



Park Hill School District

Building Successful Futures • Each Student • Every Day

Summer School 6th Grade Math Curriculum

Scope and Sequence:

Timeframe	Unit	Instructional Topics
24 Days	Gearing Up for 6th Grade Math	Topic 1: Decimals Topic 2: Fractions Topic 3: Greatest Common Factor, Exponents, Order of Operations, The Coordinate Plane

Summer School Unit: Gearing Up for 6th Grade Math

Subject: Math

Grade: 6th Grade

Name of Unit: Gearing up for Sixth Grade

Length of Unit: 23 days

Overview of Unit: Students will review essential learning goals for sixth grade and be introduced to the concepts that will be first studied in sixth grade

Priority Standards Addressed:

- 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.
- 5.NBT.A.2 Compare two numbers from billions to thousandths using the symbols $>$, $=$ or $<$, and justify the solution.
- 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.
- 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.
- 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.
- 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction. a. Recognize the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths. b. Calculate and interpret the product of a fraction by a whole number and a whole number by a fraction. c. Calculate and interpret the product of two fractions less than one.
- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system
- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.
- 6.NS.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 a sum of two whole numbers with a com
- 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 $\frac{1}{3}$ and $\frac{2}{3}$).

Unwrapped Concepts (Students need to know)	Unwrapped Skills (Students need to be able to do)	Bloom's Taxonomy Levels	Webb's DOK
numbers from billions to thousandths using number names, base ten numerals and expanded form	Read	Understand	1
numbers from billions to thousandths using number names, base ten numerals and expanded form	Write	Apply	2
numbers from billions to thousandths using number names, base ten numerals and expanded form	Identify	Understand	1
two numbers from billions to thousandths using the symbols $>$, $=$ or $<$, and justify the solution	Compare	Understand	2
multi-digit whole numbers and decimals to the thousandths place, and justify the solution.	Add, Subtract	Apply	2
multi-digit whole numbers and decimals to the hundredths place, and justify the solution.	Multiply	Apply	2
problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution	Solve	Apply	2
a fraction or whole number by a fraction	Multiply	Apply	2
the value of powers of 10 and understand the relationship to the place value system	Evaluate	Evaluate	3
numeric expressions using the order of operations	Write	Apply	2
numeric expressions using the order of operations	Evaluate	Evaluate	3
numeric expressions using the order of operations	Interpret	Evaluate	3
common factors and multiples	Find	Understand	2
equivalent representations of rational numbers between fractions, decimals and percentages	Generate	Apply	2

Essential Questions:

1. How do we round decimals?
2. How do we compare decimals?
3. How do we solve problems with whole numbers and decimals?
4. How do you simplify fractions?

Enduring Understanding/Big Ideas:

1. First work out which number will be left when we finish. Rounding to tenths means to leave one number after the decimal point. Rounding to hundredths means to leave two numbers after the decimal point. To round to "so many decimal places" count that many digits from the decimal point
2. If one decimal has a higher number in the tenths place then it is larger than a decimal with fewer tenths. If the tenths are equal compare the hundredths, then the thousandths etc. until one decimal is larger or there are no more places to compare. If each decimal place value is the same then the decimals are equal.
3. When multiplying a whole number by a decimal, multiply the numbers just as if they were whole numbers. Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.
4. To simplify a fraction to lowest terms, divide both the numerator and the denominator by their common factors. Repeat as needed until the only common factor is 1.

Unit Vocabulary: (Ratios)

Academic Cross-Curricular Words	Content/Domain Specific
Explain Compare Contrast Equivalent	Ratio Terms Rate Unit rate Proportion Exponent Coordinate Plane

Topic 1: Decimals

Engaging Experience 1

Title: Recycling

Suggested Length of time: 7 days

Standards addressed:

Priority:

- 5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.
- 5.NBT.A.2 Compare two numbers from billions to thousandths using the symbols $>$, $=$ or $<$, and justify the solution.
- 5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.
- 5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.

Detailed Description/Instruction:

Standard	Lesson Title/Topic	Day
5.NBT.A.1	Decimal Place Value	1
5.NBT.A.2	Comparing and Ordering Decimals	2
5.NBT.A.7	Multiplying 2 Digit Whole Numbers	3
5.NBT.A.6	Dividing by 1-Digit and 2-Digit Divisors	4
5.NBT.A.6	Dividing by 1-Digit and 2-Digit Divisors	5
5.NBT.A.7	Multiplying a Decimal by a Whole Number	6
5.NBT.A.7	Multiplying a Decimal by a Decimal	7

Bloom's Levels: 2, 3

Webb's DOK: 1, 2

Topic 2: Fractions

Engaging Experience 1

Title: Fractions

Suggested Length of time: 12 days

Standards addressed:

Priority:

- 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.
- 5.NF.B.7 Extend the concept of multiplication to multiply a fraction or whole number by a fraction. a. Recognize the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths. b. Calculate and interpret the product of a fraction by a whole number and a whole number by a fraction. c. Calculate and interpret the product of two fractions less than one.

Detailed Description/Instruction:

Standard	Lesson Title/Topic	Day
5.NF.B.6	Equivalent Fractions	8
5.NF.B.6	Fractions in Simplest Form	9
5.NF.B.6	Common Multiples and Least Common Multiples	10
5.NF.B.6	Finding Common Denominators	11
5.NF.B.6	Adding Fractions with Unlike Denominators	12
5.NF.B.6	Subtracting Fractions with Unlike Denominators	13
5.NF.B.6	Improper Fractions and Mixed Numbers	14
5.NF.B.7	Fractions and Division	15
5.NF.B.7	Multiply Fractions and Whole Numbers	16
5.NF.B.7	Multiply Two Fractions	17
5.NF.B.7	Find the Area of a Rectangle	18
5.NF.B.7	Multiply Mixed Numbers	19

Bloom's Levels: 1,2,3

Webb's DOK: 1,2

Topic 3: Greatest Common Factor, Exponents, Order of Operations, The Coordinate Plane

Engaging Experience 1

Title: Greatest Common Factor, Exponents, Order of Operations, The Coordinate Plane

Suggested Length of time: 5 days

Standards addressed:

Priority:

- 5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system
- 5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.
- 6.NS.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 a sum of two whole numbers with a com
- 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 $\frac{1}{3}$ and $\frac{2}{3}$).

Detailed Description/Instruction:

Standard	Lesson Title/Topic	Day
6.NS.4	Greatest Common Factor	20
5.NBT.A.4	Exponents	21
5.RA.B.3	Order of Operations	22
5.RA.B.3	Order of Operations & Simplifying Expressions	23
6.NS.C.8	The Coordinate Plane	24

Bloom's Levels: 1,2,3

Webb's DOK: 1,2

Summary of Engaging Learning Experiences for Topics

Standard	Lesson Title/Topic	Day
5.NBT.A.1	Decimal Place Value	1
5.NBT.A.2	Comparing and Ordering Decimals	2
5.NBT.A.7	Multiplying 2 Digit Whole Numbers	3
5.NBT.A.6	Dividing by 1-Digit and 2-Digit Divisors	4
5.NBT.A.6	Dividing by 1-Digit and 2-Digit Divisors	5
5.NBT.A.7	Multiplying a Decimal by a Whole Number	6
5.NBT.A.7	Multiplying a Decimal by a Decimal	7
5.NF.B.6	Equivalent Fractions	8
5.NF.B.6	Fractions in Simplest Form	9
5.NF.B.6	Common Multiples and Least Common Multiples	10
5.NF.B.6	Finding Common Denominators	11
5.NF.B.6	Adding Fractions with Unlike Denominators	12
5.NF.B.6	Subtracting Fractions with Unlike Denominators	13
5.NF.B.6	Improper Fractions and Mixed Numbers	14
5.NF.B.7	Fractions and Division	15
5.NF.B.7	Multiply Fractions and Whole Numbers	16
5.NF.B.7	Multiply Two Fractions	17
5.NF.B.7	Find the Area of a Rectangle	18
5.NF.B.7	Multiply Mixed Numbers	19

6.NS.4	Greatest Common Factor	20
5.NBT.A.4	Exponents	21
5.RA.B.3	Order of Operations	22
5.RA.B.3	Order of Operations & Simplifying Expressions	23
6.NS.C.8	The Coordinate Plane	24

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.