

# Scope and Sequence

Chapter Number and Title and Big Ideas/ Lesson Number and Title and Topics	Objectives	Corresponding K to 12 Curriculum Standards and Learning Competencies Developed	Performance Tasks (for the Chapter)/ Essential Questions (for the Lesson)
<b>Chapter 1 Sets</b>			
<p><i>Big Ideas:</i> You can form, describe, and compare collections of objects such as numbers by means of sets.</p>	<ul style="list-style-type: none"> <li>• Describe, represent, and illustrate sets</li> <li>• Define and illustrate equal sets, equivalent sets, finite sets, universal sets, empty sets, and subset and proper subset of a set</li> <li>• Perform operations on sets</li> <li>• Use Venn diagrams to represent set relations and operations</li> <li>• Solve problems involving sets</li> </ul>	<p><b>Content Standards</b></p> <p>The learner demonstrates understanding of the key concepts on sets.</p> <p><b>Performance Standards</b></p> <p>The learner is able formulate challenging situations involving sets and solve these in a variety of strategies.</p>	<p>Create examples found in everyday living that illustrate set relations and operations: universal set, empty set, subset of a set, complement of a set, union of sets, intersection of sets, and set difference.</p>
<b>Lesson 1 Basic Ideas About Sets</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• The Notion of Sets</li> <li>• Elements of a Set</li> <li>• Equal Sets</li> <li>• Methods of Representing a Set</li> <li>• Empty Sets and Universal Sets</li> <li>• Subsets of a Set</li> </ul>	<ul style="list-style-type: none"> <li>• Describe, represent, and illustrate sets</li> <li>• Define and illustrate equal sets and equivalent sets</li> <li>• Describe and illustrate the empty set and the universal set</li> <li>• Define <i>subset</i> and <i>proper subset</i></li> </ul>	<p>The learner describes well-defined sets, subsets, null set, and cardinality of sets.</p>	<p>How important are sets?</p>

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<b>Lesson 2 Operations on Sets</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Complement of a Set</li> <li>• Union of Sets</li> <li>• Intersection of Sets</li> <li>• Set Difference</li> <li>• Venn Diagrams</li> </ul>	<ul style="list-style-type: none"> <li>• Define and describe the complement of a set</li> <li>• Define and describe the union and intersection of sets</li> <li>• Use a Venn diagram to represent sets, subsets, and set operations</li> <li>• Solve problems involving sets</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• illustrates the union and intersection of sets and the difference of sets.</li> <li>• uses Venn diagrams to represent sets, subsets, and set operations.</li> <li>• solves problems involving sets.</li> </ul>	<p>How can sets be combined?</p>
<b>Chapter 2 The Real Number System</b>			
<p><i>Big Ideas:</i> Daily tasks and activities make use of real numbers and their operations.</p>	<ul style="list-style-type: none"> <li>• Identify numbers as natural numbers, whole numbers, integers, rational numbers, irrational numbers, or real numbers</li> <li>• Determine the absolute value of real numbers</li> <li>• Perform fundamental operations on integers</li> <li>• Classify real numbers as rational or irrational</li> </ul>	<p><b>Content Standards</b></p> <p>The learner demonstrates understanding of key concepts on the real number system.</p>	<p>Create a <i>Word Problem Minibook</i> that contains at least five word problems and the solutions for each.</p>

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	<ul style="list-style-type: none"> <li>• Perform operations on fractions and reduce the answers to lowest terms</li> <li>• Solve problems based on real-life situations involving real numbers</li> <li>• Determine the uses of real numbers in real-life situations</li> </ul>	<p><b>Performance Standards</b></p> <p>The learner is able to formulate challenging situations involving real numbers and solve these in a variety of strategies.</p>	
<b>Lesson 1 Integers</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Positive and Negative Integers</li> <li>• Number Lines</li> <li>• Opposites of Integers</li> <li>• Absolute Values of Integers</li> <li>• Operations on Integers</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the integers from a given list of numbers</li> <li>• Define and illustrate the absolute value of a number</li> <li>• Perform fundamental operations on integers</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• represents the absolute value of a number on a number line as the distance of the number from zero.</li> <li>• performs fundamental operations on integers.</li> <li>• illustrates the different subsets of real numbers.</li> </ul>	<p>How are integers used in real-life situations?</p>

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		<ul style="list-style-type: none"> <li>• illustrates the different properties of operations on the set of integers.</li> <li>• represents real-life situations that involve integers.</li> </ul>	
<b>Lesson 2 Rational and Irrational Numbers</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Rational Numbers as Fractions</li> <li>• Conversion of Rational Numbers to Decimals</li> <li>• Conversion of Decimals to Fractions</li> <li>• Opposites of Real Numbers</li> <li>• More Examples of Irrational Numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Define and illustrate rational numbers and arrange them on a number line</li> <li>• Express rational numbers from fraction form to decimal form and vice versa</li> <li>• Describe principal roots and determine whether they are rational or irrational</li> <li>• Determine between what two integers the square root of a number is</li> <li>• Estimate the square root of a number</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• arranges rational numbers on a number line.</li> <li>• expresses rational numbers from fraction form to decimal form and vice versa.</li> <li>• describes principal roots and tells whether they are rational or irrational.</li> <li>• determines between what two integers the square root of a number is.</li> </ul>	<p>In what real-life situations can you find rational numbers? irrational numbers?</p>

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<ul style="list-style-type: none"> <li>• Square Root of a Number</li> <li>• Approximations of Square Roots of Numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Illustrate and graph irrational numbers on a number line with or without appropriate technology</li> <li>• Arrange real numbers in increasing or decreasing order</li> </ul>	<ul style="list-style-type: none"> <li>• estimates the square root of a number to the nearest hundredth.</li> <li>• plots irrational numbers (up to square roots) on a number line.</li> <li>• arranges real numbers in increasing and decreasing order.</li> <li>• describes and represents real-life situations that involve rational numbers, square roots of rational numbers, and irrational numbers.</li> <li>• solves problems involving real numbers.</li> </ul>	
<p><b>Lesson 3 The Basic Operations and Their Properties</b></p>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Symbols and Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Exhibit familiarity with the properties of basic operations</li> <li>• Define subtraction in terms of addition, and division in terms of multiplication</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• states and illustrates the different properties of the operations on integers (commutative, associative, distributive, identity, and inverse).</li> </ul>	<p>Why is it important for you to understand the basic operations and their properties?</p>

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<ul style="list-style-type: none"> <li>• Properties of Addition</li> <li>• Subtraction Expressed in Terms of Addition</li> <li>• Properties of Multiplication</li> <li>• Division Expressed in Terms of Multiplication</li> <li>• Absolute Values of Real Numbers</li> <li>• Operations on Rational Numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Perform operations on rational numbers, and illustrate their properties</li> </ul>	<ul style="list-style-type: none"> <li>• performs operations on rational numbers.</li> </ul>	
<b>Chapter 3 Measurements</b>			
<p><i>Big Ideas:</i></p> <ul style="list-style-type: none"> <li>• Physical quantities are measured using different measuring devices.</li> </ul>	<ul style="list-style-type: none"> <li>• Convert one unit of measure such as length, mass, area, volume, temperature, and time to another</li> </ul>	<p><b>Content Standards</b></p> <p>The learner demonstrates understanding of key concepts on measurement.</p>	<p>Formulate at least five real-life problems involving measurements. This may take various forms, for example, a mini problem book.</p>

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<ul style="list-style-type: none"> <li>• The precision of the measurement is dependent on the measuring device used.</li> <li>• Conversion and approximation of units of measures facilitate understanding of the relationship between magnitudes of different objects.</li> </ul>	<ul style="list-style-type: none"> <li>• Solve word problems involving measurements of each of the various units of measure such as length, mass, area, volume, temperature, time, and electricity consumption.</li> </ul>	<p><b>Performance Standards</b></p> <p>The learner is able to formulate real-life problems involving measurements and solve these using a variety of strategies.</p>	
<b>Lesson 1 Length and Mass</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Brief History of Measurement</li> <li>• SI Units of Length</li> <li>• Measurement of Length</li> <li>• Conversion of an SI Unit of Length to Another</li> </ul>	<ul style="list-style-type: none"> <li>• Describe what it means to measure</li> <li>• Describe the development of measurement from the primitive to the present international system of units</li> <li>• Use a measuring device to find the length and mass of an object</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• illustrates what it means to measure.</li> <li>• describes the development of measurement from the primitive to the present international system of units.</li> </ul>	<ul style="list-style-type: none"> <li>• How are length and mass measured?</li> <li>• How useful is the conversion from one unit of length or mass to another?</li> </ul>

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<ul style="list-style-type: none"> <li>• Non-SI Units of Length</li> <li>• Conversion of a Non-SI Unit of Length to Another</li> <li>• Conversion of a Non-SI Unit of Length to an SI Unit of Length</li> <li>• SI Units of Mass</li> <li>• Measurement of Mass</li> <li>• Conversion of an SI Unit of Mass to Another</li> <li>• Conversion of a Non-SI Unit of Mass to Another Non-SI Unit or to an SI Unit of Mass</li> </ul>	<ul style="list-style-type: none"> <li>• Estimate or approximate the length or mass of an object</li> <li>• Convert from one unit of length or mass to another</li> <li>• Solve problems involving length and mass</li> </ul>	<ul style="list-style-type: none"> <li>• approximates the measures of quantities, particularly length and weight/mass.</li> <li>• uses appropriate instruments to measure quantities such as length and weight/mass.</li> <li>• converts measurements from one unit to another in both metric and English Systems.</li> <li>• solves problems involving conversion of units of measurement, such as perimeter and weight.</li> </ul>	
<b>Lesson 2 Area and Volume</b>			
<i>Topics:</i> <ul style="list-style-type: none"> <li>• Area</li> <li>• Volume</li> </ul>	<ul style="list-style-type: none"> <li>• Estimate or approximate the area or volume of an object</li> <li>• Compute the area or volume of an object</li> </ul>	The learner . . . <ul style="list-style-type: none"> <li>• approximates the measures of quantities, particularly volume.</li> </ul>	<ul style="list-style-type: none"> <li>• How are area and volume measured?</li> </ul>

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	<ul style="list-style-type: none"> <li>• Convert from one unit of area or volume to another</li> <li>• Solve problems involving areas, volume, and utilities usage</li> </ul>	<ul style="list-style-type: none"> <li>• uses appropriate instruments to measure quantities such as volume.</li> <li>• converts measurements from one unit to another in both metric and English systems.</li> <li>• solves problems involving conversion of units of measurements.</li> </ul>	<ul style="list-style-type: none"> <li>• How useful is the conversion from one unit of area and volume to another?</li> </ul>

### **Lesson 3 Temperatures, Time, and Electricity Consumption**

<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Temperatures</li> <li>• Time</li> <li>• Electricity Consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Use a thermometer to measure temperature</li> <li>• Convert one temperature scale unit of measurement to another</li> <li>• Convert one unit of time to another</li> <li>• Estimate time and temperature</li> <li>• Solve problems involving measurements of time, temperature, and utilities usage</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• approximates the measures of quantities, particularly time and temperature.</li> <li>• uses appropriate instruments to measure quantities such as time and temperature.</li> <li>• converts measurements from one unit to another in both metric and English systems.</li> </ul>	<ul style="list-style-type: none"> <li>• How are temperature, time, and electricity consumption measured?</li> <li>• In what ways are unit conversions involving temperature, time, and electricity consumption useful?</li> </ul>
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		<ul style="list-style-type: none"> <li>• solves problems involving conversion of units of measurements.</li> </ul>	
<b>Chapter 4 Algebraic Expressions</b>			
<p><i>Big Ideas:</i> Algebraic expressions represent relationships among quantities that serve as a guide in modeling and solving real-life problems.</p>	<ul style="list-style-type: none"> <li>• Apply the laws of exponents to evaluate or simplify algebraic expressions with exponents</li> <li>• Perform operations on polynomials</li> <li>• Recognize special products and multiply them</li> </ul>	<p><b>Content Standards</b> The learner demonstrates understanding of the key concepts of algebraic expressions.</p> <p><b>Performance Standards</b> The learner is able to model situations using oral, written, graphical, and algebraic methods in solving problems.</p>	<p>Model situations using oral, written, concrete, pictorial, graphical, and/or algebraic methods to solve problems involving algebraic expressions.</p>
<b>Lesson 1 Expressions with Exponents</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Natural Numbers as Exponents</li> </ul>	<ul style="list-style-type: none"> <li>• Define and interpret the meaning of <math>a^n</math>, where <math>n</math> is a positive integer</li> </ul>	<p>The learner model . . .</p> <ul style="list-style-type: none"> <li>• differentiates between constants and variables in a given algebraic expression.</li> </ul>	<p>How useful are algebraic expressions?</p>

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<ul style="list-style-type: none"> <li>• Terms in an Algebraic Expression</li> <li>• Evaluation of Algebraic Expressions</li> <li>• Laws of Exponents</li> <li>• Zero and Negative Integers as Exponents</li> <li>• Scientific Notation</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate numerical expressions involving exponents and grouping symbols</li> <li>• Evaluate an algebraic expression using the given values of its variables</li> <li>• Use the laws of exponents to simplify algebraic expressions with exponents</li> <li>• Express numbers in scientific notation</li> </ul>	<ul style="list-style-type: none"> <li>• evaluates algebraic expressions for given values of the variables.</li> <li>• identifies the base, coefficient, terms, and exponents in a given polynomial.</li> <li>• interprets the meaning of <math>a^n</math> where <math>n</math> is a positive integer.</li> <li>• derives the laws of exponents.</li> <li>• writes numbers in scientific notation and vice versa.</li> <li>• solves problems involving algebraic expressions.</li> </ul>	
<p><b>Lesson 2 Polynomials</b></p>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Monomials, Binomials, and Trinomials</li> <li>• Degrees of Polynomials</li> <li>• Numerical and Literal Coefficients</li> </ul>	<ul style="list-style-type: none"> <li>• Classify algebraic expressions as polynomials or nonpolynomials</li> <li>• Recognize monomials, binomials, and trinomials</li> <li>• Identify the degree of a polynomial</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• classifies algebraic expressions which are polynomials according to degree and number of terms.</li> <li>• adds and subtracts polynomials.</li> </ul>	<p>In what way or ways are polynomials useful?</p>

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<ul style="list-style-type: none"> <li>• Operations on Polynomials</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the numerical and literal coefficients of a polynomial</li> <li>• Perform operations on polynomials</li> </ul>	<ul style="list-style-type: none"> <li>• multiplies and divides polynomials.</li> </ul>	
<b>Lesson 3 Special Products</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Translations of Some Verbal Phrases into Algebraic Expressions and Vice Versa</li> <li>• Multiplication of Two Binomials Using Area Models</li> <li>• Products Involving Binomials</li> </ul>	<ul style="list-style-type: none"> <li>• Translate verbal phrases to algebraic expressions and vice versa</li> <li>• Find products of two binomials using area models</li> <li>• Recognize and find special products of polynomials algebraically</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• translates English phrases to mathematical phrases and vice versa.</li> <li>• uses models and algebraic method to find the (a) product of two binomials, (b) product of sum and difference of two terms, (c) square of a binomial, (d) cube of a binomial, and (e) product of a binomial and a trinomial.</li> </ul>	<p>What are special products for?</p>

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<b>Chapter 5 Linear Equations and Inequalities in One Variable</b>			
<p><i>Big Ideas:</i> Real-life problems where certain quantities are unknown can be modeled and solved using linear equations or inequalities in one variable.</p>	<ul style="list-style-type: none"> <li>• Name, illustrate, and apply the properties of equality to solve linear equations in one variable</li> <li>• Name, illustrate, and apply the properties of inequality to solve linear inequalities in one variable</li> <li>• Model and solve word problems involving linear equations and inequalities in one variable</li> </ul>	<p><b>Content Standards</b> The learner demonstrates understanding of the key concepts on the properties of real numbers as applied in linear equations and inequalities in one variable.</p> <p><b>Performance Standards</b> The learner is able to model situations using oral, written, graphical, and algebraic methods in solving problems involving linear equations and inequalities in one variable.</p>	<p>Model situations using oral, written, concrete, pictorial, graphical, and/or algebraic methods to solve problems involving linear equations and inequalities in one variable.</p>
<b>Lesson 1 Linear Equations in One Variable</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Types of Equations</li> <li>• Solutions to Linear Equations in One Variable</li> </ul>	<ul style="list-style-type: none"> <li>• Translate English sentences to mathematical sentences and vice versa</li> <li>• Determine whether a given equation is an identity, a conditional equation, or an inconsistent equation</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• differentiates between algebraic expressions and equations.</li> <li>• translates English sentences to mathematical sentences and vice versa.</li> </ul>	<p>How can you apply the properties of equality and real numbers to solve equations in one variable?</p>

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<ul style="list-style-type: none"> <li>• Isolation of a Variable from an Equation with More Than One Variable</li> </ul>	<ul style="list-style-type: none"> <li>• Determine if a given number is a solution to a given conditional equation</li> <li>• Name and illustrate the properties of equality</li> <li>• Find the solution of a linear equation in one variable using different methods</li> <li>• Solve linear equation involving absolute value</li> </ul>	<ul style="list-style-type: none"> <li>• differentiates between equations and inequalities.</li> <li>• defines and illustrates the meaning of absolute value.</li> <li>• solves a linear equations involving absolute value by: (a) graphing and (b) algebraic methods.</li> </ul>	
<b>Lesson 2 Linear Inequalities in One Variable</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Linear Inequalities</li> <li>• Equivalent Linear Inequalities</li> <li>• Properties of Inequality</li> </ul>	<ul style="list-style-type: none"> <li>• State and illustrate the different properties of inequality</li> <li>• Solve for the solution set of a linear inequality in one variable using different methods</li> <li>• Graph the solution set of a linear inequality in one variable</li> <li>• Solve a linear inequality in one variable involving absolute value by graphing or algebraic methods</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• defines and illustrates the meaning of absolute value.</li> <li>• illustrates a linear inequality in one variable.</li> <li>• finds the solution of a linear inequality in one variable.</li> </ul>	<p>How can you use the properties of inequality and real numbers to solve linear inequalities in one variable?</p>

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<b>Lesson 3 Word Problems Involving Linear Equations or Inequalities in One Variable</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Translation of Word Expressions into Algebraic Expressions</li> <li>• Word Problems Leading to Linear Equations</li> <li>• Word Problems Leading to Linear Inequalities</li> </ul>	<ul style="list-style-type: none"> <li>• Translate word expressions into algebraic expressions and vice versa</li> <li>• Translate English sentences to mathematical equations or inequalities and vice versa</li> <li>• Solve word problems involving linear equations or inequalities in one variable</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• translates English sentences to mathematical sentences and vice versa.</li> <li>• solves problems involving equations and inequalities in one variable.</li> </ul>	<p>How can you use linear equations and inequalities to model and solve real-life problems where certain quantities are unknown?</p>
<b>Chapter 6 Geometric Shapes</b>			
<p><i>Big Ideas:</i> Geometric forms and shapes have various properties that make them fit to use in different real-life situations.</p>	<ul style="list-style-type: none"> <li>• Represent basic geometric terms and shapes using concrete and mathematical models</li> <li>• Derive and understand the relationships and key concepts of geometric shapes and sizes using inductive investigations and measurements</li> </ul>	<p><b>Content Standards</b></p> <p>The learner demonstrates understanding of the key concepts on geometry of shapes and sizes, and geometric relationships.</p>	<ul style="list-style-type: none"> <li>• Create mathematical or geometric models for real-life structures or objects using appropriate geometric forms, for example, designing and building a miniature</li> </ul>

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	<ul style="list-style-type: none"> <li>• Construct basic geometric forms using a straightedge and compass</li> <li>• Investigate and analyze the different properties of geometric forms and shapes (triangles, quadrilaterals, polygons, and circles)</li> </ul>	<p><b>Performance Standards</b></p> <p>The learner is able to create models of plane figures and formulate and solve accurately authentic problems involving sides and angles of a polygon.</p>	<p>model of a house or a building.</p> <ul style="list-style-type: none"> <li>• Make a portfolio or journal on the uses of geometry in art, nature, and human-made structures.</li> <li>• Conduct a presentation, an exhibit, or a show showcasing the puzzles, challenges, or enrichment questions that the students created where they applied what they learned about geometric shapes.</li> </ul>

Chapter Number and Title and Big Ideas/ Lesson Number and Title and Topics	Objectives	Corresponding K to 12 Curriculum Standards and Learning Competencies Developed	Performance Tasks (for the Chapter)/ Essential Questions (for the Lesson)
<b>Lesson 1 Points, Lines, and Planes</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Undefined Terms in Geometry</li> <li>• Collinear Points and Coplanar Points and Lines</li> <li>• Segments</li> <li>• Rays</li> <li>• Intersecting, Parallel, Concurrent, and Skew Lines</li> <li>• Parallel Planes</li> </ul>	<ul style="list-style-type: none"> <li>• Represent a point, line, and plane using concrete and pictorial models</li> <li>• Define, identify, and name the subsets of a line</li> <li>• Identify collinear points and coplanar points and lines; intersecting, parallel, concurrent, and skew lines; and parallel planes</li> <li>• Name and identify congruent segments and the midpoint of a segment</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• represents a point, line, and plane using concrete and pictorial models.</li> <li>• illustrates subsets of a line.</li> </ul>	<ul style="list-style-type: none"> <li>• What basic geometric forms do you see in nature, art, structures, and everyday situations?</li> <li>• How do you see geometry as you look at the world you live in?</li> </ul>
<b>Lesson 2 Angles and Their Geometric Relations</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Basic Concepts on Angles</li> <li>• Angle Measures</li> <li>• Kinds of Angles</li> <li>• Angle Pairs</li> </ul>	<ul style="list-style-type: none"> <li>• Name and classify angles</li> <li>• Measure and construct angles using a protractor</li> <li>• Estimate or approximate measures of angles</li> <li>• Name and identify congruent angles</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• estimates or approximates the measures of quantities particularly those of angles.</li> <li>• uses appropriate instruments to measure quantities such as angles.</li> </ul>	<ul style="list-style-type: none"> <li>• What relationships between angle pairs and angles formed by parallel lines cut by a transversal are useful in real life?</li> </ul>

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<ul style="list-style-type: none"> <li>• Angles Formed by Parallel Lines Cut by a Transversal</li> <li>• Basic Geometric Constructions</li> </ul>	<ul style="list-style-type: none"> <li>• Define and construct an angle bisector and a perpendicular bisector</li> <li>• Derive relationships using measurement and inductive reasoning between pairs of groups of line or angles</li> <li>• Derive relationships among angles formed by parallel lines cut by a transversal using measurement and inductive reasoning</li> <li>• Use a compass and a straightedge to bisect segments and angles, and construct parallels and perpendiculars</li> </ul>	<ul style="list-style-type: none"> <li>• classifies the different kinds of angles.</li> <li>• derives relationships of geometric figures using measurements and by inductive reasoning: supplementary angles, complementary angles, equal angles, adjacent angles, linear pairs, perpendicular lines, and parallel lines.</li> <li>• derives relationships among angles formed by parallel lines cut by a transversal using measurement and by inductive reasoning.</li> <li>• uses a compass and straight-edge to bisect line segments and angles and construct perpendiculars and parallels.</li> </ul>	<ul style="list-style-type: none"> <li>• How do you bisect segments and angles without using a ruler and a protractor?</li> </ul>

Chapter Number and Title and Big Ideas/ Lesson Number and Title and Topics	Objectives	Corresponding K to 12 Curriculum Standards and Learning Competencies Developed	Performance Tasks (for the Chapter)/ Essential Questions (for the Lesson)
<b>Lesson 3 Triangles</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Basic Concepts on Triangles</li> <li>• Classification of Triangles</li> <li>• Relations among the Angles and Sides of a Triangle</li> </ul>	<ul style="list-style-type: none"> <li>• Illustrate, name, and identify the different kinds of triangles</li> <li>• Define the terms associated with a triangle</li> <li>• Classify triangles according to their sides and according to their angles</li> <li>• Derive inductively the relationships among the sides and angles of a triangle</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• classifies triangles according to their angles and according to their sides.</li> <li>• illustrates, names, and identifies different kinds of triangles and defines the terms associated with a triangle.</li> <li>• derives relationships among the sides and angles of a triangle using measurement and inductive reasoning.</li> </ul>	<p>Why are triangles used as support in numerous real-life situations?</p>
<b>Lesson 4 Quadrilaterals</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Basic Concepts on Quadrilaterals</li> <li>• Classification of Quadrilaterals</li> <li>• Relations among the Angles and Sides of a Quadrilateral</li> </ul>	<ul style="list-style-type: none"> <li>• Illustrate, name, and identify the different kinds of quadrilaterals</li> <li>• Derive the relationships among the angles and among the sides of a quadrilateral inductively</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• illustrates, names, and identifies the different kinds of quadrilaterals.</li> <li>• derives relationships among the angles and among the sides of a quadrilateral using measurement and inductive reasoning.</li> </ul>	<ul style="list-style-type: none"> <li>• Why are quadrilaterals used in buildings, houses, and other real-life structures and objects?</li> <li>• What makes a quadrilateral a parallelogram?</li> </ul>

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<b>Lesson 5 Polygons and Circles</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Basic Concepts on Polygons</li> <li>• Classification of Polygons</li> <li>• Regular Polygons</li> <li>• Number of Diagonals in a Polygon</li> <li>• Relations of Angles in a Convex Polygon</li> <li>• Basic Concepts on Circles</li> </ul>	<ul style="list-style-type: none"> <li>• Describe and illustrate a polygon</li> <li>• Identify the parts of a polygon</li> <li>• Classify polygons according to their number of sides</li> <li>• Define and illustrate convex polygons</li> <li>• Derive the relationship of exterior and interior angles of a convex polygon inductively</li> <li>• Illustrate a circle and define the terms related to it</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• defines and illustrates convex polygons.</li> <li>• derives inductively the relationship of exterior and interior angles of convex polygon.</li> <li>• illustrates a circle and the terms related to it: radius, diameter, center, arc, chord, central angle, and inscribed angle.</li> <li>• constructs triangles, squares, rectangles, regular polygons, and regular hexagons.</li> <li>• solves problems involving sides and angles of a polygon.</li> </ul>	<ul style="list-style-type: none"> <li>• Where do you see and use polygons and circles in nature, art, structures, and everyday situations?</li> <li>• What properties of polygons and circles make them useful in many real-life situations?</li> </ul>
<b>Chapter 7 Introduction to Statistics</b>			
<p><i>Big Ideas:</i></p> <ul style="list-style-type: none"> <li>• Descriptive statistics deals with the collection,</li> </ul>	<ul style="list-style-type: none"> <li>• Explain the basic concepts, uses, and importance of statistics</li> </ul>	<p><b>Content Standards</b></p> <p>The learner demonstrates understanding of the key concepts, uses, and importance</p>	<p>Conduct and present a research on statistical data on health, education, and</p>

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<p>organization, and presentation of data.</p> <ul style="list-style-type: none"> <li>• The type of data determines how data sets can be organized and presented.</li> <li>• Data presentations reveal patterns in the data set.</li> </ul>	<ul style="list-style-type: none"> <li>• Organize statistical data using frequency distribution tables, graphs, and measures of central tendency</li> <li>• Describe a given data using the information obtained from the measures of central tendency</li> </ul>	<p>of statistics, data collection or gathering, different forms of data representation, and measures of central tendency.</p> <p><b>Performance Standards</b> The learner is able to collect and organize data systematically and compute accurately measures of central and apply these appropriately in data analysis and interpretation in different fields.</p>	<p>population of different provinces, with possible recommendations on solutions to problems related to these areas.</p>
<b>Lesson 1 What Statistics Is All About</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Importance of Statistics</li> <li>• Areas of Statistics</li> <li>• Population and Sample</li> <li>• Census and Survey</li> <li>• Types of Variables</li> <li>• Scales of Measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Explain the basic concepts, uses, and importance of statistics</li> <li>• Collect or gather statistical data according to systematic considerations</li> <li>• Pose questions and problems that may be answered using statistics</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• explains the importance of statistics.</li> <li>• poses problems that can be solve statistics.</li> <li>• gathers statistical data.</li> <li>• organizes the data in a frequency distribution table.</li> </ul>	<ul style="list-style-type: none"> <li>• How important is statistics in everyday life?</li> <li>• Why is it important to know the type of variable?</li> </ul>

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<ul style="list-style-type: none"> <li>Data Collection and Sampling Techniques</li> </ul>			<ul style="list-style-type: none"> <li>Why is it important for a sample to be a representative of the population</li> </ul>
<b>Lesson 2 Data Presentation and Measures of Central Tendency</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>Tabular Presentation Using Frequency Distribution Tables</li> <li>Graphical Presentation</li> <li>Numerical Measures</li> </ul>	<ul style="list-style-type: none"> <li>Organize statistical data in a frequency distribution table</li> <li>Use appropriate graphs such as pie graph, bar graph, line graph, and histogram to represent organized data</li> <li>Analyze, interpret accurately, and draw conclusions from graphic and tabular presentations of statistical data</li> <li>Find the mean, median, and mode of a set of data</li> <li>Describe the given data using the information from the mean, median, and mode</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>gathers statistical data.</li> <li>organizes the data in a frequency distribution table.</li> <li>uses appropriate graphs to represent organized data: pie graph, bar graph, line graph, histogram, and ogive.</li> <li>analyzes, interprets accurately, and draws conclusions from graphic and tabular presentations of statistical data.</li> <li>finds the mean, median, and mode of statistical data.</li> <li>describes the data using the information from the mean, median, and mode.</li> </ul>	<ul style="list-style-type: none"> <li>How does data presentation help in communicating a desired message?</li> <li>How does data presentation affect the interpretation of data?</li> <li>How does the type of data influence the type of graph to be used?</li> </ul>

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<b>Chapter 8 Numerical Measures</b>			
<p><i>Big Ideas:</i> Numerical measures such as those of central tendency and variability are important in describing a statistical data set.</p>	<ul style="list-style-type: none"> <li>• Determine the mean, median, and mode of grouped and ungrouped data</li> <li>• Determine the range, average deviation, variance, and standard deviation of grouped and ungrouped data</li> <li>• Describe a statistical data using the measures of central tendency and the measures of variability</li> </ul>	<p><b>Content Standards</b> The learner demonstrates understanding of key concepts, uses and importance of measures of central tendency and measures of variability of data.</p> <p><b>Performance Standards</b> The learner is able to collect and organize data systematically and compute accurately measures of central tendency and variability and apply these appropriately in the data analysis and interpretation in different fields.</p>	<p>Gather data on a set of utility bills for the last 12 months (e.g., electricity bill, water bill, telephone bill, or cable television bill) of a specific household. Compute the numerical measures of the data set. Prepare a report on the computations, including the descriptions of the obtained data. Give suggestions on how to conserve or lessen monthly consumption.</p>

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<b>Lesson 1 Measures of Central Tendency of Ungrouped and Grouped Data</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Grouped and Ungrouped Data</li> <li>• Mean</li> <li>• Median</li> <li>• Mode</li> </ul>	<ul style="list-style-type: none"> <li>• Recall the meaning and interpretation of the mean, median, and mode of ungrouped data</li> <li>• Determine the mean, median, and mode of grouped data</li> <li>• Describe a statistical data using the measures of central tendency</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• calculates the measures of central tendency of ungrouped and grouped data.</li> <li>• uses appropriate statistical measures to analyzing and interpreting statistical data.</li> </ul>	<p>Why is it important to know the measures of central tendency in describing a particular data set?</p>
<b>Lesson 2 Measures of Variability</b>			
<p><i>Topics:</i></p> <ul style="list-style-type: none"> <li>• Range</li> <li>• Average Deviation</li> <li>• Variance and Standard Deviation</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss the meaning of variability</li> <li>• Calculate the different measures of variability of grouped and ungrouped data</li> <li>• Describe a statistical data using the measures of variability</li> </ul>	<p>The learner . . .</p> <ul style="list-style-type: none"> <li>• illustrates measures of variability (range, average deviation, variance, and standard deviation) of a statistical data.</li> <li>• calculates measures of variability of grouped and ungrouped data.</li> <li>• uses appropriate statistical measures in analyzing and interpreting in statistical data.</li> </ul>	<p>Why is it important to know the measures of variability in describing a particular data set?</p>