

E5-Advance (Math for Grade 5/6)

Course Curriculum (MPSL Academy)

Each Session: 1 hour 15 minutes

(First 10 min review of last week topics/HW, 50 min new topics, 15 min critical thinking Qs)

1. Numerical Expressions and Factors

- Powers and Exponents
- Order of Operations
- Prime Factorization
- Greatest Common Factor
- Least Common Multiple

2. Fractions and Decimals

- Multiplying Fractions
- Dividing Fractions
- Dividing Mixed Numbers
- Adding and Subtracting Decimals
- Multiplying Decimals
- Dividing Whole Numbers
- Dividing Decimals

3. Ratios and Rates

- Ratios
- Using Tape Diagrams
- Using Ratio Tables
- Graphing Ratio Relationships
- Rates and Unit Rates
- Converting Measures

4. Percents

- Percents and Fractions
- Percents and Decimals
- Comparing and Ordering Fractions, Decimals, and Percents
- Solving Percent Problems

5. Algebraic Expressions and properties

- Algebraic Expressions
- Writing Expressions
- Properties of Addition and Multiplication
- The Distributive Property
- Factoring Expressions

6. Equations

- Writing Equations in One Variable
- Solving Equations Using Addition or Subtraction
- Solving Equations Using Multiplication or Division
- Writing Equations in Two Variables
- Problem Solving: Equation Word Problems

7. Area, Surface Area, and Volume

- Areas of Parallelograms
- Areas of Triangles
- Areas of Trapezoids and Kites
- Three-Dimensional Figures
- Surface Areas of Prisms
- Surface Areas of Pyramids
- Volumes of Rectangular Prisms
- Problem Solving: Word Problems

8. Integers, Number Lines, and the Coordinate Plane

- Integers
- Comparing and Ordering Integers
- Rational Numbers
- Absolute Value
- The Coordinate Plane
- Polygons in the Coordinate Plane
- Writing and Graphing Inequalities
- Solving Inequalities

9. Statistical Measures

- Introduction to Statistics
- Mean
- Measures of Center
- Measures of Variation
- Mean Absolute Deviation

10. Data Displays

- Stem-and-Leaf Plots
- Histograms
- Shapes of Distributions
- Choosing Appropriate Measures
- Box-and-Whisker Plots

11. Adding and Subtracting Rational Numbers

- Rational Numbers
- Adding Integers
- Adding Rational Numbers
- Subtracting Integers
- Subtracting Rational Numbers

12. Multiplying and Dividing Rational Numbers

- Multiplying Integers
- Dividing Integers
- Converting Between Fractions and Decimals
- Multiplying Rational Numbers
- Dividing Rational Numbers

13. Expressions

- Algebraic Expressions
- Adding and Subtracting Linear Expressions
- The Distributive Property
- Factoring Expressions

14. Ratios and Proportions

- Ratios and Ratio Tables
- Rates and Unit Rates
- Identifying Proportional Relationships
- Writing and Solving Proportions
- Graphs of Proportional Relationships
- Scale Drawings

15. Percents

- Fractions, Decimals, and Percents
- The Percent Proportion
- The Percent Equation
- Percents of Increase and Decrease
- Discounts and Markups
- Simple Interest
- Percentage – Word Problem

16. ADVANCE TOPICS

- **FACTORING EXPRESSIONS**
- **AREA OF PARALLELOGRAM & TRAPEZOID**
- **AREAS OF COMPOSITE FIGURES**
- **POLYGONS IN THE COORDINATE PLANE**
- **ABSOLUTE VALUE**
- **REFLECTING POINTS IN THE COORDINATE PLANE**
- **SOLVING INEQUALITIES USING ADDITION, SUBTRACTION**
- **SOLVING INEQUALITIES USING MULTIPLICATION, DIVISION**
- **SURFACE AREA OF PYRAMIDS & PRISMS**
- **VOLUME OF RECTANGULAR PRISM**

NOTE: STUDENTS WILL PARTICIPATE IN VARIOUS STATE & NATIONAL LEVEL MATH COMPETITIONS LIKE MATHCOUNTS, MATH OLYMPIAD, MATH KANGAROO, CONTINENTAL MATH LEAGUE AND SO ON. OUR GOAL IS TO BUILD CONFIDENCE IN MATH IN AN EFFICIENT WAY RESULTING IN IMPROVING SCORES IN SCHOOL EXAM & SUCCEED IN NATIONAL/INTERNATIONAL MATH COMPETITIONS.