

NCLS Math program

Description:

NCLS Math program provides different levels of math courses for students from 4th grade at public elementary schools up to 11th grade at public high schools. These courses cover arithmetic, pre-algebra, algebra I, algebra II, geometry, PSAT and SAT. Instead of pursuing a placement of public school education or gifted students training, NCLS math program primarily focuses on the fundamentals and skills in math learning and problem solving. Studies in this program will help students to understand the basic concepts, theorems, and formulas, help students to gain the knowledge of applications of the math fundamentals, and most importantly, help students to acquire the manipulative skills of analyzing and solving problems.

Suggestions to the parents

When you help your child to choose class, you need to read the course syllabus carefully and clearly understand the content in each course, then, find out a class which is proper to your child.

The course syllabus:

Class Name	Math 4	Course Name	Arithmetic
Suggested to the students in public school		Grade 4-5	
Course Length	1 year		
Reference Textbook			
Course Content			
1. Whole Number Addition and Subtraction			
2. Whole Number Multiplication and Division			
3. Rounding Numbers			
4. Estimation of Sum, Differences, Products and Quotients			
5. Fraction Basic: Addition and Subtraction with Same Denominator			
6. Fraction Basic: Addition and Subtraction of Mixed Numbers			
7. Compare and Converting Fractions			
8. Decimal Basic: Tenths, Hundredths, Thousandths			
9. Decimal Basic: Addition and Subtraction			
10. Rounding and Compare Decimals			
11. Decimal Multiplication: Thousandths by Tenths			
12. Finding Percent, Calculating and Uses of Percent			
13. Relating Fractions, Decimals and Percent			
14. Basic Measurements: Time and Length			
15. Basic Measurements: Mass and Liquid Volume			
16. Geometry Basic: Points, Lines and Rays			
17. Geometry Basic: Types of Angles, Triangles and Quadrilaterals			
18. Simple Calculation of Perimeter, Area and Volume			

Class Name	Math 5	Course Name	Pre-Algebra
Suggested to the students in public school		Grade 5-6	
Course Length	1 year		
Reference Textbook	Pre-Algebra	DeMYSTiFieD	
Course Content			
<ol style="list-style-type: none"> 1. Number theory (rational and irrational number) 2. Fraction basics 3. Operations with fraction (addition, subtraction, multiplication, division) 4. Exponent, absolute value 5. Decimal basics 6. Operations with decimals 7. Ration, proportion, percent 8. Conversion of fractions, decimals and percentage 9. Probability 10. Geometry and measurement (covering and surround) 11. Perimeter, area and volume 12. Integers and equations 13. Introduction on exponent and root 14. Operator evaluation order and basic operation law (associate, commutative, distributive law) 15. Constant convert methods 16. Linear equations 17. Inequality and linear inequality equation 			

Class Name	Math 6	Course Name	Algebra I, Part 1
Suggested to the students in public school		Grade 6-8	
Course Length	1 year		
Reference Textbook	Algebra I	ISBN: 0-395-93776-0	
	Authors: Larson, Boswell, Kanold, Stiff		
Course Content			
<ol style="list-style-type: none"> 1. Review exponents and powers 2. Review rates, ratios, and percent 3. Adding and subtracting matrices 4. Introducing functions 5. Introducing real number line 6. Addition and subtraction of real numbers 7. Multiplication and division of real numbers 8. Solving linear equations 9. Introducing coordinates 10. Slope and intercepts 11. Graphing linear equations 12. Writing linear equations in Slope-Intercept form 13. Fitting a line to data 14. Point-Slope form of a linear equation 15. Standard form of a linear equation 16. Solving linear inequalities 17. Solving absolute-value equations and inequalities 18. Graphing linear inequalities 19. Stem-and-Leaf plots 			

Class Name	Math 7	Course Name	Algebra I, Part 2
Suggested to the students in public school		Grade 7-8	
Course Length	1 year		
Reference Textbook	Algebra I by Larson, Boswell, Kanold, Stiff ISBN 0395937760		
Course Content			
<ol style="list-style-type: none"> 1. Pattern and sequence 2. Solving linear systems by graphing, substitution, and linear combination 3. Application of linear systems 4. Solving systems of linear inequalities 5. Exponents operations 6. Scientific notations 7. Exponential growth and decay functions 8. Solving quadratic equations by graphing and formula 9. Graphing quadratic inequalities 10. Polynomial expansion 11. Polynomial factoring 12. Review ratio, proportion, and percents 13. Direct and inverse variation 14. Rational expression operations 15. Rational equations and functions 16. Probability and odds 17. Word problems 			

Class Name	Math 8	Course Name	Algebra II
Suggested to the students in public school		Grade 8-9	
Course Length	1 year		
Reference Textbook	Algebra 2 (McDougal Littell) Authors: Ron Larson, et al.		
Course Content			
<ol style="list-style-type: none"> 1. Relations, functions, function evaluation and operation, inverse functions 2. Function transformation including translation, reflection and rotation 3. Linear function, linear inequalities, linear mathematic modeling 4. Graphing linear functions, linear inequalities 5. Introducing matrices, matrix operations, Determinants 6. Solving linear system equations using Cramer's rules and augmented matrices 7. Quadratic functions, graph, zeros, quadratic modeling, complex number 8. Solving quadratic equations by factoring, quadratic formula, and complete square 9. Solving linear and quadratic equations system, quadratic equations system 10. Polynomial function, operations, graphs, factoring and solving 11. Rational function, graph, operations, simplification, and solving equations 12. Power and radical function, simplification, operation, solving equations, and rationalizing the denominators 13. Exponential and logarithmic functions, graph, transfer between exponential and logarithmic function, properties of logarithms 14. Solving exponential equations and logarithmic equations 15. Conic sections, circle, ellipse, parabola, hyperbola, graphs of conics 16. Probability and statistics 			

Class Name	Math 9	Course Name	Geometry
Suggested to the students in public school		Grade 9-10	
Course Length	1 year		
Reference Textbook	Geometry (Glencoe/McGraw-Hill) Authors: Jerry Cummins, et al.		
Course Content			
<ol style="list-style-type: none"> 1. Reasoning in geometry, postulates, conditional statements and their converses 2. Basic geometric concepts, segments, angles, parallels 3. Triangles and congruence 4. Pythagorean theorem and triangle inequalities 5. Proportions and similarity 6. Circles, arcs, inscribed polygons 7. Circle relationships, tangents to a circle 8. Deductive reasoning and two-column proofs 9. Circumference and area 10. The coordinate plane , linear equations and equations of circles 11. Trigonometry, Sine, Cosine and Tangent ratio 12. Surface area and volume, solid figures 			

Class Name	Math 10	Course Name	PSAT
Suggested to the students in public school		Grade 7-10	
Course Length	1 year		
Reference Textbook	Barron's SAT Math Workbook College board: Official SAT Study Guide		
Course Content			
Part One: Number and Operations <ol style="list-style-type: none"> 1. Basic Arithmetic Concepts 2. Elementary Number Theory 3. Fraction, Decimal, and Percent 4. Ratios and Proportions 5. Sequences and Series Part Two: Algebra and Functions <ol style="list-style-type: none"> 6. Polynomials and algebraic fractions 7. Solving Linear Equations and Inequalities 8. Solving Quadratic Equations 9. Word Problems 10. Exponents and Roots 11. Functions and Graphs Part Three: Geometry and Measurement <ol style="list-style-type: none"> 12. Lines and Angles 13. Triangles 14. Quadrilaterals and Polygons 15. Circles 16. Solid Geometry 17. Coordinate Geometry 18. Graphs and charts 19. Counting and probability 20. Average 			

Class Name	Math 11	Course Name	SAT
Suggested to the students in public school		Grade 8 to Grade 11	
Course Length	1 year		
Reference Textbook	1. Barron's SAT Math workbook 2009 edition 2. College board: Official SAT Study Guide 2009 Edition		
Course Content			
1. Percent, fraction, ratio and rate problems 2. Mean, mode, median and range 3. Solving linear equations and inequalities 4. Solving equations with more than one variable and equation systems 5. Polynomials, and basic operations of polynomials 6. Factoring and simplify polynomial by factoring 7. Solving quadratic equations by factoring, by formula and by graphing 8. Word problems including rate, percent, mixture and translating words into equations 9. Angles, triangles, quadrilaterals and polygons 10. Circles, perimeter, and area 11. Solid geometry, coordinate geometry 12. Counting problems including combination and permutation 13. Probability concept and application 14. Sequences and series 15. Graphs and tables 16. Integer and rational exponents 17. Special functions, simple transformations of functions			