ADM Community Schools

3th Grade Math Curriculum Map

Grade 3 Math

Units in Sequence	Place Value	Addition	Subtraction	Time	Multiplication
Unit Timeline	Weeks 1-3	Weeks 4-5	Weeks 6-8	Weeks 9-10	Weeks 11-14
Iowa Core Standards	3.NBT 1. Use Place Value understand to round whole numbers to the nearest 10 or 100.	3.NBT 2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operation, and/or the relationship between addition and subtraction 3.OA 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 9. Identify arithmetic patters and explain them using properties of operation.	3.NBT 2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operation, and/or the relationship between addition and subtraction 3.OA 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 9. Identify arithmetic patters and explain them using properties of operation.	3. MD 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g. by representing the problem on a number line diagram.	3.OA 1. Interpret products of whole numbers, e.g., interpret 5x7 as the total number of objects in 5 groups of 7 objects each. 3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. 4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. 5. Apply properties of operations as strategies to multiply and divide. 7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 9. Identify arithmetic patters and explain them using properties of operation. 3.NBT 3. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operation.
21st Century Iowa Core Standards					

Essential Learnings/Questions					
Assessment(s) Bloom's Level Quadrant Activities					
Resources					

ADM Community Schools

3th Grade Math Curriculum Map Cont.

Grade 3 Math

Units in Sequence	Division	Fractions	Measurement	Geometry	Graphing
Unit Timeline	Weeks 15-18	Weeks 19-22	Weeks 23-27	Weeks 27-30	Weeks 31- 33
Iowa Core Standards	3.OA 1. Interpret products of whole numbers, e.g., interpret 5x7 as the total number of objects in 5 groups of 7 objects each. 3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. 4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. 5. Apply properties of operations as strategies to multiply and divide. 6. Understand division as an unknown-factor problem. 7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 9. Identify arithmetic patters and explain them using properties of operation.	3. NF Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b. equal parts; understand a/b as the quantity formed by a parts of size 1/b. 2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. represent a fraction 1/b on a number linne diagram by defining the interval from 0-1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. b. Represent a fraction a/b on a number line diagraph by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line. 3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. understand two fractions as equivalent if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results with symbols <,>, =,	3.MD 2. Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters. Add subtract, multiply, and divide to solve one-step word problems involving masses or volumes that are given in the same units. 4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the date by making a lone plot, where the horizontal scale is marked off in appropriate units. whole numbers, halves, or quarters. 5. Recognize area as an attribute of plane figures and understand concepts of area measeurment. a. a square with side lengths 1 unit, called "a unit square" is said to have "one square unit" of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by n units squares is said to have an area of n square units. 6. Measure areas by counting unit squares. 7. Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. a. Multiply side lengths to find areas of rectangles with whole-number sides lengths in the context of solving real word and mathematical problems, and represent whole-number products as rectangular area in mathematical reasoning	3.MD 1. Understand that shapes in different categories may share attributes, and that the shared attributes can defend a larger category. Recognize rhombuses, rectangles, and squares and examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. 2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	3.MD 3. Draw scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in the scaled bar graphs.

		and justify the conclusions by using a visual fraction model.	c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b-c is the sum of a x b and a x c. use are models to represent the distributive property in mathematical reasoning. d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. 8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the samer perimeter and different area of with the same area and different perimeters.		
21st Century Iowa Core Standards					
Essential Learnings/Questions					
Assessment(s) Bloom's Level Quadrant Activities					
Resources					

Board Approval Date:_____

ADM Community Schools

4th Grade Math Curriculum Map

Grade or Course: 4th Math

Units in Sequence	Place Value	Addition/Subtraction	Multiplication	Division
Unit Timeline	Weeks 2-5	Weeks 6-9	Weeks 10-13	Weeks 14-17
Iowa Core Standards	4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. 4.NBT.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. 4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place.	4.NBT.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm. 4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	4.OA.1. Interpret a multiplication equation as a comparison. 4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison. 4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. 4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 4.OA.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison. 4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. 4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

21st Century Iowa Core Standards				
Essential Learnings/Questions				
Assessment(s) Bloom's Level Quadrant Activities				
Resources				

Units in Sequence	Fractions	Decimals	Measurement	Geometry
Unit Timeline	Weeks 19-22	Weeks 23-25	Weeks 26-30	Weeks 31-34
Iowa Core Standards	4.NF.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. 4.NF.2. Compare two fractions with different numerators and different denominators. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions. 4.NF.3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. 4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. Understand a fraction a/b as a multiple of $1/b$. Understand a multiple of a/b as a multiple of 1/b, and use this	4.NF.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. 4.NF.6. Use decimal notation for fractions with denominators 10 or 100. 4.NF.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.	4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. 4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. 4.MD.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	4.MD.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. An angle that turns through n one-degree angles is said to have an angle measure of n degrees. 4.MD.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. 4.MD.7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

	understanding to multiply a fraction by a whole number. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. 4.MD.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.			
21st Century Iowa Core Standards				
Essential Learnings/Questions				
Assessment(s) Bloom's Level Quadrant Activities				
Resources				

Board Approval Date:_____

ADM Community Schools
5th Grade Math Curriculum Map

Grade or Course: 5th Math

Units in Sequence	Place Value	Order of Operations & Analyzing Patterns	Adding & Subtracting Decimals	Multiply & Divide Whole Numbers & Decimals	Add & Subtract Fractions
Unit Timeline	Week 1-3	Week 4-6	Week 7-9	Week 10-14	Week 15-19
Iowa Core Standards	**Understand the place value system.** 5.NBT.1. 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. 5.NBT.3. Read, write, and compare decimals to thousandths. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. 5.NBT.4. Use place value understanding to round decimals to any place.	**Write and interpret numerical expressions.** 5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. 5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. **Analyze patterns and relationships.** 5.OA.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane	**Perform operations with multi-digit whole numbers and with decimals to hundredths.** 5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	**Understand the place value system.** 5.NBT.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. **Perform operations with multi-digit whole numbers and with decimals to hundredths.** 5.NBT.5. Fluently multiply multi-digit whole numbers using the standard algorithm. 5.NBT.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths, using	**Use equivalent fractions as a strategy to add and subtract fractions.** 5.NF.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. 5.NF.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

				concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	
21st Century Iowa Core Standards					
Essential Learnings/Questions					
Assessment(s) Bloom's Level Quadrant Activities					
Resources					

Board Approval Date:

ADM Community Schools
5th Grade Math Curriculum Map

Grade or Course: 5th Math

Units in Sequence	Multiply & Divide Fractions	Measurement	Geometry		
Unit Timeline	Week 20-24	Week 25-29	Week 30-34		
Iowa Core Standards	**Apply and extend previous understandings of multiplication and division to multiply and divide fractions.** 5.NF.3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. 5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. 5.NF.5. Interpret multiplication as scaling (resizing), by: Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. Explaining why multiplying a given number by a fraction	**Convert like measurement units within a given measurement system.** 5.MD.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. **Represent and interpret data.** 5.MD.2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	**Apply and extend previous understandings of multiplication and division to multiply and divide fractions.** 5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. **Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.** 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume A solid figure which can be		

	greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1. 5.NF.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. 5.NF.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.[1] Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. Interpret division of a whole number by a unit fraction, and compute such quotients. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem		packed without gaps or overleaps using n unit cubes is said to have a volume of n cubic units 5.MD.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems. **Graph points on the coordinate plane to solve real-world and mathematical problems.** 5.G.1. Use a pair of perpendicular number lines,		

			called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the o on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond 5.G.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. **Classify two-dimensional figures into categories based on their properties.** 5.G.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. 5.G.4. Classify two-dimensional figures in a hierarchy based on properties.		
21st Century Iowa Core Standards					

Essential Learnings/Questions					
Assessment(s) Bloom's Level Quadrant Activities					
Resources					

- Board Approval Date:

ADM Community Schools

Math Curriculum Map

Grade or Course: 6th grade Mathematics

Units in Sequence (Content)	Expressions and Number Properties	Multiplying and Dividing Fractions	Multiplying and Dividing Decimals	Fractions, Decimals, and Percents
Unit Timeline	15 days	22 days	15 days	15 days
Iowa Core Standards **Power Standards in Bold**	6.NS.4 6.EE.1 6.EE.2 **6.EE.3** 6.EE.4 6.EE.6	**6.NS.1** 6.NS.2 6.EE.6	6.NS.2 **6.NS.3**	6.RP.1 **6.RP.3** 6.NS.7
Standards For Mathematical Practice	1, 2, 3, 6	1, 2, 4, 8	1, 2, 3, 8	1, 2, 6, 7, 8
21st Century Iowa Core Standards				
Essential Learnings/ Questions	How can you write and evaluate an expression that represents a real-life problem? Which words correspond to the 4 operations of addition, subtraction, multiplication, and division? Does the order in which you perform an operation matter? How do you multiply two 2-digit numbers using mental math? How can you use formulas to find the area of an object with an unusual	How can you use estimation to check that your answer is reasonable? What does it mean when a whole number is multiplied by a fraction? Will the product be greater than or less than the whole number? What does it mean to multiply fractions? How do you multiply a mixed number by a fraction? How do you divide a fraction? How can you use division by a mixed	How can you use estimation to check that your answer is reasonable? What happens to the decimal point when you multiply a whole number by a decimal? When multiplying decimals, how do you know where to place the decimal point in the product? How is dividing a decimal by a whole number similar to dividing a whole number by a whole number? How can	How can you use a model to write a % as a fraction or write a fraction as a %? How does the decimal point move when you rewrite a percent as a decimal and when you rewrite a decimal as a percent? How can you order numbers that are written as fractions, decimals, and percents? How can you use mental math to find the percent of a number? How can you use mental math and

	shape?	number as part of a story? When you write a terminating decimal as a fraction, what type of denominator do you get? How can you tell from the denominator of a fraction if its decimal form is repeating or terminating?	you use base ten blocks to model decimal division?	estimation to help solve real-life problems?
Vocabulary	numerical expression, algebraic expression, evaluate, equivalent expressions, formula, solve a formula	underestimate, overestimate, compatible numbers, reciprocals, terminating decimal, repeating decimal		percent
Assessment(s) Bloom's Level Quadrant Activities				
Resources	6th grade Big Ideas Math Book- Chapter 1	6th grade Big Ideas Math Book- Chapter 2	6th grade Big Ideas Math Book- Chapter 3	6th grade Big Ideas Math Book- Chapter 4
Units in Sequence (Content)	Ratios, Rates, and Data Analysis	Circles and Area	Equations	Inequalities
Unit Timeline	20 days	14 days	21 days	14 days
Iowa Core Standards **Power Standards in Bold**	6.RP.1 6.RP.2 **6.RP.3** 6.SP.1 **6.SP.2** 6.SP.3 6.SP.4 6.SP.5	6.EE.2 **6.G.1**	6.EE.2 **6.EE.5** **6.EE.7** **6.G.1** 6.G.2 6.G.4	**6.EE.5** 6.EE.8
Standards For Mathematical Practice	1, 2, 7, 8	1, 2, 3, 6	1, 2, 3, 6, 7	1, 2, 4, 5
21st Century Iowa Core Standards				

Essential Learnings/ Questions	How can you tell whether two recipes make the same mixture? How can you use rates to describe changes in real-life problems? How can you use rates to help show how a country can save valuable natural resources? What is the meaning of the word "average?" How can you find the average of a collection of numbers? Describe situations in real life where the mean is not a good representation of the average? How can you use tables and graphs to help organize data?	How can you find the circumference of a circle? How can you find the perimeter of a composite figure? How can you find the area of a circle? How can you find the area of a composite figure?	How does rewriting a word problem help you solve the word problem? How can you use addition or subtraction to solve an equation? How can you use multiplication or division to solve an equation? What is a "two-step" equation? How can you solve a two-step equation? How can you use area and perimeter formulas to find missing dimensions of plane figures? How can you use a volume formula to find missing dimensions of prisms?	How can you use a number line to represent solutions of an inequality? How can you use an inequality to describe a real-life situation? How can you use multiplication or division to solve an inequality? How can you use inequalities to classify different species of animals?
Vocabulary	Ratio, equivalent ratios, rate, unit rate, unit cost, mean, outlier, measure of central tendency, median, mode, range	Circle, center, radius, diameter, circumference, pi, semicircle, composite figure	Equation, solution, inverse operations, two-step equation, terms, like terms, rectangular prisms, volume, cubic units	Inequality, solution of an inequality, solution set, graph of an inequality
Assessment(s) Bloom's Level Quadrant Activities				
Resources	6th grade Big Ideas Math Book- Chapter 5	6th grade Big Ideas Math Book- Chapter 6	6th grade Big Ideas Math Book- Chapter 7	6th grade Big Ideas math Book- Chapter 8
Units in Sequence (Content)	Tables, Graphs, and Functions			
Unit Timeline	15 days			
Iowa Core Standards	6.EE.9			

Power Standards in Bold				
Standards For Mathematical Practice	1, 2, 4, 5, 7			
21st Century Iowa Core Standards				
Essential Learnings/ Questions	What is a mapping diagram? How can it be used to represent a function? How can you describe a function with words? How can you describe a function with an equation? How can you use a table to describe a function? How can you use agraph to describe a function? How can you analyze a function from its graph?			
Vocabulary	Input, output, function, mapping diagram, function rule, input-output table, graph, linear function			
Assessment(s) Bloom's Level Quadrant Activities				
Resources	6th grade Big Ideas Math Book- Chapter 9			

ADM Community Schools

Math Curriculum Map

Grade or Course: 7th Math

Units in Sequence (Content)	Operations with Integers	Rational Numbers and Equations	Proportions and Variation	Percents
Unit Timeline	17 Days	21 Days	22 Days	13 Days
Iowa Core Standards **Power Standards in Bold**	7.NS.1 7.NS.2 **7.NS.3** **7.EE.3**	7.NS.1 7.NS.2 **7.NS.3** 7.EE.1 7.EE.2 **7.EE.3** 7.EE.4	7.RP.1 **7.RP.2** 7.RP.3	7.RP.3 7.EE.2 **7.EE.3**
Standards For Mathematical Practice	1, 3, 5, 6	1, 4, 5, 6	2, 3, 5, 7	2, 4, 6, 7
21st Century Iowa Core Standards	X	X	X	X
Essential Learnings/ Questions	How are velocity and speed related? Is the sum of two integers positive, negative, or zero? How can you tell? How are adding integers and subtracting integers related? Is the product of two integers positive, negative, or zero? How can you tell? Is the quotient of two integers positive negative, or zero? How can	How can you use a number line to order rational numbers? How does adding and subtracting rational numbers compare with adding and subtracting integers? How can you use operations with rational numbers in a story? How can you use inverse operations to solve an equation? How can you	How do rates help you describe real-life problems? How can you compare two rates graphically? How can proportions help you decide when things are "fair?" How can you write a proportion that solves a problem in real life? How can you use ratio tables and cross products to solve proportions in science?	How can you use models to estimate percent equations? What is a percent of decrease? What is a percent of increase? How can you find discounts and markups efficiently? How can you find the amount of simple interest earned on a savings account? How can you find the amount of interest

	you tell? How can you use ordered pairs to locate points in a coordinate plane?	use multiplication or division to solve an equation? In a two-step equation, which step should you do first?	How can you compare lengths between customary and metric systems? How can you use a graph to show the relationship between two variables that vary directly? How can you use an equation? How can you recognize when two variables are inversely proportional?	owed on a loan?
Vocabulary	Integer, absolute value, opposites, additive inverse, coordinate plane, origin, quadrant, x-axis, y-axis	Terminating decimal, repeating decimal, rational number, equivalent equations	Ratio, rate, unit rate, slope, proportion, proportional, cross products, US customary system, metric system, direct variation, inverse variation	Percent, percent of change, percent of increase, percent of decrease, discount, markup, interest, principal, simple interest
Assessment(s) Bloom's Level Quadrant Activities	Chapter 1 Study Help/Quiz Chapter 1 Quiz/Chapter Review Chapter 1 TEST	Chapter 2 Study Help/Quiz Chapter 2 Quiz/Chapter Review Chapter 2 TEST	Chapter 3 Study Help/Quiz Chapter 3 Quiz/Chapter Review Chapter 3 TEST	Chapter 4 Study Help/Quiz Chapter 4 Quiz/Chapter Review Chapter 4 TEST
Units in Sequence (Content)	Similarity and Transformations	Surface Area of Solids	Volumes of Solids	Data Analysis and Samples
Unit Timeline	21 Days	19 Days	18 Days	14 Days
Iowa Core Standards **Power Standards in Bold**	7.G.1 7.G.2	7.G.3 **7.G.4** **7.G.6**	**7.G.4** **7.G.6**	7.SP.1 7.SP.2 7.SP.3 **7.SP.4**
Standards For Mathematical Practice	1, 2, 4, 5	1, 2, 4, 5	1, 2, 4, 5	2, 5, 6, 8
21st Century Iowa Core Standards	X	X	X	X

Essential Learnings/ Questions	How can you use proportions to help make decisions in art, design, and magazine layouts? How do changes in dimensions of similar geometric figures affect the perimeters and areas of the figures? What information do you need to know to find the dimensions of a figure that is similar to another figure? How can you use a scale drawing to estimate the cost of painting a room? How can you use translations to make a tessellation? How can you use reflections to classify a frieze pattern? What are the three basic ways to move an object in a plane?	How can you draw three-dimensional figures? How can you use a net to find the surface area of a prism? How can you find the surface area of a cylinder? How can you find the surface area of a pyramid? How can you find the surface area of a cone? How can you find the surface area of a composite solid?	How can you find the volume of a prism? How can you find the volume of a cylinder? How can you find the volume of a pyramid? How can you remember the formula for surface area and volume? How can you estimate the volume of a composite solid? When the dimensions of a solid increase by a factor of k, how does the surface area change? How does the volume change?	How can you use a stem and leaf plot to organize a set of numbers? How do histograms show the differences in distributions of data? How can you use a circle graph to show the results of a survey? How can you use a survey to make conclusions about the general population?
Vocabulary	Similar figures, corresponding angles, corresponding sides, indirect measurement, scale drawing, scale model, scale, scale factor, transformation, image, translation, reflection, line of reflection, rotation, center of rotation, angle of rotation	Three-dimensional figure, polyhedron, lateral face, surface area, net, regular pyramid, slant height, composite solid	Volume, similar solids	Stem and leaf plot, stem, leaf, histogram, circle graph, population, sample
Assessment(s) Bloom's Level Quadrant Activities	Chapter 5 Study Help/Quiz Chapter 5 Quiz/Chapter Review Chapter 5 TEST	Chapter 6 Study Help/Quiz Chapter 6 Quiz/Chapter Review Chapter 6 TEST	Chapter 7 Study Help/Quiz Chapter 7 Quiz/Chapter Review Chapter 7 TEST	Chapter 8 Study Help/Quiz Chapter 8 Quiz/Chapter Review Chapter 8 TEST

Resources	Big Ideas Math Chapter 5	Big Ideas Math Chapter 6	Big Ideas Math Chapter 7	Big Ideas Math Chapter 8
Unit Timeline	13 Days			
Iowa Core Standards **Power Standards in Bold**	7.SP.5 **7.SP.6** 7.SP.7 7.SP.8			
Standards For Mathematical Practice	2, 3, 6, 8			
21st Century Iowa Core Standards	X	X	X	X
Essential Learnings/ Questions	How can you predict the results of spinning a spinner? How can you find a theoretical probability? What is meant by experimental probability? What is the difference between dependent and independent events?			
Vocabulary	Experiment, outcomes, event, probability, theoretical probability, fair experiment, experimental probability, independent events, dependent events			
Assessment(s) Bloom's Level Quadrant Activities	Chapter 9 Study Help/Quiz Chapter 9 Quiz/Chapter Review Chapter 9 TEST			

Resources	Big Ideas Math Chapter 9			

Board Approval Date:_____

ADM Community Schools
Math Curriculum Map - Algebra I

Units in Sequence/(Content)	*Foundations for Algebra*	*Solving Equations*	*Solving Inequalities*	*An Introduction to Functions*	*Linear Functions*	*Systems of Equations and Inequalities*
Unit Timeline	13 days	17 days	15 days	12 days	14 days	11 days
Iowa Core Standards **Power Standards in Bold**	A.SSE.1, A.SSE.1.a, N.RN.3, **A.CED.1**, **A.CED.2**, **A.REI.10**	**A.CED.1**, **A.REI.3**, A.REI.1, **N.Q.1**, A.CED.4, N.Q.2, N.Q.3	**A.CED.1**, **A.REI.3**, N.Q.2, A.SSE.1, A.SSE.1.b	**A.REI.10**, F.IF.4, **N.Q.1**, F.IF.5, A.REI.11, N.Q.2, A.SSE.1, A.SSE.1.a, **A.CED.2**, **F.IF.1**, F.IF.2, A.SSE.1.b, F.IF.3, F.BF.1, F.BF.1.a, F.BF.2, F.LE.2	F.IF.6, F.L3.1.b, N.Q.2, **A.CED.2**, F.BF.3, A.SSE.1, A.SSE.1.a, A.SSE.2, F.IF.4, **F.IF.7**, **F.IF.7.a**, F.BF.1, F.BF.1.a, F.BF.3. F.LE.2, F.LE.5, N.Q.2, F.IF.9, F.BF.4, F.BF.4.a, G.GPE.5, **N.Q.1**, S.ID.6, S.ID.6.a, S.ID.6.b, S.ID.6.c, **S.ID.7**, S.ID.8, S.ID.9, **F.IF.7.b**, F.BF.3	**A.REI.6**, A.REI.11, A.REI.5, N.Q.2, N.Q.3, A.CED.3, **A.REI.12**
Standards For Mathematical Practice	1, 2, 7	1, 2, 7, 8	1, 2, 7, 8	1, 2, 4, 7, 8	1, 2, 4, 7, 8	1, 3, 4, 5, 7
21st Century Iowa Core Standards						

ADM Community Schools
Math Curriculum Map - Algebra I

Units in Sequence/(Content)	*Foundations for Algebra*	*Solving Equations*	*Solving Inequalities*	*An Introduction to Functions*	*Linear Functions*	*Systems of Equations and Inequalities*
Essential Learnings/ Questions	How are properties related to Algebra? How can you represent quantities, patterns, and relationships?	Can equations that appear to be different be equivalent? How can you solve equations? What kinds of relationships can proportions represent?	How do you represent relationships between quantities thast are not equal? Can inequalities that appear to be different be equivalent? How can you solve inequalities?	How can you represent and descirbe functions? Can functions describe real-world situations?	What information does the equation of a line give you? How can you make predictions based on a satter plot? What does the slope of a line indicate about the line?	How can you solve a system of equations or inequalities? Can systems of equations model real-world situations?

ADM Community Schools
Math Curriculum Map - Algebra I

Units in Sequence/(Content)	*Foundations for Algebra*	*Solving Equations*	*Solving Inequalities*	*An Introduction to Functions*	*Linear Functions*	*Systems of Equations and Inequalities*
Vocabulary	additive inverse, coefficient	conversion factor, cross products, inverse operations	universal set, union, intersection, empty set	continuous graph, dependent variable, domain, function, independent variable, linear function, range	direct variation, linear equation, point-slope form, rate of change, slope, slope-intercept form, standard form, x-intercept, y-intercept	dependent, elimination method, inconsistent, independent, linear inequality, substitution method
Assessment(s) Bloom's Level						
Quadrant Activities						
Resources	Algebra I text Ch 1	Algebra I text Ch 2	Algebra I text Ch 3	Algebra I text Ch 4	Algebra I text Ch 5	Algebra I text Ch 6

ADM Community Schools
Math Curriculum Map - Algebra I

Units in Sequence/(Content)	*Exponents and Exponential Functions*	*Polynomials and Factoring*	*Quadratic Functions and Equations*	*Radical Expressions and Equations*	*Rational Expressions and Functions*	*Data Analysis and Probability*
Unit Timeline	13 days	18 days	16 days	12 days	16 days	13 days
Iowa Core Standards **Power Standards in Bold**	N.RN.1, N.RN.2, A.SSE.1, **A.CED.2**, A.REI.11, F.IF.4, F.IF.5, **F.IF.7**, **F.IF.7.e**, F.IF.9, F.LE.2, A.SSE.1, A.SSE.1.a, A.SSE.1.b, A.SSE.3.c, F.IF.8, F.IF.8.b, F.BF.1, F.BF.3, F.LE.1.c, F.LE.5	**A.APR.1**, A.SSE.1.a, A.SSE.1.b, A.SSE.2	A.SSE.1, **A.CED.2**, F.IF.4, F.IF.5, **F.IF.7**, **F.IF.7.a**, **F.IF.7.b**, F.BF.3, F.IF.6, F.LE.3, N.Q.2, **A.CED.1**, A.CED.4, A.APR.3, **A.REI.4**, **A.REI.4.b**, A.SSE.3, A.SSE.3.a, F.IF.8, F.IF.8.a, A.SSE.1, A.SSE.1.a, A.SSE.1.b, A.SSE.3.b, **A.REI.4.a**	G.SRT.8, **A.REI.2**, **A.CED.2**, **F.IF.7.b**, G.SRT.6, **G.SRT.8**	**A.APR.7**, A.APR.6, **A.CED.1**, **A.REI.2**, **A.CED.2**, F.IF.5, F.IF.4	**N.Q.1**, S.ID.1, N.Q.2, S.ID.2, S.ID.3, S.IC.3, S.ID.5, S.CP.1, S.CP.4, S.IC.5, S.CP.7, S.CP.8, S.CP.2, S.CP.3, S.CP.5
Standards For Mathematical Practice	6, 7, 8	1, 2, 7, 8	1, 2, 7, 8	2, 7, 8	2, 7, 8	3, 4, 5, 6
21st Century Iowa Core Standards						

ADM Community Schools
Math Curriculum Map - Algebra I

Units in Sequence/(Content)	*Exponents and Exponential Functions*	*Polynomials and Factoring*	*Quadratic Functions and Equations*	*Radical Expressions and Equations*	*Rational Expressions and Functions*	*Data Analysis and Probability*
Essential Learnings/ Questions	How can you represent very large and very small numbers? How can you simplify expressions involveing exponents? What are the characteristics of exponential functions?	Can two algebraic expressions that appear to be different be equivalent? How are the properties of real numbers related to polynomials?	What are the characteristics of quadratic functions? How can you solve a quadratic equation? How can you use functions to to model real-world situations?	How are radical expressions represented? What are the characteristics of square root functions? How can you solve a radical equation?	How are rational expressions related? What are the characteristics of rational functions? How can you solve a rational equation?	How can collecting and analyzing data help you make decisions or predictions? How can you make and interpret different representations of data? How is probability related to real-world events?

ADM Community Schools
Math Curriculum Map - Algebra I

Units in Sequence/(Content)	*Exponents and Exponential Functions*	*Polynomials and Factoring*	*Quadratic Functions and Equations*	*Radical Expressions and Equations*	*Rational Expressions and Functions*	*Data Analysis and Probability*
Vocabulary	compound interest, decay factor, exponential decay, exponential function, exponential growth, geometric sequence, growth factor	binomial, degree of a monomial, degree of a polynomial, difference of two squares, factoring by grouping, monomial, polynomial, trinomial	axis of symmetry, completing the square, discriminant, maximum, minimum, parabola, quadratic equation, quadratic formula, quadratic function, root of an equation	conditional, conjugates, extraneous solution, hypotenuse, like radicals, Pythagorean Theorem, radical expression	asymptote, constant of variation for an inverse variation, excluded value, inverse variation, rational equation, rational expression, rational function	combination, event, matrix, measure of central tendency, oucome, outlier, permutation, pro bability, quartile, sample space
Assessment(s) Bloom's Level						
Quadrant Activities						
Resources	Algebra I text Ch 7	Algebra I text Ch 8	Algebra I text Ch 9	Algebra I text Ch 10	Algebra I text Ch 11	Algebra I text Ch 12

ADM Community Schools
Math Curriculum Map
Grade or Cours Algebra II

Units in Sequence (Content)	**Expressions, Equations, and Inequalities**	**Functions, Equations, and Graphs**	**Linear Systems**	**Quadratic Functions and Equations**
Unit Timeline	7 days	11 days	9 days	17 days
Iowa Core Standards **Power Standards in Bold**	A.SSE3,N.RN.3, A.SSE.1.a,**ACED.1**,ACED.4,A.SSSE.1.b,A.CED.1	F.IF.1, F.IF.2N.Q.1, **A.CED.2A.CED.2, F.IF.7 F.IF.7.aN.Q.1, A.CED.2, F.IF.8, F.LE.2, F.LE.5F.IF.7.bN.Q.1, A.CED.2, F.IF.4, F.IF.6, S.ID.6, S.ID.6.a,**	N.Q.1, A.CED.2, **A.CED.3,** A.REI.6, A.REI.11 A.REI.5, A.REI.6	**A.CED.1,** F.IF.1, F.IF.2 **F.IF.4, F.IF.7, F.IF.7.a, F.BF.3** N.Q.1, A.SSE.3, A.SSE.3.c, **A.CED.2,** A.REI.11, F.IF.8, F.LE.5 F.IF.5, F.IF.7, F.LE.5 F.IF.6
Standards For Mathematical Practice	1,2,4,5,6,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8
Essential Learnings/ Questions	How do variables help you model real-world	Does it matter which form of a linear equation you use? How	How does representing functions, graphically help	What are the advantages of a quadratic fuction in Vertex form?

Vocabulary	Absolute value,albebraic expression, compund inequality,like term,literal equation,variable	corelation, direct variation,domain,function,linear equation,range, relation, slope	dependent, independent, equivalent, and linear systems,matrix, rowand matrix element,system of equations	axis of symmetry, complex numbers,discriminant,GCF,imaginary numbers,parabola, quadratic function,standard form, vertex form,zero of a function
Assessment(s) Bloom's Level Quadrant Activities				
Resources	Algebra II chapter 1	Algebra II chapter 2	Algebra II chapter 3	Algebra II chapter 4

Board Approval Date:

ADM Comı ty Schools
Math Curriculum Map

Grade or Course: Geometry

Units in Sequence (Content)	Tools of Geometry	Reasoning and Proof	Parallel and Perpendicular Lines	Congruent Triangles
Unit Timeline	16 days	10 days	16 days	14 days
Iowa Core Standards **Power Standards in Bold**	**G.CO.1**, G.CO.12, G.GPE.6, G.PE.4, G.PE.7, G.MG.1, G.MG.2, N.Q.1	**G.CO.9, G.CO.10, G.CO.11**	**G.CO.1, G.CO.9, G.CO.10**, G.CO.12, G.CO.13, G.MG.3, **G.GPE.5**	**G.CO.10**, G.CO.12, G.CO.13, **G.SRT.5**
Standards For Mathematical Practice	4, 6, 7	3, 5, 8	1, 2, 4, 5, 6	1, 2, 3, 7, 8
Essential Learnings/ Questions	How can you represent a three-dimensional figure with a two-dimensional drawing? What are the building blocks of geometry? How can you describe the attributes of a segment or angle?	How can you make a conjecture and prove that it is true?	How can you make a conjecture and prove that it is true. What is the sum of the measures of the angles of a triangle? How do you write an equation of a line in the coordinate plane?	How do you indentify corresponding parts of congruent triangles? How do you show that two triangles are congruent? How can you tell whether a triangle is isosceles or equilateral?
Vocabulary	angle/segment bisector congruent segments construction isometric drawing linear pair net orthographic drawing perpendicular bisector postulate supplementary angles vertical angles	biconditional conclusion conditional conjecture contrapositive converse deductive reasoning hypothesis inductive reasoning inverse negative theorem	alternate exterior angles alternate interior angles corresponding angles exterior angle of a polygon parallel lines same side interior angles skew lines transversal	base angles of an isosceles triangle base of an isosceles triangle congruent polygons corollary hypotenuse legs of isosceles triangles legs of right triangles vertex angle of an isosceles triangle
Assessment(s) Bloom's Level Quadrant Activities				
Resources	Pearson Geometry Text – Chapter 1	Pearson Geometry Text – Chapter 2	Pearson Geometry Text – Chapter 3	Pearson Geometry Text – Chapter 4

Board Approval Date:_____

ADM Community Schools
Math Curriculum Map

Grade or Course: Geometry

Units in Sequence (Content)	Relationships Within Triangles	Polygons and Quadrilaterals	Similarity	Right Triangles and Triangles
Unit Timeline	12 days	16 days	10 days	11 days
Iowa Core Standards **Power Standards in Bold**	**G.CO.9, G.CO.10**, G.CO.12, **G.SRT.5**, G.C.3,	G.SRT.5, G.CO.11, G.GPE.7, G.GPE.4, G.CO.12	G.SRT.4, **G.SRT.5**, G.GPE.5, G.CO.12,	G.SRT.4, G.SRT.6, G.SRT.7, **G.SRT.8** G.SRT.10, **G.SRT.11**, G.MG.1,
Standards For Mathematical Practice	1, 2, 4, 5	1, 2, 3, 4, 5, 7, 8	2, 4, 7	1, 2, 3, 4, 5, 6, 7, 8
Essential Learnings/ Questions	How do you use coordinate geometry to find relationships within triangles? How do you write indirect proofs? How do you solve problems that involve measurements of triangles?	How can you classify quadrilaterals? How can you find the sum of the measures of polygon angles? How can you use coordinate geometry to prove general relationships?	How do you use proportions to find side lengths in similar polygons? How do you identify corresponding parts of similar triangles? How do you show two triangles are similar?	How do trigonometric ratios relate to similar right triangles? How do you find a side length or angles measure in a right triangle? What is a vector?
Vocabulary	altitude of a triangle centroid circumcenter concurrent equidistant incenter indirect proof median midsegment of a triangle orthocenter	coordinate proof equiangular polygon equilateral polygon isosceles trapezoid kite midsegment of a trapezoid parallelogram rectangle regular polygon rhombus trapezoid	extremes of a proportion geometric mean indirect measurement means of a proportion proportion ratio scale drawing scale factor similar similar polygons	angle of depression angle of elevation cosine Law of Cosines Law of Sines Pythagorean triple sine tangent
Assessment(s) Bloom's Level Quadrant Activities				
Resources	Pearson Geometry Text – Chapter 5	Pearson Geometry Text – Chapter 6	Pearson Geometry Text – Chapter 7	Pearson Geometry Text – Chapter 8

Board Approval Date:_____

ADM Com ıity Schools
Math Curriculum Map

Grade or Course: Geometry

Units in Sequence (Content)	Transformations	Area	Surface Area and Volume	Circles
Unit Timeline	12 days	14 days	16 days	10 days
Iowa Core Standards **Power Standards in Bold**	G.CO.2, G.CO.3, G.CO.4, **G.CO.5**, G.CO.6, G.CO.7, **G.CO.8**, G.SRT.1, **G.SRT.2**, G.SRT.3	**G.GPE.7**, G.MG.1, G.GMD.1, **G.GMD.3**, G.CO.1, G.C.1, **G.C.2**, G.C.5, G.CO.13, G.SRT.9,	G.MG.1, G.MG.2, G.GMD.1, G.GMD.2, **G.GMD.3**, G.GMD.4	**G.C.2**, G.C.3, G.C.4, **G.GPE.1, G.GPE.2**, G.GMD.4
Standards For Mathematical Practice	4, 5, 7	1, 4, 5, 6, 7	1, 4, 5, 6, 7	1, 2, 4, 5, 6, 7
Essential Learnings/ Questions	How can you change a figure's position without changing its size and shape? How can you represent a transformation in the coordinate plane? How do you recognize symmetry in a figure?	How do you find the area of a polygon or find the circumference and area of a circle? How do perimeters and areas of similar figures compare?	How can you determine the intersection of a solid and a plane? How do you find the surface area and volume of a solid? How do the surface areas and volumes of similar solids compare?	How can you prove relationships between angles and arcs in a circle? When lines intersect a circle or within a circle, how do you find the measures of resulting angles, arcs, and segments? How do you find the equation of a circle in the coordinate plane?
Vocabulary	congruence transformation dilation image isometry preimage reflection rigid motion rotation similarity transformation translation	adjacent arcs apothem arc length central angle concentric circles congruent arcs diameter major arc minor arc radius sector of a circle segment of a circle	cone cross section cylinder face polyhedron prism pyramid similar solids sphere surface area volume	chord inscribed angle intercepted arc locus point of tangency secant standard form of an equation of a circle tangent to a circle
Assessment(s) Bloom's Level Quadrant Activities				
Resources	Pearson Geometry Text – Chapter 9	Pearson Geometry Text – Chapter 10	Pearson Geometry Text – Chapter 11	Pearson Geometry Text – Chapter 12

Board Approval Date:_____

Math Curriculum Map

Grade or Course: Geometry

Units in Sequence (Content)	Probablity			
Unit Timeline	11 days			
Iowa Core Standards **Power Standards in Bold**	S.CP.1, S.CP.2, S.CP.3, S.CP.4, S.CP.5, S.CP.6, S.CP.7, S.CP.8, S.CP.9, S.MD.6, S.MD.7			
Standards For Mathematical Practice	1, 5, 6, 8			
Essential Learnings/ Questions	What is the difference between experimental probability and theoretical probability? What does it mean for an event to be random? What is the difference between a frequency table and a contingency table?			
Vocabulary	combination conditional probability dependent events experimental probability independent events mutually exclusive events permutation sample space theoretical probability			
Assessment(s) Bloom's Level Quadrant Activities				
Resources	Pearson Geometry Text – Chapter 13			

Board Approval Date:_____

ADM SCHOOLS

ADM Community School District, in partnership with our communities, is committed to engaging all students in a challenging and supportive learning environment that ensures individual student success as measured by a comprehensive system of assessments.

Science

Curriculum Revision

Summary

2011-12

"Experiencing Success Today, Achieving Dreams Tomorrow"

ADM Science Curriculum Review Summary

2011-12

Science Department Mission Statement

ADM Schools has a commitment to providing a rigorous and relevant scientific instruction for all students through:

- Engaging students in active inquiry.
- Offering academic programs that relate to scientific thinking within and beyond the classroom.
- Aligning with the Iowa Core curriculum and district goals.
- Enabling students to become lifelong learners who value the impact science has had and will continue to have on our environment and society.

Acceleration Plan

Elementary Options

Students demonstrating firm understanding of science concepts will be allowed differentiated learning experiences whenever possible. Teachers use formative, ongoing assessments, including observation, to determine student readiness for extended learning.

Science as Inquiry is integrated into PK-5 units of study. Students must be actively investigating: designing experiments, observing, questioning, exploring, making and testing hypotheses, making and comparing predictions, evaluating data, and communicating and defending conclusions.

Secondary Options

1. Simultaneous Course Enrollment
With counselor and teacher approval, students in grades 9 through 12 can take two science courses in one year to accelerate their access to advanced science coursework.

2. Testing Out
Per ADM policy, students in grades 9-12 can test out of any course by scoring 78% or higher on the district summative end-of-course exam. This exam is to be administered in the summer or at the beginning of the school year. Any student can attempt to test out of a course, regardless of identification or standardized test scores. Additionally, a score of 78% or higher would also indicate the need for acceleration. The student transcript will reflect that the student has tested out of the course and credit will be given. However, no grade will be given and it will not count in the student's grade point average.

3. Honors Coursework
Developing Honors coursework at the middle school and high school is under consideration.

Professional Development Plan

Teachers of science will continue to study best practice in science instruction utilizing the support of their professional learning community (PLC), including district administration. The science PLCs will focus on the implementation of the Iowa Core science standards, use of new resources, and assessments.

Science Resources Adopted

The PK-5 team members of the science curriculum revision team chose to adopt National Geographic Science for Pre-Kindergarten through 5th grade. The 6-12 team members of the science curriculum revision team chose Science Fusion from Holt McDougal for grades 6-9 and Physics; Biology chose the resources from SEPUP, and Chemistry selected Glencoe.

Assessment Plan

The curriculum revision team has created a district summative end-of-course exam for each science course in grades 3-12. The assessment will be administered the first week of school and again the last week of school (the exam can be split into two parts for administration at the end of each semester for all student not wishing to test out of the class). This assessment will be used to measure students' growth on the Power Standards and provide data on individual and whole class improvement.

New Curriculum Implementation Timeline

PK-5	2012-13
6th Earth and Space Science	2012-13
7th Life Science	2012-13
8th Physical Science	2013-14*
9th Earth and Space Science	2013-14*
10th Biology	2012-13
11th Chemistry	2012-13
General Chemistry	2013-14*
Physics	2012-13

AP Chemistry (not revised this year)
Environmental Science (not revised this year)
Human Physiology I and II (not revised this year)

*Beginning in the 2013-14 school year, the ADM science curriculum, in alignment with the Iowa Core Curriculum, will include enrollment of all 8th grade students in physical science and all 9th grade students in earth science. In order to transition to this alignment, both 7th and 8th grade students will take Life Science during the 2012-13 school year. Additionally, in order to align with the Iowa Core Curriculum requirement, all ADM students will be required to take a Chemistry course to graduate. Chemistry, along with earth and space science and biology, will satisfy the board and state requirement for three full years of science. This requirement starts with the graduating class of 2015. For students without the necessary math preparation (successful completion of Algebra II with a C- or above, or concurrently taking Algebra II) there will be a General Chemistry course available.

Elementary Science Course Outlines

In grades PK-5, students will have instruction in all science strands including scientific inquiry, earth and space, life science, and physical science. A strong focus will be on the use of literacy-based strategies to teach the science concepts, infusing inquiry-based lessons when appropriate.

In PK-2, the National Geographic resources provide Big Books and many leveled readings for use with students. In grades 3-5, each student will have a copy of the National Geographic textbook.

PK-5 Units

P-K:	Weather, Earth, Insects, Plants, Environment, Life Cycles
K:	Five Senses, Nutrition, Healthy Habits, Dental Health, Science as Inquiry, Mammals, Reptiles, Amphibians, Insects, Weather and Seasons, The Sun, Plants, Taking Care of the Earth
1st Grade:	Trees/Leaves, Apples/Pumpkins, Fall Animals, States of Matter, Simple Machines, Animals in Danger, Weather, Go Green, Plants/Gardens
2nd Grade:	Habitats, Solids/Liquids/Gases, Rocks and Soils, Health, Our Weather, Scientific Inquiry, Personal Safety
3rd Grade:	Earth's Resources, Weathering and Erosion, Earth's Changing Surface, Measuring Matter, States of Matter, Force and Motion, Weather, Health
4th Grade:	Food Chains/Webs, Animal Adaptations, Plant Adaptations, Living Things In Our Environment, Solar System, Rocks and Minerals
5th Grade:	Sound, Light, Heat, Electricity/Magnetism, Human Body Systems

Secondary Course Descriptions

6th Grade Earth and Space Science

Students will investigate Earth systems and processes. Topics of inquiry include the earth's surface and history, rocks and minerals, plate tectonics, earth's water and atmosphere, weather and climate, the solar system, and the earth-moon-sun system. Throughout this course students will develop skills in scientific inquiry, and will be engaged in scientific reading, writing and discussion.

7th Grade Life Science

Life science will provide a foundation for studies in biology. In this course students will study topics including the interactions of living organisms, the earth's biomes and ecosystems, cells, and human body systems. Throughout this course students will develop skills in scientific inquiry and will be engaged in scientific reading, writing and discussion.

8th Grade Physical Science (starting 2013-14)

Students in physical science will become scientifically literate in the basic principles of chemistry and physics through an inquiry based approach. Major topics of study will include matter, the atom, chemical formulas, reactions, solutions, heat, light, electricity and forces and motion. Throughout this course students will develop skills in scientific inquiry and will be engaged in scientific reading, writing and discussion.

9th Grade Earth and Space Science (starting 2013-14)

Required - 2 credits (full year) Prerequisite: None

Earth Science is the study of the earth and beyond including geology, astronomy, meteorology, and oceanography. Students will be expected to work individually and in groups to understand the workings of the Earth and its systems. Class work will include lecture, labs, demonstrations, assignments, projects, and assessments. Course content includes the following topics: earth's chemistry; rocks and minerals; earth's geologic history; plate movements and effects of those movements; the atmosphere, climate, and weather; ocean movements; and the solar system and beyond.

Biology

Required – 2 credits (full year) Prerequisite: Earth and Space Science

Science & Global Issues (SGI) focuses on the role of science in addressing the needs of modern society and the use of technology in advancing scientific knowledge. The five units of study are: Sustainability, Ecology, Cell Biology, Genetics, and Evolution. Each student will complete a comprehensive science notebook throughout the year.

Chemistry

Required (for graduating class of 2015) – 2 credits (full year) Prerequisite: Biology and

Algebra II with a C- or higher or concurrent enrollment in Algebra II

This is an applied mathematics course dealing with the structure and function of matter. The laws and relationships governing the properties of matter and chemical reactions are presented in lecture and supported by appropriate problems and laboratories. You must pass the first semester with a C- or higher to continue in the course. This course is highly recommended for college bound students.

Students not prepared for chemistry will be required to take a General Chemistry class starting in 2013-14.

AP Chemistry

Elective – 2 credits (full year) Prerequisite: Recommendation: Due to the rigorous nature of this course, students should have taken Chemistry and Algebra II prior to being in AP Chemistry. Students who have not had these two courses will find it very difficult to be successful.

The AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first college year. For some students, this course enables them to undertake, in their first year, second-year work in the chemistry sequence at their institution or to register in courses in other fields where general chemistry is a prerequisite. For other students, the AP Chemistry course fulfills the laboratory science requirement and frees time for other courses. AP Chemistry should meet the objectives of a good college general chemistry course. Students in such a course should attain a depth of understanding of fundamentals and a reasonable competence in dealing with chemical problems. The course should contribute to the development of the student's abilities to think clearly and to express their ideas, orally and in writing, with clarity and logic. The college course in general chemistry differs qualitatively from the usual first secondary school course in chemistry with respect to the kind of textbook used, the topics covered, the emphasis on chemical calculations and the mathematical formulation of principles, and the kind of laboratory work done by students. Quantitative differences appear in the number of topics treated, the time spent on the course by students, and the nature and the variety of experiments done in the laboratory. *Secondary schools that wish to offer an AP Chemistry course must be prepared to provide a laboratory experience equivalent to that of a typical college course. Due to time constraints during the school day, lab experiments will be performed after school or on weekend times agreed upon by the students and teacher.*

This is a weighted class if the student takes the AP exam.

Physics

Elective – 2 credits (full year) Prerequisite: Geometry and Algebra II or concurrent enrollment in Algebra II or Advanced Math

Physics is a course of applied mathematics. The quantitative relationships between matter and energy are studied in terms of governing laws and problem-solving. Laboratories demonstrating the real-world relationship to these laws are an integral part of the course. This class is a fundamental science course for students preparing for college math, computers, science, engineering, architecture, pharmacy, and a number

of other fields including medicine and physical therapy. You must pass the first semester with a C- or above to continue in the course. This course is highly recommended for college bound students.

Environmental Science

Elective – 2 credits (full year) Recommended: C- or above in Biology

Environmental Science studies the following topics: 1) The planet Earth and what makes up the Biosphere, 2) Ecological Interactions and Biomes, 3) The impact of people in the global ecosystem and how to manage this, 4) Energy resources and resources in the biosphere including the impact of pollution. Students are expected to work independently and with one another on various in class assignments. They are also required to research outside topics, which are scientific and environmentally important.

Human Physiology I

Elective – 1 credit (semester) Recommended: C or higher in 9th grade science and Biology

Human Physiology I is an in-depth study of the human body with emphasis on the structure and function of the major organ systems. The course provides an adequate balance between the physical and chemical nature of the human body. Class work includes lectures, demonstrations, labs, films, discussions, assignments, and projects. Topics covered in Human Physiology I include: 1) Human body orientation, 2) Cells and Tissues, 3) DNA and Protein synthesis, 4) Basic chemistry of the human body, and 5) Skeletal system.

Human Physiology II

Elective – 1 credit (semester) Recommended: C or higher in 9th grade science and Biology

Human Physiology II is an in-depth study of the human body with emphasis on the structure and function of the major organ systems. The course provides an adequate balance between the physical and chemical nature of the human body. Class work includes lectures, demonstrations, labs, films, discussion, assignments, and projects. Topics covered in Human Physiology II include: 1) Skeletal muscular system, 2) Blood, 3) Cardiovascular system, 4) Respiratory system, and 5) Digestive system.