MATHEMATICS

Grade 7

Three-Term Budget Of Work (BOW)
for Learning Competencies

GENERAL MATHEMATICS
Grade 7

Three-Term Budget Of Work
For Learning Competencies

First Term	
Content Standard	The learners should have knowledge and understanding of… • regular and irregular polygons and their features/properties • determination of measures of angles and number of sides of polygons • application of percentages • use of rates • rational numbers • square roots of perfect squares, cube roots of perfect cubes, and irrational numbers
Performance Standard	By the end of the term, the learners are able to… • draw, and describe the features/properties of, regular and irregular polygons. • use percentages in different contexts. • identify and use rates. • create a financial plan. • describe, order, and perform operations on, rational numbers. • determine square roots of perfect squares and cube roots of perfect cubes, and identify irrational numbers.
Week	**Learning Competency**
1	**Measurement and Geometry** • Draw and describe regular and irregular polygons with 5, 6, 8, or 10 sides, based on measurements of sides and angles, using a ruler and protractor. • Draw triangles, quadrilaterals, and regular polygons (5, 6, 8, or 10 sides) with given angle measures.

2	**Measurement and Geometry** • Describe and explain the relationships between angle pairs based on their measures. • Classify polygons according to the number of sides, whether they are regular or irregular, and whether they are convex or non-convex.
3	**Measurement and Geometry** • Deduce the relationship between the exterior angle and adjacent interior angle of a polygon. • Determine the measures of angles and the number of sides of polygons.
4	**Number and Algebra** • Solve problems involving: a. percentage increase b. percentage decrease • Solve money problems involving percentages (e. g., discount, commission, sales tax, simple interest).
5	**Number and Algebra** • Create a financial plan.
6	**Number and Algebra** • Identify and explain the uses of rates. • Solve problems involving rates (e.g., speed).
7	**Number and Algebra** • Describe given rational numbers as fractions, decimals, or percentages. • Order rational numbers on a number line.
8 to 9	**Number and Algebra** • Perform operations on rational numbers.
10	**Number and Algebra**

	• Determine the square roots of perfect squares and the cube roots of perfect cubes. • Identify irrational numbers involving square roots and cube roots, and their locations on the number line.

Second Term	
Content Standard	The learners should have knowledge and understanding of… • conversion of units of measure • volume of square and rectangular pyramids, and cylinders • sets and subsets, and the union and intersection of sets using Venn diagrams • subset of real numbers • data collection and sampling techniques, and the presentation of data in appropriate tables and graphs • interpretation of statistical graphs • the set of integers, and comparing and ordering integers
Performance Standard	By the end of the term, the learners are able to… • convert units of measure from different systems of measure. • find the volume of square and rectangular pyramids, and the volume of cylinders. • describe sets and their subsets, and the union and intersection of sets. • illustrates sets and subsets, and union and intersection of sets, using Venn diagrams. • collect data, and organize data in a frequency distribution table. • represent and interpret data in different types of graphs. • compare and order integers, including through the use of the number line.

Week	Learning Competency
1 to 2	**Measurement and Geometry** • Convert units of measure within the International System of Units (SI) and across different systems of measure.
3	**Measurement and Geometry** • Explain inductively the volume of a cylinder using the area of a circle, leading to the identification of

	the formula. • Find the volume of a cylinder. • Solve problems involving the volumes of cylinders.
4	**Measurement and Geometry** • Explore inductively the volume of square and rectangular pyramids using rectangular prisms, leading to the identification of the formula. • Estimate volumes of square and rectangular pyramids. • Solve problems involving volumes of square or rectangular pyramids.
5	**Number and Algebra** • Describe sets and their subsets, the union of sets, and the intersection of sets • Illustrate sets and their subsets, the union of sets, and the intersection of sets, through the use of Venn diagrams.
6	**Number and Algebra** • Illustrate the different subsets of real numbers.
	Data and Probability • Investigate different data collection and sampling techniques.
7 to 8	**Data and Probability** • Organize statistical data in a frequency distribution table. • Use appropriate graphs to represent organized data: pie graph, bar graph, line graph, and stem-and-leaf plot. • Interpret statistical graphs.
9	**Number and Algebra** • Describe the set of integers. • Use positive and negative numbers to describe directions or opposites in real-life situations.

10	**Number and Algebra** • Locate integers on the number line. • Compare and order integers.

Third Term	
Content Standard	The learners should have knowledge and understanding of… • the four operations with integers • simplification of numerical expressions involving integers • absolute value of an integer • the solution of simple equations • the evaluation of algebraic expressions following substitution • the rearrangement of a formula to make a different variable the subject of the formula • outcomes from experiments
Performance Standard	By the end of the term, the learners are able to… • perform the four operations with integers. • simplify numerical expressions involving integers. • identify the absolute value of an integer. • solve simple equations. • substitute into an algebraic expression to evaluate the expression. • rearrange a formula to make a different variable the subject of the formula. • gather data from experiments and represent the data in different forms. • write numbers in scientific notation and perform operations on numbers written in scientific notation.
Week	**Learning Competency**
1	**Number and Algebra** • Add and subtract integers; using concrete models (e.g., counters, integer chips), pictorial models (e.g., bar models, number lines), and with integers written as numerals.

2	**Number and Algebra** • Multiply and divide integers. • Simplify numerical expressions involving integers using number properties and the order of operations (GEMDAS).
3	**Number and Algebra** • Identify the absolute value of an integer, and its meaning on the number line. • Solve simple equations represented by bar models to find unknowns.
4	**Number and Algebra** • Distinguish a variable from a constant in an algebraic expression. • Evaluate algebraic expressions given the value/s of the variable/s.
5	**Number and Algebra** • Translate verbal phrases into algebraic expressions. • Illustrate the properties of equality.
6	**Number and Algebra** • Solve one variable in terms of the other variables in a formula. • Write equations in algebraic form.
7	**Number and Algebra** • Find the value of an unknown in an equation where the unknown is non-negative. • Solve problems involving algebraic expressions and formulas.
8	**Data and Probability** • Collect data from experiments (e.g., number of heads obtained when tossing a coin, a number of times, number of prime numbers obtained when rolling a die a number of times). • Express outcomes in words and/or symbols, and represent outcomes in tables and/or graphs.
9	**Data and Probability**

	• Solve problems using the outcomes of experiments • Write numbers in scientific notation to represent very large or very small numbers, and vice versa.
10	**Data and Probability** • Perform operations on numbers expressed in scientific notation.