K to 12 Curriculum Guide

MATHEMATICS

(Grade 1 to Grade 10)
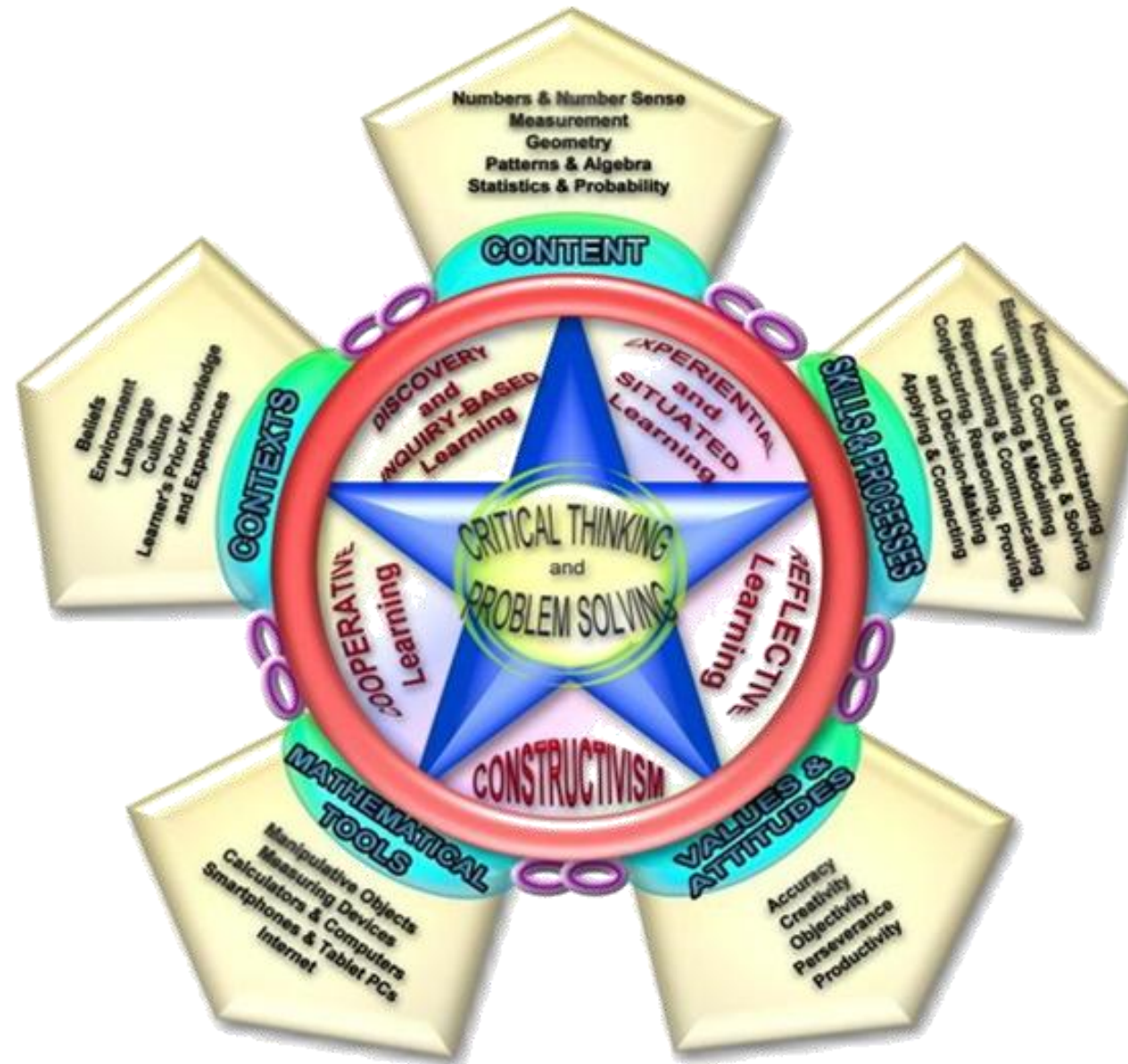
December 2013

Figure 1.The Conceptual Framework of Mathematics Education

K to 12 BASIC EDUCATION CURRICULUM

CONCEPTUAL FRAMEWORK

Mathematics   is one subject that pervades life at any age and in any circumstance. Thus, its value goes beyond the classroom and the school. Mathematics as a school subject, therefore, must be learned comprehensively and with much depth.

The twin goals of mathematics in the basic education levels, K-10, are Critical Thinking and Problem Solving.

Critical thinking, according to Scriven and Paul (1987) is the intellectually disciplined process of actively and skilfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

On the other hand, according to Polya (1945 & 1962), mathematical problem solving is finding a way around a difficulty, around an obstacle, and finding a solution to a problem that is unknown.

These two goals are to be achieved with an organized and rigorous curriculum content, a well-defined set of high-level skills and processes, desirable values and attitudes, and appropriate tools, taking into account the different contexts of Filipino learners.

There are five content areas in the curriculum, as adopted from the framework prepared by MATHTED & SEI (2010): Numbers and Number Sense, Measurement, Geometry, Patterns and Algebra, and Probability and Statistics.

The specific skills and processes to be developed are: knowing and understanding; estimating, computing and solving; visualizing and modelling; representing and communicating; conjecturing, reasoning, proving and decision-making; and applying and connecting.

The following values and attitudes are to be honed as well: accuracy, creativity, objectivity, perseverance, and productivity.

We recognize that the use of appropriate tools is necessary in teaching mathematics. These include: manipulative objects, measuring devices, calculators and computers, smart phones and tablet PCs, and the Internet.

We define context as a locale, situation, or set of conditions of Filipino learners that may influence their study and use of mathematics to develop critical thinking and problem solving skills. Contexts refer to beliefs, environment, language and culture that include traditions and practices, as well as the learner's prior knowledge and experiences.

The framework is supported by the following underlying learning principles and theories: Experiential and Situated Learning, Reflective Learning, Constructivism, Cooperative Learning and Discovery and Inquiry-based Learning. The mathematics curriculum is grounded in these theories.

Experiential Learning as advocated by David Kolb is learning that occurs by making sense of direct everyday experiences. Experiential Learning theory defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb, 1984, p. 41). Situated Learning, theorized by Lave and Wenger, is learning in the same context in which concepts and theories are applied.

Reflective Learning refers to learning that is facilitated by reflective thinking. It is not enough that learners encounter real-life situations. Deeper learning occurs when learners are able to think about their experiences and process these, allowing them the opportunity to make sense of and derive meaning from their experiences.

Constructivism is the theory that argues that knowledge is constructed when the learner is able to draw ideas from his/her own experiences and connect them to new ideas.

Cooperative Learning puts premium on active learning achieved by working with fellow learners as they all engage in a shared task.
The mathematics curriculum allows for students to learn by asking relevant questions and discovering new ideas. Discovery Learning and Inquiry-based Learning (Bruner, 1961) support the idea that students learn when they make use of personal experiences to discover facts, relationships, and concepts.

BRIEF COURSE DESCRIPTION

Mathematics from K-10 is a skills subject. By itself, it is all about quantities, shapes and figures, functions, logic, and reasoning. Mathematics is also a tool of science and a language complete with its own notations and symbols and "grammar" rules, with which concepts and ideas are effectively expressed.

The contents of mathematics include Numbers and Number Sense, Measurement, Geometry, Patterns & Algebra and Statistics and Probability.

Numbers and Number Sense as a strand include concepts of numbers, properties, operations, estimation, and their applications.

Measurement as a strand includes the use of numbers and measures to describe, understand, and compare mathematical and concrete objects. It focuses on attributes such as length, mass and weight, capacity, time, money, and temperature, as well as applications involving perimeter, area, surface area, volume, and angle measure.

Geometry as a strand includes properties of two- and three-dimensional figures and their relationships, spatial visualization, reasoning, and geometric modelling and proofs.

Patterns and Algebra as a strand studies patterns, relationships, and changes among shapes and quantities. It includes the use of algebraic notations and symbols, equations, and most importantly, functions, to represent and analyze relationships.

Statistics and Probability as a strand is all about developing skills in collecting and organizing data using charts, tables, and graphs; understanding, analyzing and interpreting data; dealing with uncertainty; and making predictions about outcomes.

The K to 10 Mathematics Curriculum provides a solid foundation for Mathematics at Grades 11 to 12.   More importantly, it provides necessary concepts and life skills needed by Filipino learners as they proceed to the next stage in their life as learners and as citizens of the Philippines.

K to 12 BASIC EDUCATION CURRICULUM

LEARNING AREA STANDARD: The learner demonstrates understanding and appreciation of key concepts and principles of mathematics as applied - using appropriate technology - in problem solving, critical thinking, communicating, reasoning, making connections, representations, and decisions in real life.

KEY STAGE STANDARDS:

K – 3	4 – 6	7 – 10
At the end of Grade 3, the learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 10,000 and the four fundamental operations including money, ordinal numbers up to 100th, basic concepts of fractions); measurement (time, length, mass, capacity, area of square and rectangle); geometry (2-dimensional and 3-dimensional objects, lines, symmetry, and tessellation); patterns and algebra (continuous and repeating patterns and number sentences); statistics and probability (data collection and representation in tables, pictographs and bar graphs and outcomes)as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.	At the end of Grade 6, the learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers, number theory, fractions, decimals, ratio and proportion, percent, and integers);measurement (time, speed, perimeter, circumference and area of plane figures, volume and surface area of solid/space figures, temperature and meter reading); geometry (parallel and perpendicular lines, angles, triangles, quadrilaterals, polygons, circles, and solid figures); patterns and algebra (continuous and repeating patterns, number sentences, sequences, and simple equations); statistics and probability (bar graphs, line graphs and pie graphs, simple experiment, and experimental probability) as applied -using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.	At the end of grade 10, the learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (sets and real numbers); measurement (conversion of units); patterns and algebra (linear equations and inequalities in one and two variables, linear functions, systems of linear equations, and inequalities in two variables, exponents and radicals, quadratic equations, inequalities, functions, polynomials, and polynomial equations and functions); geometry (polygons, axiomatic structure of geometry, triangle congruence, inequality and similarity, and basic trigonometry);statistics and probability (measures of central tendency, variability and position; combinatorics and probability) as applied - using appropriate technology - in critical thinking, problem solving, communicating, reasoning, making connections, representations, and decisions in real life.

GRADE LEVEL STANDARDS:

GRADE LEVEL	GRADE LEVEL STANDARDS
K	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 20, basic concepts on addition and subtraction); geometry (basic attributes of objects), patterns and algebra (basic concept of sequence and number pairs); measurement (time, location, non-standard measures of length, mass and capacity); and statistics and probability (data collection and tables) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations and decisions in real life.
GRADE 1	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 100, ordinal numbers up to 10th, money up to PhP100, addition and subtraction of whole numbers, and fractions ½ and 1/4);geometry (2- and 3-dimensional objects); patterns and algebra (continuous and repeating patterns and number sentences); measurement (time, non-standard measures of length, mass, and capacity);and statistics and probability (tables, pictographs, and outcomes) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 2	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 1 000, ordinal numbers up to 20th, money up to PhP100, the four fundamental operations of whole numbers, and unit fractions); geometry (basic shapes, symmetry, and tessellations); patterns and algebra (continuous and repeating patterns and number sentences);measurement (time, length, mass, and capacity); and statistics and probability (tables, pictographs, and outcomes) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 3	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 10 000; ordinal numbers up to 100th; money up to PhP1 000;the four fundamental operations of whole numbers; proper and improper fractions; and similar, dissimilar, and equivalent fractions); geometry (lines, symmetry, and tessellations); patterns and algebra (continuous and repeating patterns and number sentences); measurement (conversion of time, length, mass and capacity, area of square and rectangle); and statistics and probability (tables, bar graphs, and outcomes) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 4	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 100 000, multiplication and division of whole numbers, order of operations, factors and multiples, addition and subtraction of fractions, and basic concepts of decimals including money); geometry (lines, angles, triangles, and quadrilaterals); patterns and algebra (continuous and repeating patterns and number sentences); measurement (time, perimeter, area, and volume); and statistics and probability (tables, bar graphs, and simple experiments) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 5	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (whole numbers up to 10 000 000, order of operations, factors and multiples, fractions and decimals including money, ratio and proportion, percent); geometry (polygons, circles, solid figures); patterns and algebra (sequence and number sentences); measurement (time, circumference, area, volume, and temperature); and statistics and probability (tables, line graphs and experimental probability) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.

GRADE LEVEL	GRADE LEVEL STANDARDS
GRADE 6	The learner demonstrates understanding and appreciation of key concepts and skills involving numbers and number sense (divisibility, order of operations, fractions and decimals including money, ratio and proportion, percent, integers); geometry (plane and solid figures); patterns and algebra (sequence, expression, and equation); measurement (rate, speed, area, surface area, volume, and meter reading); and statistics and probability (tables, pie graphs, and experimental and theoretical probability) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 7	The learner demonstrates understanding of key concepts and principles of numbers and number sense (sets and real number system); measurement (conversion of units of measurement);patterns and algebra (algebraic expressions and properties of real numbers as applied in linear equations and inequalities in one variable); geometry (sides and angles of polygons); and statistics and probability (data collection and presentation, and measures of central tendency and variability) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 8	The learner demonstrates understanding of key concepts and principles of patterns and algebra (factors of polynomials, rational algebraic expressions, linear equations and inequalities in two variables, systems of linear equations and inequalities in two variables); geometry (axiomatic structure of geometry, triangle congruence, inequalities in a triangle, and parallel and perpendicular lines); and statistics and probability (probability of simple events) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 9	The learner demonstrates understanding of key concepts and principles of patterns and algebra (quadratic equations and inequalities, quadratic functions, rational algebraic equations, variations, and radicals) and geometry (parallelograms and triangle similarities and basic concepts of trigonometry) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.
GRADE 10	The learner demonstrates understanding of key concepts and principles of patterns and algebra (sequences, series, polynomials, polynomial equations, and polynomial functions); geometry (circles and coordinate geometry); and statistics and probability (combinatorics and probability, and measures of position) as applied - using appropriate technology - in critical thinking, problem solving, reasoning, communicating, making connections, representations, and decisions in real life.

Time Allotment:

Grade	1	2	3	4	5	6	7	8	9	10
Daily	50 min	50 min	50 min	50 min	50 min	50 min				
Weekly							4 hours	4 hours	4 hours	4 hours

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 1- FIRST QUARTER					
Numbers and Number Sense	demonstrates understanding of whole numbers up to 100, ordinal numbers up to 10th, money up to PhP100 and fractions ½ and 1/4.	1. is able to recognize, represent, and order whole numbers up to 100 and money up to PhP100 in various forms and contexts. 2. is able to recognize, and represent ordinal numbers up to 10th, in various forms and contexts.	1. visualizes and represents numbers from 0 to 100 using a variety of materials.	**M1NS-Ia-1.1**	• BEAM LG Gr.1 Module 2- Sets of Whole Numbers • Lesson Guide in Elem. Math Grade 1 p. 70
			2. counts the number of objects in a given set by ones and tens.	**M1NS-Ib-2.1**	• Lesson Guide in Elem. Math Grade 1 pp. 49, 54, 73, 84
			3. identifies the number that is one more or one less from a given number.	**M1NS-Ib-3**	
			4. composes and decomposes a given number. e.g. 5 is 5 and 0, 4 and 1, 3 and 2, 2 and 3, 1 and 4, 0 and 5.	**M1NS-Ic-4**	
			5. regroups sets of ones into sets of tens and sets of tens into hundreds using objects.	**M1NS- Id-5**	• BEAM LG Gr.1 Module 2- Reading and Writing of Whole Numbers
			6. visualizes, represents, and compares two sets using the expressions "less than," "more than," and "as many as."	**M1NS-Id- 6**	• BEAM LG Gr.1 Module 2- Sets of Whole Numbers
			7. visualizes, represents, and orders sets from least to greatest and vice versa.	**M1NS-Ie-7**	• BEAM LG Gr.1 Module 2- Sets of Whole Numbers • Lesson Guide in Elem. Math Grade 1 p. 40
			8. visualizes and counts by 2s, 5s and 10s through 100.	**M1NS-Ie-8.1**	• BEAM LG Gr.1 Module 2- Reading and Writing of Whole Numbers • Lesson Guide in Elem. Math Grade 1 pp. 76, 79, 82
			9. reads and writes numbers up to 100 in symbols and in words.	**M1NS-If-9.1**	• BEAM LG Gr.1 Module 2- Reading and Writing of Whole Numbers • Lesson Guide in Elem. Math Grade 1 pp. 90, 94

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			10. visualizes and gives the place value and value of a digit in one- and two-digit numbers.	M1NS-Ig-10.1	• BEAM LG Gr.1 Module 2-Reading and Writing of Whole Numbers • Lesson Guide in Elem. Math Grade 1 p. 88
			11. renames numbers into tens and ones.	M1NS-Ig-11	• Lesson Guide in Elem. Math Grade 1 p. 97
			12. visualizes, represents, and compares numbers up to 100 using relation symbols.	M1NS-Ih-12.1	• Lesson Guide in Elem. Math Grade 1 p.67
			13. visualizes, represents, and orders numbers up to 100 in increasing or decreasing order.	M1NS-Ih-13.1	• Lesson Guide in Elem. Math Grade 1 p. 58
			14. identifies the 1st , 2nd, 3rd, up to 10th object in a given set from a given point of reference.	M1NS-Ii-16.1	• BEAM LG Gr.1 Module 2-Reading and Writing of Whole Numbers
			15. reads and writes ordinal numbers: 1st, 2nd, 3rd up to 10th.	M1NS-Ii-17.1	• Lesson Guide in Elem. Math Grade 1 p. 104
			16. recognizes and compares coins and bills up to PhP100 and their notations.	M1NS-Ij-19.1	• BEAM LG Gr.1 Module 2-Reading and Writing of Whole Numbers • Lesson Guide in Elem. Math Grade 1 p. 109
Grade 1- SECOND QUARTER					
Numbers and Number Sense	demonstrates understanding of addition and subtraction of whole numbers up to 100 including money	is able to apply addition and subtraction of whole numbers up to 100 including money in mathematical problems and real-life situations.	17. illustrates addition as "putting together or combining or joining sets"	M1NS-IIa-23	• Lesson Guide in Elem. Math Grade 1 p. 123
			18. visualizes and adds two one-digit numbers with sums up to 18 using the order and zero properties of addition.	M1NS-IIa-26.1	• BEAM LG Gr.1 Module 4-Addition • Lesson Guide in Elem. Math Grade 1 pp. 135, 137
			19. adds two one-digit numbers using appropriate mental techniques e.g. adding doubles and/or near-doubles.	M1NS-IIa-28.1a	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			20. visualizes and adds three one-digit numbers using the grouping property of addition.	**M1NS-IIb-26.2**	• BEAM LG Gr.1 Module 4-Addition • Lesson Guide in Elem. Math Grade 1 p. 141
			21. visualizes and adds two to three one-digit numbers horizontally and vertically.	**M1NS-IIb-27.1**	• BEAM LG Gr.1 Module 4-Addition • Lesson Guide in Elem. Math Grade 1 p. 144
			22. uses expanded form to explain the meaning of addition with regrouping.	**M1NS-IIc-27.2**	
			23. visualizes and adds numbers with sums through 99 without or with regrouping.	**M1NS-IIc-27.3**	• BEAM LG Gr.1 Module 4-Addition • Lesson Guide in Elem. Math Grade 1 pp. 149, 152
			24. adds mentally two to three one-digit numbers with sums up to 18 using appropriate strategies.	**M1NS-IId-28.1b**	• Lesson Guide in Elem. Math Grade 1 p. 147
			25. adds mentally two-digit numbers and one-digit numbers with regrouping using appropriate strategies.	**M1NS-IId-28.2**	
			26. visualizes and solves one-step routine and non-routine problems involving addition of whole numbers including money with sums up to 99 using appropriate problem solving strategies.	**M1NS-IIe-29.1**	• BEAM LG Gr.1 Module 5-Application of Addition • Lesson Guide in Elem. Math Grade 1 p. 169
			27. creates situations involving addition of whole numbers including money .	**M1NS-IIe-30.1**	
			28. illustrates subtraction as "taking away" or "comparing" elements of sets.	**M1NS-IIf-24**	• BEAM LG Gr.1 Module 6-Subtraction
			29. illustrates that addition and subtraction are inverse operations.	**M1NS-IIf-25**	
			30. visualizes, represents, and subtracts one-digit numbers with minuends through 18 (basic facts)	**M1NS-IIg-32.1**	• BEAM LG Gr.1 Module 6-Subtraction • Lesson Guide in Elem. Math Grade 1 p. 190

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			31. visualizes, represents, and subtracts one- to two-digit numbers with minuends up to 99 without regrouping.	**M1NS-IIg-32.2**	• BEAM LG Gr.1 Module 6- Subtraction • Lesson Guide in Elem. Math Grade 1 p. 194
			32. uses the expanded form to explain subtraction with regrouping.	**M1NS-IIh-32.3**	
			33. visualizes, represents, and subtracts one- to two-digit numbers with minuends up to 99 with regrouping.	**M1NS-IIh-32.4**	• BEAM LG Gr.1 Module 6- Subtraction • Lesson Guide in Elem. Math Grade 1 p. 197
			34. subtracts mentally one-digit numbers from two-digit minuends without regrouping using appropriate strategies.	**M1NS-IIi-33.1**	• BEAM LG Gr.1 Module 6- Subtraction • Lesson Guide in Elem. Math Grade 1 p. 209
			35. visualizes, represents, and solves routine and non-routine problems involving subtraction of whole numbers including money with minuends up to 99 with and without regrouping using appropriate problem solving strategies and tools.	**M1NS-IIi-34.1**	• BEAM LG Gr.1 Module 7- Application of Subtraction • Lesson Guide in Elem. Math Grade 1 p. 235
			36. creates situations involving subtraction of whole number including money.	**M1NS-IIj-35.1**	
Grade 1- THIRD QUARTER					
			37. counts groups of equal quantity using concrete objects up to 50 and writes an equivalent expression. e.g. 2 groups of 5	**M1NS-IIIa-37**	
			38. visualizes, represents, and separates objects into groups of equal quantity using concrete objects up to 50. e.g. 10 grouped by 5s	**M1NS-IIIa-48**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Numbers and Number Sense	demonstrates understanding of fractions ½ and 1/4.	is able to recognize, represent, and compare fractions ½ and 1/4 in various forms and contexts.	39. visualizes and identifies ½ and ¼ of a whole object.	**M1NS-IIIb-72.1**	• Lesson Guide in Elem. Math Grade 1 pp. 239, 242
			40. visualizes, represents, and divides a whole into halves and fourths.	**M1NS-IIIc-73**	• BEAM LG Gr.1 Module 8-Fractions • Lesson Guide in Elem. Math Grade 1 pp. 246, 249
			41. visualizes, and divides the elements of sets into two groups of equal quantities to show halves.	**M1NS-IIIc-74.1**	• BEAM LG Gr.1 Module 8-Fractions • Lesson Guide in Elem. Math Grade 1 p. 254
			42. visualizes, represents, and divides the elements of sets into four groups of equal quantities to show fourths	**M1NS-IIId-74.2**	• BEAM LG Gr.1 Module 8-Fractions • Lesson Guide in Elem. Math Grade 1 p. 258
			43. visualizes and draws the whole region or set given its ½ and/or ¼	**M1NS-IIId-75**	• BEAM LG Gr.1 Module 8-Fractions
Geometry	demonstrates understanding of 2-dimensional and 3-dimensional figures.	is able to describe, compare, and construct 2-dimensional and 3-dimensional objects	44. identifies, names, and describes the four basic shapes (square, rectangle, triangle and circle) in 2-dimensional (flat/plane) and 3-dimensional (solid) objects.	**M1GE-IIIe-1**	• BEAM LG Gr.2 Module - Shapes
			45. compares and classifies 2-dimensional (flat/plane) and 3-dimensional (solid) figures according to common attributes.	**M1GE-IIIe-2**	
			46. draws the four basic shapes.	**M1GE-IIIf-3**	
			47. constructs three dimensional objects (solid) using manipulative materials.	**M1GE-IIIf-4**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
Patterns and Algebra	demonstrates understanding of continuous and repeating patterns and mathematical sentences.	is able to apply knowledge of continuous and repeating patterns and number sentences in various situations.	48. determines the **missing term/s** in a given **continuous pattern** using **one attribute** (letters/ numbers/events). e.g. A,B,C,D,___ 2,3,___5,6,7 ___,Wed, Thur, Fri Aa, Bb, Cb, ___,___	**M1AL-IIIg-1**	
			49. determines the missing **term/s** in a given **repeating pattern** using one attribute(letters, numbers, colors, figures, sizes, etc.). e.g. A,B,C,A,B,C,A,___ ♡♡◇◇ ♡◇◇ ___	**M1AL-IIIg-2**	
			50. constructs equivalent number expression using addition and subtraction. e.g. 6 + 5 = 12 - 1	**M1AL-IIIh-8**	• Lesson Guide in Elem. Math Grade 1 p. 184
			51. identifies and creates patterns to compose and decompose using addition. e.g. 7 = 0 + 7, 1 + 6, 2 + 5, 3 + 4, 4 + 3, 5 + 2, 6 + 1, 7 + 0	**M1AL-IIIi-9**	• Lesson Guide in Elem. Math Grade 1 pp. 39 – 41; 57 – 63
			52. visualizes and finds the missing number in an addition or subtraction sentence using a variety of ways e.g. n + 2 = 5 5 – n = 3	**M1AL-IIIj-10**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 1- FOURTH QUARTER					
Measurement	demonstrates understanding of time and non-standard units of length, mass and capacity.	is able to apply knowledge of time and non-standard measures of length, mass, and capacity in mathematical problems and real-life situations	53. tells the days in a week; months in a year in the right order.	**M1ME-IVa-1**	• BEAM LG Gr.1 Module 5- Measurement: Time Measure • Lesson Guide in Elem. Math Grade 1 pp. 262, 267
			54. determines the day or the month using a calendar.	**M1ME-IVa-2**	
			55. tells and writes time by hour, half-hour and quarter-hour using analog clock.	**M1ME-IVb-3**	• Lesson Guide in Elem. Math Grade 1 pp. 270, 274, 281
			56. solves problems involving time (days in a week, months in a year, hour, half-hour, and quarter-hour)	**M1ME-IVb-4**	
			57. compares objects using comparative words: short, shorter, shortest; long, longer, longest; heavy, heavier, heaviest; light, lighter, lightest.	**M1ME-IVc-19**	
			58. estimates and measures length using non- standard units of linear measures.	**M1ME-IVd-20**	• BEAM LG Gr.1 Module 10- Linear Measure • Lesson Guide in Elem. Math Grade 1 p. 284
			59. estimates and measures mass using non-standard units of mass measure.	**M1ME-IVe-21**	• BEAM LG Gr.1 Module 11- Mass Measure • Lesson Guide in Elem. Math Grade 1 p. 292
			60. estimates and measures capacity using non-standard unit.	**M1ME-IVf-22**	• Lesson Guide in Elem. Math Grade 1 p. 298

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Statistics and Probability	demonstrates understanding of pictographs without scales and outcomes of an event using the terms likely and unlikely to happen.	is able to create and interpret simple representations of data (tables and pictographs without scales) and describe outcomes of familiar events using the terms likely and unlikely to happen.	61. collects data on one variable through simple interview.	**M1SP-IVg-1.1**	
			62. sorts, classifies, and organizes data in tabular form and presents this into a pictograph without scales.	**M1SP-IVg-2.1**	
			63. infers and interprets data presented in a **pictograph without scales.** e.g. finding out from the title what the pictograph is all about, comparing which has the least or greatest …	**M1SP-IVh-3.1**	
			64. solves routine and non-routine problems using data presented in pictograph without scales.	**M1SP-IVh-4.1**	
			65. tells whether an event is likely or unlikely to happen.	**M1SP-IVi-7.1**	
			66. describe events in real-life situations using the phrases " likely" or "unlikely to happen". e.g. Tomorrow it will rain.	**M1SP-IVj-8.1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 2- FIRST QUARTER					
Numbers and Number Sense	1. demonstrates understanding of whole numbers up to 1000, ordinal numbers up to 20th, and money up to PhP100. 2. demonstrates understanding of addition of whole numbers up to 1000 including money.	1. is able to recognize, represent, compare, and order whole numbers up to 1000, ordinal numbers up to 20th, and money up to PhP100 in various forms and contexts. 2. is able to recognize and represent ordinal numbers up to 20th in various forms and contexts. 3. is able to apply addition of whole numbers up to 1000 including money in mathematical problems and real-life situations.	1. visualizes and represents numbers from 0-1000 with emphasis on numbers 101 – 1 000 using a variety of materials.	**M2NS-Ia-1.2**	• BEAM LG Gr. 2 Module 1- Whole Numbers • Lesson Guide in Elem. Math Grade 2 p. 1
			2. groups objects in ones, tens, and hundreds.	**M2NS-Ib-2.2**	
			3. gives the place value and finds the value of a digit in three-digit numbers.	**M2NS-Ib-10.2**	• BEAM LG Gr. 2 Module 1- Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.12
			4. visualizes and counts numbers by 10s, 50s, and 100s.	**M2NS-Ib-8.2**	• BEAM LG Gr. 2 Module 1- Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.24
			5. reads and writes numbers up to 1 000 in symbols and in words.	**M2NS-Ic-9.2**	• BEAM LG Gr. 2 Module 1- Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.15
			6. visualizes and writes three-digit numbers in expanded form.	**M2NS-Ic-14**	• BEAM LG Gr. 2 Module 1- Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.18
			7. visualizes and compares numbers up to 1 000 using relation symbols.	**M2NS-Id-12.2**	• BEAM LG Gr. 2 Module 1- Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.21
			8. visualizes and orders numbers up to 1 000 in increasing or decreasing order.	**M2NS-Id-13.2**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			9. identifies the 1st through the 20th with the emphasis on 11th to 20th object in a given set from a given point of reference.	**M2NS-Ie-16.2**	• BEAM LG Gr. 2 Module 2-Presenting Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.28
			10. reads and writes ordinal numbers from 1st through the 20th.	**M2NS-Ie-17.2**	• BEAM LG Gr. 2 Module 1-Whole Numbers
			11. identifies and uses the pattern of naming ordinal numbers from 1st to the 20th.	**M2NS-Ie-18**	• BEAM LG Gr. 2 Module 1-Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.40
			12. reads and writes money in symbols and in words through PhP100.	**M2NS-If-20.1**	• BEAM LG Gr. 1 Module 1-Reading and Writing Whole Numbers • Lesson Guide in Elem. Math Grade 2 p.42
			13. counts the value of a set of bills or a set of coins through PhP100 (peso-coins only; centavo-coins only; peso-bills only and combined peso-coins and peso-bills).	**M2NS-If-21**	• BEAM LG Gr. 2 Module 3-Money
			14. compares values of different denominations of coins and paper bills through PhP100 using relation symbols.	**M2NS-If-22.1**	• BEAM LG Gr. 2 Module 3-Money • Lesson Guide in Elem. Math Grade 2 p.50
			15. illustrates the properties of addition (commutative, associative, identity) and applies each in appropriate and relevant situations.	**M2NS-Ig-26.3**	• BEAM LG Gr. 2 Module 4-Addition • Lesson Guide in Elem. Math Grade4 p.24 • DLP Gr. 4 Modules 9, 10, 11; Gr. 5 Module 2

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			16. visualizes, represents, and adds 2-digit by 3-digit numbers with sums up to 1000 without and with regrouping .	**M2NS-Ig-27.4**	• BEAM LG Gr. 2 Module 4-Addition • Lesson Guide in Elem. Math Grade 2 p.59
			17. visualizes, represents, and adds 3-digit by 3-digit numbers with sums up to 1000 without and with regrouping.	**M2NS-Ih-27.5**	• BEAM LG Gr. 2 Module 4-Addition • Lesson Guide in Elem. Math Grade 2 p.59
			18. adds mentally 1- to 2-digit numbers with sums up to 50 using appropriate strategies.	**M2NS-Ih-28.3**	• BEAM LG Gr. 2 Module 4-Addition • Lesson Guide in Elem. Math Grade 2 p.83
			19. adds mentally 3-digit numbers and 1-digit numbers using appropriate strategies.	**M2NS-Ii-28.4**	
			20. adds mentally three -digit numbers and tens (multiples of 10 up to 90) using appropriate strategies.	**M2NS-Ii-28.5**	
			21. adds mentally 3-digit numbers and hundreds (multiples of 100 up to 900) using appropriate strategies.	**M2NS-Ii-28.6**	
			22. solves routine and non-routine problems involving addition of whole numbers including money with sums up to 1000 using appropriate problem solving strategies and tools.	**M2NS-Ij-29.2**	• BEAM LG Gr. 2 Module – Application of Addition • Lesson Guide in Elem. Math Grade 2 p.87
			23. creates problems involving addition of whole numbers including money.	**M2NS-Ij-30.2**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 2- SECOND QUARTER					
Numbers and Number Sense	demonstrates understanding of subtraction and multiplication of whole numbers up to 1000 including money.	is able to apply subtraction and multiplication of whole numbers up to 1000 including money in mathematical problems and real-life situations.	24. visualizes, represents, and subtracts 2- to 3-digit numbers with minuends up to 999 without and with regrouping.	**M2NS-IIa-32.5**	• BEAM LG Gr. 2 Module 6- Subtraction • Lesson Guide in Elem. Math Grade 2 p.105
			25. subtracts mentally 1-digit numbers from 1- to 3-digit numbers without regrouping using appropriate strategies.	**M2NS-IIb-33.2**	• BEAM LG Gr. 2 Module 6- Subtraction • LessonGuide in Elem. Math Grade 2 p.123
			26. subtracts mentally 3-digit numbers by tens and by hundreds without regrouping using appropriate strategies.	**M2NS-IIb-33.3**	
			27. solves routine and non-routine problems involving subtraction of whole numbers including money with minuends up to 1000 using appropriate problem solving strategies and tools.	**M2NS-IIc-34.2**	• BEAM LG Gr. 2 Module – Application of Subtraction • Lesson Guide in Elem. Math Grade 2 p.126
			28. creates problems involving subtraction of whole numbers including money.	**M2NS-IId-35.2**	
			29. performs orders of operations involving addition and subtractions of small numbers.	**M2NS-IId-34.3**	
			30. solves multi-step routine and non-routine problems involving addition and subtraction of 2- to 3-digit numbers including money using appropriate problem solving strategies and tools.	**M2NS-IIe-34.4**	• BEAM LG Gr. 2 Module 8- Application of Addition and Subtraction

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			31. creates word problems involving addition and subtraction of whole numbers including money.	**M2NS-IIe-35.3**	
			32. illustrates multiplication as repeated addition using 32.1 groups of equal quantities 32.2 arrays 32.3 counting by multiples 32.4 equal jumps on the number line	**M2NS-IIf-38**	• Lesson Guide in Elem. Math Grade 2 p.140
			33. writes a related equation for each type of multiplication: repeated addition, array, counting by multiples, and equal jumps on the number line.	**M2NS-IIf-39**	• Lesson Guide in Elem. Math Grade 2 p.148
			34. illustrates the property of multiplication that any number multiplied by one (1) is the same number.	**M2NS-IIg-40.1**	• Lesson Guide in Elem. Math Grade 2 p.157
			35. illustrates the property of multiplication that zero multiplied by any number is zero.	**M2NS-IIg-40.2**	• Lesson Guide in Elem. Math Grade 2 p.160 • DLP Gr. 4 Module 27
			36. illustrates the commutative property of multiplication.	**M2NS-IIg-40.3**	
			37. visualizes multiplication of numbers 1 to 10 by 2,3,4,5 and10.	**M2NS-IIh-41.1**	• BEAM LG Gr. 2 Module - Multiplication
			38. multiplies mentally 2,3,4,5 and 10 using appropriate strategies.	**M2NS-IIi-42.1**	• BEAM LG Gr. 2 Module – Multiplication • Lesson Guide in Elem. Math Grade 2 p.166

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			39. solves routine and non-routine problems involving multiplication of whole numbers including money using appropriate problem solving strategies and tools.	**M2NS-IIi-45.1**	• BEAM LG Gr. 2 Module – Multiplication • Lesson Guide in Elem. Math Grade 2 p.169
			40. solves routine and non-routine problems involving multiplication and addition or subtraction of whole numbers including money using appropriate problem solving strategies and tools.	**M2NS-IIj-45.2**	• Lesson Guide in Elem. Math Grade 2 p.177
			41. creates problems involving multiplication only and multiplication with addition or subtraction of whole numbers including money with reasonable answers.	**M2NS-IIj-46.1**	
Grade 2- THIRD QUARTER					
Numbers and Number Sense	1. demonstrates understanding of division of whole numbers up to 1000 including money. 2. demonstrates understanding of unit fractions.	1. is able to apply division of whole numbers up to 1000 including money in mathematical problems and real-life situations. 2. is able to recognize and represent unit fractions in various forms and contexts.	42. visualizes and represents division as equal sharing, repeated subtraction, equal jumps on the number line and using formation of equal groups of objects	**M2NS-IIIa-49**	• BEAM LG Gr. 2 Module 11– Application of Division • Lesson Guide in Elem. Math Grade 2 p.181
			43. creates and writes a related equation for each type of situation: equal sharing, repeated subtraction, equal jumps on the number line, and formation of equal groups of objects.	**M2NS-IIIa-50**	• DLP Gr. 3 Module 24
			44. visualizes division of numbers up to 100 by 2,3,4,5, and 10 (multiplication table of 2, 3, 4, 5 and 10).	**M2NS-IIIb-51.1**	• BEAM LG Gr. 2 Module 11– Application of Division

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			45. divides mentally numbers by 2,3,4,5 and 10 using appropriate strategies (multiplication table of 2, 3, 4, 5 and 10).	**M2NS-IIIb-52.1**	
			46. illustrates that multiplication and division are inverse operations.	**M2NS-IIIc-53**	• DLP Gr. 3 Module 28 • Lesson Guide in Elem. Math Grade 2 p.206
			47. solves routine and non-routine problems involving division of numbers by 2,3,4,5 and 10 and with any of the other operations of whole numbers including money using appropriate problem solving strategies and tools.	**M2NS-IIIc-56.1**	• BEAM LG Gr. 2 Module 11– Application of Division
			48. creates word problems involving division of whole numbers including money.	**M2NS-IIIc-57.1**	
			49. visualizes, represents and identifies unit fractions with denominators of 10 and below.	**M2NS-IIId-72.2**	• BEAM LG Gr. 2 Module 13 – Fractions • Lesson Guide in Elem. Math Grade 2 p.231
			50. reads and writes unit fractions.	**M2NS-IIId-76.1**	• Lesson Guide in Elem. Math Grade 2 p.240
			51. compares unit fractions using relation symbols.	**M2NS-IIIe-77.1**	• Lesson Guide in Elem. Math Grade 2 p.245
			52. arranges unit fractions in increasing or decreasing order.	**M2NS-IIIe-78.1**	
			53. identifies other fractions less than one with denominators 10 and below.	**M2NS-IIIe-79.1**	• DLP Gr. 3 Module 35

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			54. visualizes similar fractions (using group of objects and number line).	**M2NS-IIIf-72.3**	
			55. reads and writes similar fractions.	**M2NS-IIIf-76.2**	
			56. compares similar fractions using relation symbols.	**M2NS-IIIf-77.2**	• DLP Gr. 3 Module 36
			57. arranges similar fractions in increasing or decreasing order.	**M2NS-IIIf-78.2**	• Lesson Guide in Elem. Math Grade 4 p.205 • MISOSA Module Gr. 4 – Ordering Similar Fractions
Geometry	demonstrates understanding of straight and curved lines, flat and curved surfaces, basic shapes, symmetry in a line, and tessellations using triangles and squares.	is able to recognize and construct straight and curved lines, flat and curved surfaces, basic shapes and create simple designs that show symmetry in a line and tessellation using triangles and squares.	58. visualizes, identifies, classifies and describes half circles and quarter circles.	**M2GE-IIIg-5**	
			59. constructs squares, rectangles, triangles, circles, half-circles, and quarter circles using cut-outs and square grids.	**M2GE-IIIg-6**	
			60. identifies shapes/figures that show symmetry in a line.	**M2GE-IIIh-7.1**	• BEAM LG Gr. 2 Module Geometry – Tessellations • Lesson Guide in Elem. Math Grade 2 p.266
			61. identifies and draws the line of symmetry in a given symmetrical figure.	**M2GE-IIIh-7.4a**	
			62. creates figures that show symmetry in a line.	**M2GE-IIIh-7.2**	
			63. recognizes shapes that can tessellate.	**M2GE-IIIh-8.1**	
			64. tessellates a surface using triangles and squares.	**M2GE-IIIi-8.2**	• Lesson Guide in Elem. Math Grade 2 p.263

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			65. identifies straight lines and curves, flat and curved surfaces in a 3-dimensional object. This is not reflected in the performance standards.	**M2GE-IIIi-9**	
			66. explains the differences between straight lines and curved lines, flat surfaces and curved surfaces. This is not reflected in the performance standards.	**M2GE-IIIi-10**	
Patterns and Algebra	demonstrates understanding of continuous patterns using two attributes and mathematical sentences involving multiplication and division of whole numbers using 2, 3, 4, 5 and 10 only.	is able to apply knowledge of continuous patterns using two attributes and number sentences involving multiplication and division using 2, 3, 4, 5 and 10 only in various situations.	67. determines the missing term/s in a given continuous pattern using two attributes (any two of the following: figures, numbers, colors, sizes, and orientations, etc.) e.g. 1, A, 2,B,3,C,__,__ ①, ②, ③, ④ __	**M2AL-IIIj-3**	
			68. visualizes and finds the missing value in a number sentence involving multiplication or division of whole numbers using 2, 3, 4, 5 and 10 only. e.g. 5 x __ = 30 30 ÷ __ = 6	**M2AL-IIIj-11**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
Grade 2- FOURTH QUARTER					
Measurement	demonstrates understanding of time, standard measures of length, mass and capacity and area using square-tile units.	is able to apply knowledge of time, standard measures of length, weight, and capacity, and area using square-tile units in mathematical problems and real-life situations.	69. tells and writes time in minutes including a.m. and p.m. using analog and digital clocks.	**M2ME-IVa-5**	• BEAM LG Gr. 2 Module 9 – Time Measure • Lesson Guide in Elem. Math Grade 2 p.285
			70. visualizes and finds the elapsed time in days.	**M2ME-IVa-6**	
			71. visualizes, represents, and solves problems involving time (minutes including a.m. and p.m. and elapsed time in days).	**M2ME-IVa-7**	• BEAM LG Gr. 2 Module 9 – Time Measure • Lesson Guide in Elem. Math Grade 2 p.304
			72. shows and uses the appropriate unit of length and their abbreviation cm and m to measure a particular object.	**M2ME-IVb-23**	
			73. compares length in meters or centimeters.	**M2ME-IVb-24**	
			74. measures objects using appropriate measuring tools in m or cm.	**M2ME-IVb-25**	• Lesson Guide in Elem. Math Grade 2 p.309
			75. estimates and measures length using meter or centimeter.	**M2ME-IVc-26**	• Lesson Guide in Elem. Math Grade 2 p.312
			76. solves routine and non-routine problems involving length.	**M2ME-IVc-27**	
			77. shows and uses the appropriate unit of weight and their abbreviations g and kg to measure a particular object.	**M2ME-IVd-28**	
			78. compares mass in grams or kilograms.	**M2ME-IVd-29**	• BEAM LG Gr. 2 Module 18 – Mass and Capacity
			79. measures objects using appropriate measuring units in g or kg.	**M2ME-IVd-30**	• BEAM LG Gr. 2 Module 18 – Mass and Capacity • Lesson Guide in Elem. Math Grade 2 p.317

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			80. estimates and measures mass using gram or kilogram.	M2ME-IVe-31	• BEAM LG Gr. 2 Module 18 – Mass and Capacity • Lesson Guide in Elem. Math Grade 2 p.323
			81. solves routine and non-routine problems involving mass.	M2ME-IVe-32	
			82. measures objects using appropriate measuring tools in mL or L.	M2ME-IVf-33	
			83. creates problems involving length, mass and capacity.	M2ME-IVf-34	
			84. illustrates area as a measure of how much surface is covered or occupied by a plane figure.	M2ME-IVg-35	• BEAM LG Gr. 2 Module 12 – Area
			85. finds the area of a given figure using square-tile units i.e. number of square-tiles needed.	M2ME-IVg-36	
			86. estimates the area of a given figure using any shape.	M2ME-IVh-37	
			87. solves routine and non-routine problems involving any figure using square tiles.	M2ME-IVh-38	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Statistics and Probability	deepens understanding of pictographs without and with scales and outcomes of an event using the terms likely, equally likely and unlikely to happen.	is able to create and interpret simple representations of data (tables and pictographs without and with scales) and describe outcomes of familiar events using the terms likely, equally likely and unlikely to happen.	88. collects data on one variable using a questionnaire.	**M2SP-IVh-1.2**	
			89. sorts, classifies, and organizes data in tabular form and presents this into a pictograph without and with scales.	**M2SP-IVi-2.2**	
			90. infers and interprets data presented in a pictograph without and with scales.	**M2SP-IVi-3.2**	• BEAM LG Gr. 3 Module 15 – Pictograph
			91. solves routine and non-routine problems using data presented in a pictograph without and with scales.	**M2SP-IVi-4.2**	
			92. tells whether an event is likely, equally likely, unlikely to happen.	**M2SP-IVj-7.2**	
			93. describe events in real-life situations using the phrases " likely to happen" or "unlikely to happen" or "equally likely to happen".	**M2SP-IVj-8.2**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 3- FIRST QUARTER					
Numbers and Number Sense	1. demonstrates understanding of whole numbers up to 10 000, ordinal numbers up to 100th, and money up to PhP1000. 2. demonstrates understanding of addition and subtraction of whole numbers including money	1. is able to recognize, represent, compare, and order whole numbers up to 10 000, and money up to PhP1000 in various forms and contexts. 2. is able to recognize and represent, ordinal numbers up to 100th in various forms and contexts. 3. is able to apply addition and subtraction of whole numbers including money in mathematical problems and real-life situations.	1. visualizes numbers up to 10 000 with emphasis on numbers 1001 - 10000.	**M3NS-Ia-1.3**	• Lesson Guide in Elem. Math 3 pp. 1 – 14 • BEAM LG Gr. 3 Module 1.1 – Whole Numbers
			2. gives the place value and value of a digit in 4- to 5-digit numbers.	**M3NS-Ia-10.3**	• Lesson Guide in Elem. Math 3 pp. 15 – 17 • BEAM LG Gr. 3 Module 1.1 – Whole Numbers • MTB-MLE Group – Teacher's Guide
			3. reads and writes numbers up to 10 000 in symbols and in words.	**M3NS-Ia-9.3**	• Lesson Guide in Elem. Math 3 pp. 18 - 27 • BEAM LG Gr. 3 Module 1.1 – Whole Numbers • MTB-MLE Group – Teacher's Guide
			4. rounds numbers to the nearest ten, hundred and thousand..	**M3NS-Ib-15.1**	• Lesson Guide in Elem. Math 3 pp. 37 – 40 • BEAM LG Gr. 3 Module 1.2 – Whole Numbers • DLP Gr. 4 Module 5 • MTB-MLE Group – Teacher's Guide
			5. compares numbers up to 10 000 using relation symbols.	**M3NS-Ib-12.3**	• BEAM LG Gr. 3 Module 1.1 – Whole Numbers • MTB-MLE Group – Teacher's Guide
			6. orders 4- to 5-digit numbers in increasing or decreasing order.	**M3NS-Ib-13.3**	• MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			7. identifies ordinal numbers from 1st to 100th with emphasis on the 21st to 100th object in a given set from a given point of reference.	**M3NS-Ic-16.3**	• MTB-MLE Group – Teacher's Guide
			8. recognizes coins and bills up to PhP1 000.	**M3NS-Ic-19.2**	
			9. reads and writes money in symbols and in words through PhP1 000 in pesos and centavos.	**M3NS-Ic-20.2**	• Lesson Guide in Elem. Math 3 pp.49 – 51 • BEAM LG Gr. 3 Module 1.3 – Whole Numbers • DLP Gr. 3 Module 8, Gr. 4 Module 48 • MTB-MLE Group – Teacher's Guide
			10. compares values of the different denominations of coins and bills through PhP1 000 using relation symbols.	**M3NS-Id-22.2**	• Lesson Guide in Elem. Math 3 pp.52 – 56 • BEAM LG Gr. 3 Module 1.3 – Whole Numbers • MTB-MLE Group – Teacher's Guide
			11. adds 3- to 4-digit numbers up to three addends with sums up to 10 000 without and with regrouping.	**M3NS-Id-27.6**	• Lesson Guide in Elem. Math 3 pp.70 – 80 • DLP Gr. 3 Module 12, 13 • MTB-MLE Group – Teacher's Guide
			12. estimates the sum of 3- to 4-digit addends with reasonable results.	**M3NS-Ie-31**	• LG in Elem. Math 3 pp.81 – 84 • DLP Gr. 3 Module 14 • MTB-MLE Group – Teacher's Guide
			13. adds mentally 2-digit and 1-digit numbers without or with regrouping using appropriate strategies.	**M3NS-Ie-28.7**	• Lesson Guide in Elem. Math 3 pp.85 – 90 • DLP Gr. 3 Module 15 • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			14. adds mentally 2- to 3-digit numbers with multiples of hundreds using appropriate strategies.	**M3NS-Ie-28.8**	• LG in Elem. Math 4 pp.35 – 36 • MTB-MLE Group – Teacher's Guide
			15. solves routine and non-routine problems involving addition of whole numbers with sums up to 10 000 including money using appropriate problem solving strategies and tools.	**M3NS-If-29.3**	• Lesson Guide in Elem. Math 3 pp.95 – 99 • DLP Gr. 3 Module 16 • MTB-MLE Group – Teacher's Guide
			16. creates problems involving addition of whole numbers including money.	**M3NS-If-30.3**	
			17. subtracts 3-to 4-digit numbers from 3- to 4-digit numbers without and with regrouping.	**M3NS-Ig-32.6**	• Lesson Guide in Elem. Math 3 pp.100 – 144 • BEAM LG Gr. 3 Module 1 – Subtraction • DLP Gr. 3 Module 17, 18 • MTB-MLE Group – Teacher's Guide
			18. estimates the difference of two numbers with three to four digits with reasonable results.	**M3NS-Ih-36**	• Lesson Guide in Elem. Math 3 pp.145 – 148 • BEAM LG Gr. 3 Module 1 – Subtraction • MTB-MLE Group – Teacher's Guide
			19. subtracts mentally 1- to 2 – digits numbers without and with regrouping using appropriate strategies.	**M3NS-Ih-33.5**	• Lesson Guide in Elem. Math 3 pp.149 – 154 • BEAM LG Gr. 3 Module 1 – Subtraction • MTB-MLE Group – Teacher's Guide
			20. subtracts mentally 2- to 3 – digits numbers with multiples of hundreds without and with regrouping using appropriate strategies.	**M3NS-Ii-33.6**	• MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			21. solves routine and non-routine problems involving subtraction without or with addition of whole numbers including money using appropriate problem solving strategies and tools.	**M3NS-Ii-34.5**	• Lesson Guide in Elem. Math 3 pp.155 – 169 • BEAM LG Gr. 3 Module 2 – Application of Subtraction, Module 3 – Application of Addition and Subtraction • DLP Gr. 3 Module 19, Gr. 4 Module 19 • MTB-MLE Group – Teacher's Guide
			22. creates problems involving addition and/or subtraction of whole numbers including money.	**M3NS-Ij-35.4**	
Grade 3- SECOND QUARTER					
Numbers and Number Sense	demonstrates understanding of multiplication and division of whole numbers including money.	is able to apply multiplication and division of whole numbers including money in mathematical problems and real-life situations	23. visualizes multiplication of numbers 1 to 10 by 6,7,8 and 9.	**M3NS-IIa-41.2**	• BEAM LG Gr.2 Module – Multiplication • MTB-MLE Group – Teacher's Guide
			24. visualizes and states basic multiplication facts for numbers up to 10.	**M3NS-IIa-41.3**	• MTB-MLE Group – Teacher's Guide
			25. applies the commutative property of multiplication.	**M3NS-IIb-40.4**	• Lesson Guide in Elem. Math 3 pp.170 – 174 • DLP Gr. 5 Module 3 • MTB-MLE Group – Teacher's Guide
			26. multiplies 2-digit by 1-digit numbers using the distributive property of multiplication.	**M3NS-IIb-40.5**	• DLP Gr. 4 Module 29 • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			27. multiplies three 1-digit numbers using the associative property of multiplication.	**M3NS-IIb-40.6**	• DLP Gr. 4 Module 26, Gr. 5 Module 3 • MTB-MLE Group – Teacher's Guide
			28. multiplies 2- to 3-digit numbers by 1-digit numbers without or with regrouping.	**M3NS-IIc-43.1**	• Lesson Guide in Elem. Math 3 pp.185 – 193 • MTB-MLE Group – Teacher's Guide
			29. multiplies 2-digit numbers by 2-digit numbers without regrouping.	**M3NS-IIc-43.2**	• MTB-MLE Group – Teacher's Guide
			30. multiplies 2-digit number by 2-digit numbers with regrouping.	**M3NS-IIc-43.3**	• MTB-MLE Group – Teacher's Guide
			31. multiplies 2- to 3-digit numbers by multiples of 10 and 100.	**M3NS-IId-43.4**	• Lesson Guide in Elem. Math 3 pp.194 – 203 • MTB-MLE Group – Teacher's Guide
			32. multiplies 1- to 2-digit numbers by 1 000.	**M3NS-IId-43.5**	• MTB-MLE Group – Teacher's Guide
			33. estimates the product of 2- to 3-digit numbers and 1- to 2-digit numbers with reasonable results .	**M3NS-IId-44.1**	• MTB-MLE Group – Teacher's Guide
			34. multiplies mentally 2-digit by 1-digit numbers without regrouping with products of up to 100.	**M3NS-IIe-42.2**	• Lesson Guide in Elem. Math 3 pp.212 – 215 • MTB-MLE Group – Teacher's Guide
			35. solves routine and non-routine problems involving multiplication without or with addition and subtraction of whole numbers including money using appropriate problem solving strategies and tools.	**M3NS-IIe-45.3**	• Lesson Guide in Elem. Math 3 pp.216 – 222 • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			36. creates problems involving multiplication or with addition or subtraction of whole numbers including money.	**M3NS-IIf-46.2**	
			37. visualizes and states the multiples of 1- to 2-digit numbers.	**M3NS-IIf-47**	• MTB-MLE Group – Teacher's Guide
			38. visualizes division of numbers up to 100 by 6,7,8,and 9 (multiplication table of 6, 7, 8, and 9).	**M3NS-IIg-51.2**	• BEAM LG Gr.2 Module 11 – Division • MTB-MLE Group – Teacher's Guide
			39. visualizes and states basic division facts of numbers up to 10.	**M3NS-IIg-51.3**	• BEAM LG Gr.2 Module 11 – Division • MTB-MLE Group – Teacher's Guide
			40. divides 2- to 3-digit numbers by 1- to 2- digit numbers without and with remainder.	**M3NS-IIh-54.1**	• Lesson Guide in Elem. Math 3 pp.229 – 236 • DLP Gr. 3 Module 29 • MTB-MLE Group – Teacher's Guide
			41. divides 2-3 digit numbers by 10 and 100 without or with remainder.	**M3NS-IIh-54.2**	• Lesson Guide in Elem. Math 3 pp.270 – 275 • BEAM LG Gr.3 Module – Application of Division • DLP Gr. 3 Module 32 • MTB-MLE Group – Teacher's Guide
			42. estimates the quotient of 2- to 3- digit numbers by 1- to 2- digit numbers.	**M3NS-IIi-55.1**	• MTB-MLE Group – Teacher's Guide
			43. divides mentally 2-digit numbers by 1-digit numbers without remainder using appropriate strategies.	**M3NS-IIi-52.2**	• Lesson Guide in Elem. Math 3 pp.276 – 280 • DLP Gr. 3 Module 39 • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			44. solves routine and non-routine problems involving division of 2- to 4-digit numbers by 1- to 2-digit numbers without or with any of the other operations of whole numbers including money using appropriate problem solving strategies and tools.	**M3NS-IIj-56.2**	• Lesson Guide in Elem. Math 3 pp.281 – 292 • BEAM LG Gr.2 Module 11 – Division, Gr.3 Module – Application of Division • MTB-MLE Group – Teacher's Guide
			45. creates problems involving division or with any of the other operations of whole numbers including money.	**M3NS-IIj-57.2**	
Grade 3- THIRD QUARTER					
Numbers and Number Sense	demonstrates understanding of proper and improper, similar and dissimilar and equivalent fractions.	is able to recognize and represent proper and improper, similar and dissimilar and equivalent fractions in various forms and contexts.	46. identifies odd and even numbers.	**M3NS-IIIa-63**	• Lesson Guide in Elem. Math 3 pp.44 – 48, Gr. 5 p. 27 • DLP Gr. 3 Module 7 • BEAM LG Gr.3 Module 1.2 • MTB-MLE Group – Teacher's Guide
			47. visualizes and represents fractions that are equal to one and greater than one.	**M3NS-IIIa-72.4**	• Lesson Guide in Elem. Math 3 pp.305 – 311 • DLP Gr. 3 Module 37 • MTB-MLE Group – Teacher's Guide
			48. reads and writes fractions that are equal to one and greater than one in symbols and in words.	**M3NS-IIIb-76.3**	• BEAM LG Gr.3 Module 1- Identify and Order Fractions • MTB-MLE Group – Teacher's Guide
			49. represents fractions using regions, sets, and the number line.	**M3NS-IIIb-72.5**	• Lesson Guide in Elem. Math 4 p.188 • BEAM LG Gr.6 Module 22
			50. visualizes and represents dissimilar fractions.	**M3NS-IIIc-72.6**	• DLP Gr. 4 Module 58, 59 • Lesson Guide in Elem. Math 4 p.197 • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			51. visualizes, represents, and compares dissimilar fractions.	**M3NS-IIId-77.3**	• MISOSA Module Gr.6 – Comparing Fractions • MTB-MLE Group – Teacher's Guide
			52. visualizes, represents, and arranges dissimilar fractions in increasing or decreasing order.	**M3NS-IIId-78.3**	• BEAM LG Gr.5 Module 2, Gr.6 Module 29 • MISOSA Gr. 5 Module – Ordering Dissimilar Fractions • MTB-MLE Group – Teacher's Guide
			53. visualizes and generates equivalent fractions.	**M3NS-IIIe-72.7**	• Lesson Guide in Elem. Math 5 p.63 • BEAM LG Gr.5 Module 2 • MISOSA Gr. 5 and 6 Modules – Equal/Equivalent Fractions • MTB-MLE Group – Teacher's Guide
Geometry	demonstrates understanding of lines, symmetrical designs, and tessellation using square, triangle and other shapes that can tessellate.	is able to recognize and represent lines in real objects and designs or drawings, complete symmetrical designs, and create patterns of designs using square, triangle and other shapes that can tessellate.	54. recognizes and draws a point, line, line segment and ray.	**M3GE-IIIe-11**	• MTB-MLE Group – Teacher's Guide
			55. recognizes and draws parallel, intersecting and perpendicular lines.	**M3GE-IIIf-12.1**	• Lesson Guide in Elem. Math 3 pp.330 – 337 • DLP Gr. 3 Module 42 • BEAM LG Gr.3 Module 7 – Line and Line Segment • MTB-MLE Group – Teacher's Guide
			56. visualizes, identifies and draws congruent line segments.	**M3GE-IIIf-13**	• Lesson Guide in Elem. Math 3 pp.338 – 344 • DLP Gr. 3 Module 43 • BEAM LG Gr.3 Module 7 – Line and Line Segment • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			57. identifies and visualizes symmetry in the environment and in design.	**M3GE-IIIg-7.3**	• DLP Gr. 3 Module 44 • BEAM LG Gr.3 Module 7 – Line and Line Segment • MTB-MLE Group – Teacher's Guide
			58. identifies and draws the line of symmetry in a given symmetrical figure.	**M3GE-IIIg-7.4**	• MTB-MLE Group – Teacher's Guide
			59. completes a symmetric figure with respect to a given line of symmetry.	**M3GE-IIIh-7.5**	• Lesson Guide in Elem. Math 3 pp.357 – 362 • BEAM LG Gr.3 Module 7 – Line and Line Segment • MTB-MLE Group – Teacher's Guide
			60. tessellates the plane using triangles, squares and other shapes that can tessellate.	**M3GE-IIIh-8.3**	• Lesson Guide in Elem. Math 3 pp.345 – 356 • MTB-MLE Group – Teacher's Guide
Patterns and Algebra	demonstrates understanding of continuous and repeating patterns and mathematical sentences involving multiplication and division of whole numbers.	is able to apply knowledge of continuous and repeating patterns and number sentences involving multiplication or division of whole numbers in various situations.	61. determines the **missing term/s** in a given combination of **continuous and repeating pattern.** e.g. 4A,5B, 6A,7B,___ 1 ②③④ ___	**M3AL-IIIi-4**	• MTB-MLE Group – Teacher's Guide
			62. finds the missing value in a number sentence involving multiplication or division of whole numbers. e.g. n x 7 = 56 56 ÷ n = 8	**M3AL-IIIj-12**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 3- FOURTH QUARTER					
Measurement	demonstrates understanding of conversion of time, linear, mass and capacity measures and area of square and rectangle	is able to apply knowledge of conversion of time, linear, mass and capacity measures and area of rectangle and square in mathematical problems and real-life situations	63. visualizes, and represents, and converts time measure from seconds to minutes, minutes to hours, and hours to a day and vice versa.	**M3ME-IVa-8**	• Lesson Guide in Elem. Math 3 pp.368 – 372 • MTB-MLE Group – Teacher's Guide
			64. visualizes, and represents, and converts time measure 64.1 days to week, month and year and vice versa 64.2 weeks to months and year and vice versa 64.3 months to year and vice versa.	**M3ME-IVa-9**	• Lesson Guide in Elem. Math 3 pp.363 – 367 • BEAM LG Gr.2 Module 9-Time Measure, Gr. 3 Module 8 • MTB-MLE Group – Teacher's Guide
			65. visualizes, and represents, and solves problems involving conversion of time measure.	**M3ME-IVb-10**	• Lesson Guide in Elem. Math 3 pp.376 – 379 • BEAM LG Gr.3 Module 8 • MTB-MLE Group – Teacher's Guide
			66. visualizes, and represents, and converts common units of measure from larger to smaller unit and vice versa: meter and centimeter, kilogram and gram, liter and milliliter.	**M3ME-IVb-39**	• DLP Gr. 3 Module 45 • BEAM LG Gr.3 Module 1 • MTB-MLE Group – Teacher's Guide
			67. visualizes, and represents, and solves routine and non-routine problems involving conversions of common units of measure.	**M3ME-IVc-40**	• BEAM LG Gr.3 Module 2 – Capacity •
			68. visualizes, and represents, and finds the capacity of a container using milliliter and liter.	**M3ME-IVc-41**	• Lesson Guide in Elem. Math 3 pp.406 – 409 • BEAM LG Gr.2 Module 18 – Mass and Capacity, Gr.3 Module 1-Capacity • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			69. visualizes, and represents, and solves routine and non-routine problems involving capacity measure.	**M3ME-IVd-42**	• Lesson Guide in Elem. Math 3 pp.413 – 416 • MTB-MLE Group – Teacher's Guide •
			70. visualizes, and represents, and measures area using appropriate unit.	**M3ME-IVd-43**	• MTB-MLE Group – Teacher's Guide
			71. derives the formula for the area of a rectangle and a square.	**M3ME-IVe-44**	• Lesson Guide in Elem. Math 3 pp.388 - 397
			72. visualizes, and represents, and finds the area of a rectangle and square in sq.cm and sq. m.	**M3ME-IVe-45**	• BEAM LG Gr.3 Module 9 – Area • MTB-MLE Group – Teacher's Guide
			73. solves routine and non-routine problems involving areas of squares and rectangles.	**M3ME-IVf-46**	• Lesson Guide in Elem. Math 3 pp.398 – 405 • BEAM LG Gr.3 Module 9 – Area • MTB-MLE Group – Teacher's Guide
			74. creates problems involving area of rectangle and square.	**M3ME-IVf-47**	
Statistics and Probability	demonstrates understanding of bar graphs and outcomes of an event using the terms sure, likely, equally likely, unlikely, and impossible to happen.	is able to create and interpret simple representations of data (tables and single bar graphs) and describe outcomes of familiar events using the terms sure, likely, equally likely, unlikely, and impossible to happen.	75. collects data on one **variable** using existing records.	**M3SP-IVg-1.3**	• MTB-MLE Group – Teacher's Guide
			76. sorts, classifies, and organizes data in tabular form and presents this into a **vertical or horizontal bar graph.**	**M3SP-IVg-2.3**	• Lesson Guide in Elem. Math 3 pp.430 – 433 • BEAM LG Gr.4 Module 15 – Bar Graphs • MTB-MLE Group – Teacher's Guide
			77. infers and interprets data presented in different kinds of bar graphs (vertical/ horizontal).	**M3SP-IVh-3.3**	• Lesson Guide in Elem. Math 3 p.426 • DLP Gr. 4 Module 88, 89 • BEAM LG Gr.4 Module 15 – Bar Graphs • MTB-MLE Group – Teacher's Guide

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			78. solves routine and non-routine problems using data presented in a single-bar graph.	**M3SP-IVh-4.3**	
			79. tells whether an event is sure, likely, equally likely, unlikely, and impossible to happen.	**M3SP-IVi-7.3**	• MTB-MLE Group – Teacher's Guide
			80. describes events in real-life situations using the phrases "sure to happen," likely to happen", "equally likely to happen", "unlikely to happen", and "impossible to happen".	**M3SP-IVj-8.3**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 4- FIRST QUARTER					
Numbers and Number Sense	1. demonstrates understanding of whole numbers up to 100,000. 2. demonstrates understanding of multiplication and division of whole numbers including money.	1. is able to recognize and represent whole numbers up to 100,000 in various forms and contexts. 2. is able to apply multiplication and division of whole numbers including money in mathematical problems and real-life situations.	1. visualizes numbers up to 100 000 with emphasis on numbers 10 001 – 100 000.	**M4NS-Ia-1.4**	• BEAM LG Gr.3 Module 1.1 – Whole Numbers
			2. gives the place value and value of a digit in numbers up to 100 000.	**M4NS-Ia-10.4**	
			3. reads and writes numbers up to hundred thousand in symbols and in words.	**M4NS-Ia-9.4**	• BEAM LG Gr.3 Module 1.1 – Whole Numbers
			4. rounds numbers to the nearest thousand and ten thousand.	**M4NS-Ib-5.2**	• BEAM LG Gr.3 Module 1.1 – Whole Numbers • DLP Gr. 4 Module 6
			5. compares numbers up to 100 000 using relation symbols.	**M4NS-Ib-12.4**	
			6. orders numbers up to 100 000 in increasing or decreasing order.	**M4NS-Ib-13.4**	
			7. multiplies numbers up to 3-digit numbers by up to 2-digit numbers without or with regrouping.	**M4NS-Ic-43.7**	• BEAM LG Gr.3 Module 1- Multiplication • DLP Gr. 3 Module 20, 22, Gr. 5 Module 6
			8. estimates the products of 3- to 4-digit numbers by 2- to 3- digit numbers with reasonable results.	**M4NS-Ic-44.2**	• BEAM LG Gr.3 Module 1- Multiplication • DLP Gr. 3 Module 21
			9. multiplies mentally 2-digit by 1-to 2-digit numbers with products up to 200 and explains the strategies used.	**M4NS-Id-42.3**	• BEAM LG Gr.3 Module 1- Multiplication, Gr. 4 – Module 4 – Multiplication • DLP Gr. 4 Module 31
			10. solves routine and non-routine problems involving multiplication of whole numbers including money using appropriate problem solving strategies and tools.	**M4NS-Id-45.4**	• BEAM LG Gr.3 Module 1- Multiplication & Module on Problem Solving, Gr. 4 Module 4 – Multiplication • DLP Gr. 4 Module 34

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			11. solves multi-step routine and non-routine problems involving multiplication and addition or subtraction using appropriate problem solving strategies and tools.	**M4NS-Ie-45.5**	• BEAM LG Gr.4 Module 4-Multiplication • DLP Gr. 4 Module 35
			12. creates problems(with reasonable answers) involving multiplication or with addition or subtraction of whole numbers including money.	**M4NS-Ie-46.3**	
			13. divides 3- to 4-digit numbers by 1-to 2-digit numbers without and with remainder.	**M4NS-If-54.3**	• BEAM LG Gr.3 Module on Division • DLP Gr. 3 Module 26, 27, 30, 33, 34, Gr. 4 Module 41, Gr. 5 Module 7
			14. divides 3- to 4-digit numbers by tens or hundreds or by 1 000 without and with remainder.	**M4NS-If-54.4**	• MISOSA Module Gr. 4 – Division of Whole Numbers by 10, 100 and 1000
			15. estimates the quotient of 3- to 4-digit dividends by 1- to 2-digit divisors with reasonable results.	**M4NS-Ig-55.2**	• MISOSA Module Gr.4 – Estimating Quotients
			16. divides mentally 2- to 3-digit numbers by 1-digit numbers without remainder using appropriate strategies.	**M4NS-Ig-52.3**	• BEAM LG Gr.3 Module on Division, Gr. 4 Module 5 - Division
			17. solves routine and non-routine problems involving division of 3- to 4-digit numbers by 1- to 2-digit numbers including money using appropriate problem solving strategies and tools.	**M4NS-Ih-56.3**	• BEAM LG Gr.3 Module on Division, Gr. 4 Module 5 – Division • MISOSA Module Gr. 4 – One-Step Word Problems involving Division
			18. solves multi-step routine and non-routine problems involving division and any of the other operations of whole numbers including money using appropriate problem solving strategies and tools.	**M4NS-Ih-56.4**	•BEAM LG Gr. 4 Module 5 – Division • DLP Gr. 6 Module 3 • MISOSA Module Gr. 4 – Two- to Three-Step Word Problems involving Division

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			19. creates problems involving division without or with any other operations of whole numbers including money, with reasonable answers	**M4NS-Ii-57.3**	
			20. represents and explains Multiplication, Division, Addition, Subtraction (MDAS) correctly.	**M4NS-Ii-61.1**	
			21. performs a series of two or more operations.	**M4NS-Ij-62.1**	
Grade 4- SECOND QUARTER					
Numbers and Number Sense	1. demonstrates understanding of factors and multiples and addition and subtraction of fractions. 2. demonstrates understanding of improper fractions and mixed numbers	1. is able to apply knowledge of factors and multiples, and addition and subtraction of fractions in mathematical problems and real-life situations. 2. is able to recognize and represent improper fractions and mixed numbers in various forms and contexts.	22. identifies factors of a given number up to 100.	**M4NS-IIa-64**	
			23. identifies the multiples of a given number up to 100.	**M4NS-IIa-65**	
			24. differentiates prime from composite numbers.	**M4NS-IIb-66**	• BEAM LG Gr.5 Module 1 – Subsets of Whole Numbers, Gr. 6 Number Theory • Lesson Guide in Elem. Math Gr. 5 p. 30 MISOSA Gr. 5 Module –Prime and Composite Numbers
			25. writes a given number as a product of its prime factors.	**M4NS-IIb-67**	• BEAM LG Gr.5 Module 1 – Subsets of Whole Numbers • DLP Gr. 5 Module 10 • MISOSA Gr. 5 Module – Prime Factors of a Number
			26. finds the common factors and the greatest common factor (GCF) of two numbers using the following methods: listing, prime factorization, and continuous division.	**M4NS-IIc-68.1**	• BEAM LG Gr.5 Module 1 – Subsets of Whole Numbers • Lesson Guide in Elem. Math Gr. 5 p.33

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			27. finds the common multiples and least common multiple (LCM) of two numbers using the following methods: listing, prime factorization, and continuous division.	**M4NS-IIc-69.1**	• Lesson Guide in Elem. Math Gr. 5 p.44 • MISOSA Gr. 5 Module – Least Common Multiple
			28. solves real-life problems involving GCF and LCM of 2 given numbers .	**M4NS-IId-70.1**	
			29. creates problems with reasonable answers involving GCF and LCM of 2 given numbers.	**M4NS-IId-71.1**	
			30. identifies proper fractions, improper fractions, and mixed numbers.	**M4NS-IIe-79.2**	• BEAM LG Gr.4 Module 8 – Fractions • DLP Gr. 4 Module 57 • Lesson Guide in Elem. Math Gr. 4 p.192
			31. changes improper fraction to mixed numbers and vice versa.	**M4NS-IIe-80**	• BEAM LG Gr.4 Module 8 – Fractions • DLP Gr. 4 Module 61, Gr. 6 Module 26 • Lesson Guide in Elem. Math Gr. 4 p.209, Gr. 6 p. 170 • MISOSA Module Gr. 4 – Improper to Mixed Numbers
			32. changes fractions to lowest forms.	**M4NS-IIe-81**	• BEAM LG Gr.3 Module 2 – Fractions; Gr. 6 Module 7 • Lesson Guide in Elem. Math Gr. 6 p.166
			33. visualizes addition and subtraction of similar fractions.	**M4NS-IIf-82.1**	• BEAM LG Gr.4 Module 9 – Addition and Subtraction of Fractions • Lesson Guide in Elem. Math Gr. 4 p. 209, Gr. 5 p.124

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			34. visualizes subtraction of a fraction from a whole number.	**M4NS-IIf-82.2**	• BEAM LG Gr.4 Module 9 – Addition and Subtraction of Fractions
			35. visualizes addition and subtraction of dissimilar fractions.	**M4NS-IIg-82.3**	• BEAM LG Gr.5 Module 3 – Addition of Fractions • Lesson Guide in Elem. Math Gr. 5 p. 83, 124 • MISOSA Gr. 5 Module – Visualization of Dissimilar Fractions
			36. performs addition and subtraction of similar and dissimilar fractions.	**M4NS-IIg-83**	• BEAM LG Gr.4 Module 9 – Addition and Subtraction of Fractions • DLP Gr. 4 Module 63, 64, 65, 66, Gr. 5 Module 14, 15, 18, 20, 21 • Lesson Guide in Elem. Math Gr. 4 217, 235, Gr. 5 p.79, 90, 94, 128 – 136 • MISOSA Module Gr.4 – Addition of Similar Fractions, Fractions and Whole Numbers, Subtraction of Similar Fractions • MISOSA Module Gr.5 – Addition of Dissimilar Fractions • MISOSA Module Gr.6 – Subtraction of Dissimilar Fractions in Simple Forms

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			37. solves routine and non-routine problems involving addition and/or subtraction of fractions using appropriate problem solving strategies and tools.	M4NS-IIh-87.1	• BEAM LG Gr.4 Module 9 – Addition and Subtraction of Fractions, Grade 5 Module 4 • DLP Gr. 4 Module 67, 68, Gr. 5 Module 17 • Lesson Guide in Elem. Math Gr. 4 p. 242, 246
			38. creates problems(with reasonable answers) involving addition and/or subtraction of fractions.	M4NS-IIh-88.1	
			39. visualizes decimal numbers using models like blocks, grids, number lines and money to show the relationship to fractions.	M4NS-IIi-99	• BEAM LG Gr.4 Module 7 – Decimals • DLP Gr. 6 Module 4
			40. renames decimal numbers to fractions, and fractions whose denominators are factors of 10 and 100 to decimals.	M4NS-IIi-100	• BEAM LG Gr.4 Module 7 – Decimals; Gr. 4 Module 8 – Fractions • DLP Gr. 4 Module 44, Gr. 6 Module 23 • Lesson Guide in Elem. Math Gr. 5 p.231, Gr. 6 p. 159 • MISOSA Module Gr. 4 – Common Fractions as Decimals • MISOSA Module Gr.5 – Renaming Fractions in Decimal Form
			41. gives the place value and the value of a digit of a given decimal number through hundredths.	M4NS-IIi-101.1	• BEAM LG Gr.4 Module 7 – Decimals • MISOSA Module Gr. 4 – Place Value of Decimals

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			42. reads and writes decimal numbers through hundredths.	**M4NS-IIj-102.1**	• BEAM LG Gr.4 Module 7 – Decimals • DLP Gr. 4 Module 45
			43. rounds decimal numbers to the nearest whole number and tenth.	**M4NS-IIj-103.1**	• BEAM LG Gr.4 Module 7 - Decimals
			44. compares and arranges decimal numbers.	**M4NS-IIj-104.1**	
Grade 4- THIRD QUARTER					
Geometry	demonstrates understanding of the concepts of parallel and perpendicular lines, angles, triangles, and quadrilaterals.	is able to construct and describe parallel and perpendicular lines, angles, triangles, and quadrilaterals in designs, drawings and models.	45. describes and illustrates parallel, intersecting, and perpendicular lines.	**M4GE-IIIa-12.2**	
			46. draws perpendicular and parallel lines using a ruler and a set square.	**M4GE-IIIa-12.3**	
			47. describes and illustrates different angles (right, acute, and obtuse) using models.	**M4GE-IIIb-14**	• BEAM LG Gr.4 Module 11 – Angles and Plane Figures • DLP Gr. 4 Module 76, 77, 78, 79 • Lesson Guide in Elem. Math Gr. 4 p.287, 290, 293 • MISOSA Module Gr. 4 – Congruent Angles
			48. describes the attributes/properties of triangles and quadrilaterals using concrete objects or models.	**M4GE-IIIb-15**	• BEAM LG Gr.4 Module 11 – Angles and Plane Figures • DLP Gr. 4 Module 81
			49. identifies and describes triangles according to sides and angles.	**M4GE-IIIc-16**	• BEAM LG Gr.4 Module 11 – Angles and Plane Figures • DLP Gr. 3 Module 41, Gr. 4 Module 73 • Lesson Guide in Elem. Math Gr. 4 p.298
			50. identifies and describes the different kinds of quadrilaterals: square, rectangle, parallelogram, trapezoid, and rhombus.	**M4GE-IIIc-17**	• BEAM LG Gr.4 Module 11 – Angles and Plane Figures

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			51. relates triangles to quadrilaterals	**M4GE-IIId-18.1**	
			52. relates one quadrilateral to another quadrilateral (e.g. square to rhombus).	**M4GE-IIId-18.2**	
Patterns and Algebra	demonstrates understanding of concepts of continuous and repeating patterns and number sentences.	is able to identify the missing element in a pattern and number sentence.	53. determines the missing term/s in a sequence of numbers (e.g. odd numbers, even numbers, multiples of a number, factors of a number, etc.) e.g. 3,6,9,__ 4,8,12,16,__ (e.g. odd numbers, even numbers, multiples of a number, factors of a number, etc.) 1●△■Ⓒ▲□7 ____	**M4AL-IIIe-5**	
			54. finds the missing number in an equation involving properties of operations. (e.g. $(4+\_\_) + 8 = 4 + (5+\_\_)$	**M4AL-IIIe-13**	
Measurement	demonstrates understanding of the concept of time, perimeter, area, and volume.	is able to apply the concepts of time, perimeter, area, and volume to mathematical problems and real-life situations.	55. finds the elapsed time in minutes and seconds.	**M4ME-IIIf-11**	
			56. estimates the duration of time in minutes.	**M4ME-IIIf-12**	
			57. solves problems involving elapsed time.	**M4ME-IIIg-13**	
			58. visualizes the perimeter of any given plane figure in different situations.	**M4ME-IIIg-48**	
			59. measures the perimeter of any given figure using appropriate tools.	**M4ME-IIIh-49**	• DLP Gr. 4 Module 84
			60. derives the formula for perimeter of any given figure.	**M4ME-IIIh-50**	• BEAM LG Gr.4 Module 18 – Perimeter

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			61. finds the perimeter of triangles, squares, rectangles, parallelograms, and trapezoids.	**M4ME-IIIi-51**	• BEAM LG Gr.4 Module 18 – Perimeter • DLP Gr. 4 Module 82, 83, 86 • Lesson Guide in Elem. Math Gr. 4 p.302, 305
			62. solves routine and non-routine problems in real-life situations involving perimeter of squares and rectangles, triangles, parallelograms, and trapezoids.	**M4ME-IIIi-52**	• BEAM LG Gr.4 Module 18 – Perimeter • Lesson Guide in Elem. Math Gr. 4 p.309
			63. differentiates perimeter from area.	**M4ME-IIIj-53**	
			64. converts sq. cm to sq. m and vice versa.	**M4ME-IIIj-54**	
Grade 4- FOURTH QUARTER					
			65. finds the area of irregular figures made up of squares and rectangles using sq. cm and sq. m.	**M4ME-IVa-55**	
			66. estimates the area of irregular plane figures made up of squares and rectangles.	**M4ME-IVa-56**	
			67. derives the formulas for the area of triangles, parallelograms, and trapezoids.	**M4ME-IVb-57**	• BEAM LG Gr.4 Module 13 – Area • DLP Gr. 4 Module 85 • Lesson Guide in Elem. Math Gr. 4 p.315, 317, 321, 325
			68. finds the area of triangles, parallelograms and trapezoids using sq. cm and sq. m.	**M4ME-IVb-58**	• BEAM LG Gr.4 Module 13 – Area, Gr. 5 Module 14 – Area • DLP Gr. 4 Module 48, Gr. 5 Module 47, 50 • Lesson Guide in Elem. Math Gr. 5 p.372, 377, Gr. 6 p. 373, 378 • MISOSA Module Gr.5 –

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
					Area of a Trapezoid
			69. estimates the area of triangles, parallelograms, and trapezoids	**M4ME-IVc-59**	
			70. solves routine and non-routine problems involving squares, rectangles, triangles, parallelograms, and trapezoids.	**M4ME-IVc-60**	• BEAM LG Gr.4 Module 13 – Area • Lesson Guide in Elem. Math Gr. 5 p.386
			71. creates problems(with reasonable answers) involving perimeter and area involving squares, rectangles, triangles, parallelograms, and trapezoids.	**M4ME-IVd-61**	
			72. visualizes the volume of solid figures in different situations using non-standard (e.g. marbles, etc.) and standard units.	**M4ME-IVd-62**	• BEAM LG Gr.4 Module 14 – Volume • DLP Gr. 4 Module 87 • Lesson Guide in Elem. Math Gr. 5 p.328
			73. derives the formula for the volume of rectangular prisms.	**M4ME-IVe-63**	
			74. finds the volume of a rectangular prism using cu. cm and cu. m.	**M4ME-IVe-64**	• Lesson Guide in Elem. Math Gr. 6 p.391
			75. solves routine and non-routine problems involving the volume of a rectangular prism.	**M4ME-IVf-65**	
			76. creates problems(with reasonable answers) involving volume of rectangular prism.	**M4ME-IVf-66**	
Statistics and Probability	demonstrates understanding of the concepts of bar graphs and simple experiments.	is able to create and interpret simple representations of data (tables and bar graphs) and describe outcomes in simple experiments.	77. collects data on two variables using any source.	**M4SP-IVg-1.4**	
			78. organizes data in tabular form and presents them in a single/double horizontal or vertical bar graph.	**M4SP-IVg-2.4**	• Lesson Guide in Elem. Math Gr. 4 p.331, 337
			79. interprets data presented in different kinds of bar graphs (vertical/horizontal, single/double bars).	**M4SP-IVg-3.4**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			80. solves routine and non-routine problems using data presented in a single or double-bar graph.	**M4SP-IVh-4.4**	
			81. draws inferences based on data presented in a double-bar graph.	**M4SP-IVh-5.4**	
			82. records favorable outcomes in a simple experiment (e.g. tossing a coin, spinning a wheel, etc.)	**M4SP-IVi-9**	
			83. expresses the outcome in a simple experiment in words, symbols, tables, or graphs.	**M4SP-IVi-10**	
			84. explains the outcomes in an experiment.	**M4SP-IVi-11**	
			85. solves routine and non-routine problems involving a simple experiment.	**M4SP-IVj-12**	
			86. creates problems involving a simple experiment.	**M4SP-IVj-13**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 5- FIRST QUARTER					
Numbers and Number Sense	1. demonstrates understanding of whole numbers up to 10 000 000. 2. demonstrates understanding of divisibility, order of operations, factors and multiples, and the four fundamental operations involving fractions	1. is able to recognize and represent whole numbers up to 10 000 000 in various forms and contexts. 2. is able to apply divisibility, order of operations, factors and multiples, and the four fundamental operations involving fractions in mathematical problems and real-life situations.	1. visualizes numbers up to 10 000 000 with emphasis on numbers 100 001 – 10 000 000.	**M5NS-Ia-1.5**	• DLP Gr. 3 Module 1, Gr. 4 Module 1 • BEAM LG Gr. 4 Module 1-Whole Numbers • Lesson Guide in Elem. Math Gr. 4 p. 1 • MISOSA Gr. 4 Module – Numbers through Billions
			2. reads and writes numbers up to 10 000 000 in symbols and in words.	**M5NS-Ia-9.5**	• DLP Gr. 3 Module 3, Gr. 4 Module 3 • BEAM LG Gr. 4 Module 1-Whole Numbers, Gr. 5 Module 1 • Lesson Guide in Elem. Math Gr. 4 p. 7, Gr. 5 p. 1
			3. rounds numbers to the nearest hundred thousand and million.	**M5NS-Ia-15.3**	• DLP Gr. 3 Module 6, Gr. 5 Module 4 • BEAM LG Gr. 4 Module – Rounding Off Numbers • Lesson Guide in Elem. Math Gr. 4 p. 13 • MISOSA Gr. 4 Module – Rounding Numbers
			4. uses divisibility rules for 2, 5, and 10 to find the common factors of numbers.	**M5NS-Ib-58.1**	• DLP Gr. 4 Module 4, Gr. 5 Module 1, 12 • Lesson Guide in Elem. Math Gr. 5 p.48
			5. uses divisibility rules for 3, 6, and 9 to find common factors.	**M5NS-Ib-58.2**	• DLP Gr. 5 Module 1, 12 • Lesson Guide in Elem. Math Gr. 5 p.51, 57
			6. uses divisibility rules for 4, 8, 12, and 11 to find common factors.	**M5NS-Ib-58.3**	• DLP Gr. 5 Module 1, 12

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			7. solves routine and non-routine problems involving factors, multiples, and divisibility rules for 2,3,4,5,6,8,9,10,11, and 12.	**M5NS-Ic-59**	• Lesson Guide in Elem. Math Gr. 5 p.57
			8. creates problems(with reasonable answers) involving factors, multiples and divisibility rules.	**M5NS-Ic-60**	
			9. states, explains, and interprets Parenthesis, Multiplication, Division, Addition, Subtraction (PMDAS) or Grouping, Multiplication, Division, Addition, Subtraction (GMDAS) rule.	**M5NS-Ic-61.2**	
			10. simplifies a series of operations on whole numbers involving more than two operations using the PMDAS or GMDAS rule.	**M5NS-Id-62.2**	
			11. finds the common factors and the GCF of 2–4 numbers using continuous division.	**M5NS-Id-68.2**	• DLP Gr. 5 Module 9 • BEAM LG Gr. 6 – Number Theory • Lesson Guide in Elem. Math Gr. 5 p.33, Gr. 6 p. 148
			12. finds the common multiples and LCM of 2–4 numbers using continuous division.	**M5NS-Id-69.2**	• DLP Gr. 5 Module 11 • BEAM LG Gr. 6 – Number Theory • Lesson Guide in Elem. Math Gr. 5 p.44, Gr. 6 p. 151
			13. solves real-life problems involving GCF and LCM of 2-3 given numbers.	**M5NS-Ie-70.2**	
			14. creates problems(with reasonable answers)involving GCF and LCM of 2-3 given numbers.	**M5NS-Ie-71.2**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			15. adds fractions and mixed fractions without and with regrouping.	**M5NS-Ie-84**	• DLP Gr. 5 Module 16, 22 • Lesson Guide in Elem. Math Gr. 5 p. 99 – 107 • MISOSA Gr. 5 Modules on Addition of Fractions and Mixed Forms
			16. subtracts fractions and mixed fractions without and with regrouping.	**M5NS-If-85**	• BEAM LG Gr. 5 Module 4 – Subtraction of Dissimilar Fractions • Lesson Guide in Elem. Math Gr. 5 p. 140-166 • MISOSA Gr. 5 Modules on Subtraction of Fractions and Mixed Forms
			17. solves routine and non-routine problems involving addition and/or subtraction of fractions using appropriate problem solving strategies and tools.	**M5NS-If-87.2**	• BEAM LG Gr. 5 Module 7 – Application of Subtraction of Fraction • Lesson Guide in Elem. Math Gr. 5 p. 119, 172,176 • MISOSA Gr. 5 Modules on Addition and Subtraction of Word problems involving Fractions
			18. creates problems (with reasonable answers) involving addition and/or subtraction of fractions using appropriate problem solving strategies.	**M5NS-If-88.2**	
			19. visualizes multiplication of fractions using models.	**M5NS-Ig-89**	• DLP Gr. 4 Module 69 • BEAM LG Gr. 4 Module 10 – Multiplication of Fractions • Lesson Guide in Elem. Math Gr. 4 p. 250, Gr. 5 p.180 • MISOSA Gr. 5 Module – Visualization of Multiplication of Fractions

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			20. multiplies a fraction and a whole number and another fraction.	**M5NS-Ig-90.1**	• DLP Gr. 4 Module 70, Gr. 5 Module 25 • BEAM LG Gr. 4 Module 10 – Multiplication of Fractions • Lesson Guide in Elem. Math Gr. 4 p. 254, 261, Gr. 5 p.187, 196, 200 • MISOSA Gr. 5 Modules – Multiplication of Fractions
			21. multiplies mentally proper fractions with denominators up to 10.	**M5NS-Ig-91**	
			22. solves routine or non-routine problems involving multiplication without or with addition or subtraction of fractions and whole numbers using appropriate problem solving strategies and tools.	**M5NS-Ih-92.1**	• DLP Gr. 4 Module 71 • BEAM LG Gr. 4 Module 10 – Multiplication of Fractions • Lesson Guide in Elem. Math Gr. 4 p.264, 269 • MISOSA Gr. 5 Modules – Word problems on Multiplication of Fractions
			23. creates problems (with reasonable answers) involving multiplication of fractions.	**M5NS-Ih-93.1**	
			24. shows that multiplying a fraction by its reciprocal is equal to 1.	**M5NS-Ih-94**	
			25. visualizes division of fractions.	**M5NS-Ii-95**	
			26. divides - simple fractions - whole numbers by a fraction and vice versa	**M5NS-Ii-96.1**	• DLP Gr. 6 Module 38 • MISOSA Modules Gr.6 – Division of Fractions
			27. solves routine or non-routine problems involving division without or with any of the other operations of fractions and whole numbers using appropriate problem solving strategies and tools .	**M5NS-Ij-97.1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			28. creates problems (with reasonable answers) involving division or with any of the other operations of fractions and whole numbers.	**M5NS-Ij-98.1**	
Grade 5- SECOND QUARTER					
Numbers and Number Sense	1. demonstrates understanding of decimals. 2. demonstrates understanding of the four fundamental operations involving decimals and ratio and proportion.	1. is able to recognize and represent decimals in various forms and contexts. 2. is able to apply the four fundamental operations involving decimals and ratio and proportion in mathematical problems and real-life situations.	29. gives the place value and the value of a digit of a given decimal number through ten thousandths.	**M5NS-IIa-101.2**	• DLP Gr. 6 Module 5 • Lesson Guide in Elem. Math Gr. 5 p.237, Gr. 6 p. 38 • MISOSA Module Gr.6 – Place Value of Decimals
			30. reads and writes decimal numbers through ten thousandths.	**M5NS-IIa-102.2**	• DLP Gr. 4 Module 47, Grade 5 Module 30, Gr. 6 Module 6 • BEAM LG Gr. 5 Decimals, Gr. 6 Module 2 • Lesson Guide in Elem. Math Gr. 5 p.241, Gr. 6 p.43 • MISOSA Module Gr.6 – Read and Write Decimals
			31. rounds decimal numbers to the nearest hundredth and thousandth.	**M5NS-IIa-103.2**	• DLP Gr. 4 Module 49, Grade 5 Module 31, Gr. 6 Module 8 • BEAM LG Gr. 5 Decimals, Gr. 6 Module 2 • Lesson Guide in Elem. Math Gr. 5 p.247, Gr. 6 p.49 • MISOSA Gr. 5 and 6 Modules –Rounding Decimals

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			32. compares and arranges decimal numbers.	**M5NS-IIb-104.2**	• DLP Gr. 6 Module 7 • BEAM LG Gr. 6 Module 2 • Lesson Guide in Elem. Math Gr. 6 p. 46 • MISOSA Module Gr.6 – Compare and Order Decimals
			33. visualizes addition and subtraction of decimals.	**M5NS-IIb-105**	
			34. adds and subtracts decimal numbers through thousandths without and with regrouping.	**M5NS-IIb-106.1**	• DLP Gr. 4 Module 50, 51, 52, 53, Grade 5 Module 32, 34 • BEAM LG Gr. 4 Module 7 – Addition and Subtraction of Decimals, Gr. 5 Module 7 • Lesson Guide in Elem. Math Gr. 5 p.117, 251, 254, 257, 264 • MISOSA Gr. 4 and Gr. 5 Modules – Addition and Subtraction of Decimals
			35. estimates the sum or difference of decimal numbers with reasonable results.	**M5NS-IIc-107**	• DLP Gr. 6 Module 9
			36. solves routine or non-routine problems involving addition and subtraction of decimal numbers including money using appropriate problem solving strategies and tools.	**M5NS-IIc-108.1**	• DLP Gr. 4 Module 54, 55, 56, Grade 5 Module 35 • BEAM LG Gr. 4 Module 7 – Addition and Subtraction of Decimals, Gr. 5 Module 7 • Lesson Guide in Elem. Math Gr. 5 p.271 • MISOSA Gr. 4 Modules – Word Problems on Addition and Subtraction of Decimals

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			37. creates problems (with reasonable answers) involving addition and/or subtraction of decimal numbers including money.	**M5NS-IIc-109.1**	
			38. visualizes multiplication of decimal numbers using pictorial models.	**M5NS-IId-110**	• Lesson Guide in Elem. Math Gr. 5 p.274
			39. multiplies decimals up to 2 decimal places by 1- to 2-digit whole numbers.	**M5NS-IId-111.1**	• MISOSA Gr. 5 Module – Multiplication of Decimals and Whole Numbers
			40. multiplies decimals with factors up to 2 decimal places.	**M5NS-IId-111.2**	• Lesson Guide in Elem. Math Gr. 5 p.279, 282 • MISOSA Gr. 5 Module – Multiplication of Decimals through Hundredths
			41. estimates the products of decimal numbers with reasonable results.	**M5NS-IIe-112**	• DLP Gr. 6 Module 13 • MISOSA Module Gr.6 – Estimating Quotients of Decimals
			42. solves routine and non-routine problems involving multiplication without or with addition or subtraction of decimals and whole numbers including money using appropriate problem solving strategies and tools.	**M5NS-IIe-113.1**	• MISOSA Gr. 5 Module – Word Problems on Multiplication of Decimals
			43. visualizes division of decimal numbers using pictorial models.	**M5NS-IIf-115**	• Lesson Guide in Elem. Math Gr. 5 p.305
			44. divides decimals with up to 2 decimal places.	**M5NS-IIf-116.1**	• DLP Grade 5 Module 42 • BEAM LG Gr. 5 Module 13 • Lesson Guide in Elem. Math Gr. 5 p.314 • MISOSA Gr. 5 Module – Division of Decimals
			45. divides whole numbers with quotients in decimal form.	**M5NS-IIf-116.2**	• Lesson Guide in Elem. Math Gr. 6 p.109
			46. estimates the quotients of decimal numbers with reasonable results.	**M5NS-IIg-117**	• DLP Gr. 6 Module 18

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			47. solves routine and non-routine problems involving division without or with any of the other operations of decimals and whole numbers including money using appropriate problem solving strategies and tools.	**M5NS-IIg-120.1**	• DLP Grade 5 Module 43 • BEAM LG Gr. 5 Module 13 • MISOSA Gr. 5 Module – Word Problems on Division of Decimals
			48. creates problems (with reasonable answers) involving multiplication and/or division or with any of the other operations of decimals and whole numbers including money.	**M5NS-IIg-121.1**	
			49. visualizes the ratio of 2 given numbers.	**M5NS-IIh-122**	• MISOSA Gr. 5 Module – Visualization of Ratio
			50. expresses ratio using either the colon (:) or fraction.	**M5NS-IIh-123**	• DLP Gr. 6 Module 42 • BEAM LG Gr. 5 Module 9, Gr. 6 Module 11 • Lesson Guide in Elem. Math Gr. 5 p.218 • MISOSA Gr. 5 Module – Expressing Ratio
			51. identifies and writes equivalent ratios.	**M5NS-IIi-124**	• DLP Grade 5 Module 29 • BEAM LG Gr. 5 Module 9 • Lesson Guide in Elem. Math Gr. 5 p.227 • MISOSA Gr. 5 Module – Proportion
			52. expresses ratios in their simplest forms.	**M5NS-IIi-125**	• Lesson Guide in Elem. Math Gr. 5 p.222 • MISOSA Gr. 5 Module – Ratio in its Simplest Form
			53. finds the missing term in a pair of equivalent ratios.	**M5NS-IIi-126**	• DLP Gr. 6 Module 43
			54. defines and describes a proportion.	**M5NS-IIj-127**	
			55. recognizes when two quantities are in direct proportion.	**M5NS-IIj-128**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 5- THIRD QUARTER					
	demonstrates understanding of percent.	is able to apply percent in mathematical problems and real-life situations	56. visualizes percent and its relationship to fractions, ratios, and decimal numbers using models.	**M5NS-IIIa-136**	• DLP Gr. 5 Module 44 • BEAM LG Gr. 5 Module 14 • Lesson Guide in Elem. Math Gr. 5 p.321, 325, 330, 334 • MISOSA Gr. 5 Modules– Percent, Fraction, Ratio and Decimal
			57. defines percentage, rate or percent, and base.	**M5NS-IIIa-137**	• DLP Gr. 6 Module 45 • BEAM LG Gr. 6 Module 17 • Lesson Guide in Elem. Math Gr. 6 p.311
			58. identifies the base, percentage, and rate in a problem.	**M5NS-IIIa-138**	• DLP Gr. 6 Module 45 • Lesson Guide in Elem. Math Gr. 5 p.339
			59. finds the percentage in a given problem.	**M5NS-IIIb-139**	• DLP Gr. 6 Module 46 • BEAM LG Gr. 6 Module 17 • Lesson Guide in Elem. Math Gr. 5 p.345
			60. solves routine and non-routine problems involving percentage using appropriate strategies and tools.	**M5NS-IIIb-140**	• BEAM LG Gr. 6 Module 17
			61. creates problems involving percentage, with reasonable answers.	**M5NS-IIIb-141**	
Geometry	demonstrates understanding of polygons, circles, and solid figures.	is able to construct and describe polygons, circles, and solid figures .	62. visualizes, names, and describes polygons with 5 or more sides.	**M5GE-IIIc-19**	• DLP Gr. 4 Module 72 • Lesson Guide in Elem. Math Gr. 5 p.350, 354
			63. describes and compares properties of polygons (regular and irregular polygons).	**M5GE-IIIc-20**	
			64. draws polygons with 5 or more sides.	**M5GE-IIIc-21**	• DLP Gr. 5 Module 46 • BEAM LG Gr. 5 Geometry
			65. visualizes congruent polygons.	**M5GE-IIId-22**	
			66. visualizes and describes a circle.	**M5GE-IIId-23.1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			67. identifies the terms related to a circle.	**M5GE-IIId-23.2**	
			68. draws circles with different radii using a compass.	**M5GE-IIIe-24**	
			69. visualizes and describes solid figures.	**M5GE-IIIe-25**	
			70. makes models of different solid figures: cube, prism, pyramid, cylinder, cone, and sphere using plane figures.	**M5GE-IIIe-26**	
Patterns and Algebra	demonstrates understanding of the concept of sequence and solving simple equations.	1. is able to apply the knowledge of sequence in various situations. 2. is able to use different problem solving strategies.	71. formulates the rule in finding the next term in a sequence. e.g. 1, 3, 7,15, (15 x 2+1) Possible answers: (x 2 + 1) (+2, +4, +8, +16)	**M5AL-IIIf-6**	
			72. uses different strategies (looking for a pattern, working backwards, etc.) to solve for the unknown in simple equations involving one or more operations on whole numbers and fractions. e.g. 3 x _ + 1 = 10 (the unknown is solved by working backwards)	**M5AL-IIIf-14**	
Measurement	demonstrates understanding of time and circumference.	is able to apply knowledge of time and circumference in mathematical problems and real-life situations.	73. measures time using a 12-hour and a 24-hour clock.	**M5ME-IIIg-14**	
			74. calculates time in the different world time zones in relation to the Philippines.	**M5ME-IIIg-15**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			75. solves problems involving time.	**M5ME-IIIg-16**	
			76. visualizes circumference of a circle.	**M5ME-IIIh-67**	• BEAM LG Gr. 5 Module 2 - Circumference
			77. measures circumference of a circle using appropriate tools.	**M5ME-IIIh-68**	
			78. derives a formula in finding the circumference of a circle.	**M5ME-IIIi-69**	• BEAM LG Gr. 5 Module 2 – Circumference • Lesson Guide in Elem. Math Gr. 5 p.362
			79. finds the circumference of a circle.	**M5ME-IIIi-70**	• DLP Gr. 5 Module 52 • BEAM LG Gr. 5 Module 2 – Circumference • Lesson Guide in Elem. Math Gr. 5 p.366 • MISOSA Gr. 5 Module – Circumference of a Circle
			80. solves routine and non-routine problems involving circumference of a circle.	**M5ME-IIIj-71**	• BEAM LG Gr. 5 Module 2 – Circumference • Lesson Guide in Elem. Math Gr. 5 p.369 • MISOSA Gr. 5 Module – Word Problems on Circumference
Grade 5- FOURTH QUARTER					
Measurement	demonstrates understanding of area, volume and temperature.	is able to apply knowledge of area, volume and temperature in mathematical problems and real-life situations.	81. visualizes area of a circle.	**M5ME-IVa-72**	• BEAM LG Gr. 5 Module 14 - Area
			82. derives a formula in finding the area of a circle .	**M5ME-IVa-73**	• DLP Gr. 5 Module 49 • BEAM LG Gr. 5 Module 14 – Area • Lesson Guide in Elem. Math Gr. 5 p.382 • MISOSA Gr. 5 Module – Area of a Circle
			83. finds the area of a given circle.	**M5ME-IVa-74**	• DLP Gr. 5 Module 53 • BEAM LG Gr. 5 Module 14 - Area

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			84. solves routine and non-routine problems involving the area of a circle.	**M5ME-IVb-75**	
			85. creates problems involving a circle, with reasonable answers.	**M5ME-IVb-76**	
			86. visualizes the volume of a cube and rectangular prism.	**M5ME-IVc-77**	• Lesson Guide in Elem. Math Gr. 5 p. 389, Gr. 6 p. 384
			87. names the appropriate unit of measure used for measuring the volume of a cube and a rectangle prism.	**M5ME-IVc-78**	• Lesson Guide in Elem. Math Gr. 6 p.391
			88. derives the formula in finding the volume of a cube and a rectangular prism using cubic cm and cubic m.	**M5ME-IVc-79**	• DLP Gr. 6 Module 57 • Lesson Guide in Elem. Math Gr. 5 p.392, Gr. 6 p. 388
			89. converts cu. cm to cu. m and vice versa; cu.cm to L and vice versa.	**M5ME-IVd-80**	• DLP Gr. 5 Module 54 • BEAM LG Gr. 5 Module 18 – Volume • Lesson Guide in Elem. Math Gr. 5 p.395 • MISOSA Gr. 5 Module – Volume of a Rectangular Prism
			90. finds the volume of a given cube and rectangular prism using cu. cm and cu. m.	**M5ME-IVd-81**	
			91. estimates and uses appropriate units of measure for volume.	**M5ME-IVd-82**	• DLP Gr. 5 Module 55 • BEAM LG Gr. 5 Module 18 – Volume • Lesson Guide in Elem. Math Gr. 5 p.399
			92. solves routine and non-routine problems involving volume of a cube and rectangular prism in real-life situations using appropriate strategies and tools.	**M5ME-IVe-83**	
			93. creates problems (with reasonable answers) involving volume of a cube	**M5ME-IVe-84**	• DLP Gr. 5 Module 56 • BEAM LG Gr. 5 Module 19

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			and rectangular prism in real-life situations.		– Temperature • Lesson Guide in Elem. Math Gr. 5 p.305
			94. reads and measures temperature using thermometer (alcohol and/or digital) in degree Celsius.	M5ME-IVf-85	
			95. estimates the temperature(e.g. inside the classroom).	M5ME-IVf-86	• DLP Gr. 5 Module 57 • BEAM LG Gr. 5 Module 19 – Temperature • Lesson Guide in Elem. Math Gr. 5 p.409 • MISOSA Gr. 5 Module – Temperature
			96. solves routine and non-routine problems involving temperature in real-life situations.	M5ME-IVf-87	
			97. creates problems involving temperature, with reasonable answers.	M5ME-IVg-88	
Statistics and Probability	demonstrates understanding of line graphs and experimental probability.	is able to create and interpret representations of data (tables and line graphs) and apply experimental probability in mathematical problems and real-life situations.	98. collects data on one to two variables using any source.	M5SP-IVg-1.5	• BEAM LG Gr. 5 Module 20 – Line Graph • Lesson Guide in Elem. Math Gr. 5 p.417 • MISOSA Gr. 5 Module – Line Graph
			99. organizes data in tabular form and presents them in a line graph.	M5SP-IVg-2.5	• DLP Gr. 5 Module 58, 59 • BEAM LG Gr. 5 Module 20 – Line Graph • Lesson Guide in Elem. Math Gr. 5 p.412
			100. interprets data presented in different kinds of line graphs (single to double-line graph).	M5SP-IVh-3.5	
			101. solves routine and non-routine problems using data presented in a line graph.	M5SP-IVh-4.5	
			102. draws inferences based on data presented in a line graph.	M5SP-IVh-5.5	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			103. describes experimental probability.	**M5SP-IVi-14**	
			104. performs an experimental probability and records result by listing.	**M5SP-IVi-15**	
			105. analyzes data obtained from chance using experiments involving letter cards (A to Z) and number cards (0 to 20).	**M5SP-IVi-16**	
			106. solves routine and non-routine problems involving experimental probability.	**M5SP-IVj-17**	
			107. creates routine and non-routine problems involving experimental probability.	**M5SP-IVj-18**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 6- FIRST QUARTER					
Numbers and Number Sense	demonstrates understanding of the four fundamental operations involving fractions and decimals.	is able to apply the four fundamental operations involving fractions and decimals in mathematical problems and real-life situations.	1. adds and subtracts simple fractions and mixed numbers without or with regrouping.	**M6NS-Ia-86**	• Lesson Guide in Elem. Math Gr. 6 p. 203, 207, 212, 216, 219, 223 • DLP Gr. 6 Module 31, 32 • BEAM LG Gr. 6 Module 8A • MISOSA Modules Gr.5 and 6– Subtraction of Mixed Numbers
			2. solves routine and non-routine problems involving addition and/or subtraction of fractions using appropriate problem solving strategies and tools.	**M6NS-Ia-87.3**	• Lesson Guide in Elem. Math Gr. 6 p.232 • BEAM LG Gr. 6 Module 8B • MISOSA Module Gr.6 – Word Problems on Subtraction of Fractions
			3. creates problems (with reasonable answers) involving addition and/or subtraction of fractions.	**M6NS-Ia-88.3**	
			4. multiplies simple fractions and mixed fractions.	**M6NS-Ib-90.2**	• Lesson Guide in Elem. Math Gr. 5 p.203, 209, Gr. 6 p. 237, 250 • DLP Gr. 5 Module 24, 26, Gr. 6 Module 35 • BEAM LG Gr. 5 Module 9, Gr. 6 Module 9 • MISOSA Module Gr.5 and 6– Multiplication of Mixed Numbers and Fractions

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			5. solves routine or non-routine problems involving multiplication without or with addition or subtraction of fractions and mixed fractions using appropriate problem solving strategies and tools.	**M6NS-Ib-92.2**	• Lesson Guide in Elem. Math Gr. 5 p.213, Gr. 6 p. 262 • DLP Gr. 5 Module 27, 28, Gr. 6 Module 36, 37 • BEAM LG Gr. 5 Module 9, Gr. 6 Module 9 • MISOSA Module Gr.6 – Word Problems on Multiplication of Fractions
			6. creates problems (with reasonable answers) involving multiplication without or with addition or subtraction of fractions and mixed fractions.	**M6NS-Ib-93.2**	
			7. divides simple fractions and mixed fractions.	**M6NS-Ic-96.2**	• Lesson Guide in Elem. Math Gr. 6 p.273, 277 • BEAM LG Gr. 6 Module 10 • MISOSA Module Gr.6 – Division of Mixed Numbers
			8. solves routine or non-routine problems involving division without or with any of the other operations of fractions and mixed fractions using appropriate problem solving strategies and tools.	**M6NS-Ic-97.2**	• Lesson Guide in Elem. Math Gr. 6 p.282, 286 • DLP Gr. 6 Module 40, 41 • BEAM LG Gr. 6 Module 10
			9. creates problems (with reasonable answers) involving division without or with any of the other operations of fractions and mixed fractions.	**M6NS-Ic-98.2**	
			10. adds and subtracts decimals and mixed decimals through ten thousandths without or with regrouping.	**M6NS-Id-106.2**	• Lesson Guide in Elem. Math Gr. 6 p.54, 56, 60, 62 • DLP Gr. 6 Module 10, 11 • BEAM LG Gr. 6 Module on Addition and Subtraction of Decimals • MISOSA Modules Gr.5 – Addition and Subtraction of Mixed Decimals

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
					• MISOSA Module Gr.6 – Subtraction of Mixed Decimals
			11. solves 1 or more steps routine and non-routine problems involving addition and/or subtraction of decimals and mixed decimals using appropriate problem solving strategies and tools.	**M6NS-Id-108.2**	• Lesson Guide in Elem. Math Gr. 6 p.68 • DLP Gr. 6 Module 12, 17 • BEAM LG Gr. 6 Module on Addition and Subtraction of Decimals • MISOSA Module Gr.5 – Word problems on Addition and Subtraction of Decimals
			12. creates problems (with reasonable answers) involving addition and/or subtraction of decimals and mixed decimals.	**M6NS-Id-109.2**	
			13. multiplies decimals and mixed decimals with factors up to 2 decimal places.	**M6NS-Ie-111.3**	• Lesson Guide in Elem. Math Gr. 5 p. 289, Gr. 6 p.73, 76, 80, 83 • DLP Gr. 5 Module 37, 38, Gr. 6 Module 15 • MISOSA Module Gr.5 and 6 –Multiplication of Mixed Decimals; Decimals through Hundredths
			14. multiplies mentally decimals up to 2 decimals places by 0.1, 0.01,10, and 100.	**M6NS-Ie-111.4**	• Lesson Guide in Elem. Math Gr. 5 p. 293, Gr. 6 p.86 • DLP Gr. 5 Module 40 • BEAM LG Gr. 6 Module 4 • MISOSA Modules Gr.5 – Multiplication of Decimals by 10 and 100, by 0.1, 0.01, and 0.001

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			15. solves routine and non-routine problems involving multiplication of decimals and mixed decimals including money using appropriate problem solving strategies.	**M6NS-Ie-113.2**	• Lesson Guide in Elem. Math Gr. 5 p.301, Gr. 6 p.93 • DLP Gr. 6 Module 41 • BEAM LG Gr. 5 Module 12
			16. solves multi-step problems involving multiplication and addition or subtraction of decimals, mixed decimals and whole numbers including money using appropriate problem solving strategies and tools.	**M6NS-If-113.3**	• Lesson Guide in Elem. Math Gr. 6 p.96
			17. creates problems (with reasonable answers) involving multiplication without or with addition or subtraction of decimals, mixed decimals and whole numbers including money.	**M6NS-If-114**	
			18. divides whole numbers by decimals up to 2 decimal places and vice versa.	**M6NS-Ig-116.3**	• Lesson Guide in Elem. Math Gr.5 p.310, Gr. 6 p.103, 105, 117 • DLP Gr. 6 Module 19 • BEAM LG Gr. 6 Module 5-Division of Decimals • MISOSA Module Gr.5 and 6 –Division of Decimals by Whole Numbers
			19. divides decimals/mixed decimals up to 2 decimal places.	**M6NS-Ig-116.4**	• Lesson Guide in Elem. Math Gr. 6 p.121 • DLP Gr. 6 Module 20 • BEAM LG Gr. 6 Module 5-Division of Decimals
			20. divides decimals up to 4 decimal places by 0.1, 0.01, and 0.001.	**M6NS-Ih-116.5**	• Lesson Guide in Elem. Math Gr. 6 p.127 • BEAM LG Gr. 6 Module 5-Division of Decimals

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			21. divides decimals up to 2 decimal places by 10, 100, and 1 000 mentally.	**M6NS-Ih-118**	• Lesson Guide in Elem. Math Gr. 6 p.125 • BEAM LG Gr. 6 Module 5-Division of Decimals
			22. differentiates terminating from repeating, non-terminating decimal quotients.	**M6NS-Ii-119**	• Lesson Guide in Elem. Math Gr. 6 p.111 • MISOSA Module Gr.6 – Repeating and Terminating Decimals
			23. solves routine and non-routine problems involving division of decimals, mixed decimals, and whole numbers including money using appropriate problem solving strategies and tools.	**M6NS-Ii-120.2**	• Lesson Guide in Elem. Math Gr. 5 p. 318, Gr. 6 p.130 • DLP Gr. 6 Module 21 • BEAM LG Gr. 6 Module 5-Division of Decimals
			24. solves multi-step routine and non-routine problems involving division and any of the other operations of decimals, mixed decimals, and whole numbers including money using appropriate problem solving strategies and tools.	**M6NS-Ij-120.3**	• Lesson Guide in Elem. Math Gr. 6 p.133
			25. creates problems (with reasonable answers) involving division without or with any of the other operations of decimals, mixed decimals and whole numbers including money.	**M6NS-Ij-121.2**	
Grade 6- SECOND QUARTER					
Numbers and Number Sense	demonstrates understanding of order of operations, ratio and proportion, percent, exponents, and integers.	is able to apply knowledge of order of operations, ratio and proportion, percent, exponents, and integers in mathematical problems and real-life situations.	26. expresses one value as a fraction of another given their ratio and vice versa.	**M6NS-IIa-129**	
			27. finds how many times one value is as large as another given their ratio and vice versa.	**M6NS-IIa-130**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			28. defines and illustrates the meaning of ratio and proportion using concrete or pictorial models.	**M6NS-IIb-131**	
			29. sets up proportions for groups of objects or numbers and for given situations.	**M6NS-IIb-132**	
			30. finds a missing term in a proportion (direct, inverse, and partitive).	**M6NS-IIb-133**	• Lesson Guide in Elem. Math Gr. 6 p.301, 304, 307 • BEAM LG Gr. 6 Module 11 • MISOSA Module Gr.6 – Word Problems on Direct, Partitive and Inverse Proportion
			31. solves problems involving direct proportion, partitive proportion, and inverse proportion in different contexts such as distance, rate, and time using appropriate strategies and tools.	**M6NS-IIc-134**	
			32. creates problems involving ratio and proportion, with reasonable answers.	**M6NS-IIc-135**	
			33. finds the percentage or rate or percent in a given problem.	**M6NS-IId-142**	• Lesson Guide in Elem. Math Gr. 6 p.316, 320, 323 • DLP Gr. 6 Module 47, 48, 49 • MISOSA Module Gr.6 – Finding the Percentage, Rate and Base
			34. solves routine and non-routine problems involving finding the percentage, rate and base using appropriate strategies and tools.	**M6NS-IId-143**	• MISOSA Module Gr.6 – Word Problems on Percentage
			35. solves percent problems such as percent of increase/decrease (discounts, original price, rate of discount, sale price, marked-up price), commission, sales tax, and simple interest.	**M6NS-IIe-144**	• Lesson Guide in Elem. Math Gr. 6 p.332, 336, 340, 344 • DLP Gr. 6 Module 50, 51, 52 • BEAM LG Gr. 6 Module 17

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			36. creates problems involving percent, with reasonable answers.	**M6NS-IIe-145**	
			37. describes the exponent and the base in a number expressed in exponential notation.	**M6NS-IIf-146**	• Lesson Guide in Elem. Math Gr. 6 p.6 • DLP Gr. 6 Module 1 • MISOSA Module Gr.6 – Exponents
			38. gives the value of numbers expressed in exponential notation.	**M6NS-IIf-147**	• Lesson Guide in Elem. Math Gr. 6 p.9 • DLP Gr.4 Module 32 • MISOSA Module Gr.6 – Expressions involving Exponents
			39. interprets and explains the Grouping, Exponent, Multiplication, Division, Addition, Subtraction (GEMDAS) rule.	**M6NS-IIf-148**	• DLP Gr. 6 Module 2
			40. performs two or more different operations on whole numbers with or without exponents and grouping symbols.	**M6NS-IIf-149**	• Lesson Guide in Elem. Math Gr. 6 p.13, 17, 21, 25, 28 • BEAM LG Gr. 6 Module 1 – Order of Operations • MISOSA Modules Gr.6 – Evaluating Expressions
			41. identifies real-life situations that make use of integers.	**M6NS-IIg-150**	
			42. describes the set of integers.	**M6NS-IIg-151**	
			43. compares integers with other numbers such as whole numbers, fractions, and decimals.	**M6NS-IIg-152**	
			44. represents integers on the number line.	**M6NS-IIh-153**	• Lesson Guide in Elem. Math Gr. 6 p.353
			45. compares and arranges integers.	**M6NS-IIh-154**	• Lesson Guide in Elem. Math Gr. 6 p.356, 358 • DLP Gr. 6 Module 68, 69 • BEAM LG Gr. 6 Module 18 – Expression and Integers

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			46. describes and interprets the basic operations on integers using materials such as algebra tiles, counters, chips, and cards.	**M6NS-IIh-155**	
			47. performs the basic operations on integers.	**M6NS-IIi-156**	
			48. solves routine and non-routine problems involving basic operations of integers using appropriate strategies and tools.	**M6NS-IIj-157**	
Grade 6- THIRD QUARTER					
Geometry	demonstrates understanding of solid figures.	is able to construct and describe the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere.	49. visualizes and describes the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere.	**M6GE-IIIa-27**	• Lesson Guide in Elem. Math Gr. 6 p.360, 363
			50. differentiates solid figures from plane figures.	**M6GE-IIIa-28**	
			51. illustrates the different solid figures using various concrete and pictorial models.	**M6GE-IIIb-29**	
			52. identifies the faces of a solid figure.	**M6GE-IIIb-30**	• DLP Gr. 6 Module 54
			53. visualizes and describes the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere.	**M6GE-IIIc-31**	• BEAM LG Gr. 6 Module 15
			54. identifies the nets of the following space figures: cube, prism, pyramid, cylinder, cone, and sphere using plane figures.	**M6GE-IIIc-32**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Patterns and Algebra	demonstrates understanding of sequence in forming rules, expressions and equations.	is able to apply knowledge of sequence, expressions, and equations in mathematical problems and real-life situations.	55. formulates the rule in finding the **nth term** using different strategies (looking for a pattern, guessing and checking, working backwards) e.g. 4,7,13,16,...n (the nth term is 3n+1)	**M6AL-IIId-7**	
			56. differentiates expression from equation.	**M6AL-IIId-15**	• Lesson Guide in Elem. Math Gr. 6 p.1, 3 • BEAM LG Gr. 6 Module 18 – Expression and Integers
			57. gives the translation of real-life verbal expressions and equations into letters or symbols and vice versa.	**M6AL-IIIe-16**	
			58. defines a variable in an algebraic expression and equation.	**M6AL-IIIe-17**	
			59. represents quantities in real-life situations using algebraic expressions and equations.	**M6AL-IIIe-18**	
			60. solves routine and non-routine problems involving different types of numerical expressions and equations such as $7+9 = \_\_\_ + 6$.	**M6AL-IIIf-19**	• DLP Gr. 6 Module 70, 71
			61. creates routine and non-routine problems involving numerical expressions and equations.	**M6AL-IIIf-20**	
Measurement	demonstrates understanding of rate and speed, and of area and surface area of plane and solid/space figures.	is able to apply knowledge of speed, area, and surface area of plane and solid/space figures in mathematical problems and real-life situations	62. calculates speed, distance, and time.	**M6ME-IIIg-17**	
			63. solves problems involving average rate and speed.	**M6ME-IIIg-18**	
			64. finds the area of composite figures formed by any two or more of the following: triangle, square, rectangle, circle, and semi-circle.	**M6ME-IIIh-89**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			65. solves routine and non-routine problems involving area of composite figures formed by any two or more of the following: triangle, square, rectangle, circle, and semi-circle.	M6ME-IIIh-90	
			66. visualizes and describes surface area and names the unit of measure used for measuring the surface area of solid/space figures.	M6ME-IIIi-91	• Lesson Guide in Elem. Math Gr. 6 p.371
			67. derives a formula for finding the surface area of cubes, prisms, pyramids, cylinders, cones, and spheres.	M6ME-IIIi-92	• Lesson Guide in Elem. Math Gr. 6 p.369, 381 • DLP Gr. 6 Module 55 • BEAM LG Gr. 6 Module 16 – Surface Area
			68. finds the surface area of cubes, prisms, pyramids, cylinders, cones, and spheres.	M6ME-IIIi-93	• BEAM LG Gr. 6 Module 16 – Surface Area • MISOSA Module Gr.6 – Surface Area on Cube, Rectangular Prism, Pyramid and Cylinder
			69. solves word problems involving measurement of surface area.	M6ME-IIIj-94	• DLP Gr. 6 Module 56 • BEAM LG Gr. 6 Module 17 – Surface Area
Grade 6- FOURTH QUARTER					
Measurement	demonstrates understanding of volume of solid figures and meter reading.	is able to apply knowledge of volume of solid figures and meter reading in mathematical problems and real-life situations.	70. determines the relationship of the volume between 70.1 a rectangular prism and a pyramid; 70.2 a cylinder and a cone; 70.3 and a cylinder and sphere.	M6ME-IVa-95	
			71. derives the formula for finding the volume of cylinders, pyramids, cones, and spheres.	M6ME-IVa-96	• DLP Gr. 6 Module 58 • BEAM LG Gr. 6 Module 18 – Volume

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			72. finds the volume of cylinders, pyramids, cones, and spheres.	**M6ME-IVb-97**	• Lesson Guide in Elem. Math Gr. 6 p.394, 398 • BEAM LG Gr. 6 Module 18 – Volume • MISOSA Module Gr.6 – Volume of Rectangular Prism, Pyramid and Cylinder
			73. solves routine and non-routine problems involving volumes of solids.	**M6ME-IVc-98**	• Lesson Guide in Elem. Math Gr. 6 p.402 • DLP Gr. 6 Module 59 • BEAM LG Gr. 6 Module 19 – Volume
			74. creates problems involving surface area and volume of solid/space figures, with reasonable answers.	**M6ME-IVc-99**	
			75. reads and interprets electric and water meter readings.	**M6ME-IVd-100**	• Lesson Guide in Elem. Math Gr. 6 p.406, 409 • DLP Gr. 6 Module 60, 61 • BEAM LG Gr. 6 Module 20 – Meter Reading
			76. solves routine and non-routine problems involving electric and water consumption.	**M6ME-IVd-101**	• Lesson Guide in Elem. Math Gr. 6 p.412, 415 • DLP Gr. 6 Module 62 • BEAM LG Gr. 6 Module 20 – Meter Reading
			77. creates problems involving electric and water consumption, with reasonable answers.	**M6ME-IVd-102**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Statistics and Probability	demonstrates understanding of pie graphs and experimental probability.	is able to create and interpret representations of data (tables and pie graphs) and apply experimental probability in mathematical problems and real-life situations.	78. collects data on one or two variables using any source.	**M6SP-IVe-1.6**	
			79. constructs a pie graph based on a given set of data.	**M6SP-IVe-2.6**	• Lesson Guide in Elem. Math Gr. 6 p.426 • DLP Gr. 6 Module 65 • BEAM LG Gr. 6 Module 21 – Circle Graphs • MISOSA Module Gr.6 – Constructing Circle Graph
			80. interprets data presented in a pie graph.	**M6SP-IVf-3.6**	• Lesson Guide in Elem. Math Gr. 6 p.422 • DLP Gr. 6 Module 64 • BEAM LG Gr. 6 Module 21 – Circle Graphs • MISOSA Module Gr.6 – Interpreting Circle Graph
			81. solves routine and non-routine problems using data presented in a pie graph.	**M6SP-IVf-4.6**	
			82. creates problems that can be answered using information presented in a pie graph.	**M6SP-IVg-6**	
			83. describes the meaning of probability such as 50% chance of rain and one in a million chance of winning.	**M6SP-IVg-19**	
			84. quantifies the phrases "most likely to happen" and "unlikely to happen".	**M6SP-IVh-20**	
			85. performs experiments and records outcomes.	**M6SP-IVh-21**	• Lesson Guide in Elem. Math Gr. 6 p.349 • BEAM LG Gr. 6 Module 17 – Prediction and Outcome

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			86. makes listings and diagrams of outcomes and tells the number of favorable outcomes and chances using these listings and diagrams.	**M6SP-IVi-22**	• BEAM LG Gr. 6 Module 17 – Prediction and Outcome
			87. makes simple predictions of events based on the results of experiments.	**M6SP-IVi-23**	• Lesson Guide in Elem. Math Gr. 6 p.347 • DLP Gr. 6 Module 67 • BEAM LG Gr. 6 Module 17 – Prediction and Outcome
			88. solves routine and non-routine problems involving experimental and theoretical probability.	**M6SP-IVj-24**	
			89. creates problems involving experimental and theoretical probability.	**M6SP-IVj-25**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	**The learner...**	**The learner...**		
Grade 7- FIRST QUARTER					
Numbers and Number Sense	demonstrates understanding of key concepts of sets and the real number system.	is able to formulate challenging situations involving sets and real numbers and solve these in a variety of strategies.	1. describes well-defined sets, subsets, universal sets, and the null set and cardinality of sets.	**M7NS-Ia-1**	
			2. illustrates the union and intersection of sets and the difference of two sets.	**M7NS-Ia-2**	
			3. uses Venn Diagrams to represent sets, subsets, and set operations.	**M7NS-Ib-1**	
			4. solves problems involving sets.	**M7NS-Ib-2**	
			5. represents the absolute value of a number on a number line as the distance of a number from 0.	**M7NS-Ic-1**	
			6. performs fundamental operations on integers.	**M7NS-Ic-d-1**	
			7. illustrates the different properties of operations on the set of integers.	**M7NS-Id-2**	
			8. expresses rational numbers from fraction form to decimal form and vice versa.	**M7NS-Ie-1**	
			9. arranges rational numbers on a number line.	**M7NS-Ie-2**	
			10. performs operations on rational numbers	**M7NS-If-1**	
			11. describes principal roots and tells whether they are rational or irrational.	**M7NS-Ig-1**	
			12. determines between what two integers the square root of a number is.	**M7NS-Ig-2**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			13. estimates the square root of a whole number to the nearest hundredth.	M7NS-Ig-3	
			14. plots irrational numbers (up to square roots) on a number line.***	M7NS-Ig-4	
			15. illustrates the different subsets of real numbers.	M7NS-Ih-1	
			16. arranges real numbers in increasing or decreasing order.	M7NS-Ih-2	
			17. writes numbers in scientific notation and vice versa.	M7NS-Ii-1	
			18. represents real-life situations which involve real numbers.	M7NS-Ii-2	
			19. solves problems involving real numbers.	M7NS-Ij-1	
Grade 7- SECOND QUARTER					
Measurement	demonstrates understanding of the key concepts of measurement.	is able to formulate real-life problems involving measurements and solve these using a variety of strategies.	1. illustrates what it means to measure.	M7ME-IIa-1	
			2. describes the development of measurement from the primitive to the present international system of units.	M7ME-IIa-2	
			3. approximates the measures of quantities particularly length , weight/mass, volume, time, angle and temperature and rate.	M7ME-IIa-3	
			4. converts measurements from one unit to another in both Metric and English systems.***	M7ME-IIb-1	
			5. solves problems involving conversion of units of measurement.***	M7ME-IIb-2	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Patterns and Algebra	demonstrates understanding of key concepts of algebraic expressions, the properties of real numbers as applied in linear equations, and inequalities in one variable.	is able to model situations using oral, written, graphical, and algebraic methods in solving problems involving algebraic expressions, linear equations, and inequalities in one variable.	The learner … 6. translates English phrases to mathematical phrases and vice versa.	M7AL-IIc-1	
			7. interprets the meaning of a^n where n is a positive integer.	M7AL-IIc-2	
			8. differentiates between constants and variables in a given algebraic expression.	M7AL-IIc-3	
			9. evaluates algebraic expressions for given values of the variables.	M7AL-IIc-4	
			10. classifies algebraic expressions which are polynomials according to degree and number of terms.	M7AL-IId-1	
			11. adds and subtracts polynomials.	M7AL-IId-2	
			12. derives the laws of exponent.	M7AL-IId-e-1	
			13. multiplies and divides polynomials.	M7AL-IIe-2	
			14. uses models and algebraic methods to find the: (a) product of two binomials; (b) product of the sum and difference of two terms; (c) square of a binomial; (d) cube of a binomial; (e) product of a binomial and a trinomial.***	M7AL-IIe-g-1	
			15. solves problems involving algebraic expressions.	M7AL-IIg-2	
			16. differentiates between algebraic expressions and equations.	M7AL-IIh-1	
			17. translates English sentences to mathematical sentences and vice versa.	M7AL-IIh-2	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			18. differentiates between equations and inequalities.	M7AL-IIh-3	
			19. illustrates linear equation and inequality in one variable.	M7AL-IIh-4	
			20. finds the solution of linear equation or inequality in one variable.	M7AL-IIi-1	
			21. solves linear equation or inequality in one variable involving absolute value by: (a) graphing; and (b) algebraic methods.	M7AL-IIi-j-1	
			22. solves problems involving equations and inequalities in one variable.	M7AL-IIj-2	
Grade 7- THIRD QUARTER					
Geometry	demonstrates understanding of key concepts of geometry of shapes and sizes, and geometric relationships.	is able to create models of plane figures and formulate and solve accurately authentic problems involving sides and angles of a polygon	23. represents point, line and plane using concrete and pictorial models.	M7GE-IIIa-1	
			24. illustrates subsets of a line.	M7GE-IIIa-2	
			25. classifies the different kinds of angles.	M7GE-IIIa-3	
			26. derives relationships of geometric figures using measurements and by inductive reasoning; supplementary angles, complementary angles, congruent angles, vertical angles, adjacent angles, linear pairs, perpendicular lines, and parallel lines.***	M7GE-IIIb-1	
			27. derives relationships among angles formed by parallel lines cut by a transversal using measurement and by inductive reasoning.	M7GE-IIIc-1	
			28. uses a compass and straightedge to bisect line segments and angles and construct perpendiculars and parallels.	M7GE-IIId-e-1	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			29. illustrates polygons: (a) convexity; (b) angles; and (c) sides.	M7GE-IIIe-2	
			30. derives inductively the relationship of exterior and interior angles of a convex polygon.	M7GE-IIIf-1	
			31. illustrates a circle and the terms related to it: radius, diameter chord, center, arc, chord, central angle, and inscribed angle.	M7GE-IIIg-1	
			32. constructs triangles, squares, rectangles, regular pentagons, and regular hexagons.	M7GE-IIIh-i-1	
			33. solves problems involving sides and angles of a polygon.	M7GE-IIIj-1	
Grade 7- FOURTH QUARTER					
Statistics and Probability	demonstrates understanding of key concepts, uses and importance of Statistics, data collection/gathering and the different forms of data representation, measures of central tendency, measures of variability, and probability.	is able to collect and organize data systematically and compute accurately measures of central tendency and variability and apply these appropriately in data analysis and interpretation in different fields.	The learner … 34. explains the importance of Statistics.	M7SP-IVa-1	
			35. poses problems that can be solved using Statistics.	M7SP-IVa-2	
			36. formulates simple statistical instruments.	M7SP-IVa-3	
			37. gathers statistical data.	M7SP-IVb-1	
			38. organizes data in a frequency distribution table.	M7SP-IVc-1	
			39. uses appropriate graphs to represent organized data: pie chart, bar graph, line graph, histogram, and ogive.***	M7SP-IVd-e-1	
			40. illustrates the measures of central tendency (mean, median, and mode) of a statistical data.	M7SP-IVf-1	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			41. calculates the measures of central tendency of ungrouped and grouped data.	**M7SP-IVf-g-1**	
			42. illustrates the measures of variability (range, average deviation, variance, standard deviation) of a statistical data.	**M7SP-IVh-1**	
			43. calculates the measures of variability of grouped and ungrouped data.	**M7SP-IVh-i-1**	
			44. uses appropriate statistical measures in analyzing and interpreting statistical data.	**M7SP-IVj-1**	
			45. draws conclusions from graphic and tabular data and measures of central tendency and variability.	**M7SP-IVj-2**	

*** Suggestion for ICT enhanced lesson when available and where appropriate

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 8- FIRST QUARTER					
Patterns and Algebra	demonstrates understanding of key concepts of factors of polynomials, rational algebraic expressions, linear equations and inequalities in two variables, systems of linear equations and inequalities in two variables and linear functions.	is able to formulate real-life problems involving factors of polynomials, rational algebraic expressions, linear equations and inequalities in two variables, systems of linear equations and inequalities in two variables and linear functions, and solve these problems accurately using a variety of strategies.	1. factors completely different types of polynomials (polynomials with common monomial factor, difference of two squares, sum and difference of two cubes, perfect square trinomials, and general trinomials).	**M8AL-Ia-b-1**	
			2. solves problems involving factors of polynomials.	**M8AL-Ib-2**	
			3. illustrates rational algebraic expressions.	**M8AL-Ic-1**	
			4. simplifies rational algebraic expressions.	**M8AL-Ic-2**	
			5. performs operations on rational algebraic expressions.	**M8AL-Ic-d-1**	
			6. solves problems involving rational algebraic expressions.	**M8AL-Id-2**	
			7. illustrates the rectangular coordinate system and its uses.***	**M8AL-Ie-1**	
			8. illustrates linear equations in two variables.	**M8AL-Ie-3**	
			9. illustrates the slope of a line.	**M8AL-Ie-4**	
			10. finds the slope of a line given two points, equation, and graph.	**M8AL-Ie-5**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			11. writes the linear equation $ax + by = c$ in the form $y = mx + b$ and vice versa.	**M8AL-If-1**	
			12. graphs a linear equation given (a) any two points; (b) the $x -$ and $y -$ intercepts; (c) the slope and a point on the line.***	**M8AL-If-2**	
			13. describes the graph of a linear equation in terms of its intercepts and slope.***	**M8AL-If-3**	
			14. finds the equation of a line given (a) two points; (b) the slope and a point; (c) the slope and its intercepts.	**M8AL-Ig-1**	
			15. solves problems involving linear equations in two variables.	**M8AL-Ig-2**	
			16. illustrates a system of linear equations in two variables.	**M8AL-Ih-1**	
			17. graphs a system of linear equations in two variables.***	**M8AL-Ih-2**	
			18. categorizes when a given system of linear equations in two variables has graphs that are parallel, intersecting, and coinciding.	**M8AL-Ih-3**	
			19. solves a system of linear equations in two variables by (a) graphing; (b) substitution; (c) elimination.***	**M8AL-Ii-j-1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			20. solves problems involving systems of linear equations in two variables.	M8AL-Ij-2	
Grade 8- SECOND QUARTER					
Patterns and Algebra	demonstrates key concepts of linear inequalities in two variables, systems of linear inequalities in two variables and linear functions.	is able to formulate and solve accurately real-life problems involving linear inequalities in two variables, systems of linear inequalities in two variables, and linear functions.	21. illustrates linear inequalities in two variables.	M8AL-IIa-1	
			22. differentiates linear inequalities in two variables from linear equations in two variables.	M8AL-IIa-2	
			23. graphs linear inequalities in two variables.	M8AL-IIa-3	
			24. solves problems involving linear inequalities in two variables.	M8AL-IIa-4	
			25. solves a system of linear inequalities in two variables.***	M8AL-IIb-1	
			26. solves problems involving systems of linear inequalities in two variables.	M8AL-IIb-2	
			27. illustrates a relation and a function.	M8AL-IIc-1	
			28. verifies if a given relation is a function.	M8AL-IIc-2	
			29. determines dependent and independent variables.	M8AL-IIc-3	
			30. finds the domain and range of a function.	M8AL-IId-1	
			31. illustrates a linear function.	M8AL-IId-2	
			32. graphs a linear function's (a) domain; (b) range; (c) table of	M8AL-IId-e-1	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			values; (d) intercepts; and (e) slope.		
			33. solves problems involving linear functions.	M8AL-IIe-2	
Geometry	demonstrates understanding of key concepts of logic and reasoning.	is able to communicate mathematical thinking with coherence and clarity in formulating and analyzing arguments.	34. determines the relationship between the hypothesis and the conclusion of an if-then statement.	M8GE-IIf-1	
			35. transforms a statement into an equivalent if-then statement.	M8GE-IIf-2	
			36. determines the inverse, converse, and contrapositive of an if-then statement.	M8GE-IIg-1	
			37. illustrates the equivalences of: (a) the statement and its contrapositive; and (b) the converse and inverse of a statement.	M8GE-IIg-2	
			38. uses inductive or deductive reasoning in an argument.	M8GE-IIh-1	
			39. writes a proof (both direct and indirect).	M8GE-IIi-j-1	
Grade 8- THIRD QUARTER					
Geometry	demonstrates understanding of key concepts of axiomatic structure of geometry and triangle congruence.	1. is able to formulate an organized plan to handle a real-life situation.	40. describes a mathematical system.	M8GE-IIIa-1	
			41. illustrates the need for an axiomatic structure of a mathematical system in general, and in Geometry in particular: (a) defined terms; (b) undefined terms; (c) postulates; and (d) theorems.	M8GE-IIIa-c-1	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
		2. is able to communicate mathematical thinking with coherence and clarity in formulating, investigating, analyzing, and solving real-life problems involving congruent triangles using appropriate and accurate representations.	42. illustrates triangle congruence.***	M8GE-IIId-1	
			43. illustrates the SAS, ASA and SSS congruence postulates.***	M8GE-IIId-e-1	
			44. solves corresponding parts of congruent triangles	M8GE-IIIf-1	
			45. proves two triangles are congruent.	M8GE-IIIg-1	
			46. proves statements on triangle congruence.	M8GE-IIIh-1	
			47. applies triangle congruence to construct perpendicular lines and angle bisectors.	M8GE-IIIi-j-1	
Grade 8- FOURTH QUARTER					
Geometry	demonstrates understanding of key concepts of inequalities in a triangle, and parallel and perpendicular lines.	is able to communicate mathematical thinking with coherence and clarity in formulating, investigating, analyzing, and solving real-life problems involving triangle inequalities, and parallelism and perpendicularity of lines using appropriate and accurate representations.	48. illustrates theorems on triangle inequalities (Exterior Angle Inequality Theorem, Triangle Inequality Theorem, Hinge Theorem).***	M8GE-IVa-1	
			49. applies theorems on triangle inequalities.	M8GE-IVb-1	
			50. proves inequalities in a triangle.	M8GE-IVc-1	
			51. proves properties of parallel lines cut by a transversal.***	M8GE-IVd-1	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			52. determines the conditions under which lines and segments are parallel or perpendicular.	**M8GE-IVe-1**	
Statistics and Probability	demonstrates understanding of key concepts of probability.	is able to formulate and solve practical problems involving probability of simple events.	53. illustrates an experiment, outcome, sample space and event.***	**M8GE-IVf-1**	
			54. counts the number of occurrences of an outcome in an experiment: (a) table; (b) tree diagram; (c) systematic listing; and (d) fundamental counting principle.***	**M8GE-IVf-g-1**	
			55. finds the probability of a simple event.	**M8GE-IVh-1**	
			56. illustrates an experimental probability and a theoretical probability.	**M8GE-IVi-1**	
			57. solves problems involving probabilities of simple events.	**M8GE-IVi-j-1**	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 9- FIRST QUARTER					
Patterns and Algebra	demonstrates understanding of key concepts of quadratic equations, inequalities and functions, and rational algebraic equations.	is able to investigate thoroughly mathematical relationships in various situations, formulate real-life problems involving quadratic equations, inequalities and functions, and rational algebraic equations and solve them using a variety of strategies.	1. illustrates quadratic equations.	**M9AL-Ia-1**	• BEAM Second Year • Module 4 (TG) • EASE Module Second Year Quadratic Equations • Module 3 • Chapter 2 • Quadratic Equations pp.44-46 (LM)
			2. solves quadratic equations by: (a) extracting square roots; (b) factoring; (c) completing the square; and (d) using the quadratic formula.	**M9AL-Ia-b-1**	• BEAM Second Year • Module 4 (TG) • EASE Module Second Year Quadratic Equations, Module 3 • Chapter 2Quadratic Equations pp.47-53(LM)
			3. characterizes the roots of a quadratic equation using the discriminant.	**M9AL-Ic-1**	• BEAM Second Year, Module 4 (TG) • EASE Module Second Year Quadratic Equations, Module 3 • Chapter 2 • Quadratic Equations pp.53-59 (LM)
			4. describes the relationship between the coefficients and the roots of a quadratic equation.	**M9AL-Ic-2**	• BEAM Second Year • Module 4 (TG) • EASE Module Second Year Quadratic Equations, Module 3 Chapter 2 • Quadratic Equations pp.53-59 (LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			5. solves equations transformable to quadratic equations (including rational algebraic equations).	**M9AL-Ic-d-1**	• BEAM Second Year • Module 4 (TG) • LM • EASE Module Second Year Quadratic Equations, Module 3 • Chapter 2 • Quadratic Equations pp.53-59 (LM)
			6. solves problems involving quadratic equations and rational algebraic equations.	**M9AL-Ie-1**	• BEAM Second Year • Module 4 (TG) • EASE Module Second Year Quadratic Equations, Module 3 • Chapter 2 • Quadratic Equations pp.61-64 (LM)
			7. illustrates quadratic inequalities	**M9AL-If-1**	•
			8. solves quadratic inequalities.	**M9AL-If-2**	• APEX Chapter 3 • Quadratic Functions • Lessons 18-19 pp.203-217 (LM)
			9. solves problems involving quadratic inequalities.	**M9AL-If-g-1**	• APEX Chapter 3 • Quadratic Functions • Lessons 18-19 pp.203-217 (LM)
			10. models real-life situations using quadratic functions.	**M9AL-Ig-2**	• BEAM Fourth Year, Module 3
			11. represents a quadratic function using: (a) table of values; (b) graph; and (c) equation.	**M9AL-Ig-3**	• BEAM Fourth Year • Module 3 (TG) • EASE Module Fourth Year Quadratic Equations, Module 1 (LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			12. transforms the quadratic function defined by $y = ax^2 + bx + c$ into the form $y = a(x - h)^2 + k$.	**M9AL-Ih-1**	• BEAM Fourth Year • Module 3 • Math IV: Advanced Algrebra, Trigonometry and Statistics (Lesson Plans) 2002 BEC (Week 8) pp.31-32 (TG) • EASE Module Fourth Year Quadratic Equations, Module 1 • APEX Chapter 3 • Quadratic Functions • Lesson 2 pp.101-105 (LM)
			13. graphs a quadratic function: (a) domain; (b) range; (c) intercepts; (d) axis of symmetry; (e) vertex; (f) direction of the opening of the parabola.	**M9AL-Ig-h-i-1**	• BEAM Fourth Year, Module 3 (TG) • EASE Module Fourth Year Quadratic Equations, Module 1 (LM)
			14. analyzes the effects of changing the values of a, h and k in the equation $y = a(x - h)^2 + k$ of a quadratic function on its graph.***	**M9AL-Ii-2**	• BEAM Fourth Year • Math IV: Advanced Algebra, Trigonometry, and Statistics (Lesson Plans) 2002 BEC (Week 8-9) pp.37-41 (TG) • EASE Module Fourth Year, Module 2 • APEX Chapter 3 • Quadratic Functions • Lesson 2 pp.120-125 (LM)
			15. determines the equation of a quadratic function given: (a) a table of values; (b) graph; (c) zeros.	**M9AL-Ij-1**	• EASE Module Fourth Year • Quadratic Functions, Modules 3 and 4 • APEX Chapter 3 • Quadratic Functions • Lesson 1 pp.92-100 • Lesson 13 pp.165-171(LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			16. solves problems involving quadratic functions.	M9AL-Ii-j-2	• Math IV: Advanced Algebra, Trigonometry, and Statistics (Lesson Plans) 2002 BEC (Week 8-9) pp.37-41 (TG) • EASE Module Fourth Year • Quadratic Functions, Modules 3 and 4 • APEX Chapter 3 • Quadratic Functions • Lesson 14 pp.172-183 (LM)
Grade 9- SECOND QUARTER					
Patterns and Algebra	demonstrates understanding of key concepts of variation and radicals.	is able to formulate and solve accurately problems involving radicals.	17.illustrates situations that involve the following variations: (a) direct; (b) inverse; (c) joint; (d) combined.	M9AL-IIa-1	• BEAM Second Year, Module 8 (TG) • EASE Module Second Year • Variations • Modules 1-3 • Chapter 4 Variation pp.102-121 (LM)
			18.translates into variation statement a relationship between two quantities given by: (a) a table of values; (b) a mathematical equation; (c) a graph, and vice versa.	M9AL-IIa-b-1	• BEAM Second Year, Module 8 (TG) • EASE Module Second Year • Variations, Modules 1-3 • Chapter 4 Variation pp.102-121 (LM)
			19.solves problems involving variation.	M9AL-IIb-c-1	• BEAM Second Year, Module 8 (TG) • EASE Module Second Year • Variations, Modules 1-3 • Chapter 4 Variation pp.102-(LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			20. applies the laws involving positive integral exponents to zero and negative integral exponents.	M9AL-IId-1	• BEAM Second Year, Module 9 (TG) • Ease Module Second Year • Integral Exponents, Modules 2 • Chapter 5 Integral Exponents pp.122-135 (LM)
			21. illustrates expressions with rational exponents.	M9AL-IId-2	• BEAM Second Year, Module 9 (TG) • Ease Module Second Year • Integral Exponents, Module 2 • Chapter 6 Radical Expressions pp.149 (LM)
			22. simplifies expressions with rational exponents.	M9AL-IIe-1	• BEAM Second Year, Module 9 & 10 (TG) • EASE Module Second Year • Radical Expressions, Module 2 • Chapter 6 Radical Expressions pp.149-150 (LM)
			23. writes expressions with rational exponents as radicals and vice versa.	M9AL-IIf-1	• BEAM Second Year, Module 10 Chapter 6 Radical Expressions pp.150-151 (TG)
			24. derives the laws of radicals.	M9AL-IIf-2	• BEAM Second Year, Module 10 (TG) • EASE Module Second Year • Radical Expressions, Module 3 (LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			25.simplifies radical expressions using the laws of radicals.	**M9AL-IIg-1**	• BEAM Second Year, Module 10 (TG) • EASE Module Second Year • Radical Expressions, Module 3 • Chapter 6 Radical Expressions pp.152-156 (LM)
			26.performs operations on radical expressions.***	**M9AL-IIh-1**	• BEAM Second Year, Module 11 (TG) • EASE Module Second Year • Radical Expressions • Modules 4-5 • Chapter 6 Radical Expressions pp.157-166 (Lm)
			27.solves equations involving radical expressions.***	**M9AL-IIi-1**	• BEAM Second Year • Module 11 (TG) • EASE Module Second Year • Radical Expressions • Module 6 • Chapter 6 Radical Expressions pp.167-170 (LM)
			28. solves problems involving radicals.	**M9AL-IIj-1**	• BEAM Second Year • Module 11 (TG) • EASE Module Second Year • Radical Expressions • Module 6 • Chapter 6 Radical Expressions pp.171 (LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 9- THIRD QUARTER					
Geometry	demonstrates understanding of key concepts of quadrilaterals (parallelograms, trapezoids, kites) and triangle similarity.	is able to investigate, analyze, and solve problems involving quadrilaterals (parallelograms, trapezoids, kites) and triangle similarity through appropriate and accurate representation.	29. identifies quadrilaterals that are parallelograms.	**M9GE-IIIa-1**	• BEAM Third Year • Module 12 (TG) • APEX Lesson 1-7 • Quadrilaterals • Geometry Chapter 1 Geometry of Shape and Size ▪ Quadrilaterals p.17 Chapter 4 Quadrilaterals • 4.1.3 The Parallelogram and its properties p.124 (LM)
			30. determines the conditions that guarantee a quadrilateral a parallelogram.	**M9GE-IIIa-2**	• BEAM Third Year • Module 12 (TG) • Geometry Chapter 4 Quadrilaterals • 4.2. Conditions which guarantee that a quadrilateral is a parallelogram p.132 (LM)
			31. uses properties to find measures of angles, sides and other quantities involving parallelograms.	**M9GE-IIIb-1**	• EASE Module Third Year • Properties of Quadrilaterals • Module 1 (LM)
			32. proves theorems on the different kinds of parallelogram (rectangle, rhombus, square).	**M9GE-IIIc-1**	
			33. proves the Midline Theorem.	**M9GE-IIId-1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			34. proves theorems on trapezoids and kites.	**M9GE-IIId-2**	
			35. solves problems involving parallelograms, trapezoids and kites.	**M9GE-IIIe-1**	• EASE Module Third Year • Properties of Quadrilaterals • Module 1 (LM)
			36. describes a proportion.	**M9GE-IIIf-1**	• BEAM Third Year • Module 15 (TG) • EASE Module Third Year • Similarity • Module 1 • APEX Math Triangles Unit 4 • Lesson 1-10 • Geometry Chapter 5 Similarity • 5.1. Ratio and Proportion p.145 (LM)
			37. applies the fundamental theorems of proportionality to solve problems involving proportions.	**M9GE-IIIf-2**	• BEAM Third Year • Module 15 • APEX Math Triangles Unit 4 • Lesson 1-10 • Geometry Chapter 5 Similarity • 5.1. Ratio and Proportion p.145
			38. illustrates similarity of figures.	**M9GE-IIIg-1**	• BEAM Third Year, Module 16 (TG) • EASE Module Third Year • Similar Triangles, Module 2 • APEX Math Triangles Unit 4 • Lesson 1-10 • Geometry Chapter 5 • 5.2. Similarity between triangles p.149 (LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			39. proves the conditions for similarity of triangles. *** 39.1 SAS similarity theorem 39.2 SSS similarity theorem 39.3 AA similarity theorem 39.4 right triangle similarity theorem 39.5 special right triangle theorems	**M9GE-IIIg-h-1**	• BEAM Third Year, Module 16 • (TG) • EASE Module Third Year • Similar Triangles, Module 2 • APEX Math Triangles Unit 4 • Lesson 1-10 • Geometry Chapter 5 Similarity • 5.2.4. Basic Similarity Theorems p.157 • 5.4. Similarities in Right Triangles p.166 (LM)
			40. applies the theorems to show that given triangles are similar.	**M9GE-IIIi-1**	• BEAM Third Year, Module 16 (TG) • EASE Module Third Year • Similar Triangles, Module 2 • Geometry Chapter 5 Similarity • 5.2.4. Basic Similarity Theorems p.157 • 5.4. Similarities in Right Triangles p.166 (LM)
			41. proves the Pythagorean Theorem.	**M9GE-IIIi-2**	• APEX Math Similarity of Triangles Unit 4 • Lesson 11-16 • Geometry Chapter 5 Similarity • 5.4.2. The Pythagorean Theorem p.169

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			42. solves problems that involve triangle similarity and right triangles.***	M9GE-IIIj-1	• BEAM Third Year, Module 16 (TG) • EASE Module Third Year • Similarity, Module 3 • APEX Math Similarity of Triangles Unit 4 • Lesson 11-16 • Geometry Chapter 5 Similarity • 5.5. Problems Involving Similar Triangles and Other Special Right Triangles p.175 (LM)
• Grade 9- FOURTH QUARTER					
Geometry	demonstrates understanding of the basic concepts of trigonometry.	is able to apply the concepts of trigonometric ratios to formulate and solve real-life problems with precision and accuracy	43. illustrates the six trigonometric ratios: sine, cosine, tangent, secant, cosecant, and cotangent.	M9GE-IVa-1	• BEAM Fourth Year, Module 13 (TG) • EASE Module Fourth Year • Triangle Trigonometry, Module 1 (LM)
			44. finds the trigonometric ratios of special angles.	M9GE -IVb-c-1	•
			45. illustrates angles of elevation and angles of depression.	M9GE-IVd-1	• BEAM Fourth Year, Module 13 (TG) • EASE Module Fourth Year • Triangle Trigonometry, Module 2 (LM)
			46. uses trigonometric ratios to solve real-life problems involving right triangles. ***	M9GE-IVe-1	• BEAM Fourth Year, Module 13 (TG) • EASE Module Fourth Year • Triangle Trigonometry, Module 2 (LM)

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			47. illustrates laws of sines and cosines.	**M9GE-IVf-g-1**	• BEAM Fourth Year, Module 13 (TG) • EASE Module Fourth Year Triangle Trigonometry, Module 2 Math IV: Advanced Algebra. Trigonometry, and Statistics (Lesson Plans) 2002 EBEC (Week 6-7) pp.50-56 (LM)
			48. solves problems involving oblique triangles.	**M9GE-IVh-j-1**	• BEAM Fourth Year, Module 13 (TG) • EASE Module Fourth Year • Triangle Trigonometry, Module 2 (LM)

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 10- FIRST QUARTER					
Patterns and Algebra	demonstrates understanding of key concepts of sequences, polynomials and polynomial equations.	is able to formulate and solve problems involving sequences, polynomials and polynomial equations in different disciplines through appropriate and accurate representations.	1. generates patterns.***	**M10AL-Ia-1**	
			2. illustrates an arithmetic sequence	**M10AL-Ib-1**	
			3. determines arithmetic means and nth term of an arithmetic sequence.***	**M10AL-Ib-c-1**	
			4. finds the sum of the terms of a given arithmetic sequence.***	**M10AL-Ic-2**	
			5. illustrates a geometric sequence.	**M10AL-Id-1**	
			6. differentiates a geometric sequence from an arithmetic sequence.	**M10AL-Id-2**	
			7. differentiates a finite geometric sequence from an infinite geometric sequence.	**M10AL-Id-3**	
			8. determines geometric means and nth term of a geometric sequence.***	**M10AL-Ie-1**	
			9. finds the sum of the terms of a given finite or infinite geometric sequence.***	**M10AL-Ie-2**	
			10. illustrates other types of sequences (e.g., harmonic, Fibonacci).	**M10AL-If-1**	
			11. solves problems involving sequences.	**M10AL-If-2**	
			12. performs division of polynomials using long division and synthetic division.	**M10AL-Ig-1**	
			13. proves the Remainder Theorem and the Factor Theorem.	**M10AL-Ig-2**	
			14. factors polynomials.	**M10AL-Ih-1**	
			15. illustrates polynomial equations.	**M10AL-Ii-1**	
			16. proves Rational Root Theorem.	**M10AL-Ii-2**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			17. solves polynomial equations.	**M10AL-Ij-1**	
			18. solves problems involving polynomials and polynomial equations.	**M10AL-Ij-2**	
Grade 10- SECOND QUARTER					
Patterns and Algebra	demonstrates understanding of key concepts of polynomial function.	is able to conduct systematically a mathematical investigation involving polynomial functions in different fields.	19. illustrates polynomial functions.	**M10AL-IIa-1**	
			20. graphs polynomial functions.	**M10AL-IIa-b-1**	
			21. solves problems involving polynomial functions.	**M10AL-IIb-2**	
Geometry	demonstrates understanding of key concepts of circles and coordinate geometry.	1. is able to formulate and find solutions to challenging situations involving circles and other related terms in different disciplines through appropriate and accurate representations. 2. is able to formulate and solve problems involving geometric figures on the rectangular coordinate plane with perseverance and accuracy.	22. derives inductively the relations among chords, arcs, central angles, and inscribed angles.	**M10GE-IIc-1**	
			23. proves theorems related to chords, arcs, central angles, and inscribed angles.	**M10GE-IIc-d-1**	
			24. illustrates secants, tangents, segments, and sectors of a circle.	**M10GE-IIe-1**	
			25. proves theorems on secants, tangents, and segments.	**M10GE-IIe-f-1**	
			26. solves problems on circles.	**M10GE-IIf-2**	
			27. derives the distance formula.	**M10GE-IIg-1**	
			28. applies the distance formula to prove some geometric properties.	**M10GE-IIg-2**	
			29. illustrates the center-radius form of the equation of a circle.	**M10GE-IIh-1**	
			30. determines the center and radius of a circle given its equation and vice versa.	**M10GE-IIh-2**	
			31. graphs a circle and other geometric figures on the coordinate plane.***	**M10GE-IIi-1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			32. solves problems involving geometric figures on the coordinate plane.	M10GE-IIi-j-1	
Grade 10- THIRD QUARTER					
Statistics and Probability	demonstrates understanding of key concepts of combinatorics and probability.	is able to use precise counting technique and probability in formulating conclusions and making decisions.	33. illustrates the permutation of objects.	M10SP-IIIa-1	
			34. derives the formula for finding the number of permutations of n objects taken r at a time.	M10SP-IIIa-2	
			35. solves problems involving permutations.	M10SP-IIIb-1	
			36. illustrates the combination of objects.	M10SP-IIIc-1	
			37. differentiates permutation from combination of n objects taken r at a time.	M10SP-IIIc-2	
			38. derives the formula for finding the number of combinations of n objects taken r at a time	M10SP-IIId-1	
			39. solves problems involving permutations and combinations.	M10SP-IIId-e-1	
			40. illustrates events, and union and intersection of events.	M10SP-IIIf-1	
			41. illustrates the probability of a union of two events.	M10SP-IIIg-1	
			42. finds the probability of $(A \cup B)$.	M10SP-IIIg-h-1	
			43. illustrates mutually exclusive events.	M10SP-IIIi-1	
			44. solves problems involving probability.	M10SP-IIIi-j-1	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
Grade 10- FOURTH QUARTER					
Statistics and Probability	demonstrates understanding of key concepts of measures of position.	is able to conduct systematically a mini-research applying the different statistical methods.	45. illustrates the following measures of position: quartiles, deciles and percentiles.***	**M10SP-IVa-1**	
			46. calculates a specified measure of position (e.g. 90th percentile) of a set of data.	**M10SP-IVb-1**	
			47. interprets measures of position.	**M10SP-IVc-1**	
			48. solves problems involving measures of position.	**M10SP-IVd-e-1**	
			49. formulates statistical mini-research.	**M10SP-IVf-g-1**	
			50. uses appropriate measures of position and other statistical methods in analyzing and interpreting research data.	**M10SP-IVh-j-1**	

*** Suggestion for ICT enhanced lesson when available and where appropriate

K to 12 BASIC EDUCATION CURRICULUM

GLOSSARY

Accuracy	the quality of being correct and precise.
Applying	the skill of using concepts, procedures, algorithms and other mathematical constructs in practical situations and phenomena.
Communicating	the use of notations, symbols, figures, equations and functions to convey mathematical ideas.
Computing	the skill of calculating using correct algorithms, procedures and tools to arrive at a final exact result.
Conjecturing	the skill of formulating mathematical theories that still need to be proven.
Connecting	the skill of integrating mathematics to other school subjects and other areas in life.
Constructivism	the theory that knowledge is constructed when the learner is able to draw ideas from his/her own experiences and connects them to new ideas that are encountered.
Context	a locale, situation, or set of conditions of students that may influence their study and use of mathematics to develop critical thinking and problem solving skills.
Cooperative Learning	learning that is achieved by working with fellow learners as they all engage in a shared task.
Creativity	the skill of using available procedures in Mathematics and non-conventional methods to solve a problem and produce answers.
Critical Thinking	the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action (Scriven& Paul, 1987).
Decision-making	the skill of arriving at a choice or decision based on sound, logical procedures and mathematical analyses.
Discovery Learning	learning that is achieved by allowing students to discover new ideas using their experiences (Bruner, 1961).
Estimating	the skill of roughly calculating or judging a numerical value or quantity.
Experiential Learning	learning that occurs by making sense of direct everyday experiences (Kolb, 1984)
Inquiry-based Learning	learning that focuses on students asking questions and finding answers to their questions using their personal experiences.
Knowing and Understanding	meaningful acquisition of concepts that include memorizing and recalling of facts and procedures
Mathematical Problem Solving	finding a solution to a problem that is unknown (Polya, 1945 & 1962).
Modeling	the use of functions and graphs to represent relationships between and among quantities in a phenomenon.
Objectivity	the quality of judging, evaluating and making decisions based on mathematical facts and results without being influenced by subjective conditions.
Perseverance	firmness in finishing a task despite difficulties and obstacles.
Productivity	the quality of pursuing an activity to arrive at a meaningful and useful result or product.

K to 12 BASIC EDUCATION CURRICULUM

GLOSSARY

Proving   the skill of demonstrating the truth or falsity of a theory using reasoning and arguments.

Reasoning   the process of explaining using sound analyses, following the rules of logic.

Reflective Learning learning that is facilitated by deep thinking.

Representing   the use of figures and shapes, variables, equations and functions to concretize and illustrate quantities and their relationships.

Situated Learning   learning in the same context in which concepts and theories are applied.

Solving   to find the answer to an algebraic or mathematical problem using any procedures and tools available.

Visualizing   using one's creativity and imagination to produce images, pictures and other means to represent and understand mathematical concepts (MATHTED & SEI, 2010).

Sample: M7AL-IIg-2

LEGEND		SAMPLE	
First Entry	Learning Area and Strand/ Subject or Specialization	Mathematics	**M7**
	Grade Level	Grade 7	
Uppercase Letter/s	Domain/Content/ Component/ Topic	Patterns and Algebra	**AL**
			-
Roman Numeral *Zero if no specific quarter*	Quarter	Second Quarter	**II**
Lowercase Letter/s *Put a hyphen (-) in between letters to indicate more than a specific week*	Week	Week seven	**g**
			-
Arabic Number	Competency	Solves problems involving algebraic expressions	**2**

DOMAIN/ COMPONENT	CODE
Number Sense	NS
Geometry	GE
Patterns and Algebra	AL
Measurement	ME
Statistics and Probability	SP