**PACE ACADEMY**
**MATHEMATICS 8**
**CURRICULUM GUIDE**
**S.Y. 2020-2021**

| Most Essential Learning Competencies | Mathematics Lessons |
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| **FIRST QUARTER** | |
| -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).<br>-Solve word problems involving factors of polynomials. | Lesson 1.1 Common Monomial Factoring<br>Lesson 1.2 Factoring Difference of Two Squares<br>Lesson 1.3 Factoring Sum and Difference of Two Cubes<br>Lesson 1.4 Factoring Perfect Square Trinomials<br>Lesson 1.5 Factoring Quadratic Trinomials<br>Lesson 1.6 Factoring Polynomials by Grouping |
| -Illustrate and simplifies rational algebraic expressions. | Lesson 1.7 Concept and Simplifying Rational Algebraic Expressions |
| -Perform operations on rational algebraic expressions.<br>-Solve problems involving rational algebraic expressions. | Lesson 1.8 Multiplying and Dividing Rational Expressions<br>Lesson 1.9 Adding and Subtracting Rational Expressions<br>Lesson 1.10 Simplifying Complex Rational Expressions |
| -Illustrate the Rectangular Coordinate System and its uses. | Lesson 1.11 The Rectangular Coordinate System |
| **SECOND QUARTER** | |
| -Illustrate a relation and a function.<br>-Verify if a given relation is a function. | Lesson 2.1 Relation and Function |
| -Perform operations (addition, subtraction, multiplication, division, and composition) of functions. | Lesson 2.2 Operation with Functions |
| - Graph and illustrate a linear function and its (a) domain, (b) range, (c) table of values, (d) intercepts, and (e) slopes. | Lesson 2.3 Definition and Graphing of Linear Functions |
| -Determine the equation of the line given its (a) slope and y-intercept, (b) slope and a point, (c) two points, and (d) x and y-intercepts. | Lesson 2.4 Equation of Linear Functions |
| -Solve word problems involving linear functions. | Lesson 2.5 Problems Involving Linear Functions and Linear Patterns |
| -Illustrate a system of linear equations in two variables. | Lesson 2.6 Systems of Linear Equations in Two Variables |
| -Graph a system of linear equations in two variables.<br>-Categorize when a given system of linear equations in two variables has graph that are parallel, intersecting, and coinciding. | Lesson 2.7 Solving Systems of Linear Equations by Graphing |
| -Solve problems involving systems of linear equations in two variables by (a) elimination and (b) substitution. | Lesson 2.8 Solving Systems of Linear Equations by Elimination and Substitution Method |
| -Solve word problems involving systems of linear equation in two variables. | Lesson 2.9 Solving Problems Involving Systems of Linear Equations |
| **THIRD QUARTER** | |

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| -Differentiate linear inequalities in two variables to linear equations in two variables.<br>-Illustrate and graph linear inequalities in two variables. | Lesson 3.1 Linear Inequalities in Two Variables |
| -Solve problems involving systems of linear inequalities in two variables. | Lesson 3.2 Systems of Linear Inequalities and its application |
| -Transform statement into an if-then form.<br>-Determine the inverse, converse, and contra positive of an if-then statement. | Lesson 3.3 Conditional Statements and their Converse |
| -Describe a mathematical system.<br>-Illustrates the need for an axiomatic structure of Mathematical system in general, and in geometry in particular: (a) defined terms, (b) undefined terms, (c) postulates, and (d) theorems. | Lesson 3.4 Defined Terms, Undefined Terms, Postulates, and Theorems |
| -Illustrate triangle congruence. | Lesson 3.5 Corresponding Parts for Triangle Congruence |
| -Illustrates the SAS, ASA, and SSS congruence postulates.<br>-Solve corresponding parts of congruent triangles. | Lesson 3.6 Conditions for Triangle Congruence |
| -Prove two triangles are congruent.<br>-Prove statements on triangle congruence. | Lesson 3.7 Applying the Conditions for Triangle Congruence |
| - Prove theorems on Isosceles Triangle. | Lesson 3.8 Congruence in an Isosceles Triangle |
| - Prove theorems on Right Triangle. | Lesson 3.9 Right Triangle Congruence |
| **FOURTH QUARTER** | |
| -Illustrate theorems on triangle inequalities<br>-Apply theorems on triangle inequalities.<br>-Prove inequalities in a triangle. | Lesson 4.1 Inequalities in Single and Two Triangles |
| -Determine the conditions under which lines and segments are parallel and perpendicular | Lesson 4.2 Parallel and Perpendicular Lines |
| -Prove properties of parallel lines cut by a transversal. | Lesson 4.3 Proving Lines Parallel |
| -Illustrate an experiment, outcome, sample space, and event. | Lesson 4.4 Organizing the Outcomes of an Experiment |
| -Count the number of occurrences of an outcome in an experiment: (a) table, (b) tree diagram, (c) systematic listing, and (d) fundamental counting principle. | Lesson 4.5 Fundamental Principle of Counting |
| -Find probability of a simple event.<br>-Illustrate an experimental probability and a theoretical probability.<br>-Solve problems involving probabilities of simple events. | Lesson 4.6 Probability of an Event |

**Reference:**

*Soaring 21st Century Mathematics 8* (2017). Phoenix Publishing House, Inc.

**Time Allotment:** Five (5) 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.