Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	1) Number Puzzles and Multiple Towers	4.5

Targeted Illinois Learning Standards Expectation: Practice

Measurement and Data (5.MD)

- **5.MD.3a: I can measure volume by using unit cubes. (Major)**
- **5.MD.3b: I can use n unit cubes to find the volume of a solid figure demonstrating no gaps or overlaps. (Major)**
- **5.MD.4: I can measure volume by counting unit cubes, using cubic mc, cubic in, cubic ft., and improvised units. Example: 18x5x7 = 630 cubic yards (Major)**
- **5.MD.5a: I can find the volume of a rectangular prism with whole-number side lengths by building it with unit cubes. (Major)**
- **5.MD.5b: I can represent whole number products as volumes using the associative property of multiplication. For example: V = (3 x 5) x 6 = 3 x (5 x 6). (Major)**
- **5.MD.5c: I can show that the rectangular prism's volume is the same as using the formula V = l x w x h. (Major)**
- **5.MD.5d: I can apply the formulas V = l x w x h and V = b x h to find volumes of rectangular prisms with whole number lengths in the context of real world problems. (Major)**
- **5.MD.5e: I can recognize volume as additive by finding the volumes of two nonoverlapping prisms and them adding these volumes together. For example, the volume of prism 1 = 12 in.^{3} + the volume of prism 2 = 15 in.^{3} which equals a total of 27 in.^{3}. (Major)**

Number and Operations in Base 10 (5.NBT)

- **5.NBT.2b: I can explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Example: 3.5 X 10 = 35 because 35 is ten times more than 3.5, and 3.5 / 1/10 = 0.035 because 0.035 is one hundred times less than 3.5. (Major)**
- **5.NBT.2c: I can use whole-number exponents to denote the powers of 10. Example: 10^2 means 10 two times or 100, 10^1 means 10 one time or 10, and 10^o means 10 zero times or 1. (Major)**
- **5.NBT.5: I can fluently multiply multi-digit whole numbers using the standard algorithm. (Example: traditional, lattice, partial product, etc.) (Major)**
- **5.NBT.6b: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using all four properties of operations. (Major)**

Operations and Algebraic Thinking (5.OA)

- *5.OA.1a: I can interpret multiplication equations using the commutative property (35=7 X 5, 35=5 X 7) (Additional)*
- *5.OA.1b: I can use the number of operations to solve a problem. Example: The order of operations is as follows: (PEMDAS; Please Excuse My Dear Aunt Sally) Evaluate the parentheses, if there are any, and if they require evaluation. Evaluate the powers, that is, the exponents. Multiply or divide -- it does not matter. (4) Add or subtract. (Additional)*
- *5.OA.1c: I can verbally explain a multiplication equation using commutative property (Additional)*
- *5.OA.2a: I can interpret numerical expressions without evaluating them. (Multi-step from above.) Example: add 8 and 7, then multiply by 2 as 2 x (8 + 7). (Additional)*
- *5.OA.2b: I can recognize that 3 x (18,932 + 921) is three times as large as 18,932 + 921 without having to evaluate them. (Additional)*
- *5.OA.2c: I can write simple expressions that record calculations with numbers. Example: A number less 2 is (x – 2). (Additional)*

Targeted Illinois Learning Standards Expectation: Mastery

Number and Operations in Base 10 (5.NBT)

- **5.NBT.2a: I can explain patterns in the number of zeros of the product when multiplying a number by powers of 10. Example: 25 X 100 = 2,500 because 2,500 is 100 times larger than 25. (Major)**
- **5.NBT.6a: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using stratgegies based on place value. (Major)**
- **5.NBT.6c: I can illustrate and explain the calculation by using area models, equations, or rectangular arrays. (Major)**

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	2) Prisms and Pyramids	3

Targeted Illinois Learning Standards Expectation: Practice

Measurement and Data (5.MD)

- **5.MD.3b: I can use n unit cubes to find the volume of a solid figure demonstrating no gaps or overlaps. (Major)**
- **5.MD.5a: I can find the volume of a rectangular prism with whole-number side lengths by building it with unit cubes. (Major)**
- **5.MD.5b: I can represent whole number products as volumes using the associative property of multiplication. For example: V = (3 x 5) x 6 = 3 x (5 x 6). (Major)**
- **5.MD.5e: I can recognize volume as additive by finding the volumes of two nonoverlapping prisms and them adding these volumes together. For example, the volume of prism 1 = 12 in.^{3} + the volume of prism 2 = 15 in.^{3} which equals a total of 27 in.^{3}. (Major)**

Number and Operations in Base 10 (5.NBT)

- **5.NBT.1: I can recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. (Major)**
- **5.NBT.5: I can fluently multiply multi-digit whole numbers using the standard algorithm. (Example: traditional, lattice, partial product, etc.) (Major)**
- **5.NBT.6a: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using stratgegies based on place value. (Major)**
- **5.NBT.6b: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using all four properties of operations. (Major)**
- **5.NBT.6c: I can illustrate and explain the calculation by using area models, equations, or rectangular arrays. (Major)**

Operations and Algebraic Thinking (5.OA)

- *5.OA.1a: I can interpret multiplication equations using the commutative property (35=7 X 5, 35=5 X 7) (Additional)*
- *5.OA.1b: I can use the number of operations to solve a problem. Example: The order of operations is as follows: (PEMDAS; Please Excuse My Dear Aunt Sally) Evaluate the parentheses, if there are any, and if they require evaluation. Evaluate the powers, that is, the exponents. Multiply or divide -- it does not matter. (4) Add or subtract. (Additional)*
- *5.OA.1c: I can verbally explain a multiplication equation using commutative property (Additional)*

Targeted Illinois Learning Standards Expectation: Mastery

Measurement and Data (5.MD)

- **5.MD.3a: I can measure volume by using unit cubes. (Major)**
- **5.MD.4: I can measure volume by counting unit cubes, using cubic mc, cubic in, cubic ft., and improvised units. Example: 18x5x7 = 630 cubic yards (Major)**
- **5.MD.5c: I can show that the rectangular prism's volume is the same as using the formula V = l x w x h. (Major)**
- **5.MD.5d: I can apply the formulas V = l x w x h and V = b x h to find volumes of rectangular prisms with whole number lengths in the context of real world problems. (Major)**

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	3) Thousands of Miles, Thousands of Seats	2.5

Targeted Illinois Learning Standards Expectation: Practice

Number and Operations in Base 10 (5.NBT)

- **5.NBT.1: I can recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. (Major)**
- **5.NBT.5: I can fluently multiply multi-digit whole numbers using the standard algorithm. (Example: traditional, lattice, partial product, etc.) (Major)**
- **5.NBT.6a: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using stratgegies based on place value. (Major)**
- **5.NBT.6b: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using all four properties of operations. (Major)**
- **5.NBT.6c: I can illustrate and explain the calculation by using area models, equations, or rectangular arrays. (Major)**

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	4) What's That Portion?	6

Targeted Illinois Learning Standards Expectation: Practice

Number and Operations- Fractions (5.NF)

- **5.NF.2b: I can use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. (Estimating fractions to the benchmarks 0, ½, or 1). (Major)**
- **5.NF.4: I can interpret the product (2/3) x 4 = (8/3) by using a fraction model and create a story context (word problem) for this equation. (Major)**
- **5.NF.5b: I can explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number. For example, 5 × (1 1/2) = (7 1/2) (Major)**
- **5.NF.5c: I can explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. For example 5 × (1/2) = (2 1/2) (Major)**
- **5.NF.5d: I can relate the principle of fraction equivalence of (3/4) = ((3 x 2)/(4 x 2)) = (6/8) and realize that any fraction equal to one (Major)**
- **5.NF.7a: I can apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. By using the inverse operation of division solve (1/3) / 4 = (1/12) because (1/12) x 4 = (1/3) (Major)**
- **5.NF.7c: I can solve real world problems involving division of fractions using any customary or metric measurement units (lb., in., cm, etc.) by using visual fraction models and equations to represent the problem. (Major)**

Targeted Illinois Learning Standards Expectation: Mastery

Number and Operations- Fractions (5.NF)

- **5.NF.1a: I can add fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions. (Major)**
- **5.NF.1b: I can subtract fractions with unlike denominators (including mixed numbers by replacing given fractions with equivalent fractions. (Major)**
- **5.NF.2a: I can solve word problems involving addition and subtraction of fractions using like and unlike denominators by using visual fraction models or equations to represent the problem. Examples: number lines, fraction strips, diagrams or pictorial representation. (Major)**
- **5.NF.5a: I can compare a fraction (less than 1) with a whole number and know that the product will be smaller than the whole number when multiplied. Example: 3/7 of 7 will produce a product that is smaller than 7 because one of the factors is less than 1. (The product will be between 0-7.) (Major)**
- **5.NF.6: I can solve real world problems involving multiplication of fractions and mixed numbers using visual fraction models or equations to represent the problem. (Major)**
- **5.NF.7b: I can interpret division of a whole number by a unit fraction, and compute such quotients by creating a story context. For example, if there are 4 pizzas each cut into fifths, how many slices would there be in all? (Major)**

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	5) Measuring Polygons	3.5

Targeted Illinois Learning Standards Expectation: Practice

Geometry (5.G)

- *5.G.3: I can categorize all polygons based on their properties (sides, angles). Example: any three-sided polygon is a triangle. (Additional)*
- *5.G.4a: I can classify two-dimensional figures in a hierarchy based on properties. Example: Understand that a polygon with 8 sides is an octagon, whether regular or irregular. Regular polygons have equal sides and equal interior angles, irregular polygons have unequal sides and interior angles. (Additional)*
- *5.G.4b: I can compare and contrast the relationships between polygons based on their properties. For example, all squares are rectangles, but rectangles are not squares. All squares are rhombi, but all rhombi are not squares. Also a triangle can be classified as right and isosceles, based on its side lengths and interior angles. (Additional)*

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	6) Decimals on Grids and Number Lines	6

Targeted Illinois Learning Standards Expectation: Practice

Measurement and Data (5.MD)

- 5.MD.1a: I can convert among different-sized standard measurement units within a given measurement system. (Supporting)
- 5.MD.1b: I can use measurement conversions within the metric system or English system as I solve multi-step, real world problems. (Supporting)

Number and Operations in Base 10 (5.NBT)

- **5.NBT.2a: I can explain patterns in the number of zeros of the product when multiplying a number by powers of 10. Example: 25 X 100 = 2,500 because 2,500 is 100 times larger than 25. (Major)**
- **5.NBT.2b: I can explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Example: 3.5 X 10 = 35 because 35 is ten times more than 3.5, and 3.5 / 1/10 = 0.035 because 0.035 is one hundred times less than 3.5. (Major)**
- **5.NBT.2c: I can use whole-number exponents to denote the powers of 10. Example: 10^2 means 10 two times or 100, 10^1 means 10 one time or 10, and 10^0 means 10 zero times or 1. (Major)**
- **5.NBT.5: I can fluently multiply multi-digit whole numbers using the standard algorithm. (Example: traditional, lattice, partial product, etc.) (Major)**
- **5.NBT.6a: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using stratgegies based on place value. (Major)**
- **5.NBT.6b: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using all four properties of operations. (Major)**
- **5.NBT.6c: I can illustrate and explain the calculation by using area models, equations, or rectangular arrays. (Major)**
- **5.NBT.7a: I can add and subtract decimals to hundredths using concrete models or drawings and strategies based on place value. (Major)**
- **5.NBT.7b: I can add, subtract, multiply, and divide decimals to hundredths utilizing the properties of operations (Commutative, Associative, Identity, Zero, Distributive) and/or the relationship between addition and subtraction (inverse operation). (Major)**
- **5.NBT.7d: I can relate the strategies of place value (decimals to hundredths), properties of operations, and/or the relationship between addition and subtraction to a written method explaining my reasoning. (Major)**

Number and Operations- Fractions (5.NF)

- **5.NF.3a: I can interpret a fraction as division of the numerator by the denominator. (The numerator is the dividend and the denominator is the divisor). (Major)**
- **5.NF.3b: I can solve word problems involving division of whole numbers leading to answers in the form of fractions (improper fractions) or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. (Major)**

Operations and Algebraic Thinking (5.OA)

- *5.OA.1a: I can interpret multiplication equations using the commutative property (35=7 X 5, 35=5 X 7) (Additional)*
- *5.OA.1b: I can use the number of operations to solve a problem. Example: The order of operations is as follows: (PEMDAS; Please Excuse My Dear Aunt Sally) Evaluate the parentheses, if there are any, and if they require evaluation. Evaluate the powers, that is, the exponents. Multiply or divide -- it does not matter. (4) Add or subtract. (Additional)*
- *5.OA.1c: I can verbally explain a multiplication equation using commutative property (Additional)*

Targeted Illinois Learning Standards Expectation: Mastery

Number and Operations in Base 10 (5.NBT)

- **5.NBT.1: I can recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. (Major)**
- **5.NBT.3a: I can read and write decimals to thousandths using base-ten numerals, number names and expanded form. (Major)**
- **5.NBT.3b: I can compare two decimals to thousandths based on meanings of the digits in each place using <, >, or = to record the result of comparisons. Example 4.205 < 4.250, using the T method. (Major)**
- **5.NBT.4: I can use place value understanding to round decimals to any place. Example: Round 585.36 to the nearest tenth = 585.4 because the 6 in the 100th's place causes the 3 to move up to 4, making sure that you don't add the zero in the 100th's place because you are rounding it to the 10th's place. (Major)**
- **5.NBT.7c: I can multiply and divide decimals to hundredths using concrete models or drawings and strategies based on place value. (Major)**

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	7) How Many People? How Many Teams?	4

Targeted Illinois Learning Standards Expectation: Practice

Number and Operations in Base 10 (5.NBT)

- **5.NBT.6a: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using stratgegies based on place value. (Major)**
- **5.NBT.6b: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using all four properties of operations. (Major)**
- **5.NBT.6c: I can illustrate and explain the calculation by using area models, equations, or rectangular arrays. (Major)**

Number and Operations- Fractions (5.NF)

- **5.NF.2a: I can solve word problems involving addition and subtraction of fractions using like and unlike denominators by using visual fraction models or equations to represent the problem. Examples: number lines, fraction strips, diagrams or pictorial representation. (Major)**
- **5.NF.2b: I can use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. (Estimating fractions to the benchmarks 0, ½, or 1). (Major)**

Operations and Algebraic Thinking (5.OA)

- *5.OA.2a: I can interpret numerical expressions without evaluating them. (Multi-step from above.) Example: add 8 and 7, then multiply by 2 as 2 x (8 + 7). (Additional)*
- *5.OA.2c: I can write simple expressions that record calculations with numbers. Example: A number less 2 is (x – 2). (Additional)*

Targeted Illinois Learning Standards Expectation: Mastery

Number and Operations in Base 10 (5.NBT)

- **5.NBT.5: I can fluently multiply multi-digit whole numbers using the standard algorithm. (Example: traditional, lattice, partial product, etc.) (Major)**

Operations and Algebraic Thinking (5.OA)

- *5.OA.2b: I can recognize that 3 x (18,932 + 921) is three times as large as 18,932 + 921 without having to evaluate them. (Additional)*

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	8) Growth Patterns	2.5

Targeted Illinois Learning Standards Expectation: Practice

Geometry (5.G)

- *5.G.1b: I can explain the x value in an ordered pair moves from the origin on the horizontal axis and the y value in an ordered pair moves from the origin on the vertical axis. Example (x, y). The x value moves right or left on the horizontal axis and the y values moves up or down on the vertical axis. (Hint: You must crawl (x) before you can climb (y). (Additional)*
- *5.G.2a: I can interpret and locate coordinate values of points in the context of the situation. (Additional)*

Measurement and Data (5.MD)

- 5.MD.1a: I can convert among different-sized standard measurement units within a given measurement system. (Supporting)
- 5.MD.1b: I can use measurement conversions within the metric system or English system as I solve multi-step, real world problems. (Supporting)

Number and Operations in Base 10 (5.NBT)

- **5.NBT.3a: I can read and write decimals to thousandths using base-ten numerals, number names and expanded form. (Major)**
- **5.NBT.3b: I can compare two decimals to thousandths based on meanings of the digits in each place using <, >, or = to record the result of comparisons. Example 4.205 < 4.250, using the T method. (Major)**

Operations and Algebraic Thinking (5.OA)

- *5.OA.1a: I can interpret multiplication equations using the commutative property (35=7 X 5, 35=5 X 7) (Additional)*
- *5.OA.1b: I can use the number of operations to solve a problem. Example: The order of operations is as follows: (PEMDAS; Please Excuse My Dear Aunt Sally) Evaluate the parentheses, if there are any, and if they require evaluation. Evaluate the powers, that is, the exponents. Multiply or divide -- it does not matter. (4) Add or subtract. (Additional)*
- *5.OA.1c: I can verbally explain a multiplication equation using commutative property (Additional)*
- *5.OA.2a: I can interpret numerical expressions without evaluating them. (Multi-step from above.) Example: add 8 and 7, then multiply by 2 as 2 x (8 + 7). (Additional)*
- *5.OA.2c: I can write simple expressions that record calculations with numbers. Example: A number less 2 is (x – 2). (Additional)*
- *5.OA.3a: I can explain informally why a Rule of +6 has corresponding terms twice the value of corresponding terms with a Rule of +3. (Simple justification of the rule) (Additional)*

Targeted Illinois Learning Standards Expectation: Mastery

Geometry (5.G)

- *5.G.1: I can locate a given point in the coordinate plane using an ordered pair of numbers, called coordinates. (Additional)*
- *5.G.2b: I can represent real world and mathematical problems by graphing points in Quadrant 1 on the coordinate plane. Example: Map grids. (Additional)*

Operations and Algebraic Thinking (5.OA)

- *5.OA.2b: I can recognize that 3 x (18,932 + 921) is three times as large as 18,932 + 921 without having to evaluate them. (Additional)*
- *5.OA.3b: I can generate 2 numerical patterns using 2 given rules. Example: Make a number pattern by doubling the number, then adding 2. (4, 10, 22, 46…) (Additional)*
- *5.OA.3c: I can identify the relationship between corresponding terms (in/out box and find the rule). (Additional)*

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	9) How Long Can You Stand On One Foot?	1

Targeted Illinois Learning Standards Expectation: Practice

Measurement and Data (5.MD)

- 5.MD.2a: I can make a line plot to display a data set including fractional measurement units. (Supporting)
- 5.MD.2b: I can use operations on fractions for this grade to solve problems involving information presented in line plots. (Supporting)

Number and Operations in Base 10 (5.NBT)

- **5.NBT.6a: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using stratgegies based on place value. (Major)**
- **5.NBT.6b: I can find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors using all four properties of operations. (Major)**
- **5.NBT.6c: I can illustrate and explain the calculation by using area models, equations, or rectangular arrays. (Major)**

Number and Operations- Fractions (5.NF)

- **5.NF.6: I can solve real world problems involving multiplication of fractions and mixed numbers using visual fraction models or equations to represent the problem. (Major)**

Targeted Illinois Learning Standards Expectation: Mastery

Number and Operations in Base 10 (5.NBT)

- **5.NBT.5: I can fluently multiply multi-digit whole numbers using the standard algorithm. (Example: traditional, lattice, partial product, etc.) (Major)**

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	11) #Quarter 1	9

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Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	12) #Quarter 2	9

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Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	13) #Quarter 3	10

Rantoul City Schools District #137 Unit Plan

Subject	Unit Plan Name	Unit	Length (Weeks)
Grade 5	Math Investigations Gr 5	14) #Quarter 4	8