CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
					Trigonometry, Module 2 (LM)
			47. illustrates laws of sines and cosines.	**M9GE-IVf-g-1**	1. BEAM Fourth Year, Module 13 (TG) 2. EASE Module Fourth Year Triangle Trigonometry, Module 2 Math IV: Advanced Algebra. Trigonometry, and Statistics (Lesson Plans) 2002 EBEC (Week 6-7) pp.50-56 (LM) 3. DLM 4 – Module 2: Triangle Trigonometry
			48. solves problems involving oblique triangles.	**M9GE-IVh-j-1**	1. BEAM Fourth Year, Module 13 (TG) 2. EASE Module Fourth Year 3. Triangle Trigonometry, Module 2 (LM)

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

GRADE 10

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
Grade 10- FIRST QUARTER					
Patterns	demonstrates	is able to formulate and	1. generates patterns.***	**M10AL-Ia-1**	
			2. illustrates an arithmetic sequence	**M10AL-Ib-1**	1. Integrated Mathematics

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
and Algebra	understanding of key concepts of sequences, polynomials and polynomial equations.	solve problems involving sequences, polynomials and polynomial equations in different disciplines through appropriate and accurate representations.			III. 2001. pp. 6-8* 2. NFE Accreditation and Equivalency Learning Material. Arithmetic Sequence. 2000. pp. 3-9 3. DLM 2 – Unit 7: Sequences and Series
			3. determines arithmetic means and nth term of an arithmetic sequence.***	**M10AL-Ib-c-1**	1. Integrated Mathematics III. 2001. pp. 9-12* 2. NFE Accreditation and Equivalency Learning Material. Arithmetic Sequence. 2000. pp. 10-20 3. BEAM II – Module 12: Arithmetic Sequences: Always Come With A Flow 4. DLM 2 – Unit 7: Sequences and Series
			4. finds the sum of the terms of a given arithmetic sequence.***	**M10AL-Ic-2**	1. Integrated Mathematics III. 2001. pp. 14-16* 2. NFE Accreditation and Equivalency Learning Material. Arithmetic Sequence. 2000. pp. 21-32 3. BEAM II – Module 12: Arithmetic Sequences: Always Come With A Flow
			5. illustrates a geometric sequence.	**M10AL-Id-1**	1. Integrated Mathematics III. 2001. pp. 18-19* 2. NFE Accreditation and Equivalency Learning

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
					Material. Geometric Sequence. 2000. pp. 3-6 3. DLM 2 – Unit 7: Sequences and Series
			6. differentiates a geometric sequence from an arithmetic sequence.	**M10AL-Id-2**	NFE Accreditation and Equivalency Learning Material. Geometric Sequence. 2000. p. 6
			7. differentiates a finite geometric sequence from an infinite geometric sequence.	**M10AL-Id-3**	
			8. determines geometric means and nth term of a geometric sequence.***	**M10AL-Ie-1**	1. Integrated Mathematics III. 2001. pp. 19-23* 2. NFE Accreditation and Equivalency Learning Material. Geometric Sequence. 2000. pp. 9-16 3. BEAM II – Module 12: Arithmetic Sequences: Always Come With A Flow 4. DLM 2 – Unit 7: Sequences and Series
			9. finds the sum of the terms of a given finite or infinite geometric sequence.***	**M10AL-Ie-2**	1. Integrated Mathematics III. 2001. pp. 17-26* 2. BEAM II – Module 12: Arithmetic Sequences: Always Come With A Flow 3. DLM 2 – Unit 7: Sequences and Series
			10. illustrates other types of sequences (e.g., harmonic, Fibonacci).	**M10AL-If-1**	Integrated Mathematics III. 2001. pp. 29-33*

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
			11. solves problems involving sequences.	**M10AL-If-2**	Integrated Mathematics III. 2001. pp. 13, 16-17, 23, 28*
			12. performs division of polynomials using long division and synthetic division.	**M10AL-Ig-1**	1. Elementary Algebra I. 2002. pp. 193-197* 2. Advanced Algebra, Trigonometry and Statistics IV. 2009. pp. 304-305* 3. NFE Accreditation and Equivalency Learning Material. Studying Polynomials. 2001. pp. 37-42 4. DLM 4 – Module 1: Polynomial Functions 5. EASE IV – Module 1: Polynomial Functions
			13. proves the Remainder Theorem and the Factor Theorem.	**M10AL-Ig-2**	1. Advanced Algebra, Trigonometry and Statistics IV. 2003. pp. 120-122, 128-129* 2. Advanced Algebra, Trigonometry and Statistics IV. 2013. pp. 94-96, 98-99* 3. DLM 4 – Module 1: Polynomial Functions 4. EASE IV – Module 1: Polynomial Functions
			14. factors polynomials.	**M10AL-Ih-1**	Advanced Algebra, Trigonometry and Statistics IV. 2009. pp. 306-307*

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner…	The learner…	The learner…		
			15.illustrates polynomial equations.	**M10AL-Ii-1**	
			16.proves Rational Root Theorem.	**M10AL-Ii-2**	1. Advanced Algebra, Trigonometry and Statistics IV. 2003. pp. 138-141* 2. Advanced Algebra, Trigonometry and Statistics IV. 2009. pp. 104-106*
			17. solves polynomial equations.	**M10AL-Ij-1**	
			18. solves problems involving polynomials and polynomial equations.	**M10AL-Ij-2**	
Grade 10- SECOND QUARTER					
Patterns and Algebra	demonstrates understanding of key concepts of polynomial function.	is able to conduct systematically a mathematical investigation involving polynomial functions in different fields.	19.illustrates polynomial functions.	**M10AL-IIa-1**	
			20.graphs polynomial functions.	**M10AL-IIa-b-1**	1. Advanced Algebra, Trigonometry and Statistics IV. 2003. pp. 134-138* 2. Advanced Algebra, Trigonometry and Statistics IV. 2009. pp. 109-113* 3. EASE IV – Module 3: Polynomial Functions
			21.solves problems involving polynomial functions.	**M10AL-IIb-2**	
Geometry	demonstrates understanding of key concepts of circles and coordinate geometry.	1. is able to formulate and find solutions to challenging situations involving circles and other related terms in different disciplines	22. derives inductively the relations among chords, arcs, central angles, and inscribed angles.	**M10GE-IIc-1**	1. Geometry III. 2013. pp. 189-197* 2. BEAM III – Module 18: Circles and their Properties
			23.proves theorems related to chords, arcs, central angles, and inscribed	**M10GE-IIc-d-1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	The learner...	The learner...		
		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.	angles.		
			24. illustrates secants, tangents, segments, and sectors of a circle.	M10GE-IIe-1	1. Geometry III. 2013. pp. 197-207* 2. DLM 3 – Module 2: Circles 3. EASE III – Module 2: Circles
			25. proves theorems on secants, tangents, and segments.	M10GE-IIe-f-1	Geometry III. 2013. pp. 197-207*
			26. solves problems on circles.	M10GE-IIf-2	
			27. derives the distance formula.	M10GE-IIg-1	Geometry III. 2013. pp. 237-239*
			28. applies the distance formula to prove some geometric properties.	M10GE-IIg-2	Geometry III. 2013. pp. 243-248*
			29. illustrates the center-radius form of the equation of a circle.	M10GE-IIh-1	Geometry III. 2013. pp. 249-250*
			30. determines the center and radius of a circle given its equation and vice versa.	M10GE-IIh-2	1. Geometry III. 2013. pp. 250-252* 2. BEAM III – Module 22: Equation of a Circle
			31. graphs a circle and other geometric figures on the coordinate plane.***	M10GE-IIi-1	
			32. solves problems involving geometric figures on the coordinate plane.	M10GE-IIi-j-1	Geometry III. 2013. pp. 252-256*
Grade 10- THIRD QUARTER					
Statistics and Probability	demonstrates understanding of key concepts of combinatorics and probability.	is able to use precise counting technique and probability in formulating conclusions and making decisions.	33. illustrates the permutation of objects.	M10SP-IIIa-1	
			34. derives the formula for finding the number of permutations of n objects taken r at a time.	M10SP-IIIa-2	

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CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	**The learner...**	**The learner...**		
			35. solves problems involving permutations.	**M10SP-IIIb-1**	
			36. illustrates the combination of objects.	**M10SP-IIIc-1**	
			37. differentiates permutation from combination of n objects taken r at a time.	**M10SP-IIIc-2**	
			38. derives the formula for finding the number of combinations of n objects taken r at a time	**M10SP-IIId-1**	
			39. solves problems involving permutations and combinations.	**M10SP-IIId-e-1**	
			40. illustrates events, and union and intersection of events.	**M10SP-IIIf-1**	
			41. illustrates the probability of a union of two events.	**M10SP-IIIg-1**	
			42. finds the probability of $(A \cup B)$.	**M10SP-IIIg-h-1**	
			43. illustrates mutually exclusive events.	**M10SP-IIIi-1**	
			44. solves problems involving probability.	**M10SP-IIIi-j-1**	
Grade 10- FOURTH QUARTER					
Statistics and Probability	demonstrates understanding of key concepts of measures of position.	is able to conduct systematically a mini-research applying the different statistical methods.	45. illustrates the following measures of position: quartiles, deciles and percentiles.***	**M10SP-IVa-1**	Integrated Mathematics III. 2001. pp. 270-277*
			46. calculates a specified measure of position (e.g. 90th percentile) of a set of data.	**M10SP-IVb-1**	Integrated Mathematics III. 2001. pp. 277-279*
			47. interprets measures of position.	**M10SP-IVc-1**	
			48. solves problems involving measures of position.	**M10SP-IVd-e-1**	

CONTENT	CONTENT STANDARDS	PERFORMANCE STANDARDS	LEARNING COMPETENCY	CODE	LEARNING MATERIALS
	The learner...	**The learner...**	**The learner...**		
			49. formulates statistical mini-research.	**M10SP-IVf-g-1**	
			50. uses appropriate measures of position and other statistical methods in analyzing and interpreting research data.	**M10SP-IVh-j-1**	

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

GLOSSARY

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

GLOSSARY

Perseverance	firmness in finishing a task despite difficulties and obstacles.
Productivity	the quality of pursuing an activity to arrive at a meaningful and useful result or product.
Proving	the skill of demonstrating the truth or falsity of a theory using reasoning and arguments.
Reasoning	the process of explaining using sound analyses, following the rules of logic.
Reflective Learning	learning that is facilitated by deep thinking.
Representing	the use of figures and shapes, variables, equations and functions to concretize and illustrate quantities and their relationships.
Situated Learning	learning in the same context in which concepts and theories are applied.
Solving	to find the answer to an algebraic or mathematical problem using any procedures and tools available.
Visualizing	using one's creativity and imagination to produce images, pictures and other means to represent and understand mathematical concepts (MATHTED & SEI, 2010).

K to 12 BASIC EDUCATION CURRICULUM

Code Book Legend

Sample: M7AL-IIg-2

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

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

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