PACE ACADEMY
S.Y. 2020-2021
Mathematics 10 Curriculum Guide

Most Essential Learning Competencies	Mathematics Lessons
First Quarter	
Generates patterns.	Lesson 1.1 Sequence and Series
● Illustrates an arithmetic sequence. ● Determines arithmetic means, nth term of an arithmetic sequence and sum of the terms of a given arithmetic sequence.	Lesson 1.2 Arithmetic Sequences and Series
● Illustrates a geometric sequence. ● Differentiates a geometric sequence from an arithmetic sequence. ● Determines geometric means, nth term of a geometric sequence and sum of the terms of a given finite or infinite geometric sequence. ● Solves problems involving sequences.	Lesson 1.3 Geometric Sequences and Series
	Lesson 1.4 Infinite Geometric Sequences
	Lesson 1.5 Harmonic Sequences
● Performs division of polynomials using long division and synthetic division. ● Proves the Remainder Theorem, Factor Theorem and the Rational Root Theorem.	Lesson 1.6 Division of Polynomials, The Factor Theorem, and The Remainder Theorem
Second Quarter	
● Factors polynomials. ● Illustrates polynomial equations.Solves problems involving polynomials and polynomial equations.	Lesson 2.1 Real Zeroes of Polynomials

• Illustrates polynomial functions. • Understand, describe and interpret the graphs polynomial functions. • Solves problems involving polynomial functions.	Lesson 2.2 Polynomial Functions and Their Graphs
Derives inductively the relations among chords, arcs, central angles, and inscribed angles.	Lesson 2.3 Definition and Fundamental Relation
Proves theorems related to chords, arcs, central angles, and inscribed angles.	Lesson 2.4 Arcs and Chords
	Lesson 2.5 Proving Chords Equal
	Lesson 2.6 Inscribed Angles
• Illustrates secants, tangents, segments, and sectors of a circle. • Proves theorems on secants, tangents, and segments. • Solves problems on circles.	Lesson 2.7 Angles Formed by Tangents and Secants
	Lesson 2.8 Lengths of Segments
Third Quarter	
Applies the distance formula to prove some geometric properties.	Lesson 3.1 Slope Formula
• Illustrates the center-radius form of the equation of a circle. • Determines the center and radius of a circle given its equation and vice versa. • Graphs and solves problems involving circles and other geometric figures on the coordinate plane.	Lesson 3.2 Parallel and Perpendicular Lines
	Lesson 3.3 Midpoints and Points of Division of Line Segments
	Lesson 3.4 Distance Between a Point and a Line
	Lesson 3.5 Areas of Rectilinear Figures
	Lesson 3.6 Uses of Coordinates in Plane Figures
	Lesson 3.7 Equations of Circle
• Illustrates the permutation of objects. • Solves problems involving permutations.	Lesson 3.8 Simple Counting Principle
	Lesson 3.9 Factorial Notation and Permutation
• Illustrates the combination of objects. • Differentiates permutation from combination of n objects taken r at a time.	Lesson 3.10 Combination

• Solves problems involving permutations and combinations.	

Fourth Quarter	
Illustrates events, and union and intersection of events.	Lesson 4.1 Union and Intersection of Events
• Illustrates the probability of a union of two events. • Finds the probability of (AU B).	Lesson 4.2 Addition Law of Probability
• Illustrates mutually exclusive events. • Solves problems involving probability.	Lesson 4.3 Mutually Inclusive and Mutually Exclusive Events
• Illustrates the following measures of position: quartiles, deciles and percentiles. • Calculates a specified measure of position (e.g. 90th percentile) of a set of data. • Interprets measures of position. • Solves problems involving measures of position.	Lesson 4.4 Measures of Position
• Formulates statistical mini-research. • Uses appropriate measures of position and other statistical methods in analyzing and interpreting research data.	Lesson 4.5 Mini-research

Reference:
Soaring 21st Century Mathematics 10 (2015). Phoenix Publishing House,, Inc.

Time Allotment: Four (4) synchronous sessions (40 minutes per session); Five (5) asynchronous sessions (40 minutes per session)

Promotion/Retention:
- Assessments will be categorized as the following with the corresponding weight:
    - Short Quizzes (20%)
    - Written Outputs (35%)

- Product and Performance Tasks (45%)
- **Short Quizzes**. These include summative assessments after every lesson, group of related lessons, or chapter.
- **Written Outputs**. These include data recording and analyses, geometric and statistical analyses, graphs, charts, or maps, problem sets, and surveys.
- **Product and Performance Tasks**. TThese include diagrams, mathematical investigatory projects, models or making models of geometric figures, number representations, constructing graphs from survey conducted, multimedia presentation, outdoor math, probability experiments, problem-posing, reasoning and proof through recitation, using manipulatives to show math concepts or solve problems, and using measuring tools and devices.