

# Algebra I

$$\Gamma = \frac{V_{\text{reflected}}}{V_{\text{incident}}}$$

**Instructor:** 林子平 老师

**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.

林子平老师就学于浙大求是小学，浙大附中，曾获杭州第一届数学竞赛一等奖。先后获浙江大学学士学位、上海交大硕士学位。在留学美国时期，曾就读于加州大学，U.C.Davis, 统计系, Ph.D. Program, 后获休斯敦大学工程硕士学位。1990起从事计算机软件开发工作，并热心投入初高中数学的教学辅导。

## Contents

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

## Prepare for

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

# Geometry

**Instructor:** 林子平 老师

## Description

**Pre-requisites:** Algebra I

**Students:** 7-9 Grade

Geometry Concepts make up a significant part of SAT Math. This course helps students to recognize and work with geometric concepts. They will build on the ideas of inductive and deductive reasoning, postulates and theorems of Euclidean geometry. Students will use geometry software to aid visualizations, spatial reasoning, and geometric modeling to solve problems.

## Prepare for

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

Under the influence from his father, who was a math professor of ZheJiang Univ., and many best educators from ZheJiang University and his high school (ZheJiang Univ. Affiliated High School), Mr. Lin had shown great interest in Math and won top award for the 1st Hangzhou Math Competition. Mr. Lin graduated from ZheJiang Univ. with a Bachelor degree of Arts and Shanghai JiaoTong Univ. with a Master degree of Science. He studied at the Univ. of California, Davis, Dept. of Statistics, in Ph.D. program. Mr. Lin graduated from the Univ. of Houston with a Master degree of Engineering. He had been a software developer for many years, working for Halliburton, Exxon, and BMC Software. Mr. Lin has been enjoying tutoring students in various areas ranging from Pre-Algebra, Algebra I, Geometry, Algebra II, and SAT to Calculus.

## Contents

- Reasoning and Proof
- Parallel and Perpendicular Lines
- Congruent Triangles
- Relationships in Triangles
- Quadrilaterals
- Proportions and Similarity
- Right Triangles and Trigonometry
- Transformations
- Circles

# Algebra II

**Instructor:** 林子平 老师

**Pre-requisites:** Algebra I, Geometry

**Students:** 8<sup>th</sup> - 10<sup>th</sup> grade

## Description

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 algebra software to help student visualizing some of the concepts and building solid foundation for Pre-Calculus and eventually Calculus.



## Contents

- Equations and Inequalities
- Linear Relations and Functions
- Systems of Equations and Inequalities
- Matrices
- Quadratic Functions and Inequalities
- Polynomial Functions
- Radical Equations and Inequalities
- Rational Expressions and Equations
- Exponential and Logarithmic Relations
- Conic Sections

## Prepare for

CBE (Credit By Exam), Pre-Calculus, SAT Math

# Pre-Calculus

**Instructor:** 林子平 老师

<b>Pre-requisites</b>	10 <sup>th</sup> -11 <sup>th</sup> grade Algebra II, Geometry
<b>Prepare for</b>	Calculus, SAT Subject Test in Mathematics Level 2

## 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.

## Contents

- 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
- The Trigonometric and Periodic Functions
- 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 & Series
- Combinatorics, Statistics and Probability
- Limits, Derivatives, and Antiderivative, and the Fundamental Theorem of Calculus

# Middle School Math Competition Basics

**Instructor:** 俞新天

<b>Students</b>	6 <sup>th</sup> – 8 <sup>th</sup> grade
<b>Pre-requisites</b>	Pre-algebra
<b>Prepare for</b>	Mathleague, Mathcounts

**Xintian Yu**, a graduate from top Chinese university and a Ph.D. holder from top U.S. university, has strong scientific computing background and work experience in both academia and industry. He has coaching experience in various mathematical competitions including Mathcounts, UIL, AMC8/10, TMSCA, and Mathleague. He also had college teaching experience in the U.S.

## Course Description

<b>Contents</b>	<b>Fall semester:</b> <ul style="list-style-type: none"><li>• Algebra</li><li>• Counting</li><li>• Probability I</li></ul>
	<b>Spring semester:</b> <ul style="list-style-type: none"><li>• Probability II</li><li>• Geometry</li><li>• Number theory</li></ul>

This course is based on the fun and enlightening Mathleague and Mathcounts (School level) programs. It is designed to get inexperienced middle school students started on math competition. The questions presented in the course are more challenging than those students would encounter in their school study. The students will learn mathematical knowledge and problem-solving skills that are usually not taught in the school. One year of middle school study or equivalent math knowledge is recommended to get most out of this course.

# Middle School Math Competition Advanced - AMC 8

Instructor: 俞新天

Students	8 <sup>th</sup> – 10 <sup>th</sup> grade
Pre-requisites	Algebra & Geometry
Prepare for	Mathcounts, AMC 8/10

## Contents :

### Fall semester:

- Algebra advanced topics
- Counting advanced topics
- Probability advanced topics I

### Spring semester:

- Probability advanced topics II
- Geometry advanced topics
- Number theory advanced topics

## Description

This course is for students who have finished the Middle School Math Competition Basics course or for students at similar level. It is designed to prepare experienced math competition students for State and National level Mathcounts or AMC 8/10, two of the most premier US math competitions. More advanced topics will be discussed in the class and harder Mathcounts or AMC 8/10 problems will be presented to the students to solve. The students will learn advanced problem-solving skills and build positive attitudes towards analytical thinking.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## SAT Math Prep / Saturday Class

Instructor: 俞新天

Students	8 <sup>th</sup> – 9 <sup>th</sup> grade (PSAT), 10 <sup>th</sup> – 11 <sup>th</sup> grade (SAT)
Pre-requisites	Algebra
Prepare for	PSAT, SAT

### Description

This course is for students who will take SAT or PSAT in very near future. It will include a brief review of all the important topics in the test as well as the connections between these different topics. Through large amount of practice questions, students will learn and master problem-solving skills specific to the SAT test and gain confidence in test-taking. Students will also learn how to make personalized study plan and develop practical strategies to deal with challenging problems that could appear in the test.

### Contents

- 1: Linear Equations
- 2: Systems of Linear Equations
- 3: Inequalities
- 4: Rates, Ratios, Proportions, and Percentages
- 5: Scatter Plots
- 6: Statistics and Probability
- 7: Exponents and Radicals
- 8: Polynomials and Rational Expression
- 9: Functions
- 10: Quadratic Equations
- 11: Imaginary Numbers
- 12: Geometry
- 13: Imaginary Numbers
- 14: Trigonometry

# Middle School Math Competition Class

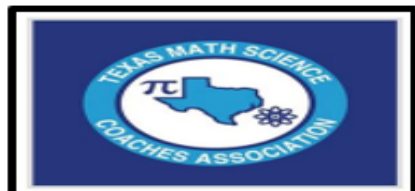
Taught by Baohong Wang

## 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.



MATHCOUNTS is a national mathematics competition that builds problem solving skills. The students will be building their knowledge of Algebra, Geometry, and other subjects. Learning 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 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 fifth year with his coaching experience.



**Time: Sunday 2:00 pm-4:00 pm**

**We look forward to seeing you in class!**



# Pre-Algebra

**Instructor:** 唐军平 博士

<b>Target Students</b>	6 <sup>th</sup> grade – 7 <sup>th</sup> grade
<b>Pre-requisites</b>	Have knowledge of concept and operations (addition, subtraction, multiplication, and division) of rational numbers (fraction, decimals, and percents). Have taken the 6 <sup>th</sup> grade math.

## Description

This course is designed to improve and enhance students' ability of calculation involving power, radicals, exponents, and logarithm, and lay a solid foundation for the future study in algebra.

**Dr. Tang** has background in Physics, Biophysics. He obtained his Ph. D in engineering from UT Austin.

## Course Syllabus

The following concepts and skills will be studied in this course:

**Power:** relationship between multiplication and power calculation, calculation of power form and governing rules, in case of same bases and different bases, and base converting. Concepts of zero power and negative power will be also introduced.

**Radicals:** introduction of root calculation and the concept of radicals; the useful skill of rationalizing denominator will be emphasized.

**Exponents:** introducing concept of exponent based power and radicals. Advanced skills for evaluating and simplifying expressions containing exponents will be introduced.

**Logarithm:** concept of logarithm, its relation with power and root will be clarified. Rules that governing log calculation will be explained. Common logarithm and natural logarithm will be introduced.

## SAT English Prep / Sunday Class

**Instructor: Hunter Lee**

**Course Description:** This class is to prepare the 9th-12th graders who wish to achieve a higher score in SAT. Through knowledge of the test format, knowledge of grammar conventions and knowledge of strategies to tackle the different kinds of questions, the students will increase test-taking confidence, make better answer choices and manage time better, leading to improved test scores.

As the seasoned SAT/ACT test-prep instructor and test-rehearsal orchestrator of past 20 more academic years, Mr. Hunter have served and contracted with Princeton Reviews at first, and later with HCC systems, UH systems, many ISDs as well for numerous sessions of SAT / ACT / GRE / GMAT / Pre-Calculus / AP-Calculus / AP-Physics / AP-Chemistry etc. all around Houston regions.

In brief overviews, the repertoires of Mr. Hunter's testing operations offer as follows: 1<sup>st</sup>, the regular SAT / ACT prep classes, 2<sup>nd</sup>, the emergency SAT / ACT pre-test trials, 3<sup>rd</sup>, enhanced SAT / ACT top-scoring classes, 4<sup>th</sup>, the make-up classes of SAT / ACT.

Well, in the academic field slates, Mr. Hunter has orchestrated more than 35,000 rounds of SAT sessions, 15,000 bounds of ACT test-preps, 8000 more of GRE rehearsals, approximated 5,000 of GMAT trials, as well as counterless coaching-classes of AP s and PreAP s.


### **We will be focused on the following topics:**

1. Readings ( Herodotus/ Pale blues/Milky's /Arias / Gold Apple/ Hypo' Oath/Cutting Edges )
2. Grammars {Tenses /Moods /Usages /Patterns /Idioms / Five Formats /Senses /Skills /jargan }
3. vocabulary ( Roots/ Derivations / Rolled Patterns / Fangles / Diluvians / Scenarioed )
4. Bio-burners ( Treatises / Oratories / Documentaries / refined stylistics / portrayals )
5. Logistics / Captures ( Chimera's pens/ Hypnos' formats / Relativity's lens / Maxwell' spectra )


**Sunday Class**



# 华夏中文学校 实Python操网络软件课程



Python Web Application Programming is a one year program course designed to help students excel in AP Computer Science and also help adult student find related job and answer interview questions. Students will learn step by step how to write Python program, and how to build web application which connect to the database. We based on learn on demand concept, let student learn language basic while it is needed for the task. Require Laptop computer.




## Python 1 - Semester 1:


1. Download and install all software needed for this class, such as Python package, VS code Editor and more...
2. An introduction to Python fundamentals. Topics include simple print statement, console usage, data type, operators, conditional statements, loops, arrays, class and objects, string, and Java standard classes. Students
3. write simple game and build up function concept.
4. write python program to plot chart based math formular. and learn to build own package.

## Python 2 - Semester 2:

1. Download and install NPM, MongoDB, Git software tools for building web application.
2. Topics include csv file handling, JSON format, Json to class. inheritance and polymorphism, array and array list, file O and exception, recursion, sorting and searching, and program design and analysis.
3. Learn MongoDB database collection and document concept, create Python program to Create, Read, Update and Delete (CRUD) data record in DB.
4. Create Python Server to connect to MongoDB, and create DB service for CRUD.
5. Display data from Database to web browser.
6. Use React JS generate simple GUI to display database data.



儿童课程偏重打好语言基础；成人课程则偏重建立网络编程理念，编写网络应用软件，解答面试问题。






# 华夏中文学校 Java实操网络软件课程




Java Programming is a one year program designed to help students excel in AP Computer Science and succeed on the USACO exam. Students will learn step by step Object Orient Programming (OOP) skills. Require Laptop computer.

Java 1 - Semester 1: An introduction to Java fundamentals. Topics include number systems, operators, conditional statements, loops, arrays, class and objects, string, and Java standard classes. Students will also use what they've learned to develop window-based applications such as the snake game with JavaFX.



儿童课程偏重打好语言基础；成人课程则偏重建立网络编程理念，编写网络应用软件，解答面试问题。

Java 2 - Semester 2: Topics include inheritance and polymorphism, abstract class and interface, array and array list, file IO and exception, recursion, sorting and searching, and program design and analysis. Students will practice solving multiple choice problems and free response type problems from the AP Computer Science A exam. Student will also learn to design and develop more complicated applications using OOP skills with JavaFX such as Alien Invasion and Tetris.



**5<sup>th</sup> Grade and up**

## 高中化学 老师简历 课程简介

**王勤**老师现在是我们学校教AP化学辅导班和化学SAT班的老师，她是一个拥有20多年教学经验的老师，她拥有德克萨斯州终身化学教师证书和硕士学位。在过去的25年中她在Houston Community College (休斯顿社区大学) 教过大学化学，和在高中教过AP化学，荣誉高中化学和普通高中化学。她在Harmony 高中和Cy-Fair ISD 教过20多年，在休斯顿社区大学教过5年。在2014-2015学年她的AP化学班的学生100%通过AP化学国家考试，之前她每年AP化学班的学生有85%左右的AP考试合格率，她的AP预科班和普通化学班的学生在学区的评估测试合格率每年始终在85-90%。我们学校很高兴能够请王勤老师到我们学校来教学。王勤老师现已退休，她除了在华夏教课外还给大学和高中的学生辅导化学，把化学知识传授给年轻一代。

### *AP Chemistry Exam Preparing Class*

This class is to prepare students taking Advanced Placement Chemistry. Whether a student is taking AP Chemistry at his/her school or he/she is working on it independently, the stage is set for a great intellectual experience. This class is to help students try to master the AP Chemistry exam, put students on a fast track with focused review. This class will follow the College Board Concept Outline to help students practice difficult problems, diagnostic tests etc. that has all of the elements of the AP Chemistry Examination so that students can walk in with confidence and get best scores possible when they are taking exam. This class is a good supplement for AP chemistry students. Every class will review and discuss the theories and concepts, work on the challenge problems and leave some class time to answer students' school work that assigned in their AP chemistry class.

### *Pre-AP Chemistry Supplement class*

Every high school student who wants to go college will take pre-AP chemistry. It is a require class. This supplemental class aligns with all public and private high schools' curriculum, and offers many effective strategies and suggestions for guiding students as they learn chemistry. The class provides opportunities through lectures, activities and discussions that allow students to further their understanding, and to discover critical concepts, and apply the knowledge they've gained to their school work and assessments. This class is intended for further assessments or student homework by practice additional problems. Many students would benefit from such further problem solving in order to reach full understanding of chapter material in their school chemistry textbook. Throughout this supplemental class, students are building problem solving and critical skills, and set a solid foundation that will be available to them for learning college chemistry and AP chemistry.

### *SAT Subject--Chemistry Class*

The SAT subject-chemistry class is to prepare students to do well on this test. The subject test is prepared by the College Board and give evidence about your readiness in chemistry academic areas. Many colleges require or recommend one or more Subject Tests for admission or placement. This class will increase the understanding of chemistry subject, help students to practice problems and diagnostic tests, allow students becoming familiar with the question types and the wording of directions, and also to gain a feel for the degree of emphasis on main topics and the ways on tests, and to help students getting the best score possible. Once students obtain chemistry standardized assessment of your achievement from your good scores, some colleges use the test result for placement into their particular programs in the freshman year. This class is a good supplement for AP chemistry students and pre-AP chemistry students. For AP chemistry students it is a great review of pre-AP chemistry to set a strong foundation in AP chemistry course. For pre-AP chemistry students it is a class to expand and strengthen the knowledge learned in pre-AP chemistry to increase problem solving ability.