, Puzzle, Maze)

Bloom's Levels: Understand, Create

Webb's DOK: 2, 4

Engaging Scenario

Each topic has its own Engaging Scenario:

Topic 1: Stations: Human Number Line, Scavenger Hunt, Opposites Matching Game, Online Games
Topic 2: Digital Breakout
Topic 3: Inequalities Board Game
Topic 4: Stations - Task Cards, Puzzle, Maze

Summer School Unit: Statistical Measures

Name of Unit 1: Statistical Measures

Length of Unit: 1 day

Overview of Unit: Overarching goals of the unit are for students to develop an understanding of statistical variability and to be able to summarize and describe the distribution of a data set.

Priority Standards for unit:
- 6.DSP.B.5 Summarize numerical data sets in relation to the context.
  - Report the number of observations.
  - Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.
  - Give quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context of the data.
  - Analyze the choice of measures of center and variability based on the shape of the data distribution and/or the context of the data.

Supporting Standards for unit:
- ISTE-COMPUTATIONAL THINKER. 5: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Priority Standard	Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
6DSP.A.5	Summarize numerical data sets in relation to the context.	Summarize	Understand	2

Essential Questions:
1. Why would you ask a statistical question?
2. How do you use measures of center?

Enduring Understanding/Big Ideas:
1. Statistical questions are questions that anticipate variability.
2. Use measure of center to summarize all of the values in a data set with a single number, and use measures of variation to summarize how all the values in a data set vary with a single number.

Unit Vocabulary:

Academic Cross-Curricular Words	Content/Domain Specific
Average Data Graphs Survey	First quartile Interquartile range Mean Mean absolute deviation Measure of center Measure of variation Median Mode Outlier Quartiles Range Skewed Statistics Statistical question Symmetry Third quartile

Topic 1: Mean, Median, Mode, Range

Engaging Experience 1

Title: Mean, Mean Absolute Deviation, Median

Suggested length: 1 day

Standards Addressed

    Priority:

- 6.DSP.B.5 Summarize numerical data sets in relation to the context.
  - Report the number of observations.
  - Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.
  - Give quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context of the data.
  - Analyze the choice of measures of center and variability based on the shape of the data distribution and/or the context of the data.

Detailed description/ instructions: Anchor chart, practice, Stations (Truth or Dare & Popcorn Data)

Bloom's Levels: Analyze

Webb's DOK: 4

Engaging Scenario

Each topic has its own Engaging Scenario:

Topic 1: Stations: Truth or Dare & Popcorn Data

List of Materials needed for summer school course (7th Math):

*These items can all be placed in **1 to 2 totes**. There is no need for 6 totes.*

1. *180 folders TOTAL*
2. *600 pencils TOTAL*
3. *40 pairs of scissors TOTAL*
4. *30 whiteboards TOTAL*
5. *100 expo markers TOTAL*
6. *30 erasers TOTAL*
7. *Bingo Markers (30 sets of 24 = 720 TOTAL)*
8. *2 sets of Sharpie Flip Chart markers TOTAL*
9. *1 pack of chart paper - unruled TOTAL*
10. *20 Full Decks of Cards TOTAL*
11. *4 - 10oz bags of Kraft Jet Puffed Fun Mallows Mini Marshmallows - have to be the colored kind (pink, yellow, orange, green) - found on Amazon TOTAL*
12. *Sandwich sized ziploc baggies - box of 100*
13. *40 sets of markers TOTAL*
14. *40 sets of colored pencils TOTAL*

Unit of Study Terminology

Appendices: All Appendices and supporting material can be found in this course's shell course in the District's Learning Management System.

Assessment Leveling Guide: A tool to use when writing assessments in order to maintain the appropriate level of rigor that matches the standard.

Big Ideas/Enduring Understandings: Foundational understandings teachers want students to be able to discover and state in their own words by the end of the unit of study. These are answers to the essential questions.

Engaging Experience: Each topic is broken into a list of engaging experiences for students. These experiences are aligned to priority and supporting standards, thus stating what students should be able to do. An example of an engaging experience is provided in the description, but a teacher has the autonomy to substitute one of their own that aligns to the level of rigor stated in the standards.

Engaging Scenario: This is a culminating activity in which students are given a role, situation, challenge, audience, and a product or performance is specified. Each unit contains an example of an engaging scenario, but a teacher has the ability to substitute with the same intent in mind.

Essential Questions: Engaging, open-ended questions that teachers can use to engage students in the learning.

Priority Standards: What every student should know and be able to do. These were chosen because of their necessity for success in the next course, the state assessment, and life.

Supporting Standards: Additional standards that support the learning within the unit.

Topic: These are the main teaching points for the unit. Units can have anywhere from one topic to many, depending on the depth of the unit.

Unit of Study: Series of learning experiences/related assessments based on designated priority standards and related supporting standards.

Unit Vocabulary: Words students will encounter within the unit that are essential to understanding. Academic Cross-Curricular words (also called Tier 2 words) are those that can be found in multiple content areas, not just this one. Content/Domain Specific vocabulary words are those found specifically within the content.

Symbols:

This symbol depicts an experience that can be used to assess a student's 21st Century Skills using the rubric provided by the district.

This symbol depicts an experience that integrates professional skills, the development of professional communication, and/or the use of professional mentorships in authentic classroom learning activities.