MOST ESSENTIAL LEARNING COMPETENCIES IN MATHEMATICS

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Guiding our Teachers: A Briefer on Using The Math MELCs

Identifying the learning competencies in the Mathematics K to 10 Curriculum that satisfy the criterion endurance posits that these most essential learning competencies necessitates the realization of the twin goals of Mathematics – problem solving and critical thinking. Laying the foundational concepts and skills at each grade level are pivotal in the learning progression of each child. This consequently scaffold the learner's understanding and acquisition of higher skills.

The identified most essential learning competencies in Math puts premium on the development of numeracy skills which are fundamental to practical and real-life problems, rather than Math content-knowledge; and on the development of higher-order thinking skills which goes beyond procedural fluency. It followed the content domains as articulated in the curriculum – Numbers and Number Sense, Measurement, Geometry, Patterns and Algebra, and Statistics and Probability.

Similarly, the skills and processes to be developed as emphasized in the curriculum, are maintained. These include knowing and understanding; estimating, computing and solving; visualizing and modelling, representing and communicating, conjecturing, reasoning, proving and decision-making; and applying and connecting.

It is further aimed that the values and attitudes – accuracy, creativity, objectivity, perseverance, and productivity, be strongly honed among learners especially at this crucial time of health emergencies. The use of various instructional resources, especially calculators, computers, smart phones and tablets, while ensuring its appropriate use with respect to age and grade level of the learners, are likewise encouraged.

The value of Mathematics as a learning area should not be confined in the corners of a classroom or any learning space. Its application to real-life world problems should be dealt with depth and breadth which may be mirrored in classroom instruction.

Teachers, as the instructional leader in the implementation of the curriculum in the classroom, should use the identified most essential learning competencies as outlined in this document to help them decide on how to scaffold the achievement of the learning goals and meaningful learning in Math, in a reduced time allotment.

Examples:

Grade 1: Quarter 1

Learning Competencies	Comments/Recommendation	Identified MELCs
Visualizes and represents numbers from 0 to 100 using a variety of materials	Clustered as counting the number of objects subsumed or is part of visualizing and representing numbers	Visualizes and represents numbers from 0 to 100 using a variety of materials and methods
Counts the number of objects in a given set by ones and tens		
Visualizes and count by 2s, 5s, and 10s through 100		
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 and 0 and 5	Omitted as this will is also discussed in Quarter 3	
Visualizes, represents and compares two sets using expressions "less than," "more than," and "as many as"	Clustered and rephrased	Compares two sets using the expressions "less than," "more than," and "as many as" and orders sets from least to greatest and vice versa
Visualizes, represents and orders sets from least to greatest and vice versa		
Visualizes, represents and compares numbers up to 100 using relation symbols	Clustered and rephrased	Compares numbers up to 100 using relations symbols and ordering them in increasing and decreasing order
Visualizes, represents and orders numbers up to 100 in increasing or decreasing order		
Identifies the 1^{st}, 2^{nd}, 3^{rd} up to 10^{th} object in a given set from a given point of reference	Clustered and rephrased	Identifies, reads and writes ordinal numbers: 1^{st}, 2^{nd}, 3^{rd}, up to 10^{th} object in a given set from a given point of reference
Reads and writes ordinal numbers: 1^{st}, 2^{nd}, 3^{rd} up to 10^{th}		

Grade 2, Quarter 4

Learning Competencies	Comments/Recommendation	Identified MELCs
Visualizes and finds the elapsed time in days	Omitted, subsumed in the next LC	Visualizes, represents and solves problems involving time (minutes including a.m. and p.m. and elapsed time in days)
Shows and uses the appropriate unit of length and their abbreviation cm and m to measure a particular object	Clustered and rephrased	Measures objects using appropriate measuring tools and units of length in m or cm
Measures objects using appropriate measuring tools in m or cm		
Compares length in meters or centimeters	Clustered and rephrased; the mathematical focus is on the comparing measures	Compares the following unit of measures: a. Length in meters or centimeters b. Mass in grams or kilograms c. Capacity in mL or L
Compares mass in grams or kilograms		

Learning Competencies	Comments/Recommendation	Identified MELCs
Shows and uses the appropriate unit of weight and their abbreviations g and kg to measure a particular object	Clustered and rephrased	Measures objects using appropriate measuring tools and measuring units in g or kg
Measures objects using appropriate measuring units in g or kg		

Learning Competencies	Comments/Recommendation	Identified MELCs
Illustrates area as measure of how much surface is covered or occupied by a plane figure	Omitted, subsumed in the LC of finding the area using square tiles	
Collects data on one variable using questionnaire	Omitted, learners have better grasps of this LC in Grade 4 be as they may not be somehow struggling in reading and writing	
Sorts, classifies, and organizes data in tabular form and present this into a pictograph without and with scales		
Tells whether an event is likely, equally likely, unlikely to happen	Omitted as this may also be taken in Grade 3 for the discussion of probability of events	
Describe events in real-life situations using the phrases "likely to happen" or "unlikely to happen" or "equally likely to happen"		

Grade 6 Quarter 2

Learning Competencies	Comments/Recommendation	Identified MELCs
Sets up proportions for groups of objects or numbers and for given situation	omitted	
Identifies real-life situations that make use of integers	Clustered and rephrased	Describe the set of integers and identify real-life situations that make use of it
Describes the set of integers		
Represents integers on the number line	LC is subsumed to the next LC	Compares and arranges integers on the number line
Compares and arranges integers		

Grade 8 Quarter 2

Learning Competency	Comments/Recommendations	Identified MELCS
Illustrates linear inequalities in two variables	Clustered, rephrased	Illustrates and graphs linear inequalities in two variables
Graphs linear inequalities in two variables		
Illustrates a linear function	Clustered and rephrased	Graphs and illustrates a linear function and its (a) domain; (b) range; (c) table of values; (d) intercepts; and (e) slope
Graphs a linear function and its (a) domain; (b) range; (c) table of values; (d) intercepts; and (e) slope		

How to Use the MELCs in Math

1. Appraise the content standards in each quarter of your grade level. This will guide you on tracking the learning content being focused per quarter.
2. Plan the instructional activities suited for the type of learning delivery modality being used based from the performance standards specified in that particular quarter. Ensure the appropriateness of the learning materials, instructional resources and/or instructional device to be utilized to achieve these standards.
3. Examine the identified most essential competencies for each quarter. This will be the learning goal for the quarter. Break it down to each month, then per week, then per day. If the learning competency is seemingly a big chunk of a learning goal, then it has to be sub-tasked. But bear in mind that the development of the math skill is arguably of more importance than the competence of content-knowledge in Math. For example, place a great emphasis on how to perform operations on fractions and how it can be utilized in real life context than on defining the different types of fractions
4. In your instructional/learning plans, design activities or assessment tasks where learners will have a great deal of analysis and problem-solving. A case in point is on analyzing the graph of an equation where tasks should not be concentrated on how the learners will draw the graph of the equation as this may be augmented through the use of spreadsheets or software application, but on the analysis of the graph and how these graph is illustrated to solve real-life problems.

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Grade 1 to 10 MATHEMATICS

Most Essential Learning Competencies
School Year 2020-2021

Grade Level: **Grade 1**
Subject: **Mathematics**

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	demonstrates understanding of whole numbers up to 100, ordinal numbers up to 10th, money up to PhP100.	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.	Visualizes,represents and counts numbers from 0 to 100 using a variety of materials and methods.	Week 1	M1NS-Ia-1.1
			identifies the number that is one more or one less from a given number.	Week 2	M1NS-Ib-3
			regroups sets of ones into sets of tens and sets of tens into hundreds using objects.	Week 3	M1NS- Id-5
			compares two sets using the expressions “less than,” “more than,” and “as many as” and orders sets from least to greatest and vice versa.	Week 4	
			reads and writes numbers up to 100 in symbols and in words.	Week 5	M1NS-If-9.1
			visualizes and gives the place value and value of a digit in one- and two-digit numbers.	Week 6	M1NS-Ig-10.1
			renames numbers into tens and ones.		M1NS-Ig-11
			compares numbers up to 100 using relation symbol and orders them in increasing or decresing order.	Week 7	
			Identifies, reads and writes ordinal numbers: 1st , 2nd, 3rd, up to 10th object in a given set from a given point of reference.	Week 8	
			recognizes and compares coins and bills up to PhP100 and their notations.	Week 9	M1NS-Ij-19.1
Q2			illustrates addition as “putting together or combining or joining sets”	Week 1 to 2	M1NS-IIa-23

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	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.	visualizes and adds the following numbers using appropriate techniques: a. two one-digit numbers with sums up to 18 b. three one-digit numbers c. numbers with sums through 99 without and with regrouping		
			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.	Week 3	M1NS-IIe-29.1
			illustrates subtraction as "taking away" or "comparing" elements of sets.	Week 4	M1NS-IIf-24
			illustrates that addition and subtraction are inverse operations.		M1NS-IIf-25
			visualizes, represents, and subtracts the following numbers: a. one-digit numbers with minuends through 18 (basic facts) b. one- to two-digit numbers with minuends up to 99 without regrouping c. one- to two-digit numbers with minuends up to 99 with regrouping	Week 5 to 6	
			subtracts mentally one-digit numbers from two-digit minuends without regrouping using appropriate strategies.	Week 7	M1NS-IIi-33.1
			visualizes, represents, and solves routine and non-routine problems involving subtraction of whole numbers including money with minuends	Week 8	M1NS-IIi-34.1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			up to 99 with and without regrouping using appropriate problem solving strategies and tools.		
Q3	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.	counts groups of equal quantity using concrete objects up to 50 and writes an equivalent expression. e.g. 2 groups of 5	Week 1	M1NS-IIIa-37
			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
			visualizes, represents, divides a whole into halves and fourths and identifies ½ and ¼ of a whole object.	Week 2	
			visualizes, represents and divides the elements of sets into two groups of equal quantities to show halves and four groups of equal quantities to show fourths	Week 3	
			visualizes and draws the whole region or set given its ½ and/or ¼	Week 4	M1NS-IIId-75
	demonstrates understanding of 2-dimensional and 3-dimensional figures.	is able to describe, compare, and construct 2-dimensional and 3-dimensional objects	identifies, names, and describes the four basic shapes (square, rectangle, triangle and circle) in 2-dimensional (flat/plane) and 3-dimensional (solid) objects.	Week 5	M1GE-IIIe-1
			draws the four basic shapes.	Week 6	M1GE-IIIf-3
			constructs three dimensional objects (solid) using manipulative materials.		M1GE-IIIf-4
	demonstrates understanding of	is able to apply knowledge of	determines the missing term/s using one attribute in a given continuous pattern (letters/ numbers/events) and in a given	Week 7	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	continuous and repeating patterns and mathematical sentences.	continuous and repeating patterns and number sentences in various situations.	repeating pattern (letters, numbers, colors, figures, sizes, etc.).		
			constructs equivalent number expression using addition and subtraction. e.g. 6 + 5 = 12 - 1	Week 8	M1AL-IIIh-8
			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
			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	Week 9	M1AL-IIIj-10
Q4	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	tells the days in a week; months in a year in the right order.	Week 1	M1ME-IVa-1
			determines the day or the month using a calendar.	Week 2	M1ME-IVa-2
			tells and writes time by hour, half-hour and quarter-hour using analog clock.	Week 3	M1ME-IVb-3
			solves problems involving time (days in a week, months in a year, hour, half-hour, and quarter-hour)	Week 4	M1ME-IVb-4
			compares objects using comparative words: short, shorter, shortest; long, longer, longest; heavy, heavier, heaviest; light, lighter, lightest.	Week 5 to 6	M1ME-IVc-19
			estimates and measures length, mass and capacity using non- standard units of measures.	Week 7	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	demonstrates understanding of pictographs without scales and outcomes of an event.	is able to interpret simple representations of data (tables and pictographs without scales).	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 …	Week 8	M1SP-IVh-3.1
			solves routine and non-routine problems using data presented in pictograph without scales.	Week 9	M1SP-IVh-4.1

Grade Level: Grade 2
Subject: Mathematics

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	1. demonstrates understanding of whole numbers up to 1000, ordinal numbers up to 20th, and money up to PhP100. 2. demonstrates understanding of	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	visualizes and represents numbers from 0-1000 with emphasis on numbers 101 – 1 000 using a variety of materials.	Week 1	M2NS-Ia-1.2
			gives the place value and finds the value of a digit in three-digit numbers.		M2NS-Ib-10.2
			visualizes and counts numbers by 10s, 50s, and 100s.	Week 2	M2NS-Ib-8.2
			reads and writes numbers up to 1 000 in symbols and in words.		M2NS-Ic-9.2
			visualizes and writes three-digit numbers in expanded form.	Week 3	M2NS-Ic-14
			compares numbers up using relation symbols and orders numbers up to 1 000 in increasing or decreasing order.		

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	addition of whole numbers up to 1000 including money.	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.	Identifies, reads and writes ordinal numbers from 1st through the 20th object in a given set from a given point of reference.	Week 4	
			reads and writes money in symbols and in words through PhP100.		M2NS-If-20.1
			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).	Week 5	M2NS-If-21
			compares values of different denominations of coins and paper bills through PhP100 using relation symbols.		M2NS-If-22.1
			illustrates the properties of addition (commutative, associative, identity) and applies each in appropriate and relevant situations.	Week 6	M2NS-Ig-26.3
			visualizes, represents, and adds the following numbers with sums up to 1000 without and with regrouping: a. 2-digit by 3-digit numbers b. 3-digit by 3-digit numbers		
			adds mentally the folllowing numbers using appropriate strategies: a. 1- to 2-digit numbers with sums up to 50 b. 3-digit numbers and 1-digit numbers c. three -digit numbers and tens (multiples of 10 up to 90) d. 3-digit numbers and hundreds (multiples of 100 up to 900)	Week 7 to 8	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			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.	Week 9	M2NS-Ij-29.2
Q2	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.	visualizes, represents, and subtracts 2- to 3-digit numbers with minuends up to 999 without and with regrouping.	Week 1	M2NS-IIa-32.5
			subtracts mentally the following numbers without regrouping using appropriate strategies: a. 1-digit numbers from 1- to 3-digit numbers b. 3-digit numbers by tens and by hundreds	Week 2	
			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.	Week 3	M2NS-IIc-34.2
			performs orders of operations involving addition and subtractions of small numbers.	Week 4	M2NS-IId-34.3
			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.	Week 5	M2NS-IIe-34.4
			illustrates and writes a related equation for each type of multiplication: repeated addition, array, counting by multiples, and equal jumps on the number line.	Week 6	
			illustrates the following properties of multiplication and applyc each in relevant situation: (a) identity, (b) zero, and, (c) commutative.	Week 7	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			visualizes multiplication of numbers 1 to 10 by 2,3,4,5 and10.	Week 8	M2NS-IIh-41.1
			multiplies mentally 2,3,4,5 and 10 using appropriate strategies.		M2NS-IIi-42.1
			solves routine and non-routine problems using appropriate problem solving strategies and tools: a. multiplication of whole numbers including money b. multiplication and addition or subtraction of whole numbers including money	Week 9	
Q3	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.	visualizes and represents division, 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.	Week 1	
			visualizes division of numbers up to 100 by 2,3,4,5, and 10 (multiplication table of 2, 3, 4, 5 and 10).	Week 2	M2NS-IIIb-51.1
			divides mentally numbers by 2,3,4,5 and 10 using appropriate strategies (multiplication table of 2, 3, 4, 5 and 10).	Week 3	M2NS-IIIb-52.1
			illustrates that multiplication and division are inverse operations.		M2NS-IIIc-53
			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.	Week 4	M2NS-IIIc-56.1
			visualizes, represents and identifies unit fractions with denominators of 10 and below.	Week 5 to 6	M2NS-IIId-72.2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			reads and writes unit fractions.		M2NS-IIId-76.1
			compares using relation symbol and arranges in increasing or decreasing order the unit fractions.		
			identifies other fractions less than one with denominators 10 and below.		M2NS-IIIe-79.1
			visualizes (using group of objects and number line), reads and writes similar fractions		
			compares similar fractions using relation symbols.	Week 7	M2NS-IIIf-77.2
			arranges similar fractions in increasing or decreasing order.		M2NS-IIIf-78.2
	demonstrates understanding of straight and curved lines, flat and curved surfaces and basic shapes.	is able to recognize and construct straight and curved lines, flat and curved surfaces and basic shapes	constructs squares, rectangles, triangles, circles, half-circles, and quarter circles using cut-outs and square grids.	Week 8	M2GE-IIIg-6
			identifies straight lines and curves, flat and curved surfaces in a 3-dimensional object.		M2GE-IIIi-9
	demonstrates understanding of continuous patterns using two attributes	is able to apply knowledge of continuous patterns using two attributes	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,__,__	Week 9	M2AL-IIIj-3
Q4	demonstrates understanding of time, standard measures of length, mass	is able to apply knowledge of time, standard measures of length, weight, and capacity, and	tells and writes time in minutes including a.m. and p.m. using analog and digital clocks.	Week 1	M2ME-IVa-5
			visualizes, represents, and solves problems involving time (minutes including a.m. and p.m. and elapsed time in days).		
			compares the following unit of measures:	Week 2	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	and capacity and area using square-tile units.	area using square-tile units in mathematical problems and real-life situations.	a. length in meters or centimeters b. mass in grams or kilograms c. capacity in mL or L		
			measures objects using appropriate measuring tools and unit of leangth in m or cm.	Week 3	
			estimates and measures length using meter or centimeter.		M2ME-IVc-26
			solves routine and non-routine problems involving length.	Week 4	M2ME-IVc-27
			measures objects using appropriate measuring tools and measuring units in g or kg.	Week 5	
			estimates and measures mass using gram or kilogram.		M2ME-IVe-31
			solves routine and non-routine problems involving mass.	Week 6	M2ME-IVe-32
			measures objects using appropriate measuring tools in mL or L.		M2ME-IVf-33
			finds the area of a given figure using square-tile units i.e. number of square-tiles needed.	Week 7	M2ME-IVg-36
			estimates the area of a given figure using any shape.		M2ME-IVh-37
			solves routine and non-routine problems involving any figure using square tiles.	Week 8	M2ME-IVh-38
	deepens understanding of	is able to interpret simple	infers and interprets data presented in a pictograph without and with scales.	Week 9	M2SP-IVi-3.2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	pictographs without and with scales	representations of data (pictographs without and with scales)	solves routine and non-routine problems using data presented in a pictograph without and with scales.		M2SP-IVi-4.2

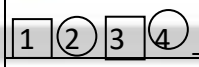
Grade Level: Grade 3
Subject: Mathematics

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	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	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.	visualizes numbers up to 10 000 with emphasis on numbers 1001 - 10000.	Week 1	M3NS-Ia-1.3
			gives the place value and value of a digit in 4- to 5-digit numbers.		M3NS-Ia-10.3
			reads and writes numbers up to 10 000 in symbols and in words.		M3NS-Ia-9.3
			rounds numbers to the nearest ten, hundred and thousand..	Week 2	M3NS-Ib-15.1
			compares using relation symbols and orders in increasing or decreasing order 4- to 5-digit numbers up to 10 000.		
			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.	Week 3	M3NS-Ic-16.3
			recognizes, reads and writes money in symbols and in words through PhP1 000 in pesos and centavos		

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	whole numbers including money	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.	compares values of the different denominations of coins and bills through PhP1 000 using relation symbols.	Week 4	M3NS-Id-22.2
			adds 3- to 4-digit numbers up to three addends with sums up to 10 000 without and with regrouping.		M3NS-Id-27.6
			estimates the sum of 3- to 4-digit addends with reasonable results.	Week 5	M3NS-Ie-31
			adds mentally the following numbers using appropriate strategies: a. 2-digit and 1-digit numbers without or with regrouping b. 2- to 3-digit numbers with multiples of hundreds		
			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.	Week 6	M3NS-If-29.3
			subtracts 3-to 4-digit numbers from 3- to 4-digit numbers without and with regrouping.	Week 7	M3NS-Ig-32.6
			estimates the difference of two numbers with three to four digits with reasonable results.		M3NS-Ih-36
			subtracts mentally the following numbers using appropriate strategies: a. 1- to 2-digit numbers without and with regrouping b. 2- to 3-digit numbers with multiples of hundreds without and with regrouping	Week 8	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			solves routine and non-routine problems involving subtraction without or with addition of whole numbers including money using appropriate problem solving strategies and tools.	Week 9	M3NS-Ii-34.5
Q2	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	visualizes multiplication of numbers 1 to 10 by 6,7,8 and 9.	Week 1	M3NS-IIa-41.2
			visualizes and states basic multiplication facts for numbers up to 10.		M3NS-IIa-41.3
			Illustrates the properties of multiplication in relevant situations (commutative property, distributive property or associative property)	Week 2 to 3	
			multiplies numbers: a. 2- to 3-digit numbers by 1-digit numbers without or with regrouping b. 2-digit numbers by 2-digit numbers without regrouping c. 2-digit number by 2-digit numbers with regrouping d. 2- to 3-digit numbers by multiples of 10 and 100 e. 1- to 2-digit numbers by 1 000		
			estimates the product of 2- to 3-digit numbers and 1- to 2-digit numbers with reasonable results .	Week 4	M3NS-IId-44.1
			multiplies mentally 2-digit by 1-digit numbers without regrouping with products of up to 100.		M3NS-IIe-42.2
			solves routine and non-routine problems involving multiplication without or with addition and subtraction of whole numbers including money	Week 5	M3NS-IIe-45.3

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			using appropriate problem solving strategies and tools.		
			visualizes and states the multiples of 1- to 2-digit numbers.	Week 6	M3NS-IIf-47
			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
			visualizes and states basic division facts of numbers up to 10.	Week 7	M3NS-IIg-51.3
			divides numbers without or with remainder: a. 2- to 3-digit numbers by 1- to 2- digit numbers b. 2-3 digit numbers by 10 and 100		
			estimates the quotient of 2- to 3- digit numbers by 1- to 2- digit numbers.	Week 8	M3NS-IIi-55.1
			divides mentally 2-digit numbers by 1-digit numbers without remainder using appropriate strategies.		M3NS-IIi-52.2
			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.	Week 9	M3NS-IIj-56.2
Q3	demonstrates understanding of proper and improper, similar and dissimilar and	is able to recognize and represent proper and improper, similar and dissimilar and	identifies odd and even numbers.	Week 1	M3NS-IIIa-63
			visualizes and represents fractions that are equal to one and greater than one using regions, sets and number line.		
			reads and writes fractions that are equal to one and greater than one in symbols and in words.	Week 2	M3NS-IIIb-76.3

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	equivalent fractions.	equivalent fractions in various forms and contexts.	Represents, compares and arranges dissimilar fractions in increasing or decreasing order.	Week 3	
			visualizes and generates equivalent fractions.	Week 4	M3NS-IIIe-72.7
	demonstrates understanding of lines and symmetrical designs	is able to recognize and represent lines in real objects and designs or drawings and complete symmetrical designs	recognizes and draws a point, line, line segment and ray.	Week 5	M3GE-IIIe-11
			recognizes and draws parallel, intersecting and perpendicular lines.		M3GE-IIIf-12.1
			visualizes, identifies and draws congruent line segments.	Week 6	M3GE-IIIf-13
			identifies and visualizes symmetry in the environment and in design.		M3GE-IIIg-7.3
			identifies and draws the line of symmetry in a given symmetrical figure.	Week 7	M3GE-IIIg-7.4
			completes a symmetric figure with respect to a given line of symmetry.		M3GE-IIIh-7.5
	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	determines the missing term/s in a given combination of continuous and repeating pattern. e.g. 4A,5B, 6A,7B,__ 	Week 8	M3AL-IIIi-4
			finds the missing value in a number sentence involving multiplication or division of whole numbers. e.g. n x 7 = 56 56 ÷ n = 8	Week 9	M3AL-IIIj-12

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		various situations.			
Q4	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.	visualizes, represents, and converts time measure: a. from seconds to minutes, minutes to hours, and hours to a day and vice versa b. days to week, month and year and vice versa c. weeks to months and year and vice versa d. months to year and vice versa.	Week 1	
			solves problems involving conversion of time measure.	Week 2	
			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.	Week 3	M3ME-IVb-39
			visualizes, and represents, and solves routine and non-routine problems involving conversions of common units of measure.		M3ME-IVc-40
			solves routine and non-routine problems involving capacity measure.	Week 4	
			visualizes, and represents, and measures area using appropriate unit.	Week 5	M3ME-IVd-43
			solves routine and non-routine problems involving areas of squares and rectangles.		M3ME-IVf-46
	demonstrates understanding of bar graphs and outcomes of an	is able to create and interpret simple representations	collects data on one variable using existing records.	Week 6	M3SP-IVg-1.3
			sorts, classifies, and organizes data in tabular form and presents this into a vertical or horizontal bar graph.		M3SP-IVg-2.3

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	event using the terms sure, likely, equally likely, unlikely, and impossible to happen.	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.	infers and interprets data presented in different kinds of bar graphs (vertical/ horizontal).	Week 7	M3SP-IVh-3.3
			solves routine and non-routine problems using data presented in a single-bar graph.	Week 8	M3SP-IVh-4.3
			tells whether an event is sure, likely, equally likely, unlikely, and impossible to happen.	Week 9	M3SP-IVi-7.3
			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

Grade Level: **Grade 4**
Subject: **Mathematics**

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	1. demonstrates understanding of whole numbers up to 100,000.	1. is able to recognize and represent whole numbers up to 100,000 in various forms and contexts.	visualizes numbers up to 100 000 with emphasis on numbers 10 001–100 000.	Week 1	M4NS-Ia-1.4
			gives the place value and value of a digit in numbers up to 100 000.		M4NS-Ia-10.4
			reads and writes numbers, in symbols and in words, up to hundred thousand and compare them using relation symbols		
	2. demonstrates understanding of multiplication and division of whole numbers including money.	2. is able to apply multiplication and division of whole numbers including money in mathematical problems and real-life situations.	rounds numbers to the nearest thousand and ten thousand.	Week 2	M4NS-Ib-5.2
			orders numbers up to 100 000 in increasing or decreasing order.		M4NS-Ib-13.4
			multiplies numbers up to 3-digit numbers by up to 2-digit numbers without or with regrouping.	Week 3	M4NS-Ic-43.7
			estimates the products of 3- to 4-digit numbers by 2- to 3- digit numbers with reasonable results.		M4NS-Ic-44.2
			multiplies mentally 2-digit by 1-to 2-digit numbers with products up to 200 and explains the strategies used.	Week 4	M4NS-Id-42.3
			solves routine and non-routine problems involving multiplication of whole numbers including money using appropriate problem solving strategies and tools.		M4NS-Id-45.4
			solves multi-step routine and non-routine problems involving multiplication and	Week 5	M4NS-Ie-45.5

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			addition or subtraction using appropriate problem solving strategies and tools.		
			divides 3- to 4-digit numbers by 1-to 2-digit numbers without and with remainder.	Week 6	M4NS-If-54.3
			divides mentally 2- to 4-digit numbers by tens or hundreds or by 1 000 without and with remainder.		
			estimates the quotient of 3- to 4-digit dividends by 1- to 2-digit divisors with reasonable results.	Week 7	M4NS-Ig-55.2
			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.	Week 8	M4NS-Ih-56.3
			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
			performs a series of two or more operations applying Multiplication, Division, Addition, Subtraction (MDAS) correctly.	Week 9	
Q2	1. demonstrates understanding of factors and multiples and	1. is able to apply knowledge of factors and multiples, and addition and	identifies factors of a given number up to 100.	Week 1	M4NS-IIa-64
			identifies the multiples of a given number up to 100.		M4NS-IIa-65
			differentiates prime from composite numbers.		M4NS-IIb-66

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	addition and subtraction of fractions. 2. demonstrates understanding of improper fractions, mixed numbers and decimals	subtraction of fractions in mathematical problems and real-life situations. 2. is able to recognize and represent improper fractions, mixed numbers and decimals	writes a given number as a product of its prime factors.	Week 2	M4NS-IIb-67
			finds the common factors, greatest common factor (GCF), common multiples and least common multiple (LCM) of two numbers using the following methods: listing, prime factorization, and continuous division.		
			solves real-life problems involving GCF and LCM of 2 given numbers.	Week 3	M4NS-IId-70.1
			changes improper fraction to mixed numbers and vice versa.	Week 4	M4NS-IIe-80
			changes fractions to lowest forms.		M4NS-IIe-81
			visualizes addition and subtraction of similar and dissimilar fractions.	Week 5	
			visualizes subtraction of a fraction from a whole number.		M4NS-IIf-82.2
			performs addition and subtraction of similar and dissimilar fractions.	Week 6	M4NS-IIg-83
			solves routine and non-routine problems involving addition and/or subtraction of fractions using appropriate problem solving strategies and tools.		M4NS-IIh-87.1
			visualizes decimal numbers using models like blocks, grids, number lines and money to show the relationship to fractions.	Week 7	M4NS-IIi-99
			renames decimal numbers to fractions, and fractions whose denominators are factors of 10 and 100 to decimals.		M4NS-IIi-100

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			gives the place value and the value of a digit of a given decimal number through hundredths.	Week 8	M4NS-IIi-101.1
			reads and writes decimal numbers through hundredths.		M4NS-IIj-102.1
			rounds decimal numbers to the nearest whole number and tenth.	Week 9	M4NS-IIj-103.1
			compares and arranges decimal numbers.		M4NS-IIj-104.1
Q3	demonstrates understanding of the concepts of parallel and perpendicular lines, angles, triangles, and quadrilaterals.	is able to describe parallel and perpendicular lines, angles, triangles, and quadrilaterals	describes and draws parallel, intersecting, and perpendicular lines using ruler and set square.	Week 1	
			describes and illustrates different angles (right, acute, and obtuse) using models.	Week 2	M4GE-IIIb-14
			describes the attributes/properties of triangles and quadrilaterals using concrete objects or models.		M4GE-IIIb-15
			identifies and describes triangles according to sides and angles.	Week 3	M4GE-IIIc-16
			identifies and describes the different kinds of quadrilaterals: square, rectangle, parallelogram, trapezoid, and rhombus.		M4GE-IIIc-17
			relates triangles to quadrilaterals	Week 4	M4GE-IIId-18.1
			relates one quadrilateral to another quadrilateral (e.g. square to rhombus).		M4GE-IIId-18.2
	demonstrates understanding of concepts of continuous and	is able to identify the missing element in a pattern and number sentence.	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.)	Week 5	M4AL-IIIe-5

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	repeating patterns and number sentences.		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 ● 3 ■ 5 ▲ 7 ____		
			finds the missing number in an equation involving properties of operations. (e.g. (4+__) + 8 = 4 + (5 + __)		M4AL-IIIe-13
	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.	finds the elapsed time in minutes and seconds.	Week 6	M4ME-IIIf-11
			estimates the duration of time in minutes.		M4ME-IIIf-12
			solves problems involving elapsed time.		M4ME-IIIg-13
			visualizes the perimeter of any given plane figure in different situations.	Week 7	M4ME-IIIg-48
			measures the perimeter of any given figure using appropriate tools.		M4ME-IIIh-49
			finds the perimeter of triangles, squares, rectangles, parallelograms, and trapezoids.		M4ME-IIIi-51
			solves routine and non-routine problems in real-life situations involving perimeter of squares and rectangles, triangles, parallelograms, and trapezoids.	Week 8	M4ME-IIIi-52
			differentiates perimeter from area.	Week 9	M4ME-IIIj-53
			converts sq. cm to sq. m and vice versa.		M4ME-IIIj-54
Q4			finds the area of irregular figures made up of squares and rectangles using sq. cm and sq. m.	Week 1	M4ME-IVa-55
			finds the area of triangles, parallelograms and trapezoids using sq. cm and sq. m.		M4ME-IVb-58

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			solves routine and non-routine problems involving squares, rectangles, triangles, parallelograms, and trapezoids.	Week 2	M4ME-IVc-60
			visualizes the volume of solid figures in different situations using non-standard (e.g. marbles, etc.) and standard units.	Week 3	M4ME-IVd-62
			finds the volume of a rectangular prism using cu. cm and cu. m.		M4ME-IVe-64
			solves routine and non-routine problems involving the volume of a rectangular prism.	Week 4	M4ME-IVf-65
	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.	collects data on two variables using any source.	Week 5	M4SP-IVg-1.4
			organizes data in tabular form and presents them in a single/double horizontal or vertical bar graph.		M4SP-IVg-2.4
			interprets data presented in different kinds of bar graphs (vertical/horizontal, single/double bars).	Week 6	M4SP-IVg-3.4
			solves routine and non-routine problems using data presented in a single or double-bar graph.		M4SP-IVh-4.4
			draws inferences based on data presented in a double-bar graph.	Week 7	M4SP-IVh-5.4
			records favorable outcomes in a simple experiment (e.g. tossing a coin, spinning a wheel, etc.)		M4SP-IVi-9
			expresses the outcome in a simple experiment in words, symbols, tables, or graphs.	Week 8	M4SP-IVi-10

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			explains the outcomes in an experiment.		M4SP-IVi-11
			solves routine and non-routine problems involving a simple experiment.	Week 9	M4SP-IVj-12

Grade Level: Grade 5
Subject: Mathematics

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	demonstrates understanding of divisibility, order of operations, factors and multiples, and the four fundamental operations involving fractions	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.	uses divisibility rules for 2, 5, and 10 to find the common factors of numbers.	Week 1	M5NS-Ib-58.1
			uses divisibility rules for 3, 6, and 9 to find common factors.		M5NS-Ib-58.2
			uses divisibility rules for 4, 8, 12, and 11 to find common factors.	Week 2	M5NS-Ib-58.3
			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
			Performs a series of more than two operations on whole numbers applying Parenthesis, Multiplication, Division, Addition, Subtraction (PMDAS) or Grouping, Multiplication, Division, Addition, Subtraction (GMDAS) correctly.	Week 3	
			finds the common factors, GCF, common multiples and LCM of 2–4 numbers using continuous division.	Week 4	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			solves real-life problems involving GCF and LCM of 2-3 given numbers.		M5NS-Ie-70.2
			adds and subtracts fractions and mixed fractions without and with regrouping.	Week 5	M5NS-Ie-84
			solves routine and non-routine problems involving addition and/or subtraction of fractions using appropriate problem solving strategies and tools.		M5NS-If-87.2
			visualizes multiplication of fractions using models.	Week 6	M5NS-Ig-89
			multiplies a fraction and a whole number and another fraction.		M5NS-Ig-90.1
			multiplies mentally proper fractions with denominators up to 10.		M5NS-Ig-91
			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.	Week 7	M5NS-Ih-92.1
			shows that multiplying a fraction by its reciprocal is equal to 1.		M5NS-Ih-94
			visualizes division of fractions.	Week 8	M5NS-Ii-95
			divides simple fractions and whole numbers by a fraction and vice versa		M5NS-Ii-96.1
			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 .	Week 9	M5NS-Ij-97.1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q2	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.	gives the place value and the value of a digit of a given decimal number through ten thousandths.	Week 1	M5NS-IIa-101.2
			reads and writes decimal numbers through ten thousandths.		M5NS-IIa-102.2
			rounds decimal numbers to the nearest hundredth and thousandth.		M5NS-IIa-103.2
			compares and arranges decimal numbers.	Week 2	M5NS-IIb-104.2
			adds and subtracts decimal numbers through thousandths without and with regrouping.		M5NS-IIb-106.1
			solves routine or non-routine problems involving addition and subtraction of decimal numbers including money using appropriate problem solving strategies and tools.	Week 3	M5NS-IIc-108.1
			multiplies decimals up to 2 decimal places by 1- to 2-digit whole numbers.	Week 4	M5NS-IId-111.1
			multiplies decimals with factors up to 2 decimal places.		M5NS-IId-111.2
			estimates the products of decimal numbers with reasonable results.	Week 5	M5NS-IIe-112
			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

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			divides decimals with up to 2 decimal places.	Week 6	M5NS-IIf-116.1
			divides whole numbers with quotients in decimal form.		M5NS-IIf-116.2
			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.	Week 7	M5NS-IIg-120.1
			visualizes the ratio of 2 given numbers.		M5NS-IIh-122
			identifies and writes equivalent ratios.	Week 8	M5NS-IIi-124
			expresses ratios in their simplest forms.		M5NS-IIi-125
			finds the missing term in a pair of equivalent ratios.	Week 9	M5NS-IIi-126
			defines and describes a proportion.		M5NS-IIj-127
			recognizes when two quantities are in direct proportion.		M5NS-IIj-128
Q3	demonstrates understanding of percent.	is able to apply percent in mathematical problems and real-life situations	visualizes percent and its relationship to fractions, ratios, and decimal numbers using models.	Week 1	M5NS-IIIa-136
			defines percentage, rate or percent, and base.		M5NS-IIIa-137
			identifies the base, percentage, and rate in a problem.		M5NS-IIIa-138
			finds the percentage in a given problem.	Week 2	M5NS-IIIb-139
			solves routine and non-routine problems involving percentage using appropriate strategies and tools.		M5NS-IIIb-140

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	demonstrates understanding of polygons, circles, and solid figures.	is able to construct and describe polygons, circles, and solid figures.	visualizes, names, describes and draws polygons with 5 or more sides.	Week 3	M5GE-IIIc-19
			describes and compares properties of polygons (regular and irregular polygons).		M5GE-IIIc-20
			visualizes congruent polygons.		M5GE-IIId-22
			identifies the terms related to a circle.	Week 4	M5GE-IIId-23.2
			draws circles with different radii using a compass.		M5GE-IIIe-24
			visualizes and describes solid figures.	Week 5	M5GE-IIIe-25
			makes models of different solid figures: cube, prism, pyramid, cylinder, cone, and sphere using plane figures.		M5GE-IIIe-26
	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	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)	Week 6	M5AL-IIIf-6
			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
	demonstrates understanding of time and circumference.	is able to apply knowledge of time and circumference in mathematical	measures time using a 12-hour and a 24-hour clock.	Week 7	M5ME-IIIg-14
			calculates time in the different world time zones in relation to the Philippines.		M5ME-IIIg-15
			solves problems involving time.		M5ME-IIIg-16
			visualizes circumference of a circle.	Week 8	M5ME-IIIh-67

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		problems and real-life situations.	measures circumference of a circle using appropriate tools.		M5ME-IIIh-68
			finds the circumference of a circle.		M5ME-IIIi-70
			solves routine and non-routine problems involving circumference of a circle.	Week 9	M5ME-IIIj-71
Q4	demonstrates understanding of area, volume and temperature.	is able to apply knowledge of area, volume and temperature in mathematical problems and real-life situations.	finds the area of a given circle.	Week 1	M5ME-IVa-74
			solves routine and non-routine problems involving the area of a circle.		M5ME-IVb-75
			visualizes the volume of a cube and rectangular prism.	Week 2	M5ME-IVc-77
			names the appropriate unit of measure used for measuring the volume of a cube and a rectangle prism.		M5ME-IVc-78
			converts cu. cm to cu. m and vice versa; cu.cm to L and vice versa.		M5ME-IVd-80
			finds the volume of a given cube and rectangular prism using cu. cm and cu. m.	Week 3	M5ME-IVd-81
			estimates and uses appropriate units of measure for volume.		M5ME-IVd-82
			solves routine and non-routine problems involving volume of a cube and rectangular prism in real-life situations using appropriate strategies and tools.	Week 4	M5ME-IVe-83
			reads and measures temperature using thermometer (alcohol and/or digital) in degree Celsius.	Week 5	M5ME-IVf-85
			solves routine and non-routine problems involving temperature in real-life situations.		M5ME-IVf-87

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	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.	organizes data in tabular form and presents them in a line graph.	Week 6	M5SP-IVg-2.5
			interprets data presented in different kinds of line graphs (single to double-line graph).		M5SP-IVh-3.5
			solves routine and non-routine problems using data presented in a line graph.	Week 7	M5SP-IVh-4.5
			draws inferences based on data presented in a line graph.		M5SP-IVh-5.5
			describes experimental probability.	Week 8	M5SP-IVi-14
			performs an experimental probability and records result by listing.		M5SP-IVi-15
			analyzes data obtained from chance using experiments involving letter cards (A to Z) and number cards (0 to 20).	Week 9	M5SP-IVi-16
			solves routine and non-routine problems involving experimental probability.		M5SP-IVj-17

Grade Level: **Grade 6**
Subject: **Mathematics**

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	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.	adds and subtracts simple fractions and mixed numbers without or with regrouping.	Week 1	M6NS-Ia-86
			solves routine and non-routine problems involving addition and/or subtraction of fractions using appropriate problem solving strategies and tools.		M6NS-Ia-87.3
			multiplies simple fractions and mixed fractions.	Week 2	M6NS-Ib-90.2
			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
			divides simple fractions and mixed fractions.	Week 3	M6NS-Ic-96.2
			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
			adds and subtracts decimals and mixed decimals through ten thousandths without or with regrouping.	Week 4	M6NS-Id-106.2
			solves 1 or more steps routine and non-routine problems involving addition and/or		M6NS-Id-108.2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			subtraction of decimals and mixed decimals using appropriate problem solving strategies and tools.		
			multiplies decimals and mixed decimals with factors up to 2 decimal places.	Week 5	M6NS-Ie-111.3
			multiplies mentally decimals up to 2 decimals places by 0.1, 0.01,10, and 100.		M6NS-Ie-111.4
			solves routine and non-routine problems involving multiplication of decimals and mixed decimals including money using appropriate problem solving strategies.		M6NS-Ie-113.2
			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.	Week 6	M6NS-If-113.3
			divides: a. whole numbers by decimals up to 2 decimal places and vice versa b. decimals/mixed decimals up to 2 decimal places	Week 7	
			divides decimals: a. up to 4 decimal places by 0.1, 0.01, and 0.001 b. up to 2 decimal places by 10, 100, and 1 000 mentally	Week 8	
			differentiates terminating from repeating, non-terminating decimal quotients.	Week 9	M6NS-Ii-119

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			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
			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.	Week 10	M6NS-Ij-120.3
Q2	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.	expresses one value as a fraction of another given their ratio and vice versa.	Week 1	M6NS-IIa-129
			defines and illustrates the meaning of ratio and proportion using concrete or pictorial models.		M6NS-IIb-131
			finds a missing term in a proportion (direct, inverse, and partitive).	Week 2	M6NS-IIb-133
			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
			finds the percentage or rate or percent in a given problem.	Week 3	M6NS-IId-142
			solves routine and non-routine problems involving finding the percentage, rate and base using appropriate strategies and tools.		M6NS-IId-143

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			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.	Week 4	M6NS-IIe-144
			describes the exponent and the base in a number expressed in exponential notation.	Week 5	M6NS-IIf-146
			gives the value of numbers expressed in exponential notation.		M6NS-IIf-147
			interprets and explains the Grouping, Exponent, Multiplication, Division, Addition, Subtraction (GEMDAS) rule.	Week 6	M6NS-IIf-148
			performs two or more different operations on whole numbers with or without exponents and grouping symbols.		M6NS-IIf-149
			describe the set of integers and identify real-life situations that make use of it.	Week 7	
			compares integers with other numbers such as whole numbers, fractions, and decimals.		M6NS-IIg-152
			compares and arranges integers on the number line.	Week 8	
			describes and interprets the basic operations on integers using materials such as algebra tiles, counters, chips, and cards.		M6NS-IIh-155
			performs the basic operations on integers.	Week 9	M6NS-IIi-156
			solves routine and non-routine problems involving basic operations of integers using appropriate strategies and tools.	Week 10	M6NS-IIj-157

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q3	demonstrates understanding of solid figures.	is able to construct and describe the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere.	visualizes and describes the different solid figures: cube, prism, pyramid, cylinder, cone, and sphere using various concrete and pictorial models.	Week 1	
			differentiates solid figures from plane figures.		M6GE-IIIa-28
			identifies the faces of a solid figure.		M6GE-IIIb-30
	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.	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)	Week 2	M6AL-IIId-7
			differentiates expression from equation.		M6AL-IIId-15
			gives the translation of real-life verbal expressions and equations into letters or symbols and vice versa.	Week 3	M6AL-IIIe-16
			defines a variable in an algebraic expression and equation.		M6AL-IIIe-17
			represents quantities in real-life situations using algebraic expressions and equations.	Week 4	M6AL-IIIe-18
			solves routine and non-routine problems involving different types of numerical expressions and equations such as 7+ 9 =___ + 6.		M6AL-IIIf-19
	demonstrates understanding of rate and speed,	is able to apply knowledge of speed, area, and surface area	calculates speed, distance, and time.	Week 5	M6ME-IIIg-17
			solves problems involving average rate and speed.		M6ME-IIIg-18

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	and of area and surface area of plane and solid/space figures.	of plane and solid/space figures in mathematical problems and real-life situations	finds the area of composite figures formed by any two or more of the following: triangle, square, rectangle, circle, and semi-circle.	Week 6	M6ME-IIIh-89
			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
			visualizes and describes surface area and names the unit of measure used for measuring the surface area of solid/space figures.	Week 7	M6ME-IIIi-91
			finds the surface area of cubes, prisms, pyramids, cylinders, cones, and spheres.	Week 8	M6ME-IIIi-93
			solves word problems involving measurement of surface area.	Week 9	M6ME-IIIj-94
Q4	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.	determines the relationship of the volume between a rectangular prism and a pyramid; a cylinder and a cone; and a cylinder and sphere.	Week 1	M6ME-IVa-95
			finds the volume of cylinders, pyramids, cones, and spheres.	Week 2	M6ME-IVb-97
			solves routine and non-routine problems involving volumes of solids.		M6ME-IVc-98
			reads and interprets electric and water meter readings.	Week 3	M6ME-IVd-100
			solves routine and non-routine problems involving electric and water consumption.		M6ME-IVd-101

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	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.	constructs a pie graph based on a given set of data and interpret it.	Week 4	
			solves routine and non-routine problems using data presented in a pie graph.	Week 5	M6SP-IVf-4.6
			describes the meaning of probability such as 50% chance of rain and one in a million chance of winning.	Week 6	M6SP-IVg-19
			performs experiments and records outcomes.		M6SP-IVh-21
			makes listings and diagrams of outcomes and tells the number of favorable outcomes and chances using these listings and diagrams.	Week 7	M6SP-IVi-22
			makes simple predictions of events based on the results of experiments.	Week 8	M6SP-IVi-23
			solves routine and non-routine problems involving experimental and theoretical probability.	Week 9	M6SP-IVj-24

Grade Level: **Grade 7**
Subject: **Mathematics**

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	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.	illustrates well-defined sets, subsets, universal sets, null set, cardinality of sets, union and intersection of sets and the different of two sets	Week 1	
			solves problems involving sets with the use of Venn Diagram.	Week 2	
			represents the absolute value of a number on a number line as the distance of a number from 0.	Week 3	M7NS-Ic-1
			performs fundamental operations on integers.		M7NS-Ic-d-1
			illustrates the different properties of operations on the set of integers.	Week 4	M7NS-Id-2
			expresses rational numbers from fraction form to decimal form and vice versa.		M7NS-Ie-1
			performs operations on rational numbers	Week 5	M7NS-If-1
			describes principal roots and tells whether they are rational or irrational.	Week 6	M7NS-Ig-1
			determines between what two integers the square root of a number is.		M7NS-Ig-2
			estimates the square root of a whole number to the nearest hundredth.	Week 7	M7NS-Ig-3
			plots irrational numbers (up to square roots) on a number line.***		M7NS-Ig-4
			illustrates the different subsets of real numbers.	Week 8	M7NS-Ih-1
			arranges real numbers in increasing or decreasing order and on a number line.		
			writes numbers in scientific notation and vice versa.	Week 9	M7NS-Ii-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			represents real-life situations and solves problems involving real numbers.		
Q2	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.	approximates the measures of quantities particularly length , weight/mass, volume, time, angle and temperature and rate.	Week 1	M7ME-IIa-3
			converts measurements from one unit to another in both Metric and English systems.	Week 2	M7ME-IIb-1
			solves problems involving conversion of units of measurement.		M7ME-IIb-2
	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	translates English phrases to mathematical phrases and English sentences to mathematics sentences, and vice versa.	Week 3	
			Illustrates and differentiates related terms in algebra: a. a^n where n is a positive integer b. constants and variables c. literal coefficients and numerical coefficients d. algebraic expressions, terms and polynomials e. number of terms, degree of the term and degree of the polynomial.		
			evaluates algebraic expressions for given values of the variables.	Week 4	M7AL-IIc-4
			adds and subtracts polynomials.		M7AL-IId-2
			derives the laws of exponent.	Week 5	M7AL-IId-e-1
			multiplies and divides polynomials.		M7AL-IIe-2
			uses models and algebraic methods to find the: (a) product of two binomials; (b) product of the sum and	Week 6	M7AL-IIe-g-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		inequalities in one variable.	difference of two terms; (c) square of a binomial; (d) cube of a binomial; (e) product of a binomial and a trinomial.		
			solves problems involving algebraic expressions.	Week 7 to 8	M7AL-IIg-2
			differentiates algebraic expressions, equations and inequalities.		
			illustrates linear equation and inequality in one variable.		M7AL-IIh-4
			finds the solution of linear equation or inequality in one variable.	Week 9	M7AL-IIi-1
			solves linear equation or inequality in one variable involving absolute value by: (a) graphing; and (b) algebraic methods.		M7AL-IIi-j-1
			solves problems involving equations and inequalities in one variable.		M7AL-IIj-2
Q3	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	represents point, line and plane using concrete and pictorial models.	Week 1	M7GE-IIIa-1
			illustrates subsets of a line.		M7GE-IIIa-2
			classifies the different kinds of angles.		M7GE-IIIa-3
			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.	Week 2	M7GE-IIIb-1
			derives relationships among angles formed by parallel lines cut by a transversal using measurement and by inductive reasoning.	Week 3	M7GE-IIIc-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		and angles of a polygon	uses a compass and straightedge to bisect line segments and angles and construct perpendiculars and parallels.	Week 4	M7GE-IIId-e-1
			illustrates polygons: (a) convexity; (b) angles; and (c) sides.	Week 5	M7GE-IIIe-2
			derives inductively the relationship of exterior and interior angles of a convex polygon.	Week 6	M7GE-IIIf-1
			illustrates a circle and the terms related to it: radius, diameter chord, center, arc, chord, central angle, and inscribed angle.	Week 7	M7GE-IIIg-1
			constructs triangles, squares, rectangles, regular pentagons, and regular hexagons.	Week 8	M7GE-IIIh-i-1
			solves problems involving sides and angles of a polygon.	Week 9	M7GE-IIIj-1
Q4	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	poses real-life problems that can be solved by Statistics.	Week 1	M7SP-IVa-2
			formulates simple statistical instruments.		M7SP-IVa-3
			gathers statistical data.	Week 2	M7SP-IVb-1
			organizes data in a frequency distribution table.	Week 3	M7SP-IVc-1
			uses appropriate graphs to represent organized data: pie chart, bar graph, line graph, histogram, and ogive.	Week 4 to 5	M7SP-IVd-e-1
			illustrates the measures of central tendency (mean, median, and mode) of a statistical data.	Week 6	M7SP-IVf-1
			calculates the measures of central tendency of ungrouped and grouped data.		M7SP-IVf-g-1
			illustrates the measures of variability (range, average deviation, variance, standard deviation) of a statistical data.	Week 7	M7SP-IVh-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		interpretation in different fields.	calculates the measures of variability of grouped and ungrouped data.		M7SP-IVh-i-1
			uses appropriate statistical measures in analyzing and interpreting statistical data.	Week 8 to 9	M7SP-IVj-1
			draws conclusions from graphic and tabular data and measures of central tendency and variability.		M7SP-IVj-2

Grade Level: Grade 8
Subject: Mathematics

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	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	is able to formulate real-life problems involving factors of polynomials, rational algebraic expressions, linear equations and inequalities in two variables, systems of	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).	Week 1 to 2	M8AL-Ia-b-1
			solves problems involving factors of polynomials.		M8AL-Ib-2
			illustrates rational algebraic expressions.	Week 3	M8AL-Ic-1
			simplifies rational algebraic expressions.		M8AL-Ic-2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	two variables and linear functions.	linear equations and inequalities in two variables and linear functions, and solve these problems accurately using a variety of strategies.	performs operations on rational algebraic expressions.	Week 4	M8AL-Ic-d-1
			solves problems involving rational algebraic expressions.		M8AL-Id-2
			illustrates the rectangular coordinate system and its uses.	Week 5	M8AL-Ie-1
			illustrates linear equations in two variables.		M8AL-Ie-3
			Illustrates and finds the slope of a line given two points, equation, and graph.		
			writes the linear equation $ax + by = c$ in the form $y = mx + b$ and vice versa.	Week 6	M8AL-If-1
			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
			describes the graph of a linear equation in terms of its intercepts and slope.		M8AL-If-3
			finds the equation of a line given (a) two points; (b) the slope and a point; (c) the slope and its intercepts.	Week 7	M8AL-Ig-1
			solves problems involving linear equations in two variables.		M8AL-Ig-2
			illustrates a system of linear equations in two variables.	Week 8	M8AL-Ih-1
			graphs a system of linear equations in two variables.		M8AL-Ih-2
			categorizes when a given system of linear equations in two variables has graphs that are parallel, intersecting, and coinciding.		M8AL-Ih-3

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			solves problems involving systems of linear equations in two variables by (a) graphing; (b) substitution; (c) elimination.	Week 9	
Q2	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.	differentiates linear inequalities in two variables from linear equations in two variables.	Week 1	M8AL-IIa-2
			Illustrates and graphs linear inequalities in two variables.		
			solves problems involving linear inequalities in two variables.		M8AL-IIa-4
			solves problems involving systems of linear inequalities in two variables.	Week 2	M8AL-IIb-2
			illustrates a relation and a function.	Week 3	M8AL-IIc-1
			verifies if a given relation is a function.		M8AL-IIc-2
			determines dependent and independent variables.		M8AL-IIc-3
			finds the domain and range of a function.	Week 4	M8AL-IId-1
			graphs and illustrates a linear function and its (a) domain; (b) range; (c) table of values; (d) intercepts; and (e) slope.		
			solves problems involving linear functions.	Week 5	M8AL-IIe-2
	demonstrates understanding of key concepts of logic and reasoning.	is able to communicate mathematical thinking with coherence and clarity in formulating and	determines the relationship between the hypothesis and the conclusion of an if-then statement.	Week 6	M8GE-IIf-1
			transforms a statement into an equivalent if-then statement.		M8GE-IIf-2
			determines the inverse, converse, and contrapositive of an if-then statement.	Week 7	M8GE-IIg-1
			illustrates the equivalences of: (a) the statement and its contrapositive; and (b) the converse and inverse of a statement.	Week 8	M8GE-IIg-2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		analyzing arguments.	uses inductive or deductive reasoning in an argument.	Week 9	M8GE-IIh-1
			writes a proof (both direct and indirect).		M8GE-IIi-j-1
Q3	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. 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.	describes a mathematical system.	Week 1 to 2	M8GE-IIIa-1
			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
			illustrates triangle congruence.	Week 3 to 4	M8GE-IIId-1
			illustrates the SAS, ASA and SSS congruence postulates.		M8GE-IIId-e-1
			solves corresponding parts of congruent triangles	Week 5	M8GE-IIIf-1
			proves two triangles are congruent.	Week 6	M8GE-IIIg-1
			proves statements on triangle congruence.	Week 7	M8GE-IIIh-1
			applies triangle congruence to construct perpendicular lines and angle bisectors.	Week 8 to 9	M8GE-IIIi-j-1
Q4	demonstrates understanding of key concepts of	is able to communicate mathematical	illustrates theorems on triangle inequalities (Exterior Angle Inequality Theorem, Triangle Inequality Theorem, Hinge Theorem).	Week 1	M8GE-IVa-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	inequalities in a triangle, and parallel and perpendicular lines.	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.	applies theorems on triangle inequalities.	Week 2	M8GE-IVb-1
			proves inequalities in a triangle.	Week 3	M8GE-IVc-1
			proves properties of parallel lines cut by a transversal.	Week 4	M8GE-IVd-1
			determines the conditions under which lines and segments are parallel or perpendicular.	Week 5	M8GE-IVe-1
	demonstrates understanding of key concepts of probability.	is able to formulate and solve practical problems involving probability of simple events.	illustrates an experiment, outcome, sample space and event.	Week 6	M8GE-IVf-1
			counts the number of occurrences of an outcome in an experiment: (a) table; (b) tree diagram; (c) systematic listing; and (d) fundamental counting principle.	Week 7	M8GE-IVf-g-1
			finds the probability of a simple event.	Week 8	M8GE-IVh-1
			illustrates an experimental probability and a theoretical probability.	Week 9	M8GE-IVi-1
			solves problems involving probabilities of simple events.		M8GE-IVi-j-1

Grade Level: **Grade 9**
Subject: **Mathematics**

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	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.	illustrates quadratic equations.	Week 1	M9AL-Ia-1
			solves quadratic equations by: (a) extracting square roots; (b) factoring; (c) completing the square; and (d) using the quadratic formula.		M9AL-Ia-b-1
			characterizes the roots of a quadratic equation using the discriminant.	Week 2 to 3	M9AL-Ic-1
			describes the relationship between the coefficients and the roots of a quadratic equation.		**M9AL-Ic-2**
			solves equations transformable to quadratic equations (including rational algebraic equations).		M9AL-Ic-d-1
			solves problems involving quadratic equations and rational algebraic equations.	Week 4	M9AL-Ie-1
			illustrates quadratic inequalities	Week 5	M9AL-If-1
			solves quadratic inequalities.		M9AL-If-2
			solves problems involving quadratic inequalities.		M9AL-If-g-1
			models real-life situations using quadratic functions.	Week 6	M9AL-Ig-2
			represents a quadratic function using: (a) table of values; (b) graph; and (c) equation.		M9AL-Ig-3
			transforms the quadratic function defined by $y = ax^2 + bx + c$ into the form $y = a(x - h)^2 + k$.	Week 7 to 8	M9AL-Ih-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			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
			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
			determines the equation of a quadratic function given: (a) a table of values; (b) graph; (c) zeros.	Week 9	M9AL-Ij-1
			solves problems involving quadratic functions.		M9AL-Ii-j-2
Q2	demonstrates understanding of key concepts of variation and radicals.	is able to formulate and solve accurately problems involving radicals.	illustrates situations that involve the following variations: (a) direct; (b) inverse; (c) joint; (d) combined.	Week 1 to 2	M9AL-IIa-1
			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
			solves problems involving variation.		M9AL-IIb-c-1
			applies the laws involving positive integral exponents to zero and negative integral exponents.	Week 3	M9AL-IId-1
			simplifies expressions with rational exponents.	Week 4	M9AL-IIe-1
			writes expressions with rational exponents as radicals and vice versa.		M9AL-IIf-1
			derives the laws of radicals.	Week 5	M9AL-IIf-2
			simplifies radical expressions using the laws of radicals.	Week 6	M9AL-IIg-1
			performs operations on radical expressions.	Week 7	M9AL-IIh-1
			solves equations involving radical expressions.	Week 8	M9AL-IIi-1
			solves problems involving radicals.	Week 9	M9AL-IIj-1
Q3			determines the conditions that make a quadrilateral a parallelogram.	Week 1	M9GE-IIIa-2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	demonstrates understanding of key concepts of parallelograms and triangle similarity.	is able to investigate, analyze, and solve problems involving parallelograms and triangle similarity through appropriate and accurate representation.	uses properties to find measures of angles, sides and other quantities involving parallelograms.		M9GE-IIIb-1
			proves theorems on the different kinds of parallelogram (rectangle, rhombus, square).	Week 2	M9GE-IIIc-1
			proves the Midline Theorem.	Week 3	M9GE-IIId-1
			proves theorems on trapezoids and kites.		M9GE-IIId-2
			solves problems involving parallelograms, trapezoids and kites.	Week 4	M9GE-IIIe-1
			describes a proportion.	Week 5	M9GE-IIIf-1
			applies the fundamental theorems of proportionality to solve problems involving proportions.		M9GE-IIIf-2
			illustrates similarity of figures.	Week 6 to 7	M9GE-IIIg-1
			proves the conditions for similarity of triangles. 1.1 SAS similarity theorem 1.2 SSS similarity theorem 1.3 AA similarity theorem 1.4 right triangle similarity theorem 1.5 special right triangle theorems		M9GE-IIIg-h-1
			applies the theorems to show that given triangles are similar.	Week 8	M9GE-IIIi-1
			proves the Pythagorean Theorem.		M9GE-IIIi-2
			solves problems that involve triangle similarity and right triangles.	Week 9	

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
					M9GE-IIIj-1
Q4	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.	illustrates the six trigonometric ratios: sine, cosine, tangent, secant, cosecant, and cotangent.	Week 1 to 2	M9GE-IVa-1
			finds the trigonometric ratios of special angles.		M9GE -IVb-c-1
			illustrates angles of elevation and angles of depression.	Week 3 to 5	M9GE-IVd-1
			uses trigonometric ratios to solve real-life problems involving right triangles.		M9GE-IVe-1
			illustrates laws of sines and cosines.	Week 6 to 9	M9GE-IVf-g-1
			solves problems involving oblique triangles.		M9GE-IVh-j-1

Grade Level: **Grade 10**
Subject: **Mathematics**

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	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.	generates patterns.	Week 1 to 2	M10AL-Ia-1
			illustrates an arithmetic sequence		M10AL-Ib-1
			determines arithmetic means, nth term of an arithmetic sequence and sum of the terms of a given arithmetics sequence.		
			illustrates a geometric sequence.	Week 3	M10AL-Id-1
			differentiates a geometric sequence from an arithmetic sequence.		M10AL-Id-2
			determines geometric means, nth term of a geometric sequence and sum of the terms of a given finite or infinite geometric sequence	Week 4	
			solves problems involving sequences.	Week 5	M10AL-If-2
			performs division of polynomials using long division and synthetic division.	Week 6	M10AL-Ig-1
			proves the Remainder Theorem, Factor Theorem and the Rational Root Theorem.		
			factors polynomials.	Week 7	M10AL-Ih-1
			illustrates polynomial equations.	Week 8	M10AL-Ii-1
			solves problems involving polynomials and polynomial equations.	Week 9	M10AL-Ij-2
Q2	demonstrates understanding of key concepts of	is able to conduct systematically a mathematical investigation involving	illustrates polynomial functions.	Week 1 to 2	M10AL-IIa-1
			understand, describe and interpret the graphs polynomial functions.		
			solves problems involving polynomial functions.		M10AL-IIb-2

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	polynomial function.	polynomial functions in different fields.			
	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.	derives inductively the relations among chords, arcs, central angles, and inscribed angles.	Week 3 to 4	M10GE-IIc-1
			proves theorems related to chords, arcs, central angles, and inscribed angles.		M10GE-IIc-d-1
			illustrates secants, tangents, segments, and sectors of a circle.	Week 5 to 6	M10GE-IIe-1
			proves theorems on secants, tangents, and segments.		M10GE-IIe-f-1
			solves problems on circles.		M10GE-IIf-2
			applies the distance formula to prove some geometric properties.	Week 7	M10GE-IIg-2
			illustrates the center-radius form of the equation of a circle.	Week 8	M10GE-IIh-1
			determines the center and radius of a circle given its equation and vice versa.		M10GE-IIh-2
			graphs and solves problems involving circles and other geometric figures on the coordinate plane.	Week 9	
Q3			illustrates the permutation of objects.	Week 1 to 2	M10SP-IIIa-1

Quarter	Content Standards The learner…	Performance Standards The learner…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	demonstrates understanding of key concepts of combinatorics and probability.	is able to use precise counting technique and probability in formulating conclusions and making decisions.	solves problems involving permutations		M10SP-IIIb-1
			illustrates the combination of objects.	Week 3 to 4	M10SP-IIIc-1
			differentiates permutation from combination of n objects taken r at a time.		M10SP-IIIc-2
			solves problems involving permutations and combinations	Week 5	M10SP-IIId-e-1
			illustrates events, and union and intersection of events.	Week 6	M10SP-IIIf-1
			illustrates the probability of a union of two events.	Week 7	M10SP-IIIg-1
			finds the probability of $(A \cup B)$.	Week 8	M10SP-IIIg-h-1
			illustrates mutually exclusive events.	Week 9	M10SP-IIIi-1
			solves problems involving probability.		M10SP-IIIi-j-1
Q4	demonstrates understanding of key concepts of measures of position.	is able to conduct systematically a mini-research applying the different statistical methods.	illustrates the following measures of position: quartiles, deciles and percentiles.	Week 1	M10SP-IVa-1
			calculates a specified measure of position (e.g. 90th percentile) of a set of data.	Week 2	M10SP-IVb-1
			interprets measures of position.	Week 3	M10SP-IVc-1
			solves problems involving measures of position.	Week 4 to 5	M10SP-IVd-e-1
			formulates statistical mini-research.	Week 6 to 7	M10SP-IVf-g-1
			uses appropriate measures of position and other statistical methods in analyzing and interpreting research data.	Week 8 to 9	M10SP-IVh-j-1

Department of Education
Bureau of Curriculum Development
Curriculum Standards Development Division
Meralco Avenue, Pasig City

SENIOR HIGH SCHOOL

MATH SUBJECTS

Most Essential Learning Competencies
School Year 2020-2021

May 2020

Grade Level: **Grade 11**
Subject: **General Mathematics**

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	key concepts of functions.	accurately construct mathematical models to represent real-life situations using functions.	represents real-life situations using functions, including piece-wise functions.	Week 1	M11GM-Ia-1
			evaluates a function.		M11GM-Ia-2
			performs addition, subtraction, multiplication, division, and composition of functions		M11GM-Ia-3
			solves problems involving functions.		M11GM-Ia-4
	key concepts of rational functions.	accurately formulate and solve real-life problems involving rational functions.	represents real-life situations using rational functions.	Week 2	M11GM-Ib-1
			distinguishes rational function, rational equation, and rational inequality.		M11GM-Ib-2
			solves rational equations and inequalities.		M11GM-Ib-3
			represents a rational function through its: (a) table of values, (b) graph, and (c) equation.		M11GM-Ib-4
			finds the domain and range of a rational function.		M11GM-Ib-5
			determines the: (a) intercepts; (b) zeroes; and (c) asymptotes of rational functions	Week 3	M11GM-Ic-1
			solves problems involving rational functions, equations, and inequalities.		M11GM-Ic-3
	key concepts of inverse functions, exponential functions, and	apply the concepts of inverse functions, exponential functions, and logarithmic functions to formulate	represents real-life situations using one-to one functions.	Week 4	M11GM-Id-1
			determines the inverse of a one-to-one function.		M11GM-Id-2
			represents an inverse function through its: (a) table of values, and (b) graph.		M11GM-Id-3

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	logarithmic functions.	and solve real-life problems with precision and accuracy.	finds the domain and range of an inverse function.		M11GM-Id-4
			solves problems involving inverse functions.	Week 5	M11GM-Ie-2
			represents real-life situations using exponential functions.		M11GM-Ie-3
			distinguishes between exponential function, exponential equation, and exponential inequality.		M11GM-Ie-4
			solves exponential equations and inequalities.	Week 6	M11GM-Ie-f-1
			represents an exponential function through its: (a) table of values, (b) graph, and (c) equation.		M11GM-If-2
			finds the domain and range of an exponential function.		M11GM-If-3
			determines the intercepts, zeroes, and asymptotes of an exponential function.		M11GM-If-4
			solves problems involving exponential functions, equations, and inequalities.	Week 7	M11GM-Ig-2
			represents real-life situations using logarithmic functions.	Week 8	M11GM-Ih-1
			distinguishes logarithmic function, logarithmic equation, and logarithmic inequality.		M11GM-Ih-2
			solves logarithmic equations and inequalities.		M11GM-Ih-i-1
			represents a logarithmic function through its: (a) table of values, (b) graph, and (c) equation.	Week 9	M11GM-Ii-2
			finds the domain and range of a logarithmic function.		M11GM-Ii-3

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			determines the intercepts, zeroes, and asymptotes of logarithmic functions.		M11GM-Ii-4
			solves problems involving logarithmic functions, equations, and inequalities.	Week 10	M11GM-Ij-2
Q2	key concepts of simple and compound interests, and simple and general annuities.	investigate, analyze and solve problems involving simple and compound interests and simple and general annuities using appropriate business and financial instruments.	illustrates simple and compound interests.	Week 1 to 2	M11GM-IIa-1
			distinguishes between simple and compound interests.		M11GM-IIa-2
			computes interest, maturity value, future value, and present value in simple interest and compound interest environment.		M11GM-IIa-b-1
			solves problems involving simple and compound interests.		M11GM-IIb-2
			illustrates simple and general annuities.	Week 3 to 4	M11GM-IIc-1
			distinguishes between simple and general annuities.		M11GM-IIc-2
			finds the future value and present value of both simple annuities and general annuities.		M11GM-IIc-d-1
			calculates the fair market value of a cash flow stream that includes an annuity.		M11GM-IId-2
			calculates the present value and period of deferral of a deferred annuity.		M11GM-IId-3
	basic concepts of stocks and bonds.	use appropriate financial instruments involving stocks and bonds in formulating conclusions and making decisions.	illustrate stocks and bonds.	Week 5	M11GM-IIe-1
			distinguishes between stocks and bonds.		M11GM-IIe-2
			describes the different markets for stocks and bonds.		M11GM-IIe-3
			analyzes the different market indices for stocks and bonds.		M11GM-IIe-4

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	basic concepts of business and consumer loans.	decide wisely on the appropriateness of business or consumer loan and its proper utilization.	illustrates business and consumer loans.	Week 6	M11GM-IIf-1
			distinguishes between business and consumer loans.		M11GM-IIf-2
			solves problems involving business and consumer loans (amortization, mortgage).		M11GM-IIf-3
	key concepts of propositional logic; syllogisms and fallacies.	judiciously apply logic in real-life arguments.	illustrates and symbolizes propositions.	Week 7	
			distinguishes between simple and compound propositions.		M11GM-IIg-3
			performs the different types of operations on propositions.		M11GM-IIg-4
			determines the truth values of propositions.	Week 8	M11GM-IIh-1
			illustrates the different forms of conditional propositions.		M11GM-IIh-2
			illustrates different types of tautologies and fallacies.	Week 9	M11GM-IIi-1
	key methods of proof and disproof.	appropriately apply a method of proof and disproof in real-life situations.	determines the validity of categorical syllogisms.		M11GM-IIi-2
			establishes the validity and falsity of real-life arguments using logical propositions, syllogisms, and fallacies.		M11GM-IIi-3

Grade Level: **Grade 11/12**
Subject: **Statistics and Probability**

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q3	The learner demonstrates understanding of key concepts of random variables and probability distributions.	The learner is able to apply an appropriate random variable for a given real-life problem (such as in decision making and games of chance).	illustrates a random variable (discrete and continuous).	Week 1	M11/12SP-IIIa-1
			distinguishes between a discrete and a continuous random variable.		M11/12SP-IIIa-2
			finds the possible values of a random variable.		M11/12SP-IIIa-3
			illustrates a probability distribution for a discrete random variable and its properties.		M11/12SP-IIIa-4
			computes probabilities corresponding to a given random variable.	Week 2	M11/12SP-IIIa-6
			illustrates the mean and variance of a discrete random variable.		M11/12SP-IIIb-1
			calculates the mean and the variance of a discrete random variable.		M11/12SP-IIIb-2
			interprets the mean and the variance of a discrete random variable.	Week 3	M11/12SP-IIIb-3
			solves problems involving mean and variance of probability distributions.		M11/12SP-IIIb-4
	The learner demonstrates understanding of key concepts of normal	The learner is able to accurately formulate and solve real-life problems in different disciplines	illustrates a normal random variable and its characteristics.		M11/12SP-IIIc-1
			identifies regions under the normal curve corresponding to different standard normal values.	Week 4	M11/12SP-IIIc-3
			converts a normal random variable to a standard normal variable and vice versa.		M11/12SP-IIIc-4

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	probability distribution.	involving normal distribution.	computes probabilities and percentiles using the standard normal table.		M11/12SP-IIIc-d-1
	The learner demonstrates understanding of key concepts of sampling and sampling distributions of the sample mean.	The learner is able to apply suitable sampling and sampling distributions of the sample mean to solve real-life problems in different disciplines.	illustrates random sampling.	Week 5	M11/12SP-IIId-2
			distinguishes between parameter and statistic.		M11/12SP-IIId-3
			identifies sampling distributions of statistics (sample mean).		M11/12SP-IIId-4
			finds the mean and variance of the sampling distribution of the sample mean.	Week 6	M11/12SP-IIId-5
			defines the sampling distribution of the sample mean for normal population when the variance is: (a) known; (b) unknown		M11/12SP-IIIe-1
			illustrates the Central Limit Theorem.	Week 7 to 8	M11/12SP-IIIe-2
			defines the sampling distribution of the sample mean using the Central Limit Theorem.		M11/12SP-III-3
			solves problems involving sampling distributions of the sample mean.		M11SP-IIIe-f-1
	The learner demonstrates understanding of key concepts of estimation of population mean and population proportion.	The learner is able to estimate the population mean and population proportion to make sound inferences in real-life problems in different disciplines.	illustrates the t-distribution.	Week 9	M11/12SP-IIIg-2
			identifies percentiles using the t-table.		M11/12SP-IIIg-5
			identifies the length of a confidence interval.	Week 10	M11/12SP-IIIj-1
			computes for the length of the confidence interval.		M11/12SP-IIIj-2
			computes for an appropriate sample size using the length of the interval.		M11/12SP-IIIj-3
			solves problems involving sample size determination.		M11/12SP-IIIj-4
Q4	The learner demonstrates understanding of	The learner is able to perform appropriate tests of hypotheses	illustrates: (a) null hypothesis; (b) alternative hypothesis; (c) level of significance; (d) rejection region; and (e) types of errors in hypothesis testing.	Week 1	M11/12SP-IVa-1

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	key concepts of tests of hypotheses on the population mean and population proportion.	involving the population mean and population proportion to make inferences in real-life problems in different disciplines.	identifies the parameter to be tested given a real-life problem.		M11/12SP-IVa-3
			formulates the appropriate null and alternative hypotheses on a population mean.	Week 2	M11/12SP-IVb-1
			identifies the appropriate form of the test-statistic when: (a) the population variance is assumed to be known; (b) the population variance is assumed to be unknown; and (c) the Central Limit Theorem is to be used.		M11/12SP-IVb-2
			identifies the appropriate rejection region for a given level of significance when: (a) the population variance is assumed to be known; (b) the population variance is assumed to be unknown; and (c) the Central Limit Theorem is to be used.	Week 3	M11/12SP-IVc-1
			computes for the test-statistic value (population mean).	Week 4	M11/12SP-IVd-1
			draws conclusion about the population mean based on the test-statistic value and the rejection region.		M11/12SP-IVd-2
			solves problems involving test of hypothesis on the population mean.	Week 5	M11/12SP-IVe-1
			formulates the appropriate null and alternative hypotheses on a population proportion.		M11/12SP-IVe-2
			identifies the appropriate form of the test-statistic when the Central Limit Theorem is to be used.		M11/12SP-IVe-3
			identifies the appropriate rejection region for a given level of significance when the Central Limit Theorem is to be used.	Week 6	M11/12SP-IVe-4

Quarter	Content Standards The learner demonstrates understanding of…	Performance Standards The learner is able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			computes for the test-statistic value (population proportion).		M11/12SP-IVf-1
			draws conclusion about the population proportion based on the test-statistic value and the rejection region.		M11/12SP-IVf-2
			solves problems involving test of hypothesis on the population proportion.	Week 7	M11/12SP-IVf-g-1
	The learner demonstrates understanding of key concepts of correlation and regression analyses.	The learner is able to perform correlation and regression analyses on real-life problems in different disciplines.	illustrates the nature of bivariate data.		M11/12SP-IVg-2
			constructs a scatter plot.		M11/12SP-IVg-3
			describes shape (form), trend (direction), and variation (strength) based on a scatter plot.		M11/12SP-IVg-4
			calculates the Pearson's sample correlation coefficient.	Week 8	M11/12SP-IVh-2
			solves problems involving correlation analysis.		M11/12SP-IVh-3
			identifies the independent and dependent variables.	Week 9	M11/12SP-IVi-1
			calculates the slope and y-intercept of the regression line.		M11/12SP-IVi-3
			interprets the calculated slope and y-intercept of the regression line.		M11/12SP-IVi-4
			predicts the value of the dependent variable given the value of the independent variable.	Week 10	M11/12SP-IVj-1
			solves problems involving regression analysis.		M11/12SP-IVj-2

Grade Level: **Grade 11**
Subject: **Business Mathematics**

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learners are able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
Q1	1. fractions 2. decimals and percentage	1. Solve problems involving fractions, decimals and percent related to business	Express: a. fractions to decimal and percent forms b. decimals to fractions and percent forms c. percent to fractions and decimal forms	Week 1 to 2	
			Give real-life situations to illustrate fractions, decimals, and percent		ABM_BM11FO-Ic-4
			Solve problems involving fractions, decimals, and percent		ABM_BM11FO-Id-5
	key concepts of ratio and proportion	1. formulate and solve problems involving ratio and proportion 2. use the concept of proportion in making life decisions	Identify the different kinds of proportions and write examples of real-life situations for each	Week 3	
			Solve problems involving direct, inverse and partitive proportion	Week 4	ABM_BM11RP-If-4
	key concepts in buying and selling	Analyze and solve problems on important factors in managing a	Differentiate Mark-on, Mark down and Mark-up	Week 5	ABM_BM11BS-Ig-1

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learners are able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
		business: buying products and selling products	obtain Mark-on, Mark-down, and Mark-up given price of a product		
			Differentiate mark-up from margins	Week 6	ABM_BM11BS-Ih-3
			Describe how gross margins is used in sales		ABM_BM11BS-Ih-4
			Compute single trade discounts and discount series		
			Differentiate profit from loss	Week 7	ABM_BM11BS-Ii-6
			Illustrate how profit is obtained and how to avoid loss in a given transaction		ABM_BM11BS-Ii-7
			Determine the break-even point	Week 8	
			Solve problems involving buying and selling products		ABM_BM11BS-Ij-9
			Compute interest specifically as applied to mortgage, amortization, and on services/utilities and on deposits and loans	Week 9	
Q2			Illustrate the different types of commissions	Week 1	ABM_BM11BS-IIa-11
			Compute commissions on cash basis and commission on instalment basis		ABM_BM11BS-IIa-12

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learners are able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
			Compute down payment, gross balance and current increased balance		
			Solve problems involving interests and commissions	Week 2	ABM_BM11BS-IIb-14
	the fundamental operations of mathematics as applied in salaries and wages	apply appropriate mathematical operation in computing salaries and wages	Define salary, wage, income, benefits	Week 3	ABM_BM11SW-IIc-1
			Compute gross and net earnings		ABM_BM11SW-IId-2
			Define each of the benefits given to wage earners	Week 4	ABM_BM11SW-IIe-5
			Distinguish taxable from nontaxable benefits		ABM_BM11SW-IIe-6
			Enumerate the standard deductions with the corresponding computation		ABM_BM11SW- IIe-7
			Identify the variables needed in the computation of the overtime	Week 5	ABM_BM11SW- IIe -8
			Compute overtime pay		ABM_BM11SW- IIe -9
			Use E- spread sheet in the computation of salary and overtime pay	Week 6	ABM_BM11SW- IIf -10
			Present graphical representation of the details or particulars of the salary.		ABM_BM11SW- IIf -13

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learners are able to…	Most Essential Learning competencies The learner…	Duration	K to 12 CG Code
	business data present them in graphs, charts, and tables	solve problems in real-life business situations, present data in graphical form, and analyze them	Compare the forms (textual, tabular and graphical) of business data.	Week 7	ABM_BM11PAD-IIg-2
			Analyze and interprets the data presented in the table using measures of central tendency and variability and tests of significant differences		ABM_BM11PAD-IIh-5
			Describe the different kinds of graphs and its essential parts for data presentation.	Week 8	
			Give a set of business data; identify the graphs to be used		ABM_BM11PAD-IIi-8
			Draw the graph/table to present the data		ABM_BM11PAD-IIi-9
			Analyze and interpret the data presented in a graph/table	Week 9	ABM_BM11PAD-IIi-10
			Use software (i.e., MS Excel, SPSS) programs to compute and present graphical representation of business data		ABM_BM11PAD-IIj-11

Grade Level: **Grade 11**
Subject: **Basic Calculus**

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learner shall be able to…	Most Essential Learning competencies The learners…	Duration	K to 12 CG Code
Quarter 3	the basic concepts of limit and continuity of a function	formulate and solve accurately real-life problems involving continuity of functions	illustrate the limit of a function using a table of values and the graph of the function	Week 1	STEM_BC11LC-IIIa-1
			distinguish between $\lim_{x\to c} f(x)$ and f(c)		STEM_BC11LC-IIIa-2
			illustrate the limit laws		STEM_BC11LC-IIIa-3
			apply the limit laws in evaluating the limit of algebraic functions (polynomial, rational, and radical		STEM_BC11LC-IIIa-4
			compute the limits of exponential, logarithmic, and trigonometric functions using tables of values and graphs of the functions	Week 2	STEM_BC11LC-IIIb-1
			illustrate limits involving the expressions $\frac{\sin t}{t}$, $\frac{1-\cos t}{t}$ and $\frac{e^t-1}{t}$ and using tables of values		STEM_BC11LC-IIIb-2
			illustrate continuity of a function at a number	Week 3	STEM_BC11LC-IIIc-1
			determine whether a function is continuous at a number or not		STEM_BC11LC-IIIc-2
			illustrate continuity of a function on an interval		STEM_BC11LC-IIIc-3
			solves problems involving continuity of a function		STEM_BC11LC-IIId-3
	basic concepts of derivatives	formulate and solve accurately situational problems involving extreme values	illustrate the tangent line to the graph of a function at a given point	Week 4	STEM_BC11D-IIIe-1
			applies the definition of the derivative of a function at a given number		STEM_BC11D-IIIe-2

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learner shall be able to…	Most Essential Learning competencies The learners…	Duration	K to 12 CG Code
			relate the derivative of a function to the slope of the tangent line		STEM_BC11D-IIIe-3
			determine the relationship between differentiability and continuity of a function	Week 5	STEM_BC11D - IIIf-1
			apply the differentiation rules in computing the derivative of an algebraic, exponential, logarithmic, trigonometric functions and inverse trigonometric functions		STEM_BC11D-IIIf-3
			illustrate the Extreme Value Theorem	Week 6	
			solve optimization problems that yield polynomial functions		
		formulate and solve accurately situational problems involving related rates	illustrate the Chain Rule of differentiation		STEM_BC11D-IIIh-2
			solve problems using the Chain Rule	Week 7 to 8	STEM_BC11D-IIIh-i-1
			illustrate implicit differentiation		STEM_BC11D-IIIi-2
			solve problems (including logarithmic, and inverse trigonometric functions) using implicit differentiation	Week 9	STEM_BC11D-IIIi-j-1
			solve situational problems involving related rates		STEM_BC11D-IIIj-2
Quarter 4	antiderivatives and Riemann integral	formulate and solve accurately situational problems involving population models	illustrate an antiderivative of a function	Week 1 to 3	STEM_BC11I-IVa-1
			compute the general antiderivative of polynomial, radical, exponential, and trigonometric functions		STEM_BC11I-IVa-b-1
			compute the antiderivative of a function using substitution rule		
			solve problems involving antidifferentiation	Week 4	
			solve situational problems involving exponential growth and decay	Week 5 to 6	
		formulate and solve accurately real-life problems involving	illustrate the definite integral as the limit of the Riemann sums		
			illustrate the Fundamental Theorem of Calculus		STEM_BC11I-IVh-1

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learner shall be able to…	Most Essential Learning competencies The learners…	Duration	K to 12 CG Code
		areas of plane regions	compute the definite integral of a function using the Fundamental Theorem of Calculus	Week 7	STEM_BC11I-IVh-2
			compute the definite integral of a function using the substitution rule		STEM_BC11I-IVi-2
			compute the area of a plane region using the definite integral	Week 8	STEM_BC11I-IVi-j-1
			solve problems involving areas of plane regions	Week 9	STEM_BC11I-IVj-2

Grade Level: Grade 11
Subject: Pre-Calculus

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learner shall be able to…	Most Essential Learning competencies The learners…	Duration	K to 12 CG Code
Quarter 1	key concepts of conic sections and systems of nonlinear equations	model situations appropriately and solve problems accurately using conic sections and systems of nonlinear equations	illustrate the different types of conic sections: parabola, ellipse, circle, hyperbola, and degenerate cases.	Week 1	STEM_PC11AG-Ia-1
			define a circle.		STEM_PC11AG-Ia-2
			determine the standard form of equation of a circle		STEM_PC11AG-Ia-3
			define a parabola	Week 2	STEM_PC11AG-Ia-5

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learner shall be able to…	Most Essential Learning competencies The learners…	Duration	K to 12 CG Code
			determine the standard form of equation of a parabola		STEM_PC11AG-Ib-1
			define an ellipse	Week 3	STEM_PC11AG-Ic-1
			determine the standard form of equation of an ellipse		STEM_PC11AG-Ic-2
			define a hyperbola	Week 4	STEM_PC11AG-Id-1
			determine the standard form of equation of a hyperbola		STEM_PC11AG-Id-2
			recognize the equation and important characteristics of the different types of conic sections	Week 5 to 6	STEM_PC11AG-Ie-1
			solves situational problems involving conic sections		STEM_PC11AG-Ie-2
	an understanding of key concepts of series and mathematical induction and the Binomial Theorem.	shall be able to keenly observe and investigate patterns, and formulate appropriate mathematical statements	Illustrate a series	Week 7 to 9	STEM_PC11SMI-Ih-1
			differentiate a series from a sequence		STEM_PC11SMI-Ih-2
			use the sigma notation to represent a series		STEM_PC11SMI-Ih-3
			Apply the use of sigma notation in finding sums		
Quarter 2	an understanding key concepts of circular functions, trigonometric identities, inverse	1. formulate and solve accurately situational problems involving circular functions	illustrate the unit circle and the relationship between the linear and angular measures of a central angle in a unit circle	Week 1 to 2	STEM_PC11T-IIa-1
			convert degree measure to radian measure and vice versa		STEM_PC11T-IIa-2

Quarter	Content Standards The learners demonstrate an understanding of…	Performance Standards The learner shall be able to…	Most Essential Learning competencies The learners…	Duration	K to 12 CG Code
	trigonometric functions, and the polar coordinate system		illustrate angles in standard position and coterminal angles		STEM_PC11T-IIa-3
			illustrate the different circular functions	Week 3	STEM_PC11T-IIb-1
			uses reference angles to find exact values of circular functions		STEM_PC11T-IIb-2
			illustrate the domain and range of the different circular functions	Week 4	STEM_PC11T-IIc-1
			graph the six circular functions (a) amplitude, (b) period, and (c) phase shift		STEM_PC11T-IIc-d-1
			solve situational problems involving circular functions	Week 5	STEM_PC11T-IId-2
		2. apply appropriate trigonometric identities in solving situational problems	determine whether an equation is an identity or a conditional equation	Week 6 to 8	STEM_PC11T-IIe-1
			apply trigonometric identities to find other trigonometric values		
			solve situational problems involving trigonometric identities		STEM_PC11T-IIg-2
		3. formulate and solve accurately situational problems involving appropriate trigonometric functions	illustrate the domain and range of the inverse trigonometric functions.		STEM_PC11T-IIh-1
			evaluate an inverse trigonometric expression.		STEM_PC11T-IIh-2
			solve trigonometric equations.		STEM_PC11T-IIh-i-1
			solve situational problems involving inverse trigonometric functions and trigonometric equations	Week 9	STEM_PC11T-IIi-2