

NAD-USA ELEMENTARY MATH STANDARDS 2012 + CIRCLE RESOURCE IDEAS

NUMBERS AND OPERATIONS

Grade	Content	Skills (CCSSM alignment)	Susan Meseraull's Online links http://circle.adventist.org/browse/resource.phtml?leaf=6624
Essential Question: What do numbers represent and how do they help us order and compare things in God's world?			Big Idea: Numbers represent an amount that helps us order and compare things in God's world.
K	Numbers	K.NO.1 Know number names and count up to 100 by ones and tens (K.CC.1,2) K.NO.2 Read and write numbers 0 to 20 (K.CC.3) K.NO.3 Count to tell the number of objects and be able to represent as a written numeral (K.CC.3,4,5) K.NO.4 Compare number of objects between groups; compare written numerals between 1 and 10 (K.CC.6,7)	6 Guiding Principles for teaching math http://circle.adventist.org/browse/resource.phtml?leaf=12846 Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402 All I do in Kindergarten is Play! http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19469
	Place Value	K.NO.5 Begin to organize objects up to 19 into groups of tens and ones (K.NBT.1)	Math beads(strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197
1	Numbers	1.NO.1 Count, read, write, and understand numbers up to 120 (1.NBT.1) 1.NO.2 Count by twos, fives, and twenty-fives up to 100	Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831 Math beads(strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197 Math Ball http://circle.adventist.org/browse/resource.phtml?leaf=14198 Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402
	Place Value	1.NO.3 Understand and compare two-digit numbers organized as groups of tens and ones (1.NBT.2,3) 1.NO.4 Understand and mentally find ten more or ten less than a given two-digit number (1.NBT.5) 1.NO.5 Add and subtract multiples of ten within 100 using models or drawings (1.NBT.4,6)	6 Guiding Principles for teaching math http://circle.adventist.org/browse/resource.phtml?leaf=12846 Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831 Math beads(strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197 Math Ball http://circle.adventist.org/browse/resource.phtml?leaf=14198 Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402
2	Numbers	2.NO.1 Read, write, and understand numbers up to 1000 using standard, number name, and expanded forms (2.NBT.3) 2.NO.2 Count by ones, fives, tens, and hundreds up to 1000 (2.NBT.2)	Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831 Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402
	Place Value	2.NO.3 Understand and compare three-digit numbers organized as groups of hundreds, tens, and ones; use place value to understand addition and subtraction (2.NBT.1,4,9) 2.NO.4 Mentally add and subtract multiples of ten and multiples of a hundred within 1000 (2.NBT.8) 2.NO.5 Add and subtract within 1000 with regrouping using models or drawings (2.NBT.7)	6 Guiding Principles for teaching math http://circle.adventist.org/browse/resource.phtml?leaf=12846 Math Ball http://circle.adventist.org/browse/resource.phtml?leaf=14198 Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624
Assessments		Math Interviews; Checklists; Written Assessments; Student Demonstrations; Models and Drawings	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
Essential Question: What does numerical reasoning involve and what does it demonstrate about God's world?			Big Idea: Numerical reasoning with whole numbers and fractions demonstrates dependability and order in God's world.
	Place Value	3.NO.1 Use place value understanding of up to five-digit whole numbers to round to the nearest 10, 100, and 1,000 (3.NBT.1)	

3	Addition & Subtraction	3.NO.2 Add and subtract up to four digits with and without regrouping (3.NBT.2)	
	Fractions	3.NO.3 Understand, express, and order fractions between zero and one, simple mixed numbers, and whole numbers as fractions (3.NF.1,2) 3.NO.4 Understand and create equivalent fractions with denominators 2,3,4,6,8 using fraction models (3.NF.3)	Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624 Fantastic Fractions http://circle.adventist.org/browse/resource.phtml?leaf=17014 Fractions and Tithing http://circle.adventist.org/browse/resource.phtml?leaf=7431 Parts of a Group http://circle.adventist.org/browse/resource.phtml?leaf=14468 The month of March (integrated unit) http://circle.adventist.org/files/download/TBMarchVol6.pdf
4	Place Value	4.NO.1 Use place value understanding of multi-digit whole numbers to round to any place up to millions (4.NBT.1,3) 4.NO.2 Read, write, compare, and understand whole numbers using standard, number name, and expanded forms (4.NBT.2)	Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624
	Basic Operations	4.NO.3 Add and subtract multi-digit whole numbers; multiply up to 4 digits X 1 digit and 2 digits X 2 digits; divide using a one-digit divisor and up to a four-digit dividend with and without a remainder (4.NBT.4,5,6)	Math Bail http://circle.adventist.org/browse/resource.phtml?leaf=14198 Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624
	Fractions & Decimals	4.NO.4 Understand, express, and order fractions with different numerators and denominators; numerically express equivalent fractions (4.NF.1,2) 4.NO.5 Add and subtract fractions and mixed numbers with common denominators; multiply fractions by whole numbers (4.NF.3,4) 4.NO.6 Understand, compare, and use decimal notation for fractions with denominators of 10 or 100 (4.NF.5,6,7)	Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624 Fantastic Fractions http://circle.adventist.org/browse/resource.phtml?leaf=17014 Fractions and Tithing http://circle.adventist.org/browse/resource.phtml?leaf=7431 Template for comparing fractions, decimals, and percentages http://circle.adventist.org/browse/resource.phtml?leaf=7906
5	Place Value	5.NO.1 Read, write, and compare decimals to the thousandths place using standard, number name, and expanded forms; round decimals to any place (5.NBT.3,4) 5.NO.2 Explain patterns in relation to the powers of 10 (5.NBT.1,2)	Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624
	Basic Operations	5.NO.3 Multiply multi-digit whole numbers; divide using a two-digit divisor and up to a four-digit dividend; add, subtract, multiply, and divide decimals up to the hundredths place (5.NBT.5,6,7)	
	Fractions	5.NO.4 Add and subtract fractions and mixed numbers with unlike denominators; multiply a fraction or a whole number by a fraction; divide fractions by whole numbers (5.NF.1,2,3,4,5,6,7) 5.NO.5 Simplify fractions to lowest terms	Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624 Fantastic Fractions http://circle.adventist.org/browse/resource.phtml?leaf=17014 Fractions and Tithing http://circle.adventist.org/browse/resource.phtml?leaf=7431 Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521
Assessments	Journal Entries; Class Discussions; Written Assessments; Open-ended Projects and Problems; Oral Reports; Virtual Models	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547	

Essential Question: How can we use God's gift of the number system to understand the world and all created things?		Big Idea: The use of the number system to help us understand the world and all created things is a gift from God.	
6	Rational Numbers	<p>6.NO.1 Add, subtract, multiply, and divide multi-digit whole numbers and decimals (6.NS.2,3)</p> <p>6.NO.2 Find common factors and multiples (6.NS.4); understand and apply prime factorization and exponents (6.EE.1)</p> <p>6.NO.3 Understand, compare, and order integers; apply integer principles within the four basic operations; graph ordered pairs on a coordinate plane (6.NS.5,6,7,8)</p> <p>6.NO.4 Divide fractions by fractions; express a remainder as a fraction or decimal; convert within fractions, decimals, and percents; convert fractions to terminating, repeating, or rounded decimals (6.NS.1)</p>	<p>Money Management Unit Plan http://circle.adventist.org/browse/resource.phtml?leaf=14536</p> <p>Fantastic Fractions http://circle.adventist.org/browse/resource.phtml?leaf=17014</p> <p>Template for comparing fractions, decimals, and percentages http://circle.adventist.org/browse/resource.phtml?leaf=7906</p> <p>Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521</p>
	Ratios, Proportions & Percentages	6.NO.5 Understand and apply ratio concepts and use ratio reasoning to solve problems (6.RP.1,2,3)	
7	Rational Numbers	<p>7.NO.1 Apply and extend the four basic operations to rational numbers (7.NS.1,2,3)</p> <p>7.NO.2 Understand and apply properties of operations (7.NS.2)</p> <p>7.NO.3 Perform operations with numbers expressed in scientific notation, exponents, and square root</p>	<p>Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521</p> <p>Because we Can Square Root Method http://circle.adventist.org/browse/resource.phtml?leaf=9876</p>
	Ratios, Proportions & Percentages	7.NO.4 Analyze and apply proportional relationships (7.RP.1,2,3)	
8	Rational/Irrational Numbers	8.NO.1 Informally understand and use number sense for irrational numbers (8.NS.1,2)	<p>Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521</p>
Assessments		Journal Entries; Class Discussions; Written Assessments; Open-ended Projects and Problems; Oral Reports; Virtual Models	<p>Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547</p>

OPERATIONS AND ALGEBRAIC THINKING

Grade	Content	Skills (CCSSM alignment)	Teaching Number Sense in Elementary Schools http://circle.adventist.org/files/jae/en/jae199456031206.pdf
Essential Question: How can objects be represented to help us understand the variety of God's creation?			Big Idea: A single collection of objects can always be represented in more than one way to help us understand the variety of God's creation.
K	Addition	K.OAT.1 Understand addition as putting together and adding to (K.OA.1,2) K.OAT.2 Represent and solve addition word problems within 10; fluently add within 5 (K.OA.3,4,5)	Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831 Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402 Math beads(strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197 Math Ball http://circle.adventist.org/browse/resource.phtml?leaf=14198 All I do in Kindergarten is Play! http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19469
	Subtraction	K.OAT.3 Understand subtraction as taking apart and taking from (K.OA.1,2) K.OAT.4 Represent and solve subtraction word problems within 10; fluently subtract within 5 (K.OA.3,4,5)	Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831 Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402 Math beads (strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197 Math ball http://circle.adventist.org/browse/resource.phtml?leaf=14198
1	Addition/ Subtraction	1.OAT.1 Understand, represent, compare, and apply addition and subtraction properties to word problems within 20; fluently add and subtract within 10 (1.OA.1,2,3,4,5,6); add up to three whole numbers within 20 (1.OA.2); add two-digit and one-digit numbers with regrouping within 100 using models or drawings (1.NBT.4) 1.OAT.2 Work with addition and subtraction equations including unknowns (1.OA.7,8)	Math beads (strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197 Math ball http://circle.adventist.org/browse/resource.phtml?leaf=14198
2	Addition/ Subtraction	2.OAT.1 Understand, represent, compare, and apply addition and subtraction properties within 100 to solve one- and two- step word problems (2.OA.1) (2.NBT.5); add up to four 2-digit numbers (2.NBT.6) 2.OAT.2 Memorize and fluently add and subtract within 20 (2.OA.2)	Money and Time lesson http://circle.adventist.org/browse/resource.phtml?leaf=14537 Money in my Pocket Unit http://circle.adventist.org/browse/resource.phtml?leaf=14460
	Multiplication	2.OAT.3 Determine if a group of objects within 20 represents an odd or even number (2.OA.3) 2.OAT.4 Write an equation to represent the total as a sum of equal addends with up to 5 groups of 5 objects (2.OA.3,4)	Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402 Math beads (strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197 Math ball http://circle.adventist.org/browse/resource.phtml?leaf=14198
Assessments		Math Interviews; Checklists; Models and Drawings; Written Assessments	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547

Essential Question: How do numerical patterns link us to an infinite God?		Big Idea: Exploring numerical patterns through problem solving links us to an infinite God by demonstrating His order and constancy.	
3	Multiplication/ Division	<p>3.OAT.1 Understand the meaning and relationship of multiplication and division (3.OA.1,2,6)</p> <p>3.OAT.2 Memorize and fluently multiply and divide using the multiplication facts through 10 (3.OA.3,7); mentally multiply by 10 and 100 (3.NBT.3)</p> <p>3.OAT.3 Represent and determine the unknown whole number in an equation (3.OA.4)</p> <p>3.OAT.4 Apply properties of operations (commutative, associative, distributive) to multiply and divide (3.OA.5)</p>	<p>Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831</p> <p>Multiplying for problem solvers http://circle.adventist.org/browse/resource.phtml?leaf=14462</p> <p>Math beads http://circle.adventist.org/browse/resource.phtml?leaf=14197</p> <p>Math Ball http://circle.adventist.org/browse/resource.phtml?leaf=14198</p>
	Problem Solving	<p>3.OAT.5 Solve two-step word problems using the four basic operations and estimate to check (3.OA.8)</p> <p>3.OAT.6 Begin to understand and apply the standard order of operations (3.OA.8)</p>	<p>Multiplying for problem solvers http://circle.adventist.org/browse/resource.phtml?leaf=14462</p>
	Patterns	3.OAT.7 Identify arithmetic patterns using properties of operations (3.OA.9)	
4	Multiplication	4.OAT.1 Memorize and fluently multiply using the multiplication facts through 12	<p>Computational Strategies http://circle.adventist.org/browse/resource.phtml?leaf=12831</p> <p>Math beads (strings) http://circle.adventist.org/browse/resource.phtml?leaf=14197</p> <p>Math Ball http://circle.adventist.org/browse/resource.phtml?leaf=14198</p> <p>Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624</p>
	Problem Solving	4.OAT.2 Solve multi-step word problems including remainder interpretation and estimate to check; create equations with a letter for the unknown (4.OA.1,2,3)	<p>Math Step-by-step Cue Cards http://circle.adventist.org/browse/resource.phtml?leaf=7624</p>
	Factors	<p>4.OAT.3 Find all factor pairs for a whole number within 100; identify whole numbers as prime or composite (4.OA.4)</p> <p>4.OAT.4 Understand the basic concepts of least common multiple (LCM) and greatest common factor (GCF)</p>	<p>Fantastic Fractions http://circle.adventist.org/browse/resource.phtml?leaf=17014</p> <p>Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521</p>
	Patterns	4.OAT.5 Generate and analyze number and shape patterns (4.OA.5)	
5	Numerical Expressions	5.OAT.1 Write and interpret simple numerical expressions using parentheses, brackets, and braces (5.OA.1,2)	<p>Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521</p>
	Factors	5.OAT.2 Determine the least common multiple (LCM) and greatest common factor (GCF) of two numbers	<p>Fantastic Fractions http://circle.adventist.org/browse/resource.phtml?leaf=17014</p>
	Patterns	5.OAT.3 Generate, identify the relationship, and graph ordered pairs using numerical patterns with two given rules (5.OA.3)	
Assessments		Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and Virtual Models	<p>Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547</p>

Essential Question: What do mathematical principles demonstrate about God?		Big Idea: The consistency of mathematical principles continues to demonstrate the orderliness and precision of God.
6	Expressions and Equations	<p>6.OAT.1 Apply basic operations to algebraic expressions; solve and explain one-variable equations and inequalities; identify parts of an expression using mathematical terms (6.EE.1,2,3,4,5,6,7,8)</p> <p>6.OAT.2 Represent, graph, and analyze quantitative relationships between dependent and independent variables (6.EE.9)</p>
7	Expressions/ Equations/ Inequalities	<p>7.OAT.1 Use properties of operations to generate equivalent expressions (7.EE.1,2)</p> <p>7.OAT.2 Solve real-life and mathematical problems using numerical and algebraic expressions and equations (7.EE.3,4)</p> <p>7.OAT.3 Represent, graph, analyze, and generalize patterns, ratios, and inequalities using symbolic rules</p>
8	Expressions/ Equations/ Inequalities	<p>8.OAT.1 Work with radicals and integer exponents (8.E.E.1,2,3,4)</p> <p>8.OAT.2 Understand and graph the connections between proportional relationships, lines, slope, and linear equations (8.EE.5,6)</p> <p>8.OAT.3 Analyze and solve linear equations and pairs of simultaneous linear equations (8.EE.7,8)</p>
	Functions	8.OAT.4 Define, evaluate, compare, and use functions to model relationships between quantities (8.F.1,2,3,4,5)
Assessments		Open-ended Projects and Problems; Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and Virtual Models
		<p>Architecture and math problem solving lesson plan http://circle.adventist.org/browse/resource.phtml?leaf=14495</p> <p>Fundamentals of Math http://circle.adventist.org/browse/resource.phtml?leaf=8521 Linear equations http://circle.adventist.org/browse/resource.phtml?leaf=17015</p> <p>Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547</p>

MEASUREMENT

Grade	Content	Skills (CCSSM alignment)	Susan Meseraull's Online links http://circle.adventist.org/browse/resource.phtml?leaf=6624
Essential Question: How does measurement help us fulfill God's plan?			Big Idea: Measurement allows us to be accurate and orderly as God planned.
K	Measurement	K.M.1 Describe and compare measurable attributes of objects, such as length or weight (K.MD.1,2) K.M.2 Understand that thermometers are used to measure temperature	All I do in Kindergarten is Play! http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19469
	Time	K.M.3 Order a sequence of events by time (e.g., before, after, morning, night, seasons) K.M.4 Understand that clocks and calendars are used to measure time	Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402
1	Length	1.M.1 Measure, order, compare, and express lengths of objects by counting non-standard units (1.MD.1,2)	
	Time	1.M.2 Tell and write time in hours and half-hours using analog and digital clocks (1.MD.3)	Innovative Math Centers http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19402
	Money	1.M.3 Identify pennies, nickels, dimes, quarters, half-dollars, and dollar bills	
2	Length	2.M.1 Measure and estimate lengths in standard units (e.g., inches, feet, centimeters, meters) using appropriate tools (e.g., rulers, yardsticks, meter sticks) (2.MD.1,3) 2.M.2 Measure, compare, and describe the length of an object using two units of measurement (e.g. inches and yards, centimeters and meters) (2.MD.2) 2.M.3 Measure to compare the length of two objects using a standard length unit (2.MD.4) 2.M.4 Use addition and subtraction equations within 100 to solve word problems involving lengths of the same unit (2.MD.5) 2.M.5 Represent whole numbers as equally spaced lengths from 0 on a number line; represent sums and differences within 100 on a number line (2.MD.6)	Engaging elementary students in geometry and measurement http://circle.adventist.org/browse/resource.phtml?leaf=3343 Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
	Time	2.M.6 Tell and write time to the nearest five minutes from analog and digital clocks using a.m. and p.m. (2.MD.7)	Money and Time lesson http://circle.adventist.org/browse/resource.phtml?leaf=14537
	Money	2.M.7 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ (2.MD.8)	Money and Time lesson http://circle.adventist.org/browse/resource.phtml?leaf=14537 Money in my Pocket Unit http://circle.adventist.org/browse/resource.phtml?leaf=14460 That's Life: A Simulation about Money http://circle.adventist.org/browse/resource.phtml?leaf=7623
	Assessments	Math Interviews; Checklists; Graphs; Measurement Tools, Clocks, Money; Written Assessments	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
Essential Question: What do the attributes of measurement reveal about God?			Big Idea: The attributes of measurement reveal God's accuracy, dependability, and precision.
	Measurement	3.M.1 Solve problems involving measurement and estimation of intervals of time (nearest minute), liquid volume (liter), and masses of objects (gram, kilogram) (3.MD.1,2) 3.M.2 Read and understand a calendar using day, week, month, and year 3.M.3 Explain and measure temperature using Celsius and Fahrenheit scales	Recycling with composting http://circle.adventist.org/browse/resource.phtml?leaf=14486

3	Geometric Measurement	3.M.4 Understand concepts of area and its measurement by counting unit squares (cm ² , m ² , in ² , ft ²); apply multiplication and addition to area (3.MD.5,6,7) 3.M.5 Solve real-world and mathematical problems recognizing area and perimeter of plane figures; distinguish between linear and area measurements (3.MD.8)	Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
	Money	3.M.6 Construct various equivalent combinations of money; add and subtract money amounts	Money Management Unit Plan http://circle.adventist.org/browse/resource.phtml?leaf=14536 That's Life: A Simulation about Money http://circle.adventist.org/browse/resource.phtml?leaf=7623
4	Measurement/ Conversion	4.M.1 Solve problems involving measurement (time, volume, mass, money, simple fractions, decimals, distance) (4.MD.2) 4.M.2 Convert measurement from a larger unit to a smaller unit (km, m, cm; kg, g; lb, oz; L, mL; hr, min, sec) (4.MD.1) 4.M.3 Apply area and perimeter formulas (4.MD.3) 4.M.4 Read a Fahrenheit and Celsius thermometer knowing the significance of 32°F, 212°F, 0°C, and 100°C	Summer Trip Lesson Plan http://circle.adventist.org/browse/resource.phtml?leaf=14490 Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
	Angles	4.M.5 Recognize angles as geometric shapes that are formed wherever two rays share a common end point; understand concepts of angle measurement and measure angles in whole-number degrees (4.MD.5,6,7)	
	Money	4.M.6 Know how to count up to make change	That's Life: A Simulation about Money http://circle.adventist.org/browse/resource.phtml?leaf=7623
5	Conversion	5.M.1 Convert like units within a given measurement system (e.g., cm to m, m to cm) (5.MD.1)	
	Volume	5.M.2 Understand concepts of volume measurement in cubic measure (cm ³ , in ³ , ft ³) and apply to multiplication and addition (5.MD.3,4,5)	
	Geometric Measurement	5.M.3 Know the relationship between radius and diameter	
Assessments		Written Assessments; Journal Entries; Class Discussions; Open-ended Projects and Problems; Visual and Virtual Models; Diagrams	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
Essential Question: How can we show honor to God by being faithful and accurate in our measurements?			Big Idea: God is concerned that we be accurate and orderly in our use of weights, measures, and numbers.
6	Elapsed Time	6.M.1 Calculate elapsed time	
7	Measurement Systems	7.M.1 Convert between a variety of standard/metric measures (e.g., in to cm, cm to in)	Math for science http://circle.adventist.org/browse/resource.phtml?leaf=17017
8	Mathematical Precision	8.M.1 Use appropriate significant digits in calculations	
Assessments		Open-ended Projects and Problems; Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and Virtual Models	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547

GEOMETRY

Grade	Content	Skills (CCSSM alignment)	Susan Meseraull's Online links http://circle.adventist.org/browse/resource.phtml?leaf=6624
Essential Question: How do shapes and their parts help us appreciate God's creation?			Big Idea: Shapes and their parts help us appreciate the beauty and order in everything God has designed.
K	Shapes	K.GEO.1 Identify, describe, analyze, and compare two- and three-dimensional shapes (regardless of size or orientation) by size, color, and shape; describe relative positions of objects (e.g., above, beside, behind, nearer, farther) (K.G.1,2,3,4) K.GEO.2 Create two- and three-dimensional shapes by building or drawing; compose simple shapes to form larger shapes (K.G.5,6)	6 Guiding Principles for teaching math http://circle.adventist.org/browse/resource.phtml?leaf=12846 All I do in Kindergarten is Play! http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19469
	Shapes	1.GEO.1 Describe, build, and draw shapes with defining attributes (1.G.1) 1.GEO.2 Compose two- and three- dimensional shapes to form composite or new shapes (1.G.2)	Using Patch Pictures (tanagrams) http://circle.adventist.org/browse/resource.phtml?leaf=3340 Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
1	Fractions	1.GEO.3 Partition circles and rectangles into two and four equal parts; describe the whole and its parts using the words halves, fourths, quarters, half of, quarter of and third of (1.G.3)	
	Shapes	2.GEO.1 Recognize and draw two- and three- dimensional shapes having specified attributes (2.G.1)	Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
2	Area	2.GEO.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of squares (2.G.2)	Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
	Fractions	2.GEO.3 Partition circles and rectangles into two, three, and four equal parts; describe the whole and its parts using the words halves, thirds, half of, third of, etc.; understand that equal parts need not have the same shape (2.G.3)	
Assessments		Math Interviews; Checklists; Models and Drawings; Written Assessments; Art Projects	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
Essential Question: What does geometry reveal about God?			Big Idea: God is revealed as the Master Designer when geometry is used as a means of describing the attributes of the physical world.
3	Shapes	3.GEO.1 Sort and classify shapes to compare and contrast attributes (3.G.1,2)	Engaging elementary students in geometry and measurement http://circle.adventist.org/files/jae/en/jae199456033404.pdf
	Fractions	3.GEO.2 Partition shapes into equal areas and express as a fraction (3.G.2)	
4	Lines/Angles	4.GEO.1 Draw and identify points, lines, line segments, rays, angles, and perpendicular and parallel lines (4.G.1)	Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
		4.GEO.2 Classify figures with perpendicular and parallel lines, and angles of a specified size (4.G.2)	
		4.GEO.3 Recognize and draw lines of symmetry with two-dimensional figures (4.G.3)	
5	Graphs	5.GEO.1 Graph points in the first quadrant of the coordinate plane to solve real-world and mathematical problems (5.G.1,2)	
	Sides/Angles	5.GEO.2 Classify two-dimensional figures into categories based on their properties of sides and angles (5.G.3,4)	

Assessments		Written Assessments; Journal Entries; Class Discussions; Open-ended Projects and Problems; Visual and Virtual Models	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
Essential Question: How does the study of geometrical principles help us to better understand God's creation?			Big Idea: Study of geometrical principles results in a greater understanding of the complexity of God's creation.
6	Area/Volume	6.GEO.1 Solve real-world and mathematical problems involving area, surface area, and volume (6.G.1,2,3,4)	
7	Figures	7.GEO.1 Draw, construct, and describe geometrical figures and identify the relationships between them (7.G.1,2,3)	Intersections of Math and Literacy: Heuristic Patterns http://2012teachersconvention.com/wpcontent/uploads/2012/08/Intersections_PresentationforNashville2012_version2.pdf
	Geometrical Measurements	7.GEO.2 Solve real-world and mathematical problems involving angle measure, perimeter, area, surface area, and volume (7.G.4,5,6)	Archaeology integrated lesson http://circle.adventist.org/browse/resource.phtml?leaf=14530
8	Figures	8.GEO.1 Understand congruence and similarity using various mediums including geometric software (8.G.1,2,3,4,5) 8.GEO.2 Understand and apply the Pythagorean Theorem (8.G.6,7,8)	
	Volume	8.GEO.3 Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres (8.G.9)	
Assessments		Open-ended Projects and Problems; Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and Virtual Models	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547

DATA ANALYSIS, STATISTICS, AND PROBABILITY

Grade	Content	Skills (CCSSM alignment)	
Essential Question: How can we quantify our findings in a way that pleases God?			Big Idea: God has at various times commanded men to count, measure, and record their findings.
K	Data	K.DSP.1 Classify objects into given categories; count the number of objects in each category and sort the categories by count up to 10 (K.MD.3)	School yard safari http://circle.adventist.org/browse/resource.phtml?leaf=14487 All I do in Kindergarten is Play! http://circle.adventist.org/mycircle/admin/resources/view.phtml?r=19469
1	Data	1.DSP.1 Organize, represent, compare, and interpret data with up to three categories (1.MD.4)	Grand Grocery Graphs Unit http://circle.adventist.org/browse/resource.phtml?leaf=14390 Boats Graphing lesson http://circle.adventist.org/browse/resource.phtml?leaf=14366 School yard safari http://circle.adventist.org/browse/resource.phtml?leaf=14487
2	Data	2.DSP.1 Generate measurement data by measuring lengths of several objects to the nearest whole unit; show the measurements by making a line plot (2.MD.9) 2.DSP.2 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories; solve simple addition, subtraction, and comparison problems using information in a bar graph (2.MD.10)	Grand Grocery Graphs Unit http://circle.adventist.org/browse/resource.phtml?leaf=14390 Boats Graphing lesson http://circle.adventist.org/browse/resource.phtml?leaf=14366 Graphing lesson plan http://circle.adventist.org/browse/resource.phtml?leaf=14392

Assessments		Math Interviews; Graphs; Written Assessments	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
3	Data	<p>3.DSP.1 Draw and interpret scaled picture and bar graphs to represent a data set (3.MD.3)</p> <p>3.DSP.2 Measure length using rulers marked with halves and fourths of an inch and the nearest whole centimeter; show data by making a line plot (3.MD.4)</p>	Grand Grocery Graphs Unit http://circle.adventist.org/browse/resource.phtml?leaf=14390
4	Data	4.DSP.1 Solve addition and subtraction problems using a line plot to display a data set of measurement in fractions of a unit (halves, fourths, and eighths) (4.MD.4)	
5	Data	<p>5.DSP.1 Use basic operations to solve problems using a line plot to display a data set of measurement in fractions of a unit (halves, fourths, and eighths) (5.MD.2)</p> <p>5.DSP.2 Find the mean, median, mode, and range of a given set of data</p>	Breakfast Study Unit http://circle.adventist.org/files/nadspiritual/BreakfastUnitStudy5-8.pdf
Assessments		Written Assessments; Journal Entries; Class Discussions; Diagrams; Virtual Models	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547
6	Statistics and Probability	<p>6.DSP.1 Develop understanding of statistical variability (6.SP.1,2,3)</p> <p>6.DSP.2 Summarize and describe distributions (6.SP.4,5)</p>	
7	Statistics and Probability	<p>7.DSP.1 Use random sampling to draw inferences about a population (7.SP.1,2)</p> <p>7.DSP.2 Draw informal comparative inferences about two populations (7.SP.3,4)</p> <p>7.DSP.3 Investigate chance processes and develop, use, and evaluate probability models (7.SP.5,6,7,8)</p>	
8	Statistics and Probability	8.DSP.1 Investigate patterns of association in bivariate data (8.SP.1,2,3,4)	
Assessments		Open-ended Projects and Problems; Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and Virtual Models	Minimum Math Standards and test from Georgia-Cumberland Conference http://circle.adventist.org/browse/resource.phtml?leaf=11547