秋季学期

初高中课程介绍

华夏总校2024

华夏中文学校总校2024秋季课程

点击链接注册：www.houstonhuaxia.org

AP Physics1 物理 1

课程/Course: AP Physics 1

老师/Teacher: Ziping Lin 林子平

学生/Students: Grade 9th-12th

准备为/Prepare for: AP Physics 1 每年5月份全国统考，AP Physics2

先决必修课/Pre-requisites: Algebra I, Geometry

课程说明/Course Description:

AP Physics 1 is the equivalent of a first-semester college course in algebra-based physics, which allows high school students to take college-level courses and earn college credit. The course emphasizes critical thinking, problem-solving, and the development of laboratory skills.

上半部分(1st half 2024秋季学期）

- Introduction - Metric System, SI Unit, Accuracy vs. Precision, Approximation, and Scientific Notation
- Kinematics – Vector, Position, Displacement, Velocity, Acceleration, Linear Motion, and Projectile
- Dynamics – Different Kinds of Forces, Newton's 1st, 2nd, and 3rd laws, Free-Body Diagrams, and Applications
- Circular Motion and Gravitation – Gravitational Forces, Centripetal Acceleration and Centripetal Force, Uniform Circular Motion

下半部分(2nd half2025 春季学期）

- Energy – Open & Closed Systems, Work & Mechanical Energy. Kinetic vs. Potential Energy, Conservation of Energy, and Power
- Momentum – Impulse, Conservation Momentum, Elastic and Inelastic Collisions.
- Simple Harmonic Motion – Period and Frequency, Spring-Mass System, Pendulum, and Kinetic Energy vs. Potential Energy.
- Torque and Rotational Motion – Angular Kinematics, Torque, Rotational Inertial, and Conservation of Rotational Momentum

教师介绍/About The Teacher: Teacher Lin is meticulous and responsible in teaching, focusing on students' understanding of concepts, emphasizing students' expressive ability, advocating interaction in the classroom, and fully combining modern technology and his practical work experience in engineering, computer, mathematics, statistics, investment, and teaching. In the Huaxia big family, Teacher Lin is deeply loved by students and recognized by parents. Mr. Lin has been passionately teaching Pre-Algebra, Algebra I, Geometry, Algebra II, SAT Math, Pre-Calculus, and Calculus to middle & high school students for more than 10 years. Benefitted from his education and research in Signal Processing and Statistics, plus his work experience as an electronics engineer and a software developer for 中科院光机所, Halliburton, Exxon, and BMC Software, Mr. Lin is a seasoned stock investor & option trader and a passionate math teacher.
林老师教学认真负责，注重学生对概念的理解，强调学生的表达能力，倡导课堂中的互动，充分结合现代科技以及他在工程，计算机

华夏中文学校总校2024秋季课程

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Geometry 几何

课程/Course: 华夏数学几何/Geometry

老师/Teacher: Ziping Lin 林子平

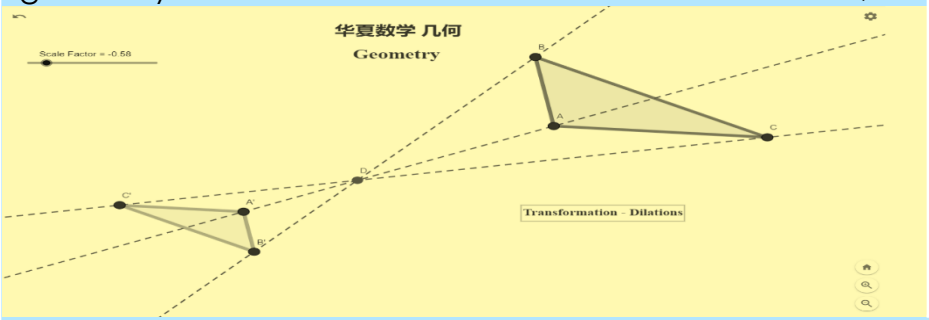
学生/Students: Grade 7th-9th

准备为/Prepare for: Algebra II, SAT Math, AMC, 数学

先决必修课/Pre-requisites: Algebra I

课程说明/Course Description:

Geometry Concepts make up a significant portion of SAT Math. This course helps students to recognize and work with geometric concepts. They build on ideas of inductive and deductive reasoning, logic, concepts, and postulates and theorems of Euclidean plane and solid geometry. Students use a software to aid visualizations,



上半册(1st half 2024 秋季)

- Inductive & Deductive Reasoning, Conditionals and Proof
- Angle Relations, Parallel and Perpendicular Lines
- Angle Theorems, Congruent Triangles, SSS, SAS, ASA, AAS and HL
- Relationships in Triangles, Formations of Circumcenter, Incenter, Centroid, and Orthocenter, Triangle Inequality, Hinge Theorem.
- Quadrilaterals, Sum of Interior Angles, Sum of Exterior Angles/
- Proportions and Similarity, Special Segments.

下半册(2nd half 2025 春季)

- Proportions and Similarity, Special Segments.
- Right Triangles (Pythagorean Triples and Special Right Triangles) and Trigonometry, Law of Sines and Cosines.
- Transformations(Translation, Reflection, Rotation, and Dilation) and Vectors
- Circles, Arcs, Chords, Central and Inscribed Angles, Tangents, Secants, Equations of Circles.
- Areas of Polygons and Circles
- Extending Surface Area & Volume
- Euclidian vs. Non-Euclidian Geometry

教师介绍/About The Teacher: Teacher Lin is meticulous and responsible in teaching, focusing on students' understanding of concepts, emphasizing students' expressive ability, advocating interaction in the classroom, and fully combining modern technology and his practical work experience in engineering, computer, mathematics, statistics, investment, and teaching. In the Huaxia big family, Teacher Lin is deeply loved by students and recognized by parents. Mr. Lin has been passionately teaching Pre-Algebra, Algebra I, Geometry, Algebra II, SAT Math, Pre-Calculus, and Calculus to middle & high school students for more than 10 years. Benefitted from his education and research in Signal Processing and Statistics, plus his work experience as an electronics engineer and a software developer for 中科院光机所, Halliburton, Exxon, and BMC Software, Mr. Lin is a seasoned stock investor & option trader and a passionate math teacher.

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Algebra II
代数 2

课程/Course: 华夏代数 2/Algebra II

老师/Teacher: Ziping Lin 林子平

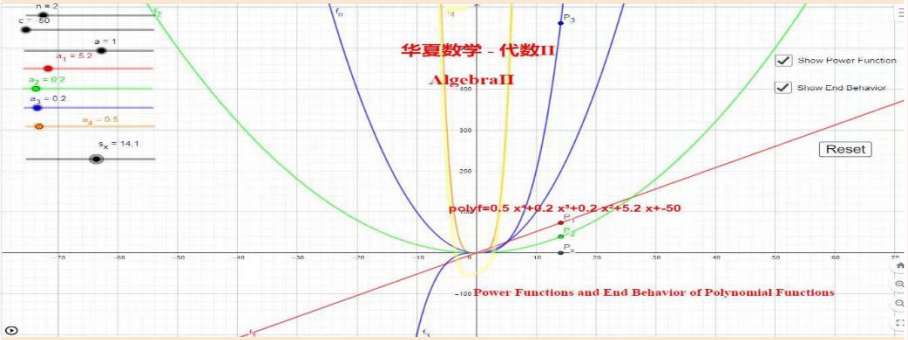
学生/Students: Grade 8th-10th

为期/Duration:

先决必修课/Pre-requisites: Algebra I, Geometry

准备为/Prepare for: Pre-Calculus， SAT Math，数学竞赛

Algebra II and Algebra I makeup Passport to Advanced Math in SAT Math. This course will progressively and systematically teach student some of the more difficult and advanced concepts in Algebra. The class will use a software to help student visualizing some of the concepts and building solid foundation for Pre-Calculus



上半册（1st half 2024秋季学期）

- Compound Inequalities, Absolute Value Equations and Inequalities
- Relations and Functions, Domain and Range, Special Functions, Graphs of Piecewise Inequalities
- Systems of Equations in 3 Variables & Graphic Interpretation Systems of Linear Inequalities, and Linear Programming
- Matrices and Its Application in Transformation and System of Linear Equations.
- Complex Numbers, Quadratic Functions and Inequalities, Vertex Form and Graphic Transformation of Quadratics
- Long and Synthetic Division of Polynomials, Polynomial Functions, and Fundamental Theorem of Algebra

下半册(2nd half 2025 春季)

- Long and Synthetic Division of Polynomials, Polynomial Functions, and Fundamental Theorem of Algebra
- Inverse Relations and Functions, nth Roots, Radical Equations and Inequalities
- Complex Fractions, Rational Equations and Inequalities, Graphs of Rational Functions, Asymptotes, and Points of Discontinuities,
- Exponential and Logarithmic Functions, Common & Natural Logarithms, and Logarithmic Equations and Inequalities
- Conic Sections (Parabolas, Circles, Ellipse, and Hyperbolas), Standard Form, Systems of Quadratic Equations and Inequalities
- Arithmetic & Geometric Sequences and Series, Sigma Notation, Recursion and Special Sequences

教师介绍/About The Teacher: Teacher Lin is meticulous and responsible in teaching, focusing on students' understanding of concepts, emphasizing students' expressive ability, advocating interaction in the classroom, and fully combining modern technology and his practical work experience in engineering, computer, mathematics, statistics, investment, and teaching. In the Huaxia big family, Teacher Lin is deeply loved by students and recognized by parents. Mr. Lin has been passionately teaching Pre-Algebra, Algebra I, Geometry, Algebra II, SAT Math, Pre-Calculus, and Calculus to middle & high school students for more than 10 years. Benefitted from his education and research in Signal Processing and Statistics, plus his work experience as an

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AP Pre-Calculus
预科微积分

课程/Course: 预科微积分 AP Pre-Calculus

老师/Teacher: Ziping Lin 林子平

学生/Students: Grade 10th-12th

准备为/Prepare for

AP Calculus AB or BC 5月年度全国统考， Multi-Variable Calculus

先决必修课/Pre-requisites: Algebra II, Geometry

课程说明/Course Description:

Calculus developed by Isaac Newton and others has wide applications in Physics and other natural sciences, Engineering, and Economics. HuaXia Pre-Calculus is aimed to help student prepared for the All-Important Calculus. This course will progressively and systematically teach student some of the advanced concepts in Pre-Calculus and introduce Limits, Derivatives and Antiderivatives, and the Fundamental Theorem of Calculus.

内容/Contents

上半册 (1st half 2024 秋季）

- Linear Equations & Inequalities and Piecewise Functions
- Systems of Linear Equations & Inequalities and Matrices
- Families of Graphs – Symmetry, Continuity, and End Behavior
- Polynomial, Rational, and Radical Functions & Inequalities
- Unit Circle, Trigonometric and Periodic Functions
- Graphs of The Trigonometric and Inverse Functions

下半册(2nd half2025 春季)

- Trigonometric Identities and Equations
- Vectors and Parametric Equations
- Polar Coordinates and Complex Numbers
- Introduction to Analytic Geometry and Conics
- Exponential and Logarithmic Relations
- Arithmetic, Geometry, and Special Sequences &

教师介绍/About The Teacher: Teacher Lin is meticulous and responsible in teaching, focusing on students' understanding of concepts, emphasizing students' expressive ability, advocating interaction in the classroom, and fully combining modern technology and his practical work experience in engineering, computer, mathematics, statistics, investment, and teaching. In the Huaxia big family, Teacher Lin is deeply loved by students and recognized by parents. Mr. Lin has been passionately

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AP Calculus AB & BC （AP微积分）

课程/Course: 预备微积分 Pre-Calculus

老师/Teacher: Ziping Lin 林子平

学生/Students: Grade 10th-12th

准备为/Prepare for

先决必修课/Pre-requisites:
Pre-Calculus

AP Calculus AB or BC 5月年度全国统考， Multi-Variable Calculus

课程说明/Course Description:
Calculus developed by Isaac Newton and others has wide applications in Physics and other natural sciences, Engineering, and Economics. HuaXia Pre-Calculus is aimed to help student prepared for the All-Important Calculus. This course will progressively and systematically teach student some of the advanced concepts in Pre-Calculus and introduce Limits, Derivatives and Antiderivatives, and the Fundamental Theorem of Calculus.

第一部分

- Limit(极限), the Very 1st Big Idea of Calculus – Rate of Change, Continuity, One Sided Limits, Laws of Limit, Intermediate Value Theorem, and Asympototes
- Differentiation （微分）, the 2nd Big Idea - Rules of Derivatives, Higher Derivatives, Chain Rule, Derivatives of Trigonometric, Exponential, Logarithmic, and Inverse Functions, Tangent Lines, Implicit Differentiation, and Approximation of a Derivative
- Applications of Differentiation – Related Rates, Linear Motion, Mean Value Theorem, 1st & 2nd Derivative Test, Higher Derivatives, Curve Sketching, Concavity, and Optimization
- Integration （积分）, Antiderivatives, Riemann Sum and Area Approximation, Definite Integral and Properties, Area under a Curve, and Trapezoidal Rules

第二部分

Fundamental Theorem of Calculus, Integration by Substitution, Integration of Exponential and Logarithmic Function

- Application of Integration – Area of a Region Between 2 Curves, Volumes by Disk and Washers. Volumes of Solids with Cross Sections, Motion of a Particle, Average Value of a Function, Length of a Curve (**BC**)
- Techniques of Integrations – Basic Rules, Trigonometric Integrals, L'Hopital's Rule, Integration by Partial Fraction(**BC**) and by Parts(**BC**),

第三部分

Vector Valued Function, Slopes, Tangents, and Arc Length in Parametric Equations, and Areas in Polar Coordinates

- Infinite Sequences and Series – p-Series, Integral Test, Comparison Test, Ratio Test, Alternating Series and Error Bound
- Representations of Functions as Power Series – Convergence of Power Series, Taylor Polynomials, Lagrange Error Bound

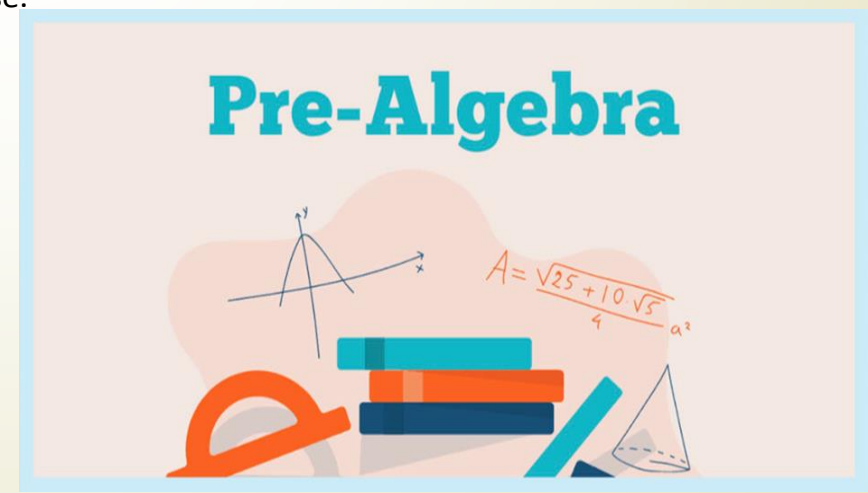
Pre-Algebra

Instructor： 汪宝宏老师

Prealgebra includes a thorough exploration of the fundamentals of arithmetic, including fractions, exponents, and decimals. We also introduce beginning topics in number theory and algebra, including common divisors and multiples, primes and prime factorizations, basic equations and inequalities, and ratios. The course also surveys a wide range of topics, including geometry, counting, statistics, and probability.

This course is specifically designed for high-performing students and draws material from many programs for top middle school students in the country. Our philosophy is that students develop more by learning to solve problems they haven't seen before, as opposed to offering repeated drills that students can memorize their way through. In this way, our classes are structured much more like courses at top-tier colleges.

Time Commitment: This 32-week course includes 90 minutes in-class and 1-3 hours of homework each week, corresponding to a full year course.



AMC8 & Middle School Math Competition Class

Taught by Baohong Wang

ABOUT THE CLASS

Course mission: Middle School Math Competition Class provides engaging math programs to middle school students of all ability levels to build confidence and improve attitudes about math and problem solving.

AMC8 and MATHCOUNTS are national mathematics competitions that builds problem solving skills. The students will be building their knowledge of Algebra, Geometry, and other subjects. Learning AMC8 and MATHCOUNTS will help apply the knowledge while developing problem solving skills.

TMSCA and UIL are similar as they cover many areas of middle school math. This includes Algebra, Geometry, Probability, and also number skills. The students will become faster at answering problems and find success in school competitions when they learn and practice.

ABOUT THE TEACHER

Mr. Wang has ten years of coaching experience in AMC8, MATHCOUNTS and TMSCA/UIL. As a head coach of MATHCOUNTS, he led the Willow Wood Junior High School math team to participate in MATHCOUNTS State Competition three times. In the year 2019, the school team was honored the sixth-place spot in the state competition. Now Mr. Wang continues to teach Math in Hua Xia Chinese School for the eighth year with his coaching experience.

Time: Saturday 2:00 ~ 4:00 pm (On Campus)

Sunday 2:00 ~ 4:00 pm (Online)

Algebra I

Instructor: 林子平

教师介绍/About The Teacher: Teacher Lin is meticulous and resp
Mr. Lin has been passionately teaching Pre-Algebra, Algebra I, Geometry, Algebra II, SAT Math, Pre-Calculus, and Calculus to middle & high school students for more than 10 years. Benefitted from his education and research in Signal Processing and Statistics, plus his work experience as an electronics engineer and a software developer for 中科院光机所, Halliburton, Exxon, and BMC Software, Mr. Lin is a seasoned stock investor & option trader and a passionate math teacher.
林老师教学认真负责，注重学生对概念的理解，强调学生的表达能力，倡导课堂中的互动，充分结合现代科技以及他在工程，计算机，数学，统计，投资，教学各领域的实际工作经验，进行数学教学，在华夏这个大家庭，深受学生喜爱和家长的认可。

Pre-requisites: Pre-Algebra
Students: 6-8 grade

Description

Algebra I makes up the Heart of Algebra in SAT Math. This course helps students to explore the tools of Algebra. Students will learn to comprehend fundamental Algebra Concepts such as Factoring Technique, Completing the Squares, Quadratic Equations, etc. and master the ability to solving problems using Logical Reasoning and Algebraic Skills.

Contents

- Solving Linear Equations
- Functions and Patterns
- Analyzing Linear Equations
- Solving Systems of Linear Equations
- Solving Linear Inequalities
- Polynomials
- Factoring
- Quadratic an Exponential Functions
- Radical Expressions and Triangles
- Rational Expressions and Equations

Prepare for

CBE (Credit By Exam),Geometry, and Algebra II, SAT Math

华夏中文学校总校2024秋季课程

注册链接：www.houstonhuaxia.org

MATH CBE 5 to 6

Instructor: Nora Qin (秦老师)
Student: 5th Graders (5年级学生)

秦老师是一名结构工程师，在数学，物理和力学方面接受过大量良好的教育，在美国拿到研究生学位后，一直从事专业工作。有过自家孩子在美读書的经历后，秦老师希望能用自己的经验，结合中美教育的长处，为更多的孩子有效地传授知识，答疑解惑，帮助孩子们在学习的乐趣中打下扎实的基础，实现自己的理想。

当您的孩子正要读小学5年级时，您应该考虑让ta申请数学Math CBE 5-6的考试，这样ta的初中三年可以按顺序修Math 7, Algebra I & Geometry, 这样ta的高中头三年可以按顺序修Algebra II, Pre-Calculus & Calculus. 这样的选课将对ta的Physics 1, PSAT & SAT 都有很大的帮助。欢迎加入我们的Math CBE 5-6的课程，帮助孩子们顺利通过CBE考试，为将来的选课铺好路。

课程要求：

1. 需购教材：ThinkUp! Math Level 6 (可以登记团购)
2. 家长需要准备一个 1 inch binder, 在第一堂课带来。
3. 家长需要在小学5年级刚开学时，询问学校CBE的要求事样，如CBE申请表格，交表截止日期，和考试日期，并把考试日期电邮告诉秦老师。

SYLLABUS:

1. Number System & Operations:
   Whole Numbers, Fractions & Decimals
2. Ratios, Rates & Percents
3. Customary & Metric Measurement
4. Expressions, Equations & Inequalities
5. Geometry
6. Probability & Statistics
7. Data Representation:
   Bar Graph, Dot Plan, Stem & Leaf Plot & Scatterplot
8. Financial Literacy
9. Word Problems

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注册链接：www.houstonhuaxia.org

ALGEBRA I

Instructor: Nora Qin (秦老师)
Student: 6/7/8th Graders (6/7/8年级学生)

秦老师是一名结构工程师，在数学，物理和力学方面接受过大量良好的教育，在美国拿到研究生学位后，一直从事专业工作。有过自家孩子在美读書的经历后，秦老师希望能用自己的经验，结合中美教育的长处，为更多的孩子有效地传授知识，答疑解惑，帮助孩子们在学习的乐趣中打下扎实的基础，实现自己的理想。

Algebra I是初中数学的核心，也是高中数学最重要的基石。打好这个基础，对接下来的Geometry，Algebra II和Physics 1的学习，都很有帮助。当然对PSAT & SAT的成绩，也是有着直接的影响，因为这两门考试的数学大部分内容都是Algebra I。欢迎加入我们的Algebra I课程，帮助孩子们加深理解，提高成绩，增强信心。

课程要求：

1. 需购教材：Core Skills - Algebra (可以登记团购)
   by Houghton Mifflin Harcourt
2. 家长需要准备一个 1 inch binder, 在第一堂课带来。

SYLLABUS:

1. Expressions & Formulas
2. Monomials
3. Solving Equations
4. Exponents & Polynomials
5. Linear, Quadratic & Exponential Functions
6. Graphs
7. Systems of Equations
8. Inequalities, Roots & Proportions
9. Piecewise Functions
10. Factoring
11. Solving Quadratic Equations
12. Data & Statistics
13. Word Problems