INTRODUCTION

MATHEMATICAL PRACTICES

Student Mathematical Practices	1. NCTM Teaching Mathematical Practices
2. Make sense of problems and persevere in solving them. 3. Reason abstractly and quantitatively. 4. Construct viable arguments and critique the reasoning of others. 5. Model with mathematics. 6. Use appropriate tools strategically. 7. Attend to precision. 8. Look for and make use of structure. 9. Look for and express regularity in repeated reasoning.	1. Establish mathematics goals to focus learning. 2. Implement tasks that promote reasoning and problem solving. 3. Use and connect mathematical representations. 4. Facilitate meaningful mathematical discourse. 5. Pose purposeful questions. 6. Build procedural fluency from conceptual understanding. 7. Support productive struggle in learning mathematics. 8. Elicit and use evidence of student thinking.

LITERACY SKILLS FOR MATHEMATICAL PROFICIENCY

Communication in mathematics employs literacy skills in reading, vocabulary, speaking and listening, and writing. Mathematically proficient students communicate using precise terminology and multiple representations including graphs, tables, charts, and diagrams. By describing and contextualizing mathematics, students create arguments and support conclusions. They evaluate and critique the reasoning of others and analyze and reflect on their own thought processes. Mathematically proficient students have the capacity to engage fully with mathematics in context by posing questions, choosing appropriate problem-solving approaches, and justifying solutions.

1. Use multiple reading strategies.
2. Understand and use correct mathematical vocabulary.
3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

GENERAL RESOURCES

INSTRUCTIONAL FOCUS DOCUMENTS (IFDs)

Each unit within this guide includes detailed information from the Instructional Focus Documents (IFDs) for all standards within that unit. The IFDs are state documents that include grade-level expectations and instructional guidance for each content standard within this math course.

For the complete list of IFDs for 6th grade standards, click HERE

TEXTBOOK RESOURCES

INCLUDE INFORMATION ABOUT TEXTBOOK ACCESS AND ALIGNMENT INFORMATION.

ADDITIONAL RESOURCES

For additional unit-specific resources, click the Unit Title at the beginning of each unit of study. For general resources that are not unit-specific, click.

Note that all resources are also available on our CMCSS MATH HUB MS site. Access requires the use of your CMCSS-provided Google account.

CURRICULUM GUIDE FEEDBACK

Your constructive feedback about the content and organization of the curriculum guide is vital to continuous improvement. Please submit your feedback using the survey link. CMCSS CURRICULUM FEEDBACK SURVEY

PACING

SEMESTER 1 August 7 - December 19 , 2024 (83 total days)			
MODULE #	**MODULE TITLE**	**APPROXIMATE DATE RANGE**	**Approximate # OF DAYS**
3	COMPUTE WITH MULTI-DIGIT NUMBERS AND FRACTIONS	August 12 - August 30 Universal Screener	15
1	RATIOS AND RATES	September 3- September 25	16
2	FRACTIONS, DECIMALS, AND PERCENTS (OMIT 2.5)	September 26 - October 22 Benchmark 1	14
4	INTEGERS, RATIONAL NUMBERS, AND THE COORDINATE PLANE	October 23- November 18	17
5	NUMERICAL AND ALGEBRAIC EXPRESSIONS	November 19- December 19 Benchmark 2 Universal Screener	21
SEMESTER 2 January 6 - May 21, 2025 (89 total days)			
6	EQUATIONS AND INEQUALITIES	January 6 - January 24	14
7	RELATIONSHIPS BETWEEN TWO VARIABLES	January 27 - February 6	8
8	AREA	February 7 -February 26 Benchmark 3	13
9	VOLUME AND SURFACE AREA	February 27 - March 20	11

10	STATISTICAL MEASURES AND DISPLAYS	March 21 -April 8 Universal Screener	13
Review	Review Days	April 9 - April 11	3
TCAP	TCAP WINDOW	April 14 - May 2	14
11	Transition to 7th grade	May 5 - May 21	13

DISTRICT AND STATE ASSESSMENTS	
ASSESSMENT	**ASSESSMENT WINDOW**
Fall Universal Screener	August 12 - 23
Benchmark 1 Module 3 and Module 1	September 25 - October 4
Winter Universal Screener	December 2 - 13
Benchmark 2 Modules 2,4,5	December 4 - December 13
Benchmark 3 Modules 6,7,8	February 24 - 25
State-TNReady	**April 14 - May 2**
Spring Universal Screener	April 1 - 11

SCOPE AND SEQUENCE

6.RP.A.1	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.RP.A.2	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.RP.A.3	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.RP.A.3a	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.RP.A.3b	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.RP.A.3c	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.RP.A.3d	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.A.1	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.B.2	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.B.3	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.B.4	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.5	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.6	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.6a	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.6b	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.6c	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.7	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.7a	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10

6.NS.C.7b	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.7c	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.NS.C.8	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.1	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.2	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.2a	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.2b	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.2c	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.3	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.A.4	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.B.5	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.B.6	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.B.7	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.C.8	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.C.9	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.C.9a	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.EE.C.9b	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.G.A.1	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.G.A.2	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.G.A.3	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.G.A.4	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.A.1	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10

6.SP.A.2	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.A.3	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.B.4	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.B.5	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.B.5a	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.B.5b	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.B.5c	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10
6.SP.B.5d	MOD.1	MOD.2	MOD.3	MOD.4	MOD.5	MOD.6	MOD.7	MOD.8	MOD.9	MOD.10

MODULE 3 | COMPUTE WITH MULTI-DIGIT NUMBERS AND FRACTIONS

Approximately 15 Days | SEPTEMBER 26 - OCTOBER 23

Module 3 : Students will computer with multi-digit numbers and fractions

TN Reveal Lessons: 3.1, 3.2, 3.3, 3.4, 3.5

	STANDARD	MODULE 3 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
3.1	**6.NS.B.2** **Fluently divide multi-digit numbers using a standard algorithm.**	➔ Use models to solve division problems with one and two-digit divisors. ➔ Know division is the inverse of multiplication. ➔ Know the place value of a number. ➔ Connect multi-digit whole number division using a partial quotient algorithm to the standard algorithm for division with both one- and two digit divisors ➔ Determine the remainder in a multi digit division problem and record with an R. ➔ Estimate the quotient in a multi digit division problem.	➔ Accurately, flexibly and efficiently divide multi-digit whole numbers using a standard algorithm. ➔ Apply place value understanding to divide multi-digit whole numbers ➔ Interpret the quotient and remainder in a multi-digit division problem. ➔ Represent the remainder of a multi digit division problem using a fraction or decimal.	➔ Explain the division algorithm using place value language ➔ Perform error analysis to critique a peer's division of multi-digit whole numbers.
3.2	**6.NS.B.3** **Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm and making connections to previous conceptual work with each operation**	➔ Fluently add, subtract, and multiply whole numbers using strategies based on place value and properties of operations as well as the standard algorithm. ➔ Use models to add and subtract and multiply decimals to hundredths using strategies based on place value and properties of operations. ➔ Use models, place value strategies and properties of operations to divide whole numbers and decimals with a whole number divisor or dividend. ➔ Estimate decimal numbers to add, subtract, multiply, and divide	➔ Find a sum, difference, product, or quotient of multi-digit decimals flexibly, efficiently and accurately using a standard algorithm for each operation.	➔ Using precise mathematical language, explain various parts of a model in relation to the standard algorithm. ➔ Use estimation to assess the reasonableness of the quotient in a division problem. ➔ Analyze student work and justify why an algorithm or strategy is correct or incorrect.

		mentally ➔ Divide multi-digit whole numbers using a standard algorithm. ➔ Use appropriate strategies and models to add and subtract, multiply, and divide decimals to hundredths with a whole number divisor or dividend..		
3.3 3.4 3.5	**6.NS.A.1** **Interpret and compute quotients of fractions and solve real-world and mathematical problems involving division of fractions by fractions (e.g., connecting visual fraction models and equations to represent the problem is suggested). For example, create a story context for ($\frac{2}{3}$) ÷ ($\frac{3}{4}$) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that ($\frac{2}{3}$) ÷ ($\frac{3}{4}$) = $\frac{8}{9}$ because $\frac{3}{4}$ times $\frac{8}{9}$ is $\frac{2}{3}$ (($\frac{a}{b}$) ÷ $\frac{c}{d}$ = ($\frac{ad}{bc}$)) Further example: How much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How wide is a rectangular strip of land with length of $\frac{3}{4}$ mi and area of $\frac{1}{2}$ square mi?**	➔ Compute the quotient of a fraction divided by a unit fraction with the same denominator when a visual fraction model is provided. ➔ Compute the quotient of a fraction divided by a unit fraction with the same denominator. ➔ Compute the quotient of a fraction divided by a fraction resulting in a quotient that is a whole number when a visual fraction model is provided.	➔ Compute the quotient of a fraction divided by a fraction. ➔ Solve contextual problems involving partitive and quotative division of fractions by fractions. ➔ Interpret solutions to real-world problems involving partitive and quotative division of fractions by fractions. ➔ Model both partitive and quotative division using visual fraction models.	➔ Solve real-world problems involving division of fractions by fractions and interpret solutions in complex contextual problems ➔ Create real-world problems involving division of fractions by fractions and interpret the solution using precise mathematical language. ➔ Explain the connection between computing quotients of fractions by fractions and visual fraction models and equations that represent the problem. ➔ Model both partitive and quotative division using visual fraction models and explain each both in verbal and written form using appropriate mathematical vocabulary

MODULE 1 | RATIOS AND RATES

Approximately 16 DAYS | AUGUST 14 - SEPTEMBER 5, 2023

Module 1 : Students will use ratio and rate reasoning to solve real-world and mathematical problems

TN Reveal Lessons - 1.1, 1.21.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9

LESSON	STANDARD	MODULE 1 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
1.1 1.5 1.6	**6.RP.A.1** **Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. Make a distinction between ratios and fractions. For example, the ratio of wings to beaks in a bird house at the zoo was 2:1, because for every 2 wings there was 1 beak. Another example could be for every vote candidate A received, candidate C received nearly three votes**	➔ Choose a ratio to represent a given situation ➔ Interpret a given ratio. ➔ Write a ratio to represent a given situation in at least one form. .	➔ Use ratio language such as for each, or for every, to describe a ratio between two quantities. ➔ Express ratios in various forms including fraction notation, using a colon, using the word "to" or as a verbal expression ➔ Explain how ratios and fractions are different.	➔ Create a context or image and use ratio language to describe a relationship between 2 quantities within the problem.

1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9	**6.RP.A.3** **Use ratio and rate reasoning to solve real-world and mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).** **6.RP.A.3a** **Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. LESSONS 1.2, 1.3, 1.4, 1.7** **6.RP.A.3b** **Solve unit rate problems including those involving unit pricing and constant speed. For example, if a runner ran 10 miles in 90 minutes, running at that speed, how long will it take him to run 6 miles? How fast is he running in miles per hour? LESSONS 1.7, 1.8, 1.9** ~~**6.RP.A.3c**~~ ~~**Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.**~~ **6.RP.A.3d** **Use ratio reasoning to convert customary and metric measurement units (within the same system); manipulate and transform units appropriately when multiplying or dividing quantities. LESSONS 1.6, 1.7**	➔ Fill in missing values in a table of equivalent ratios. ➔ Determine equivalent ratios from a ratio table ➔ Plot points on a coordinate plane when given the x and y values. ➔ When given a contextual situation, determine the ratio. For example, 40 dollars for 10 hours of work is a ratio of 40:10. ➔ Use a table and a graph to reason about equivalent ratios. ➔ Given a table, represent equivalent ratios on a coordinate plane. ➔ Explain a percent as a rate per hundred. ➔ When given a contextual situation, determine the ratio using a table. For example, 40 dollars for 10 hours of work is a ratio of 40:10, so the unit ratio is 4:1, or four dollars for one hour of work. ➔ Convert larger measurement units to smaller measurement units using the unit rate and multiplication.	➔ Solve real-world problems using ratio and rate reasoning using tables, tape diagrams, double number line diagrams, or equations ➔ From context generate tables of equivalent ratios, find a missing number in the table and use the table to plot the ratios on a coordinate graph. ➔ Use a table and graph to compare ratios. ➔ Solve unit rate problems, including those about unit pricing and constant speed. ➔ Use ratio reasoning to convert measurement units within the same system. ➔ Solve percent problems involving both finding a percent of a quantity and finding the whole.	➔ Create real-world contextual problems that involve ratio and rate reasoning. ➔ Perform an error analysis of ratio and/or rate problems and be able use appropriate mathematical vocabulary to justify your response. ➔ Represent ratios by creating tables, tape diagrams, double number line diagrams, and equations.

1.7 1.8 1.9	6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio a : b with b ≠ 0. Use rate language in the context of a ratio relationship. For example, this recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar. Also, we paid $75 for 15 hamburgers, which is a rate of $5 per hamburger. (Expectations for unit rates in 6th grade are limited to non-complex fractions)	➔ Identify a ratio as a unit rate when it is expressed in the form a : 1 or 1 : a. ➔ Simplify a given ratio in a simple context to a unit rate when the value of a in the resultant unit ratio (a : 1 or 1 : a) is a whole number	➔ Give a unit rate to represent a ratio embedded in a context. ➔ When given a context, use rate language to describe a ratio relationship.	➔ Use rate language to express a unit rate in a non-routine context.

MODULE 2 | FRACTIONS, DECIMALS, AND PERCENT

Approximately 13 DAYS | September 6 - September 25

Module 2 : Students will learn about the relationship between fractions, decimals, and percents, and apply that relationship to finding the percent of a number.

TN Reveal Lessons - 2.1, 2.2, 2.3, 2.4, 2.5, 2.6

LESSON	STANDARD	MODULE 2 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
2.4 2.5 2.6	6.RP.A.3 **Use ratio and rate reasoning to solve real-world and mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double**	➔ Fill in missing values in a table of equivalent ratios. ➔ Determine equivalent ratios from a ratio table	➔ Solve real-world problems using ratio and rate reasoning using tables, tape diagrams, double number line diagrams, or	➔ Create real-world contextual problems that involve ratio and rate reasoning. ➔ Perform an error analysis of ratio and/or rate problems

	number line diagrams, or equations). ~~**6.RP.A.3a**~~ ~~**Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.**~~ ~~**6.RP.A.3b**~~ ~~**Solve unit rate problems including those involving unit pricing and constant speed. For example, if a runner ran 10 miles in 90 minutes, running at that speed, how long will it take him to run 6 miles? How fast is he running in miles per hour?**~~ **6.RP.A.3c** **Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. LESSONS 2.4, 2.5, 2.6** ~~**6.RP.A.3d**~~ ~~**Use ratio reasoning to convert customary and metric measurement units (within the same system); manipulate and transform units appropriately when multiplying or dividing quantities.**~~	➔ Plot points on a coordinate plane when given the x and y values. ➔ When given a contextual situation, determine the ratio. For example, 40 dollars for 10 hours of work is a ratio of 40:10. ➔ Use a table and a graph to reason about equivalent ratios. ➔ Given a table, represent equivalent ratios on a coordinate plane. ➔ Explain a percent as a rate per When given a contextual situation, determine the ratio using a table. For example, 40 dollars for 10 hours of work is a ratio of 40:10, so the unit ratio is 4:1, or four dollars for one hour of work. ➔ Convert larger measurement units to smaller measurement units using the unit rate and multiplication.	equations ➔ From context generate tables of equivalent ratios, find a missing number in the table and use the table to plot the ratios on a coordinate graph. ➔ Use a table and graph to compare ratios. ➔ Solve unit rate problems, including those about unit pricing and constant speed. ➔ Use ratio reasoning to convert measurement units within the same system. ➔ Solve percent problems involving both finding a percent of a quantity and finding the whole.	and be able use appropriate mathematical vocabulary to justify your response. ➔ Represent ratios by creating tables, tape diagrams, double number line diagrams, and equations.

MODULE 4 | INTEGERS, RATIONAL NUMBERS, AND THE COORDINATE PLANE

Approximately 19 Days | October 24 - November 21

Module 4: Students will graph integers and rational numbers on number lines and on the coordinate plane..

TN Reveal Lessons: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7

	STANDARD	MODULE 4 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
4.1 4.2	**6. NS.C.5** **Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation as well as describing situations in which opposite quantities can combine to make 0**	➔ Define integers as positive or negative in a real-world context where the meaning of 0 is determined in the situation. ➔ Identify opposite quantities used in real-world situations. ➔ Identify opposite quantities that combine to make 0.	➔ Use integers to represent contextual situations involving quantities that have opposite directions or values. ➔ Explain the meaning of zero when used to represent quantities in real world situations. ➔ Describe situations in which opposite quantities can combine to make 0.	➔ Generate contextual situations involving rational numbers and their opposites. ➔ Create a real-world situation where opposites make zero.
4.1 4.2 4.3 4.4 4.5 4.6 4.7	**6.NS.C.6** **Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.** **6.NS.C.6a Recognize opposite signs of numbers as indicating locations on**	➔ Understand that the number line can be extended to include negative numbers. ➔ Understand that the x-axis and y axis can be extended to include negative numbers. ➔ Identify the graphed integers, given negative integers graphed on a number line.	➔ Describe positive and negative numbers as indicating opposite directions relative to 0 on the number line and explain the meaning of 0 in mathematical contexts. ➔ Locate positive and negative rational numbers on a horizontal and vertical number line.	➔ Describe positive and negative numbers as indicating opposite directions relative to 0 and explain the meaning of 0 in contextual problems. ➔ Explain that changing the sign(s) of numbers in ordered pairs has the effect of reflecting the associated points across one or both

	opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself. For example, – (–3) = 3, and that 0 is its own opposite. LESSONS: 4.2, 4.6 **6.NS.C.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. LESSONS: 4.5, 4.6** **6.NS.C.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. LESSONS: 4.1, 4.3, 4.4, 4.5, 4.6**	➔ Locate positive rational numbers on a horizontal or vertical number line. ➔ Locate positive and negative integers on a horizontal and vertical number line. ➔ Understand the connection between graphing on the number line to graphing on the coordinate plane ➔ Graph ordered pairs of integers on a coordinate plane.	➔ Recognize the opposite of the opposite of a number as the number itself. ➔ Identify and locate points described by ordered pairs of positive and negative rational numbers on a coordinate plane	axes.
4.2 4.3 4.4 4.7	**6.NS.C.7** **Understand ordering and absolute value of rational numbers.** **6.NS.C.7a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right. LESSONS: 4.3, 4.4, 4.6** **6.NS.C.7b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3° C > –7° C to express the fact that –3° C is warmer than –7° C. LESSON: 4.3, 4.4,**	➔ Compare two positive rational numbers without context using >, <, and = symbols to record the results of comparisons ➔ Compare two rational numbers of opposite sign without context using >, <, and = symbols to record the results of comparisons. ➔ Choose a representation showing a number line modeling absolute value as the distance a number is from 0. ➔ Compare two negative rational numbers using >, <, and = symbols to record the results of comparisons. ➔ Determine the absolute value of a rational number.	➔ Compare two rational numbers using >, <, and = symbols to record the results of comparisons. ➔ Compare and order absolute values of rational numbers. ➔ Interpret statements of inequality as the comparison of two numbers on a number line diagram. ➔ Write, interpret, and explain statements of order for rational numbers in real-world contexts ➔ Use a number line to model the absolute value of a rational number showing that it represents the distance the	➔ Interpret and order absolute values for rational numbers in real-world contexts ➔ Recognize the relationship between absolute values and magnitude of quantities in context. ➔ Create contextual situations involving comparing and ordering rational numbers and explain the comparison using precise mathematical language. ➔ Create contextual situations that distinguish comparisons of absolute value from statements about order.

	6.NS.C.7c. Understand the absolute value of a rational number as its distance from 0 on the number line and distinguish comparisons of absolute value from statements about order in a real-world context. For example , an account balance of -24 dollars represents a greater debt than an account balance of -14 dollars because -24 is located to the left of -14 on the number line. LESSONS: 4.2, 4.3, 4.4, 4.7		number is from zero ➔ Distinguish comparisons of absolute value from statements about order in a real-world context.	
4.5 4.6 4.7	**6.NS.C.8** **Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.**	➔ Graph integers on a vertical and horizontal number line ➔ Use a number line to find the absolute value of a given number by determining its distance from zero. ➔ Given a set of coordinates, graph points on any quadrant of the coordinate plane.	➔ Find the distance between two points on the coordinate plane using absolute value when both points lie on the same horizontal or vertical line. ➔ Solve real-world and mathematical problems by graphing points on the coordinate plane.	➔ Generate contextual problems that involve graphing points on the coordinate plane.

MODULE 5 | NUMERICAL AND ALGEBRAIC EXPRESSIONS

Approximately 20 Days | DATE November 27 -January 10

Module 5 : Students will evaluate numerical and algebraic expressions.

TNReveal Lessons: 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7

LESSON	STANDARD	MODULE 5 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
5.1 5.2	**6. EE.A.1** **Write and evaluate numerical expressions involving whole-number exponents**	➔ Apply the order of operations to evaluate simple numerical expressions with grouping symbols. ➔ Recognize that the exponent denotes the number of times the base is used as a factor. ➔ Apply the order of operations to evaluate numerical expressions with whole-number bases and whole-number exponents. ➔ Choose the numerical expression that models the context when given a real-world problem.	➔ Write numerical expressions that represent a real-world or mathematical context with whole number exponents and grouping symbols. ➔ Evaluate numerical expressions by applying the order of operations with whole-number exponents	➔ Write and evaluate complex numerical expressions that represent a real-world context with whole-number exponents including complex fractions. ➔ Create a real-world problem and the numerical expression that models the context using wholenumber exponents including complex fractions
5.2 5.3 5.4 5.7	**6.EE.A.2** **Write, read, and evaluate expressions in which variables stand for numbers.** **6.EE.A.2a Write expressions that record operations with numbers and with variables. For example, express the calculation "Subtract y from 5" as 5 - y.** **LESSON: 5.3** **6.EE.A.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.** **LESSONS: 5.3, 5.6**	➔ Apply the order of operations to evaluate algebraic expressions with whole numbers without exponents. ➔ Choose an expression using a letter to represent the unknown when given a verbal expression written in words such as "Subtract 2 from the product of 6 and y." ➔ Apply the order of operations to evaluate algebraic expressions involving positive rational numbers without exponents. ➔ Read and identify the parts of an expression using appropriate mathematical vocabulary. ➔ Recognize that one or more parts of an expression can be written as a single entity. For example, (8 + 7) can be written as a single quantity, 15.	➔ Write expressions that record operations with numbers and with variables given a verbal expression written in words. ➔ Identify and describe parts of an expression using appropriate mathematical vocabulary. ➔ Evaluate algebraic expressions involving positive rational numbers with whole-number exponents using properties of operations and order of operations (when there are no parentheses to specify a particular order). ➔ Substitute for the unknown (variable), when given a specific numerical value, to evaluate expressions including those that arise from formulas used in	➔ Explain whether an algebraic expression has been correctly written to represent a given context and provide justification using precise mathematical language. ➔ Write a real-world problem to represent a given algebraic expression. ➔ Write algebraic expressions to generate formulas that arise from real-world problems (i.e., P = 2l + 2w).

	6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). LESSONS: 5.2, 5.4, 5.6,	➔ Write an expression using a letter to represent the unknown when given a verbal expression written in words such as "Subtract 2 from the product of 6 and y.	real world problems.	
5.3 5.4	**6.EE.B.6** **Use variables to represent numbers and write expressions when solving real-world and mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.**	➔ State the meaning of a variable. ➔ Use variables to write expressions and solve mathematical problems.	➔ Use variables to write expressions and solve real-world problems. ➔ Explain the meaning of a variable in an expression using precise mathematical vocabulary.	➔ Generate a contextual problem to represent the relationship in an algebraic expression.
5.5 5.6	**6.NS.B.4** **Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2).**	➔ Informally explain the difference between factors and multiples. ➔ Find all factor pairs for a whole number in the range of 1-100. ➔ Recognize that a whole number is a multiple of each of its factors. ➔ Determine whether a whole number in the range of 1-100 is a multiple of a given one-digit number. ➔ Determine whether a whole number in the range of 1-100 is prime or composite. ➔ Evaluate expressions to determine if they are equivalent. ➔ List multiples of a given number from 1-12.	➔ Rewrite the sum of two whole numbers using the GCF and distributive property. ➔ Determine the greatest common factor for two given whole numbers that are less than or equal to 100. ➔ Determine the least common multiple for two given whole numbers that are less than or equal to twelve.	➔ Solve contextual problems that involve finding the greatest common factor. ➔ Solve contextual problems that involve finding the least common multiple.

		➔ List the factors for any whole number from 1 to 100. ➔ Use distributive property to write equivalent numerical expressions.		
5.7	**6.EE.A.3** **Apply the properties of operations (including, but not limited to, commutative, associative, and distributive properties) to generate equivalent expressions. (The distributive property of multiplication over addition is prominent here. Negative coefficients are not an expectation at this grade level.) For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y**	➔ Use the commutative or associative property to generate an equivalent expression. ➔ Name the properties of operations when given an example. ➔ Apply the commutative, associative or distributive property to interpret and generate models to represent an equivalent expression.	➔ Apply multiple properties of operations to rewrite an expression, generating an equivalent expression.	➔ Perform error analysis and explain why two or more expressions are not equivalent using representations and appropriate mathematical vocabulary
5.7	**6.EE.A.4** **Identify when expressions are equivalent (i.e., when the expressions name the same number regardless of which value is substituted into them). For example, the expression 5b + 3b is equivalent to (5 +3) b, which is equivalent to 8b.**	➔ Choose an equivalent expression when the simplification requires combining like terms and does not require the application of a property of operations. ➔ Choose multiple equivalent expressions when the simplification requires the application of a single property of operations. ➔ Generate equivalent expressions as a result of applying a single property of operations.	➔ Choose multiple equivalent expressions when the simplification requires the application of multiple properties of operations. ➔ Identify when expressions are equivalent using substitution	➔ Generate equivalent expressions as a result of applying multiple properties of operations. ➔ Explain the process of generating equivalent expressions using precise mathematical vocabulary.

MODULE 6 | EQUATIONS AND INEQUALITIES

Approximately 15 Days |January 11 - February 1

Module 6 : Students will solve one-step equations and inequalities

TN Reveal Lessons: - 6.1, 6.2, 6.3, 6.4, 6.5 , 6.6

	STANDARD	MODULE 6 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
6.1 6.6	**6.EE.B.5** **Understand that a solution to an equation or inequality is the value(s) that makes that statement true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true.**	➔ Explain what equality and inequality symbols represent. ➔ Determine if a numerical equation or inequality is true or false. ➔ Use substitution to determine if a value from a given set is the solution to an equation that contains variables.	➔ Use substitution to determine if a value from a given set is the solution to an equation or inequality that contains variables.	➔ Generate a model to show that a value makes an equation or inequality true or false. ➔ Reason to predict whether a given value is the solution to an equation.
6.1 6.2 6.3 6.4 6.5 6.6	**6.EE.B.6** **Use variables to represent numbers and write expressions when solving a real-world and mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set**	➔ Identify variables in an expression. ➔ State the meaning of a variable ➔ Use variables to write expressions and solve mathematical problems.	➔ Use variables to write expressions and solve real-world problems. ➔ Explain the meaning of a variable in an expression using precise mathematical vocabulary.	➔ Generate a contextual problem to represent the relationship in an algebraic expression.
6.2 6.3 6.4 6.5	**6.EE.B.7** **Solve real-world and mathematical problems by writing and solving one-step equations**	➔ Solve an equation in the form x + p = q or x – p = q when p, q, and x are all whole numbers.	➔ Solve equations of the form x + p = q , px = q, x – p = q, or x/p = q when p, q, and x are all non-negative rational	➔ Explain the relationship between the context and the written equation in both

	of the form x + p = q, px = q, x – p = q, and x/p = q for cases in which p, q, and x are all nonnegative rational numbers and p ≠ 0. (Complex fractions are not an expectation at this grade level.)	➔ Identify the variable quantity in a real-world or mathematical situation. ➔ Choose an appropriate equation to model a given situation or real world problem ➔ Solve equations of the form px = q or x/p = q when p, q, and x are all whole numbers.	numbers. ➔ Write equations in the form x + p = q , px = q, x – p = q, or x/p = q to represent real-world contexts.	verbal and written form.
6.6	**6.NS.C.6** **Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.** **6.NS.C.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself. For example, – (–3) = 3, and that 0 is its own opposite.** **6.NS.C.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.** **6.NS.C.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.**	➔ Understand that the number line can be extended to include negative numbers. ➔ Understand that the x-axis and yaxis can be extended to include negative numbers. ➔ Identify the graphed integers, given negative integers graphed on a number line. ➔ Locate positive rational numbers on a horizontal or vertical number line. ➔ Locate positive and negative integers on a horizontal and vertical number line. ➔ Understand the connection between graphing on the number line to graphing on the coordinate plane. ➔ Graph ordered pairs of integers on a coordinate plane.	➔ Describe positive and negative numbers as indicating opposite directions relative to 0 on the number line and explain the meaning of 0 in mathematical contexts. ➔ Locate positive and negative rational numbers on a horizontal and vertical number line. ➔ Recognize the opposite of the opposite of a number as the number itself. ➔ Identify and locate points described by ordered pairs of positive and negative rational numbers on a coordinate plane.	➔ Describe positive and negative numbers as indicating opposite directions relative to 0 and explain the meaning of 0 in contextual problems. ➔ Explain that changing the sign(s) of numbers in ordered pairs has the effect of reflecting the associated points across one or both axes.

MODULE 7 | RELATIONSHIPS BETWEEN TWO VARIABLES

Approximately 8 Days | February 2 - February 14

Module 7: Students will be able to express relationships between two variables using tables, equations, and graphs

TN Reveal Lessons - 7.1, 7.2, 7.3, 7.4

LESSON	STANDARD	UNIT 7 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
7.1 7.2 7.3 7.4	**6.EE.C.9** **Use variables to represent two quantities in a real-world problem that change in relationship to one another. For example, Susan is putting money in her savings account by depositing a set amount each week ($50). Represent her savings account balance with respect to the number of weekly deposits (s = 50w, illustrating the relationship between balance amount s and number of weeks w).** 6.EE.C.9a Write an equation in the form y = px where y, p and x are all non-negative and p ≠ 0, to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. 6.EE.B.9b Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the equation.	➔ Determine the value of the dependent variable given the value of the independent variable given an equation in the form y = px. ➔ Identify the dependent and/or independent variables in a real world situation. ➔ Choose a graph or table that represents a given two-variable equation in the form y = px.	➔ Determine independent and dependent variables and write an equation in the form y = px that represents the relationship. ➔ Recognize that a change in the independent variable creates a change in the dependent variable. ➔ Analyze relationships between variables using tables, graphs, and equations.	➔ Analyze the relationship between dependent and independent variables in complex real-world situations using equations, graphs, and tables.

7.1	**6.EE.A.2** **Write, read, and evaluate expressions in which variables stand for numbers.** **6.EE.A.2a Write expressions that record operations with numbers and with variables. For example, express the calculation "Subtract y from 5" as 5 - y.** **6.EE.A.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.** **6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).**	➔ .Apply the order of operations to evaluate algebraic expressions with whole numbers without exponents. ➔ Choose an expression using a letter to represent the unknown when given a verbal expression written in words such as "Subtract 2 from the product of 6 and y." ➔ Apply the order of operations to evaluate algebraic expressions involving positive rational numbers without exponents. ➔ Read and identify the parts of an expression using appropriate mathematical vocabulary. ➔ Recognize that one or more parts of an expression can be written as single entity. For example, (8 + 7) can be written as a single quantity, 15. ➔ Write an expression using a letter to represent the unknown when given a verbal expression written in words such as "Subtract 2 from the product of 6 and y."	➔ Write expressions that record operations with numbers and with variables given a verbal expression written in words. ➔ Identify and describe parts of an expression using appropriate mathematical vocabulary. ➔ Evaluate algebraic expressions involving positive rational numbers with whole-number exponents using properties of operations and order of operations (when there are no parentheses to specify a particular order). ➔ Substitute for the unknown (variable), when given a specific numerical value, to evaluate expressions including those that arise from formulas used in realworld problems.	➔ Explain whether an algebraic expression has been correctly written to represent a given context and provide justification using precise mathematical language. ➔ Write a real-world problem to represent a given algebraic expression. ➔ Write algebraic expressions to generate formulas that arise from real-world problems (i.e., P = 2l + 2w).
7.2 7.3 7.4	**6.EE.B.6** **Use variables to represent numbers and write expressions when solving real-world and mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.**	➔ . Identify variables in an expression. ➔ State the meaning of a variable. ➔ Use variables to write expressions and solve mathematical problems.	➔ Use variables to write expressions and solve real-world problems. ➔ Explain the meaning of a variable in an expression using precise mathematical vocabulary.	➔ Generate a contextual problem to represent the relationship in an algebraic expression.
7.2 7.3 7.4	**6.EE.B.7** **Solve real-world and mathematical problems by writing**	➔ Solve an equation in the form x + p = q or x – p = q when p, q, and x	➔ Solve equations of the form x + p = q , px = q, x – p = q, or x/p = q when p, q, and x are	➔ Explain the relationship between the context and the written equation in both

	and solving one-step equations of the form x + p = q, px = q, x − p = q, and x/p = q for cases in which p, q, and x are all nonnegative rational numbers and p ≠ 0. (Complex fractions are not an expectation at this grade level.)	are all whole numbers. ➔ Identify the variable quantity in a real-world or mathematical situation. ➔ Choose an appropriate equation to model a given situation or real world problem. ➔ Solve equations of the form px = q or x/p = q when p, q, and x are all whole numbers.	all non-negative rational numbers. ➔ Write equations in the form x + p = q , px = q, x − p = q, or x/p = q to represent real-world contexts.	verbal and written form.
7.3 7.4	**6.RP.A.3** **Use ratio and rate reasoning to solve real-world and mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).** **6.RP.A.3a Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.** **6.RP.A.3b Solve unit rate problems including those involving unit pricing and constant speed. For example, if a runner ran 10 miles in 90 minutes, running at that speed, how long will it take him to run 6 miles? How fast is he running in miles per hour?** **6.RP.A.3c Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.** **6.RP.A.3d Use ratio reasoning to convert customary and metric measurement**	➔ Fill in missing values in a table of equivalent ratios. ➔ Determine equivalent ratios from a ratio table. ➔ Plot points on a coordinate plane when given the x and y values. ➔ When given a contextual situation, determine the ratio. For example, 40 dollars for 10 hours of work is a ratio of 40:10. ➔ Use a table and a graph to reason about equivalent ratios. ➔ Given a table, represent equivalent ratios on a coordinate plane. ➔ Explain a percent as a rate per hundred. ➔ When given a contextual situation, determine the ratio using a table. For example, 40 dollars for 10 hours of work is a ratio of 40:10, so the unit ratio is	➔ Solve real-world problems using ratio and rate reasoning using tables, tape diagrams, double number line diagrams, or equations. ➔ From context generate tables of equivalent ratios, find a missing number in the table and use the table to plot the ratios on a coordinate graph. ➔ Use a table and graph to compare ratios. ➔ Solve unit rate problems, including those about unit pricing and constant speed. ➔ Use ratio reasoning to convert measurement units within the same system. ➔ Solve percent problems involving both finding a percent of a quantity and finding the whole	➔ Create real-world contextual problems that involve ratio and rate reasoning. ➔ Perform an error analysis of ratio and/or rate problems and be able use appropriate mathematical vocabulary to justify your response. ➔ Represent ratios by creating tables, tape diagrams, double number line diagrams, and equations.

	units (within the same system); manipulate and transform units appropriately when multiplying or dividing quantities	4:1, or four dollars for one hour of work. ➔ Convert larger measurement units to smaller measurement units using the unit rate and multiplication.		
7.3 7.4	**6.NS.C.6** **Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.** **6.NS.C.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself. For example, – (–3) = 3, and that 0 is its own opposite.** **6.NS.C.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.** **6.NS.C.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane**	➔ Understand that the number line can be extended to include negative numbers. ➔ Understand that the x-axis and yaxis can be extended to include negative numbers ➔ Identify the graphed integers, given negative integers graphed on a number line. ➔ Locate positive rational numbers on a horizontal or vertical number line. ➔ Locate positive and negative integers on a horizontal and vertical number line. ➔ Understand the connection between graphing on the number line to graphing on the coordinate plane. ➔ Graph ordered pairs of integers on a coordinate plane.	➔ Describe positive and negative numbers as indicating opposite directions relative to 0 on the number line and explain the meaning of 0 in mathematical contexts. ➔ Locate positive and negative rational numbers on a horizontal and vertical number line. ➔ Recognize the opposite of the opposite of a number as the number itself. ➔ Identify and locate points described by ordered pairs of positive and negative rational numbers on a coordinate plane.	➔ Describe positive and negative numbers as indicating opposite directions relative to 0 and explain the meaning of 0 in contextual problems. ➔ Explain that changing the sign(s) of numbers in ordered pairs has the effect of reflecting the associated points across one or both axes.

MODULE 8 | AREA

Approximately 11 Days | February 15 - March 1

Module 8: Students will be able to find areas of parallelogram, triangles, trapezoids, regular polygons, and polygons on a coordinate plane.

Big Ideas Lessons - 8.1, 8.2, 8.3, 8.4, 8.5

LESSON	STANDARD	UNIT 8 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
8.1 8.2 8.3 8.5	**6.EE.A.2** **Write, read, and evaluate expressions in which variables stand for numbers. 6.EE.A.2a Write expressions that record operations with numbers and with variables. For example, express the calculation "Subtract y from 5" as 5 - y. 6.EE.A.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.** **6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).**	➔ Apply the order of operations to evaluate algebraic expressions with whole numbers without exponents. ➔ Choose an expression using a letter to represent the unknown when given a verbal expression written in words such as "Subtract 2 from the product of 6 and y." ➔ Apply the order of operations to evaluate algebraic expressions involving positive rational numbers without exponents. ➔ Read and identify the parts of an expression using appropriate mathematical vocabulary. ➔ Recognize that one or more parts of an expression can be written as single entity. For example, (8 + 7) can be written as a single quantity, 15. ➔ Write an expression using a letter to represent the unknown when given a verbal expression written in words such as "Subtract 2 from the product of 6 and y."	➔ Write expressions that record operations with numbers and with variables given a verbal expression written in words. ➔ Identify and describe parts of an expression using appropriate mathematical vocabulary. ➔ Evaluate algebraic expressions involving positive rational numbers with whole-number exponents using properties of operations and order of operations (when there are no parentheses to specify a particular order). ➔ Substitute for the unknown (variable), when given a specific numerical value, to evaluate expressions including those that arise from formulas used in real world problems.	➔ Explain whether an algebraic expression has been correctly written to represent a given context and provide justification using precise mathematical language. ➔ Write a real-world problem to represent a given algebraic expression. ➔ Write algebraic expressions to generate formulas that arise from real-world problems (i.e., P = 2l + 2w).

8.1 8.2 8.3 8.4 8.5	**6.G.A.1** **Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; know and apply these techniques in the context of solving real-world and mathematical problems.**	➔ Find the area of right triangles by composing into rectangles, then find the area of the rectangles. ➔ Find the area of right triangles and rectangles in contextual problems. ➔ Find the area of a right triangle. ➔ Find the area of a quadrilateral given its decomposition into rectangles and/or right triangles ➔ Find the area of non-right triangles given their decomposition into right triangles.	➔ Find the area of non-right triangles by decomposing them into right triangles. ➔ Find the area of quadrilaterals and polygons that can be composed into rectangles and/or decomposed into triangles and other shapes. ➔ Find the area of polygons embedded in real-world and mathematical problems by composing and/or decomposing them into simpler shapes.	➔ Find the area of complex polygons by composing or decomposing them into simpler shapes. ➔ Find the area of polygons embedded in complex real-world and mathematical problems.
8.5	**6.G.A.3** **Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side that joins two vertices (vertical or horizontal segments only). Apply these techniques in the context of solving real-world and mathematical problems.**	➔ Accurately plot points in a coordinate plane. ➔ Find the distance between two points on a number line. ➔ Find the length of a vertical or horizontal side of a polygon when provided a visual representation of the polygon on a coordinate plane.	➔ Draw a polygon in the coordinate plane given a set of coordinates for the vertices. ➔ Find the lengths of the sides of a polygon with horizontal and vertical sides. ➔ Use a polygon drawn in a coordinate plane with horizontal and vertical sides to solve realworld and mathematical problems.	➔ Create a real-world problem that involves drawing a polygon in the coordinate plane and use precise mathematical language to explain the solution. ➔ Find the lengths of the sides of a polygon given the coordinates of the vertices without graphing and explain their reasoning.

MODULE 9| VOLUME AND SURFACE AREA

Approximately 14 Days | March 11 -March 28

Module 9: Students will be able to find the volume of rectangular prisms and surface area of triangular and rectangular prisms and pyramids.

Big Ideas Lessons - 9.1, 9.2, 9.3, 9.4

LESSON	STANDARD	UNIT 9 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
9.1	**6.G.A.2** **Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh where B is the area of the base to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.**	➔ Find the volume of a right rectangular prism with whole number side lengths using a visual model. ➔ Find the volume of a right rectangular prism with whole number side lengths by packing it with unit cubes and equate this to finding volume by multiplying the edge lengths. ➔ Find the volume of a right rectangular prism represented visually with a single simple fractional edge length. ➔ Model the volume of a right rectangular prism when a single side has a fractional edge length using unit cubes with dimensions of the appropriate unit fraction.	➔ Find the volume of right rectangular prisms with fractional edge lengths to solve real-world and mathematical problems when a visual model is provided. ➔ Model the volume of a right rectangular prism with multiple fractional edge lengths using unit cubes with dimensions of an appropriate unit fraction. ➔ Show that the volume found by creating a model of a right rectangular prism packed with unit cubes is the same as would be found by multiplying the edge lengths of the prism. ➔ Explain the relationship between the formulas for calculating volume V = lwh and V = Bh.	➔ Solve real-world and mathematical problems by finding the volume of right rectangular prisms with multiple fractional edge lengths when a visual model is not provided. ➔ Explain why the volume found by creating a model of a right rectangular prism is the same as would be found by multiplying the edge lengths of the prism.
9.1	**6.EE.B.6** **Use variables to represent numbers and write expressions when solving real-world and mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a**	➔ Identify variables in an expression ➔ State the meaning of a variable. ➔ Use variables to write expressions and solve mathematical problems.	➔ Use variables to write expressions and solve real-world problems. ➔ Explain the meaning of a variable in an expression using precise mathematical	➔ Generate a contextual problem to represent the relationship in an algebraic expression.

	specified set.		vocabulary.	
9.2	**6.G.A.4** **Represent three-dimensional figures using nets made up of rectangles and triangles and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.**	➔ Identify the net of a rectangular prism given a visual model. ➔ Calculate the area of a rectangle. ➔ Calculate the area of a triangle. ➔ Identify the net of a triangular prism given a visual model. ➔ Identify the net of a rectangular pyramid or a triangular pyramid given a visual model.	➔ Draw a net to represent prisms and pyramids made up of rectangles and triangles. ➔ Use nets of three-dimensional figures to calculate the surface area. ➔ Relate the area of two-dimensional figures to find the surface area of three-dimensional figures. ➔ Solve real-world and mathematical problems involving surface area of prisms and pyramids made up of rectangles and triangles.	➔ Explain similarities and differences between calculating the surface area and the volume of a solid using precise math vocabulary. ➔ Create real-world scenarios that involve finding the surface area of three-dimensional figures. ➔ Explore nets of other solid figures made up of rectangles and triangles to find their surface areas.

MODULE 10 | STATISTICAL MEASURES AND DISPLAYS

Approximately 15 Days | April 1 - April 19

Module 10 : Students will be able to find and use statistical measures, and create and interpret circle graphs.

Big Ideas Lessons - 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8

LESSON	STANDARD	UNIT 10 INSTRUCTIONAL FOCUS		
		APPROACHING UNDERSTANDING (1-2)	GRADE-LEVEL UNDERSTANDING (3)	EXTENSIVE UNDERSTANDING (4)
10.1	**6.SP.A.1** **Recognize a statistical question as one that anticipates variability in the data**	➔ Define data.	➔ Distinguish between a statistical and a non-statistical	➔ Write statistical questions that can result in a wide range of responses.

	related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.	➔ Collect data from various sources. ➔ Recognize variability in data. ➔ Define statistical question	question. ➔ Write statistical questions. ➔ Collect data to answer statistical questions	
10.2 10.3 10.4 10.5 10.6 10.7	**6.SP.B.5 Summarize numerical data sets in relation to their context. 6.SP.B.5a Report the number of observations. 6.SP.B.5b Describe the nature of the attribute under investigation, including how it was measured and its units of measurement. 6.SP.B.5c Give quantitative measures of center (median and/or mean) and variability (range) as well as describing any overall pattern with reference to the context in which the data were gathered. 6.SP.B.5d Relate the choice of measures of center to the shape of the data distribution and the context in which the data were gathered.**	➔ Organize data in numerical order. ➔ Identify and define measures of center that are used in statistics. ➔ Identify units of measurement for a set of data. ➔ Determine the mean, median, and range for a given set of data that is presented numerically or in a graph. ➔ Define statistical terms such as variability and measure of center.	➔ Summarize data displays by describing overall patterns in a distribution. ➔ Communicate appropriate measures of center and variability (range) when describing a data set. ➔ Analyze data displays to determine the attribute being measured, its unit of measurement and the number of observations. ➔ Summarize data using the mean, median and range considering the method used to collect the data.	➔ Construct viable arguments to explain statistical measures and predict how changes in the data affect those statistical measures.
10.2 10.3 10.4 10.6 10.7 10.8	**6.SP.B.4 Display a single set of numerical data using dot plots (line plots), box plots, pie charts and stem plots**	➔ Identify various types of graphs used to display numerical data. ➔ Represent data using dot plots. ➔ Choose an appropriate scale for a given numerical data set. ➔ Calculate the median and range for a given data set. ➔ Identify upper quartile, lower quartile, and interquartile range on a	➔ .Interpret data that is represented in a dot plot, box plot and stem plot. ➔ Interpret data that is represented on a pie chart by relating each section to the whole circle. ➔ Create a dot plot, box plot, and stem plot using a numerical data set.	➔ Select the most appropriate display to represent given data. ➔ Provide context for a given dot plot, box plot, pie chart or stem plot. ➔ Explore the relationship between histograms and stem plots.

		box plot and stem plot.	➔ Create a histogram using a numerical data set. ➔ Create a pie chart using a numerical data set.	
10.3 10.4 10.5 10.6 10.7	**6.SP.A.3** **Recognize that a measure of center (mean, median, mode) for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.**	➔ Represent a data set on a line plot. ➔ Arrange numerical values in order. ➔ Estimate the mean on the graph of a numerical data set. ➔ Calculate the mean, median, mode, and range of a given set of numerical data.	➔ Recognize that a measure of center for a numerical data set summarizes all of its values with a single number. ➔ Recognize that a measure of variation describes how its values vary with a single number. ➔ Distinguish between measures of center and measures of variation. ➔ Determine appropriate measures of center and variation for various data sets.	➔ Model with examples the difference between measures of center and measures of spread. ➔ Critique the interpretation of data using precise mathematical vocabulary. ➔ Explain why two very different sets of data can have the same median and mean but differ by their variability.
10.4 10.7	**6.SP.A.2** **Understand that a set of data collected to answer a statistical question has a distribution which can be described by its measures of center (mean, median, mode), measures of variation (range only), and overall shape.**	➔ Collect data to answer a statistical question. ➔ Display single, numerical data sets with line plots ➔ Calculate the mean, median, mode and range of a given set of data. ➔ Display single, numerical data sets with box plots, stem plots, and histograms.	➔ Use the mean, median, and mode to describe data that has been generated from a statistical question. ➔ Use the range to describe data that has been generated from a statistical question. ➔ Describe the overall shape of a data set with respect to its center.	➔ Determine whether median or mean is a better choice for describing the center of a set of data collected from a statistical question. ➔ Describe the variation of a data set using the range. ➔ Describe the impact of an extreme value on the median, mean, and range.
10.7	**6.RP.A.1** **Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old**	➔ Define data. ➔ Collect data from various sources.	➔ Distinguish between a statistical and a non-statistical question. ➔ Write statistical questions.	➔ Write statistical questions that can result in a wide range of responses.

	am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.	➔ Recognize variability in data. ➔ Define statistical questions.	➔ Collect data to answer statistical questions.	
10.7	**6.RP.A.3** **Recognize that a measure of center (mean, median, mode) for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number**	➔ Represent a data set on a line plot. ➔ Arrange numerical values in order. ➔ Estimate the mean on the graph of a numerical data set. ➔ Calculate the mean, median, mode, and range of a given set of numerical data.	➔ Recognize that a measure of center for a numerical data set summarizes all of its values with a single number. ➔ Recognize that a measure of variation describes how its values vary with a single number. ➔ Distinguish between measures of center and measures of variation. ➔ Determine appropriate measures of center and variation for various data sets.	➔ Model with examples the difference between measures of center and measures of spread. ➔ Critique the interpretation of data using precise mathematical vocabulary. ➔ Explain why two very different sets of data can have the same median and mean but differ by their variability.