Academia Santa Rosa
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Syllabus 2023-2024
Mathematics 6B

Course: Math Sixth Grade   Office hours: (Only by appointment)
Teacher: Mrs. T. Morales   Email:tmorales@asrpr.org
Platform: 6th Math Series from Edu System

I.   Course description and introduction:

   In sixth grade, according to the standards of the Puerto Rico Department of Education
and the National Council of Teachers of Mathematics (NCTM), the areas of emphasis
are Number and Operation, Algebra, and Measurement. The student will relate
mathematical content to daily life through their experiences and curriculum activities
in a problem-solving environment using all four operations, including situations
involving the division of fractions. They will also explain the fundamental theorem of
arithmetic as the basis for advanced mathematics. The student will solve real-life
mathematical problems using ratios, percentages, and rational numbers. Measurement
will be used to make sense of their surroundings and describe their world in terms of
geometry with geometric figures, line relationships, parts of a circle, angle
relationships, and transformations. They will formulate questions from daily life and
collect, organize, and analyze data to answer those questions. The student will identify
the theoretical probability of a real-life event using tables, tree diagrams, and frequency
tables. The curriculum aims to provide a comprehensive and practical understanding of
mathematics, connecting it to the students' everyday experiences and preparing them
for further mathematical concepts and applications.
   The EduSystem Mathematics K-6 series actively encourages students to apply what
they learn and recognize the universal significance of mathematics in relation to
society, community, organizations, and institutions. Moreover, by incorporating real-
life situations and problems into each topic, the series aims to spark students' interest
in the study of mathematics, making it more engaging and relevant to their daily lives.

II.   General Objectives:

   • Help students develop an interest and appreciation for mathematics.
   • Develop the problem-solving processes in students, as a cornerstone of
     encouragement, furthering the development of mathematical capacity.
   • Stimulate within students the need of using language and academic vocabulary
     to communicate mathematical ideas.
   • Develop mathematical reasoning and critical thinking skills that allow students
     to visualize mathematics as a relevant discipline in their lives.

III.   Specific objectives:

The student will:
- Work with the four basic operations of mathematics to solve real-life problems. They will learn to divide fractions and solve mathematical problems that involve division of fractions. The student will also work with prime and composite numbers, which will help them understand the fundamental theorem of arithmetic.
- Learn about ratios and view percentages as a ratio of one hundred. They will practice converting fractions to decimals and percentages. The student will solve real-life problems using unit rates and percentages.
- Use linear equations to represent real-life situations. They will solve linear equations and find ordered pairs to determine an equation. The student will use properties to evaluate expressions and represent geometric patterns algebraically.
- Observe polygons and their relationships, such as parallelism, perpendicularity, and symmetry, in everyday life. They will also observe different types of angles, such as complementary and supplementary angles, describe them, and solve mathematical problems using their knowledge of angles.
- Refine the skills they have developed in measurement by using formulas to calculate area, perimeter, volume, surface area, and circumference.
- Formulate questions, define populations, collect, and organize data, representing it graphically to answer those questions. They will analyze data using measures of dispersion and central tendency to communicate the results. The student will also work with experimental and theoretical probability, calculating theoretical probabilities, conducting simple experiments, and learning about the concept of range for probability. They will understand how to estimate theoretical probabilities based on simple experiments.

IV.   Content outline:

UNITS	THEMES
Unit 1: Number Sense	- Numbers to the Hundred Trillions - The Decimal Numbers to the Ten Thousandths - Comparing and Arranging in Order Decimal Numbers - Rounding Decimal Numbers - Exponential Expressions
Unit 2: Adding and Subtracting Whole and Decimal Numbers	- Properties of Addition - Adding Numbers with Six or More Digits - Subtracting Numbers with Six or More Digits - Adding Decimal Numbers - Subtract Four-Digit Numbers
Unit 3: Multiplying Whole and Decimals Numbers	- Properties of Whole Numbers - Estimating products - Multiplying Whole Numbers with Five or More Digits - Multiplying Decimal Numbers - Rules of Divisibility

Unit 4: Dividing Whole and Decimal Numbers	• Dividing Decimal Numbers with Zeroes in the Quotient • Dividing with Zeroes in the Dividend • Divide numbers with two-digit divisors • Multiplying and Dividing Decimals by Powers of Ten • Dividing Decimal Numbers
Unit 5: Number Theory	• Prime and Composite Numbers • Prime Factorization • The Greatest Common Factor of Two • Simplifying Fractions • Converting Improper Fractions to Mixed Numbers • Converting Mixed Numerals into Improper Fractions • The Least Common Multiple of Two or more Numbers • Comparing and Placing Fractions in Order • Equivalent Fractions
Unit 6: Operations with Fractions	• Adding and Subtracting Like Fractions • Adding and Subtracting Unlike Fractions • Adding and Subtracting Mixed Numbers • Multiplying Fractions • Multiplying Mixed Numbers • Dividing Fractions • Dividing Mixed Numbers • Converting Fractions into Decimals • Converting Decimals into Fractions
Unit 7: Expressions, Equations, and Inequalities	• Writing Mathematical Expressions as Algebraic Expressions • Evaluating Algebraic Expressions • Solving Addition and Subtraction Equations • Solving Equations using Multiplications and Division • Combined Equations • Inequalities and Inequations • Equations with two variables
Unit 8: Ratio, Proportion, and Percent	• Ratios • Equivalent Ratios • Solving Proportions • Percentages • Expressing Percentages as Fractions or Decimals • Expressing a Decimal as a Percent • Expressing a Ratio as a Percentage • Rates
Unit 9: Measurement	• Prefixes Added to Metric Units • Metric Units of Length • Converting Metric Units of Length • Metric Units of Capacity and Mass • Converting Metric Units of Capacity • Converting Metric Units of Mass • Customary Units of Mass, Capacity, and Length • Converting Customary Units of Length • Converting Customary Units of Mass • Converting from Customary Units of Capacity
Unit 10: Statistics and Probability	• Compiling and Organizing Data • Pictographs

	• Bar Graphs, Pie Charts, and Line Graphs • Median, Mode, Range, and Arithmetic Mean • Probability
Unit 11: Geometry	• Basic Geometric Concepts • Parallel, Oblique, and Perpendicular Lines • Drawing Angles • Classifying Angles by Measurement • Classifying Triangles by the Measurement of their Sides and Angles • Congruent and Similar Figures • Geometric Shapes and their Axes of Symmetry • Geometric Transformations • Three-Dimensional Shapes • Elements of Geometric Shapes
Unit 12: Area, Perimeter, and Volume	• The Perimeter of Two-Dimensional Shapes • The Area of Two-Dimensional Shapes • The Volume of Polyhedra • The Circumference and the Area of a Circle • Problems about Area, Perimeter, and Volume
Unit 13: Integers	• Positive and Negative Numbers • Graphing Integers on a Number Line • Comparing Integers • Ordering Integers • The Numbers on the Coordinate Plane • Adding Integers • Subtracting Integers • Multiplying and Dividing Integers • Order of Operations

V. Didactic materials:
   1. Technological equipment
   2. Curricular framework
   3. Content Standards: Mathematics
   4. Printed material.
   5. Educational links
   6. Technology equipment (computer, radio, projector) Physical facilities (Laboratory and Library)
   7. Google Classroom Platform

VI. Teaching strategies, techniques, methods:
   Strategies:
   • ECA
   • Teamwork
   • Reasonable accommodations: All reasonable accommodations for the particular needs of these students will be made in accordance with the Americans with Disabilities Act (ADA).
   Techniques:
   • Socialized discussion
   • Demo

- Laboratory
- Virtual laboratory
- Excursion

Methods:
- Explore
- Acquire
- Discover
- Problem solution
- Worksheets
- Calculator
- Comment and analyze situations in daily life.
- Projects and Homework's online.

VII. Evaluation Method:
   Criteria and instruments:
   - Exams – Approximately 3 per quarter
   - Short tests
   - Worksheets - Appraisal (value will depend on skill)
   - Online Assignments - Vary by skill
   - Assessments and dictations of the tables – weekly
   - Projects - Appraisal carried out in class.

VIII. Course requirements
   - Checkered notebook; 6 or 7 mm
   - Sharpened pencils
   - Eraser
   - Rule
   - Compass
   - Colored pencils or crayons
   - Ballpoint pen (for self-correction)
   - Ring and construction paper
   - Bring a written excuse when you are absent.
   - Make up assignments covered when absent.
   - Comply with the Cell Phone Policy.
   - Comply with the Plagiarism Policy.

* This syllabus is subject to change according to the needs of the students, given learning experiences, and other factors that may arise.

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ACKNOWLEDGEMENT OF RECEIPT OF THE SYLLABUS AND STUDENT EVALUATION PLAN		
Student's Name	Parent's signature	Date