

GRADE 9 – QUARTER 1

CONTENT DOMAIN	CONTENT STANDARDS <i>The learners demonstrate knowledge and understanding of ...</i>	LEARNING COMPETENCIES <i>The learners ...</i>
Measurement and Geometry (MG)	<ol style="list-style-type: none"> 1. simple geometric concepts and notations. 2. perpendicular and parallel lines, and angles formed by parallel lines cut by a transversal. 	<ol style="list-style-type: none"> 1. illustrate and describe point, line, ray, line segment, angle, and plane using models and geometric notations. 2. construct perpendicular and parallel lines. 3. identify the relationships between angles formed by parallel lines cut by a transversal. 4. determine angle measures involving angle pairs, parallel and perpendicular lines, and parallel lines cut by a transversal.
Number and Algebra (NA)	<ol style="list-style-type: none"> 3. relations and functions. 4. graphs of linear functions, and the identification of domain and range, slope, intercepts, and zeros. 	<ol style="list-style-type: none"> 5. identify relations that are functions based on the definitions of relations and functions. 6. determine the domain and the range of a function expressed in different representations. 7. express the relationship between two variables as a function. 8. determine the slopes (as rate of change) and the zeros of linear functions represented in: <ol style="list-style-type: none"> a. graphs, b. equations, and c. tables of values. 9. graph a linear function and determine its: <ol style="list-style-type: none"> a. domain, b. range, c. intercepts, and d. slope. 10. represent linear relationships found in real-life situations using different representations. 11. solve problems involving linear functions.
<p>Performance Standards <i>By the end of the quarter, the learners are able to ...</i></p> <ul style="list-style-type: none"> • illustrate and describe points, lines, rays, line segments, angles, and planes. (MG) • construct perpendicular and parallel lines. (MG) • determine the measure of the angles formed by parallel lines cut by a transversal. (MG) • identify relations and functions. (NA) • graph a linear function and identify the domain and range, intercepts, slope, and zeros. (NA) 		

GRADE 9 – QUARTER 2

CONTENT DOMAIN	CONTENT STANDARDS <i>The learners demonstrate knowledge and understanding of ...</i>	LEARNING COMPETENCIES <i>The learners ...</i>
Measurement and Geometry (MG)	<ol style="list-style-type: none"> 1. parallelism and perpendicularity of lines. 2. different quadrilaterals and their properties. 3. congruence of triangles. 4. congruence proofs. 	<ol style="list-style-type: none"> 1. determine conditions that guarantee parallelism and perpendicularity of lines. 2. classify quadrilaterals based on formal definitions. 3. use properties of parallelograms to find measures of angles, sides, perpendicular height, and diagonals. 4. solve problems involving parallelograms, rectangles, squares, or rhombuses by applying their different properties. 5. prove properties of parallelograms by applying the relevant theorems. 6. derive the properties of trapezoids and kites by exploring the relationship between their parts and secondary parts. 7. solve problems on trapezoids and kites by applying their properties. 8. distinguish inductive and deductive reasoning for establishing proofs. 9. state postulates and theorems about defined and undefined terms in geometry, and formulates proofs involving them. 10. use the triangle congruence postulates and theorems to illustrate congruence of triangles, including CPCTC (definition of congruent triangles). 11. solve problems involving right triangle congruence theorems, isosceles triangle theorem, perpendicular bisector theorem, and midline theorem 12. construct and justify the construction of segments, angles and triangles, including, but not limited to, the triangle’s secondary parts and centers, using the triangle congruence postulates and theorems. 13. construct congruence proofs involving triangles or corresponding parts of triangles using a two-column proof.
<p>Performance Standards</p> <p><i>By the end of the quarter, the learners are able to ...</i></p> <ul style="list-style-type: none"> • determine the conditions for lines to be parallel or perpendicular. (MG) • use geometric properties to find unknown sides and angles of quadrilaterals. (MG) • apply the triangle congruence postulates and theorems. (MG) • construct and justify the construction of segments, angles, and triangles. (MG) • construct proofs of the congruence of triangles. (MG) 		

GRADE 9 – QUARTER 3

CONTENT DOMAIN	CONTENT STANDARDS <i>The learners demonstrate knowledge and understanding of ...</i>	LEARNING COMPETENCIES <i>The learners ...</i>
Number and Algebra (N/A)	<ol style="list-style-type: none"> quadratic equations and graphs of quadratic functions. the solution of quadratic equations. 	<ol style="list-style-type: none"> represent real-life situations that can be modelled using quadratic relationships. graph equations in two variables to represent quadratic relationships, such as $y = ax^2$, $y = ax^2 + b$, $y = a(x - b)^2$. interpret features of a parabola such as vertex, axis of symmetry, x-intercepts, opening direction, minimum or maximum value, zeros, and increasing and decreasing intervals. transform the quadratic functions $y = ax^2$, $y = ax^2 + b$, $y = a(x - b)^2$ and $y = ax^2 + bx + c$ into the form $y = a(x - h)^2 + k$, and vice versa. sketch the graph of quadratic functions expressed in equation form. analyze the effect of changing the values of the parameters on the behavior of its graph and on the properties of the quadratic function $y = a(x - h)^2 + k$. find the zeros of quadratic functions in factored and standard form, graphically and algebraically. solve quadratic equations by: <ol style="list-style-type: none"> extracting square roots, factoring, and using the quadratic formula. solve problems involving quadratic functions and equations
Measurement and Geometry (MG)	<ol style="list-style-type: none"> similarity of polygons. special triangles. 	<ol style="list-style-type: none"> illustrate similarity of polygons. illustrate and apply triangle similarity theorems in different situations. solve problems involving triangle similarity. solve problems involving measures of sides and angles of special triangles (30-60-90, 45-45-90).
Number and Algebra (NA)	<ol style="list-style-type: none"> direct and inverse variation. 	<ol style="list-style-type: none"> illustrate real-life situations that involve direct variation and real-life situations that involve inverse variation. translate a relationship between two quantities into a variation statement and/or a mathematical equation, given a table of values or a graph. solve problems involving variation.
<p>Performance Standards</p> <p><i>By the end of the quarter, the learners are able to ...</i></p> <ul style="list-style-type: none"> represent quadratic relationships. (NA) interpret features of a parabola. (NA) express quadratic functions in different forms. (NA) 		

CONTENT DOMAIN	CONTENT STANDARDS <i>The learners demonstrate knowledge and understanding of ...</i>	LEARNING COMPETENCIES <i>The learners ...</i>
		<ul style="list-style-type: none"> • sketch the graph of a quadratic function. (NA) • solve quadratic equations. (NA) • illustrate and apply similarity of polygons, including triangles. (MG) • apply direct and inverse variation. (NA)

GRADE 9 – QUARTER 4

CONTENT DOMAIN	CONTENT STANDARDS <i>The learners demonstrate knowledge and understanding of ...</i>	LEARNING COMPETENCIES <i>The learners ...</i>
Measurement and Geometry (MG)	<ol style="list-style-type: none"> 1. triangle theorems and triangle inequality theorems. 2. the trigonometric ratios and their application. 	<ol style="list-style-type: none"> 1. solve problems involving the perpendicular bisector theorem, isosceles triangle theorem, theorems on equilateral triangles, and the midline theorem. 2. explain theorems on triangle inequalities and apply these theorems in comparing measures in a triangle. 3. determine the values of the sine, cosine, and tangent trigonometric ratios corresponding to the angles of the special triangles. 4. find the values of the sine, cosine, and tangent ratios of any acute angle. 5. use the trigonometric ratios in solving right triangles. 6. illustrate angles of elevation and angles of depression. 7. solve real-life problems involving right triangles through the application of the trigonometric ratios.
Data and Probability (DP)	<ol style="list-style-type: none"> 3. interpretation and analysis of data to assess whether the data may be misleading. 4. probabilities of simple and compound events. 	<ol style="list-style-type: none"> 8. interpret and analyze data from the digital media that are in tabular or graphical form to assess whether the data may be misleading. 9. illustrate simple and compound events. 10. determine the probabilities of simple and compound events. 11. solve problems involving probabilities of simple and compound events.
<p>Performance Standards <i>By the end of the quarter, the learners are able to ...</i></p> <ul style="list-style-type: none"> • apply triangle theorems and triangle inequality theorems. (MG) • apply trigonometric ratios to solve right triangles. (MG) • interpret and analyze data to assess whether the data may be misleading. (DP) • determine the probabilities of simple and compound events. (DP) 		