Grade 6 Mathematics
School City of East Chicago

Grade 6 Mathematics

Units of Study

Unit 1:	Computation	44 days	1st quarter
Unit 2:	Ratios and Unit Rates	22 days	2nd quarter
Unit 3:	Integers	14 days	2nd quarter
Unit 4:	Order of Operations	7 days	2nd quarter
Unit 5:	Algebraic Expressions	12 days	3rd quarter
Unit 6:	Equations and Inequalities	28 days	3rd quarter
Unit 7:	Geometry and Measurement	28 days	4th quarter
Unit 8:	Data Analysis	10 days	4th quarter

Appendices

Appendix A: Proficiency Scale Template

Standards Breakdown

Green: Priority Standards **Pink:** Supporting Standards **Gray:** Additional Standards

STANDARDS		UNITS 1	2	3	4	5	6	7	8
Computation	1	● Green							
	2	● Green							
	3	● Green							
	4	● Pink							
	5				● Gray				
	6				● Green				
Number Sense	1			● Green					
	2			● Pink					
	3			● Pink					
	4			● Pink					
	5	● Pink							
	6	● Gray							
	7	● Gray							
	8		● Pink						
	9		● Gray						
	10		● Green						
Algebra and Functions	1					● Green			
	2					● Pink			
	3					● Green			
	4						● Pink		
	5						● Green		
	6						● Pink		
	7			● Pink					
	8			● Green					
	9		● Pink						
	10						● Pink		
Geometry	1		● Gray						
	2							● Pink	
	3							● Pink	
	4							● Green	
	5							● Pink	
	6							● Pink	
Data Analysis and Statistics	1								● Pink
	2								● Pink
	3								● Pink
	4								● Green

Priority Standards	**Supporting Standards**
• **6.C.1:** Divide multi-digit whole numbers fluently using a standard algorithmic approach. • **6.C.2:** Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. • **6.C.3:** Solve real-world problems with positive fractions and decimals by using one or two operations.	• **6.C.4:** Compute quotients of positive fractions and solve real-world problems involving division of fractions by fractions. Use a visual fraction model and/or equation to represent these calculations. • **6.NS.5:** Know commonly used fractions (halves, thirds, fourths, fifths, eighths, tenths) and their decimal and percent equivalents. Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. **Additional Standards** • **6.NS.6:** Identify and explain prime and composite numbers. • **6.NS.7:** 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 from 1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.
Enduring Understandings	**Essential Questions**
• There are multiple methods for dividing whole numbers and you must select an efficient method that is appropriate for the problem. • Estimation, number sense, and placement of the decimal in the problem can help determine placement of the decimal in solutions. • Common denominators are needed in fraction computations involving addition and subtraction but are not needed in fraction computations involving multiplication and division. • Fractions, decimals, and percents can be converted between using algorithms to simplify comparisons and computations. • Prime numbers have two distinct factors, one and itself. Composite numbers are composed of more than two distinct factors.	• What real-world situation can you think of that would require you to divide a 5-digit number by a 2-digit number? • How are whole numbers and decimal computations similar? How are they different? • How are computations with fractions similar between operations? How are they different? Which is easiest? Which is most difficult? Why? • What are real-world examples of when you may need to add or subtract decimals? Multiply or divide decimals? • What is a real-world example of when you might need to add fractions? Subtract? Multiply? Divide? • In converting between fractions, decimals, and percents, which conversion is easiest? Hardest? Why are these conversions useful? • How can you figure out if a number is prime or composite? Why might it be important to determine this information?

Key Concepts	**Related Concepts**	**Vocabulary**
• I can use a standard algorithm to fluently divide multi-digit whole numbers. (6.C.1)	• I can divide two positive fractions. (6.C.4) • I can solve real-world problems	• Algorithm • Composite numbers • Distributive Property

• I can compute with positive fractions fluently using a standard algorithm. (6.C.2) • I can compute with positive decimals fluently using a standard algorithm. (6.C.2) • I can solve real-world problems that involve positive fractions using up to two operations. (6.C.3) • I can solve real-world problems with positive decimals using up to two operations. (6.C.3)	involving division of fractions by fractions. (6.C.4) • I can use fraction models to represent dividing positive fractions by fractions. (6.C.4) • I can use equations to divide positive fractions by fractions. (6.C.4) • I can give examples of commonly used fractions. (6.NS.5) • I can translate between commonly used fractions and their decimal and percent equivalents. (6.NS.5) • Without using a calculator, I can convert between fractions, decimals and percents of positive rational numbers. (6.NS.5) • I can identify prime numbers. (6.NS.6) • I can identify composite numbers. (6.NS.6) • I can explain how to determine if numbers are prime or composite. (6.NS.6) • I can find the greatest common factor (GCF) between two numbers less than or equal to 100. (6.NS.7) • I can find the least common multiple (LCM) between two whole numbers less than or equal to 12. (6.NS.7) • I can determine whether two whole numbers from 1 to 100 have a common factor. (6.NS.7) • I can use the distributive property to express a sum of two whole numbers between 1 and 100 with a common factor as a multiple of a sum of two whole numbers without a common factor. (6.NS.7)	• Division algorithm • Equivalent • Greatest common factor • Integer • Least common multiple • Prime numbers • Quotient • Reciprocal
Mathematical Processes • PS.1: Make sense of problems and persevere in solving them. • PS.2: Reason abstractly and quantitatively		
Proficiency Scales 6.C.1 6.C.2 6.C.3	**Digital** • **IDOE Examples/Tasks 6.C.1** • **IDOE Examples/Tasks 6.C.2** • **IDOE Examples/Tasks 6.C.4** • **IDOE Examples/Tasks 6.NS.5** • **IDOE Examples/Tasks 6.NS.6** • **IDOE Examples/Tasks 6.NS.7** Iready Aligned Lessons: 6.C.4 • Understand Division of Fractions. • Divide Unit Fractions in World Problems.	**Manipulatives** • **Bar Model Tool** • **Divisibility Rules** • **Fraction Strips** • **Fractions, Decimals, and Percents Model** • **Sieve of Eratosthenes**

	• Division of Fractions. 6.C.2/ 6.C.3 • Understand division of fractions. • Divide unit fractions in world problems. • Division of Fractions. 6.C.1 • Divide whole numbers 6.C.2/6.C.3 • Practice decimals and power of ten 6.C.2/6.C.3 • Multiply and Divide Decimals by Powers of Ten. • Multiplication of Decimals • Division of Decimals • Division of Whole Numbers and Decimals	

Textbook	**Formative Assessments**
Lesson 0 (days) 8/16-8/20 Ready Lesson 6 (3 days) 8/23-8/25 Ready Lesson 7 (5 days) 8/26-9/1 Ready Lesson 8 (9 days) 9/2-9/15 Ready Lesson 9 (2 days) 9/16-9/17 Ready Lesson 10 (3 days) 9/20-9/22 Ready Lesson 11 (4 days) 9/23-9/28 Ready Lesson 5A (9 days) 9/29-10/11 Ready Lesson 5B (4 days)10/12-10/19	ISM 6.C.3 Form A Date: 10/20

Priority Standards	**Supporting Standards**
• **6.NS.10:** Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations).	• **6.AF.9:** 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. • **6.NS.8:** Interpret, model, and use ratios to show the relative sizes of two quantities. Describe how a ratio shows the relationship between two quantities. Use the following notations: a/b, a to b, a:b. **Additional Standards** • **6.GM.1:** Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems. • **6.NS.9:** Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship.
Enduring Understandings	**Essential Questions**
• Unit rates refer to the amount of one unit for one quantity in a ratio/proportion. • Ratios can be written in multiple ways, including with a colon, with the word 'to', and as a fraction. • Ratios, unit rates, and proportions can all be represented in tables and determining the relationship between numbers in the table can help to find missing numbers.	• How can you determine the relationship between two numbers in a ratio? • How are ratios related to measurement conversions? • Why is it important to understand unit rates? When might you need to calculate a unit rate in the real world?

Key Concepts	**Related Concepts**	**Vocabulary**
• I can use reasoning to model real-world problems involving rates. (6.NS.10) • I can use reasoning to model real-world problems involving ratios. (6.NS.10) • I can represent real world and other mathematical problems with rates and ratios. (6.NS.10)	• I can create tables of equivalent ratios with whole-number measurements. (6.AF.9) • I can find missing values in tables showing equivalent ratios with whole-number measurements. (6.AF.9) • I can interpret the values in a table as coordinates to be plotted on the coordinate plane. (6.AF.9) • I can plot the pairs of values from a table. (6.AF.9) • I can interpret ratios as relative size between two quantities. (6.NS.8) • I can model and use ratios to show relative sizes of two quantities. (6.NS.8) • I can describe how a ratio show the relationship between two quantities. (6.NS.8) • I can represent ratios using the	• Conversion factor • Coordinate plane • Double number line • Equivalent • Imperial System of Measurement • Metric System • Rate • Ratio • Tape diagram • Unit rate

	following notations: a/b, a to b, and a:b. (6.NS.8) • I can use conversion factors to convert between English and metric measurement systems. (6.GM.1) • Given conversion factors, I can convert between measurement systems to solve real-world problems. (6.GM.1) • I can demonstrate understanding of unit rates. (6.NS.9) • I can use terms related to rate in the context of a ratio relationship. (6.NS.9)	

Mathematical Processes

- PS.1: Make sense of problems and persevere in solving them
- PS.2: Reason abstractly and quantitatively.

Proficiency Scales	**Digital**	**Manipulatives**
• 6.NS.10	• **IDOE Examples/Tasks 6.NS.10** • **IDOE Examples/Tasks 6.AF.9** • **IDOE Examples/Tasks 6.NS.8** • **IDOE Examples/Tasks 6.GM.1** • **IDOE Examples/Tasks 6.NS.9** **Iready Aligned Lessons:** **6.NS.8** • Concept of Ratio **6.NS.9** • Concept of Rate **6.NS.10** • Concept of Rate • Problem Solving with Ratio and Percent **6.GM.1** • Solve real world problems involving conversions **6.AF.9** • Concept of Ratio* • Ratio Concepts* • Ratios involving Complex Fractions	• **Tape Diagram Models** • **Double Number Line** • **Desmos Online Graphing Calculator** • **Function Puzzles** • **Bar Model Tool**

Textbook	Formative Assessments
Ready Lesson 1 (4 days) 10/21-10/26 Ready Lesson 2 (3 days) 10/27-10/29 Ready Lesson 3 (3 days) 11/1-11/3 Ready Lesson 4A (6 days) 11/4-11/12 Ready Lesson 4B (0 days)	ISM 6.NS.10 Form A Date:11/15

Priority Standards	**Supporting Standards**
• **6.NS.1:** Understand that positive and negative numbers are used 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 and compare quantities in real-world contexts, explaining the meaning of 0 in each situation. • **6.AF.8:** Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	• **6.NS.2:** 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 (e.g., –(–3) = 3), and that 0 is its own opposite. • **6.NS.3:** Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. • **6.NS.4:** Understand that the absolute value of a number is the distance from zero on a number line. Find the absolute value of real numbers and know that the distance between two numbers on the number line is the absolute value of their difference. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. • **6.AF.7:** Understand that signs of numbers in ordered pairs indicate the quadrant containing the point. Identify rules or patterns in the signs as they relate to the quadrants. Graph points with rational number coordinates on a coordinate plane.
Enduring Understandings	**Essential Questions**
• There are positive and negative numbers. These values represent real-world contexts, with zero creating a baseline in each context. • Absolute value represents the distance from zero on a number line and is represented by two parallel, vertical lines on each side of a number. • The coordinate plane is divided into four quadrants. • There are patterns in coordinate pairs that indicate which quadrant a point will lie in. • Distances between points can be found on the coordinate plane and also by computing with the coordinates.	• What are real-world examples of negative integers? • Why is it important to be able to compare rational numbers? • How would you describe absolute value to someone? • How would you teach someone to graph an ordered pair?

Key Concepts	**Related Concepts**	**Vocabulary**
• I can show on a number line that a negative number lies in the opposite direction as a positive number. (6.NS.1) • I can show that positive and negative numbers have opposite values. (6.NS.1) • I can use positive and negative numbers to represent and compare quantities in a variety of real-world contexts. (6.NS.1) • I can explain the meaning of 0 in real world contexts. (6.NS.1)	• I can demonstrate understanding of integers. (6.NS.2) • I can show that numbers with opposite signs are located on opposite sides of zero on the number line. (6.NS.2) • I can explain that the opposite of the opposite of a number is actually the number itself. (6.NS.2) • I can explain that 0 is its own opposite. (6.NS.2) • I can plot rational numbers on a number line. (6.NS.3)	• Absolute value • Axes • Coordinate plane • Coordinates • Integer • Magnitude • Negative • Opposite • Order • Ordered pair • Positive • Quadrant • Rational number

• I can solve real-world and other problems by graphing points with rational number coordinates on a coordinate plane. (6.AF.8) • I can find the distance between points with the same first coordinate or the same second coordinate. (6.AF.8)	• I can compare and order rational numbers. (6.NS.3) • I can write statements of order for rational numbers in real-world problems. (6.NS.3) • I can interpret and explain statements of order for rational numbers in real-world problems. (6.NS.3) • I can use a number line to explain that absolute value is the distance a number is away from zero. (6.NS.4) • I can find the absolute value of real numbers. (6.NS.4) • I can show the distance between two numbers on the number line is the absolute value of their difference. (6.NS.4) • I can relate absolute value to magnitude for a positive or negative quantity in a real-world situation. (6.NS.4) • I can accurately identify the four quadrants of a coordinate plane. (6.AF.7) • I can demonstrate understanding that the signs of the numbers in ordered pairs indicate which quadrant a point lies. (6.AF.7) • I can identify rules or patterns in the signs as they relate to quadrants. (6.AF.7) • I can graph points with rational number coordinates on a coordinate plane. (6.AF.7)	• Real numbers • Reflection

Mathematical Processes

- PS.4: Model with mathematics.
- PS.5: Use appropriate tools strategically

Proficiency Scales	**Digital**	**Manipulatives**
• 6.AF.8 • 6.NS.1	• IDOE Examples/Tasks 6.AF.8 • IDOE Examples/Tasks 6.NS.1 • IDOE Examples/Tasks 6.AF.7 • IDOE Examples/Tasks 6.NS.2 • IDOE Examples/Tasks 6.NS.3 • IDOE Examples/Tasks 6.NS.4 **Iready Aligned Lessons:** **6.NS.1** • Rational Numbers and Absolute Value • Coordinate Plane and Absolute Value **6.NS.2/6.NS.3/6.NS.4**	• Digital Number Line • Number Line • Desmos Online Graphing Calculator • Geogebra Coordinate Plane • Coordinates Game

	- Rational Numbers and Absolute value	

Textbook	**Formative Assessments**
Ready Lesson 12 (3 days) 11/16-11/18 Ready Lesson 13 (5 days) 11/19-11/30 Ready Lesson 14 (6 days) 12/1-12/8	ISM 6.NS.1 Form A Date:12/9

Priority Standards
- **6.C.6:** Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents.

Supporting Standards
- **6.C.5:** Evaluate positive rational numbers with whole number exponents.

Enduring Understandings
- Just like there are standard rules for reading a book, there are rules for the order in which math problems are solved. Problems are not always solved left to right, but rather using an order of operations.
- While the acronym PEMDAS is often used to describe the order of operations, multiplication and division are completed left to right and addition and subtraction are completed left to right.
- Exponents indicate repeated multiplication: 2^3 is 2 x 2 x 2, not 2 x 3.

Essential Questions
- Why is it important to have an order of operations?
- How do the order of operations impact how you solve a problem?
- What are common mistakes with order of operations that you want to remember to avoid?
- What are common mistakes with exponents that you want to remember to avoid?

Key Concepts
- I can apply the order of operations to evaluate numerical expressions with nonnegative rational numbers. (6.C.6)
- I can use the identity and inverse properties of addition and multiplication when evaluating numerical expressions with nonnegative rational numbers. (6.C.6)
- I can use the commutative properties of addition and multiplication when evaluating expressions with nonnegative rational numbers. (6.C.6)
- I can evaluate expressions that have grouping symbols and whole number exponents. (6.C.6)

Related Concepts
- I can evaluate positive rational numbers with whole number exponents. (6.C.5)

Vocabulary
- Associative Property of Addition
- Associative Property of Multiplication
- Commutative Property of Addition
- Commutative Property of Multiplication
- Distributive Property of Multiplication
- Evaluate
- Exponent
- Identity Property of Addition
- Identity Property of Multiplication
- Inverse Property of Addition
- Inverse Property of Multiplication
- Numerical expression
- Rational number
- Whole number

Mathematical Processes
- PS.1 Make sense of problems and persevere in solving them.
- PS.2 Reason abstractly and quantitatively.
- PS.6 Attend to precision.

Proficiency Scales
- 6.C.6

Digital
- **IDOE Examples/Tasks 6.C.6**

Manipulatives
- **Order of Operations Calculator**

	• [IDOE Examples/Tasks 6.C.5] **Iready Aligned Lessons:** **6.C.6** ● Write and Evaluate Expressions ● Practice: Interpret and Evaluate Expressions ● Numerical Expressions and Order of Operation **6.C.5** ● Numerical Expressions and Order of Operations	• [Scientific Calculator]

Textbook	**Formative Assessments**
Ready Lesson 15 (7 days) 12/10-12/20	ISM 6.C.6 Form A Date:12/21

Priority Standards	**Supporting Standards**
• **6.AF.1:** Evaluate expressions for specific values of their variables, including expressions with whole-number exponents and those that arise from formulas used in geometry and other real-world problems. • **6.AF.3:** Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values.	• **6.AF.2:** Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.
Enduring Understandings	**Essential Questions**
• Variables are used to represent a value in a mathematical expression. • More than one variable can be used in mathematical expressions. • Equivalent expressions can be written in a variety of ways.	• Why are variables used in mathematics? • When might you need to use a variable to represent a real-world situation?

Key Concepts	**Related Concepts**	**Vocabulary**
• I can evaluate variable expressions by substituting specific values in for the variables. (6.AF.1) • I can evaluate variable expressions with whole number exponents by substituting specific values in for the variables. (6.AF.1) • I can evaluate variable expressions that arise from formulas used in geometry and real-world problems by substituting specific values in for the variables. (6.AF.1) • I can write expressions using multiple variables to represent real-world problems. (6.AF.3) • I can define variables within expressions given in the context of a problem. (6.AF.3) • I can evaluate expressions that include multiple variables in real-world problems for given values. (6.AF.3)	• I can use the properties of operations to create equivalent linear expressions. (6.AF.2) • I can use the identity and inverse properties of addition and multiplication to create equivalent linear expressions. (6.AF.2) • I can use the identity and inverse properties of addition and multiplication to justify whether two linear expressions are equivalent when the same number is generated regardless of which value of substituted in to it. (6.AF.2) • I can use the commutative properties of addition and multiplication to create equivalent linear expressions. (6.AF.2) • I can use the commutative properties of addition and multiplication to justify whether two linear expressions are equivalent when the same number is generated regardless of which value of substituted in to it. (6.AF.2) • I can evaluate expressions that have grouping symbols and whole number exponents. (6.AF.2) • I can use the distributive property to create equivalent linear expressions. (6.AF.2) • I can use the distributive property	• Associative Property of Addition • Associative Property of Multiplication • Commutative Property of Addition • Commutative Property of Multiplication • Distributive Property of Multiplication • Evaluate • Exponent • Expression • Identity Property of Addition • Identity Property of Multiplication • Inverse Property of Addition • Inverse Property of Multiplication • Linear expression • Variable

	to justify whether two linear expressions are equivalent when the same number is generated regardless of which value of substituted in to it. (6.AF.2) ● I can determine whether two expressions are equivalent. (6.AF.2)	

Mathematical Processes
- PS.1 Make sense of problems and persevere in solving them.
- PS.6 Attend to precision.

Proficiency Scales	**Digital**	**Manipulatives**
● 6.AF.1 ● 6.AF.3	● **IDOE Examples/Tasks 6.AF.1** ● **IDOE Examples/Tasks 6.AF.3** ● **IDOE Examples/Tasks 6.AF.2** **Iready Aligned Lessons:** **6.AF.1** ● Algebraic Expressions **6.AF.2** ● Equivalent Expressions ● Linear Expressions **6.AF.3** ● Algebraic Expressions	● **Model Algebra Equations** ● **Algebra Mobile Puzzles** ● **Bar Model Tool**

Textbook	**Formative Assessments**
Ready Lesson 16 (8 days) 1/4-1/13 Ready Lesson 17 (4 days) 1/14-1/20	ISM 6.AF.3 Form A Date:1/21

Priority Standards	Supporting Standards
● **6.AF.5:** Solve equations of the form x + p = q, x – p = q, px = q, and x/p = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real world problems using equations of these forms and solve such problems.	● **6.AF.10:** Use variables to represent two quantities in a proportional relationship in a real-world problem ; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. ● **6.AF.4:** Understand that solving an equation or inequality is the process of answering the following question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. ● **6.AF.6:** Write an inequality of the form x > c, x ≥ c, x < c, or x ≤ c, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Recognize inequalities have infinitely many solutions and represent solutions on a number line diagram.

Enduring Understandings	Essential Questions
● Equations and inequalities with variables can be solved with an understanding of inverse operations. ● Equations have one solution and inequalities may have more than one solution. ● Inequality solutions can be represented using number line diagrams.	● When might you need to solve for a variable in a real-life situation? ● Why are operations important in evaluating expressions? ● What types of real-life situations are represented by inequalities?

Key Concepts	Related Concepts	Vocabulary
● I can identify the operation and its inverse operation in order to solve one step linear equations. (6.AF.5) ● I can solve linear equations using one of four operations when working with nonnegative rational numbers. (6.AF.5) ● I can represent real-world problems using one step linear equations. (6.AF.5) ● I can solve real-world problems involving one step linear equations. (6.AF.5)	● I can use variables to represent quantities in proportional relationships in real-world problems. (6.AF.10) ● I can write an equation expressing the dependent variable in terms of the independent variable. (6.AF.10) ● I can use graphs to analyze the relationship between dependent and independent variables. (6.AF.10) ● I can use tables to analyze the relationship between dependent and independent variables. (6.AF.10) ● I can demonstrate how graphs and tables depicting the relationship between dependent and independent variables relate to equations. (6.AF.10) ● I can use substitution to determine	● Constraint ● Dependent variable ● Equation ● Independent variable ● Inequality ● Infinitely many solutions ● Inverse operation ● Proportional relationship ● Rational number ● Substitute ● Variable

	whether a number in a set makes an equation or an inequality true. (6.AF.4) • I can explain what the solution to an equation or inequality represents. (6.AF.4) • I can write inequalities of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$ to represent real-world problems. (6.AF.6) • I can write inequalities of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$ to represent a given visual representation. (6.AF.6) • I can demonstrate understanding that inequalities have infinite solutions. (6.AF.6) • I can graph solutions to inequalities on a number line. (6.AF.6)	

Mathematical Processes

- PS.1 Make sense of problems and persevere in solving them.
- PS.2 Reason abstractly and quantitatively.

Proficiency Scales	Digital	Manipulatives
• 6.AF.5	• **IDOE Examples/Tasks 6.AF.5** • **IDOE Examples/Tasks 6.AF.10** • **IDOE Examples/Tasks 6.AF.4** • **IDOE Examples/Tasks 6.AF.6** **Iready Aligned Lessons:** **6.AF.4** • Solving Equations • Using Equations to Solve Problems • Relationships Between Variables in Equations **6.AF.5** • Solving Equations • Using Equations to Solve Problems • Problem Solving with Equations **6.AF.6** • Solving Inequalities • Problem Solving with Inequalities	• **Model Algebra Equations** • **Algebra Mobile Puzzles**

Textbook	Formative Assessments
Ready Lesson 18 (3 days) 1/24-1/26 Ready Lesson 19 (11 days) 1/27-2/10 Ready Lesson 20 (5 days) 2/11-2/17 Ready Lesson 21 (4 days) 2/22-2/25	ISM 6.AF.5 Form A Date: 2/28

Priority Standards	**Supporting Standards**
• **6.GM.4:** Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.	• **6.GM.2:** Know that the sum of the interior angles of any triangle is 180º and that the sum of the interior angles of any quadrilateral is 360º. Use this information to solve real-world and mathematical problems. • **6.GM.3:** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate; apply these techniques to solve real-world and other mathematical problems. • **6.GM.5:** Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), 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 to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems. • **6.GM.6:** Construct right rectangular prisms from nets and use the nets to compute the surface area of prisms; apply this technique to solve real-world and other mathematical problems.
Enduring Understandings	**Essential Questions**
• Volume represents the unit cubes that fit within a 3D object. Volume can be found visually with unit cubes, or by computing with the side lengths of the object. • Area represents the square units within a 2D object and complex shapes can be divided into simple shapes to compute the area more easily. • Surface area represents the outside area of a 3D object and can be found by adding the area of the different faces of the 3D object.	• How can you describe the size of this amazon box (or other 3D object) to someone that couldn't see it? How can you use measurement to make your description more precise? • How are area, volume, and surface area related? How are they different? • What are real-world examples of when you might need to find area? Volume? Surface area?

Key Concepts	**Related Concepts**	**Vocabulary**
• I can decompose or compose complex shapes composed of polygons. (6.GM.4) • I can find the area of shapes composed of polygons. (6.GM.4) • I can solve real-world problems where finding the area of complex shapes is required. (6.GM.4)	• I can show that the sum of the interior angles of all triangles is 180º. (6.GM.2) • I can show that the sum of all interior angles of any quadrilateral is 360º. (6.GM.2) • I can solve real-world problems involving missing angles of triangles and quadrilaterals. (6.GM.2) • I can solve problems involving missing angles of triangles and quadrilaterals. (6.GM.2) • Given coordinates for their vertices, I can draw polygons in the coordinate plane. (6.GM.3)	• Complex shape • Composing • Coordinate plane • Coordinates • Decomposing • Interior angle • Net • Polygon • Quadrilateral • Rectangular prism • Sum • Surface area • Unit Cubes • Vertex • Volume

	• I can use coordinates with the same first or second coordinate to find side lengths of polygons. (6.GM.3) • I can solve real-world problems involving missing length by using the coordinates of polygons. (6.GM.3) • I can use unit cubes (using technology or concrete materials) to find the volume of right rectangular prisms with fractional edge lengths. (6.GM.5) • I can use unit cubes (using technology or concrete materials) to show the volume of a right rectangular prism with fractional edge lengths. (6.GM.5) • I can show that finding the volume of a right rectangular prism using unit cubes is the same as finding the volume by multiplying the edge lengths of the prism. (6.GM.5) • I can apply the volume formulas V=lwh and V=Bh to find the volume of right rectangular prisms with fractional edge lengths. (6.GM.5) • I can solve real-world problems by finding the area of right rectangular prisms with fractional edge lengths. (6.GM.5) • I can construct right rectangular prisms from nets. (6.GM.6) • I can use the net of a right rectangular prism to find the surface area. (6.GM.6) • I can solve real-world problems asking me to find the surface area of right rectangular prisms by using nets. (6.GM.6)	
Mathematical Processes • PS.4 Model with mathematics. • PS.7 Look for and make use of structure.		
Proficiency Scales • [6.GM.4]()	**Digital** • IDOE Examples/Tasks 6.GM.4 • IDOE Examples/Tasks 6.GM.2 • IDOE Examples/Tasks 6.GM.3 • IDOE Examples/Tasks 6.GM.5 • IDOE Examples/Tasks 6.GM.6 **Iready Aligned Lessons:** **6.GM.2** • Angle Sums Properties **6.GM.4** • Area of Composed Figures	**Manipulatives** • Rectangular Prisms • Geogebra • Mathigon

	6.GM.5 ● Understand & Measure Volume ● Practice: Measure Volume ● Measure Volume Using Formulas ● Practice: Volume of Rectangular Prisms ● Practice: Volume of Composite Figures ● Volume with Fractional Length **6.GM.6** ● Nets & Surface Area	

Textbook	**Formative Assessments**
Ready Lesson 22 (7 days) 3/1-3/9 Ready lesson 23A (6 days) 3/10-3/17 Ready Lesson 23B (6 days) 3/18-4/1 Ready Lesson 24 (5 days) 4/4-4/8 Ready Lesson 25 (4 days) 4/11-4/14	ISM 6.GM.4 Form A Date: 4/18

Priority Standards

- **6.DS.4:** Summarize numerical data sets in relation to their context in multiple ways, such as: report the number of observations; describe the nature of the attribute under investigation, including how it was measured and its units of measurement; determine quantitative measures of center (mean and/or median) and spread (range and interquartile range); describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered; relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered

Supporting Standards

- **6.DS.1:** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for the variability in the answers. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- **6.DS.2:** Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots.
- **6.DS.3:** Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology).

Enduring Understandings

- There are different measures of center, frequency, and distribution that can be used to describe and summarize a data set.
- Different measures of center have different pros and cons, and they must be evaluated for each situation to find the data point that best represents a data set.
- There are several ways to collect, organize, display, and analyze data. You must choose the most appropriate methods for the data you are considering.

Essential Questions

- What is the best measure of center, and why?
- How might someone (i.e. reporters, politicians, etc.) use a certain measure of center, frequency, or distribution over a different measure to persuade or mislead an audience?
- What are different ways you can collect, organize, and display data? Is there a best way; why?

Key Concepts

- I can report the number of observations when summarizing numerical data sets. (6.DS.4)
- I can describe the nature of the attribute under investigation, including how it was measured and the units of measurement, when summarizing data sets. (6.DS.4)
- I can describe overall patterns and deviations from overall patterns with reference to the context in which data was gathered. (6.DS.4)
- I can find the mean, median of data sets. (6.DS.4)
- I can find the range and interquartile range of data sets. (6.DS.4)
- I can communicate my choice of measure of center and spread to the shape of the data distribution and the context in which the data were gathered. (6.DS.4)

Related Concepts

- I can recognize that statistical questions anticipate variability in data related to the question. (6.DS.1)
- I can explain how statistical questions will account for the variability in responses. (6.DS.1)
- I can understand that data collected to answer statistical questions has a distribution and can describe it by its overall shape. (6.DS.1)
- I can describe a data distribution by its center and spread. (6.DS.1)
- I can identify appropriate graphical representations of numerical data including line plots, histograms, and box plots. (6.DS.2)
- I can create and interpret line plots that represent numerical data. (6.DS.2)
- I can create and interpret histograms that represent numerical data. (6.DS.2)
- I can create and interpret box plots that represent numerical data.

Vocabulary

- Attribute
- Box plots
- Center
- Distribution
- Graphical representation
- Histograms
- Interquartile range
- Line plots
- Mean
- Measures of center
- Median
- Observation
- Outlier
- Range
- Spread
- Statistical question
- Variability

	(6.DS.2) ● I can create statistical questions. (6.DS.3) ● I can collect the data from a statistical question. (6.DS.3) ● I can organize (using technology) data based on statistical questions. (6.DS.3) ● I can display and interpret data collected from a statistical question with graphical representations (using technology). (6.DS.3)	

Mathematical Processes

- PS.2 Reason abstractly and quantitatively.
- PS.3 Construct viable arguments and critique the reasoning of others.

Proficiency Scales	Digital	Manipulatives
● 6.DS.4	● IDOE Examples/Tasks 6.DS.4 ● IDOE Examples/Tasks 6.DS.1 ● IDOE Examples/Tasks 6.DS.2 ● IDOE Examples/Tasks 6.DS.3 **Iready Aligned Lessons:** **6.DS.1** ● Understanding Statistics ● Making Statistical Inferences* ● Using Mean and Mean Absolute Deviation to Compare Data* ● Using Measures of Center and Variability to Compare Data* **6.DS.2** ● Choosing Data Displays ● Box Plots ● Histograms ● Fractions on a Line Plot ● Dot Plots **6.DS.3** ● Making Statistical Inferences **6.DS.4** ● Understand Mean & MAD ● Choice of Measures of Center & Variability	● Statistics Calculator ● Desmos Online Graphing Calculator ● Desmos Box Plot ● Histogram Maker ● Dice Roller ● Data Displays

Textbook	Formative Assessments
Ready Lesson 26 (5 days) 4/19-4/25 Ready Lesson 27 (0 days) - skipped Ready Lesson 28 (5 days) 4/26-5/2 Ready Lesson 29 (5 days) 5/3-5/9 Lesson 28 and 29 taught together in 5 days	ISM 6.DS.4 Form A Date:5/10