PRINCETON UNIVERSITY

IN THE CITY OF NEW YORK

参加美国 Math League 如何能够帮助学生系统、科学地提高数学的英文阅读理解能力和听说能力

目录

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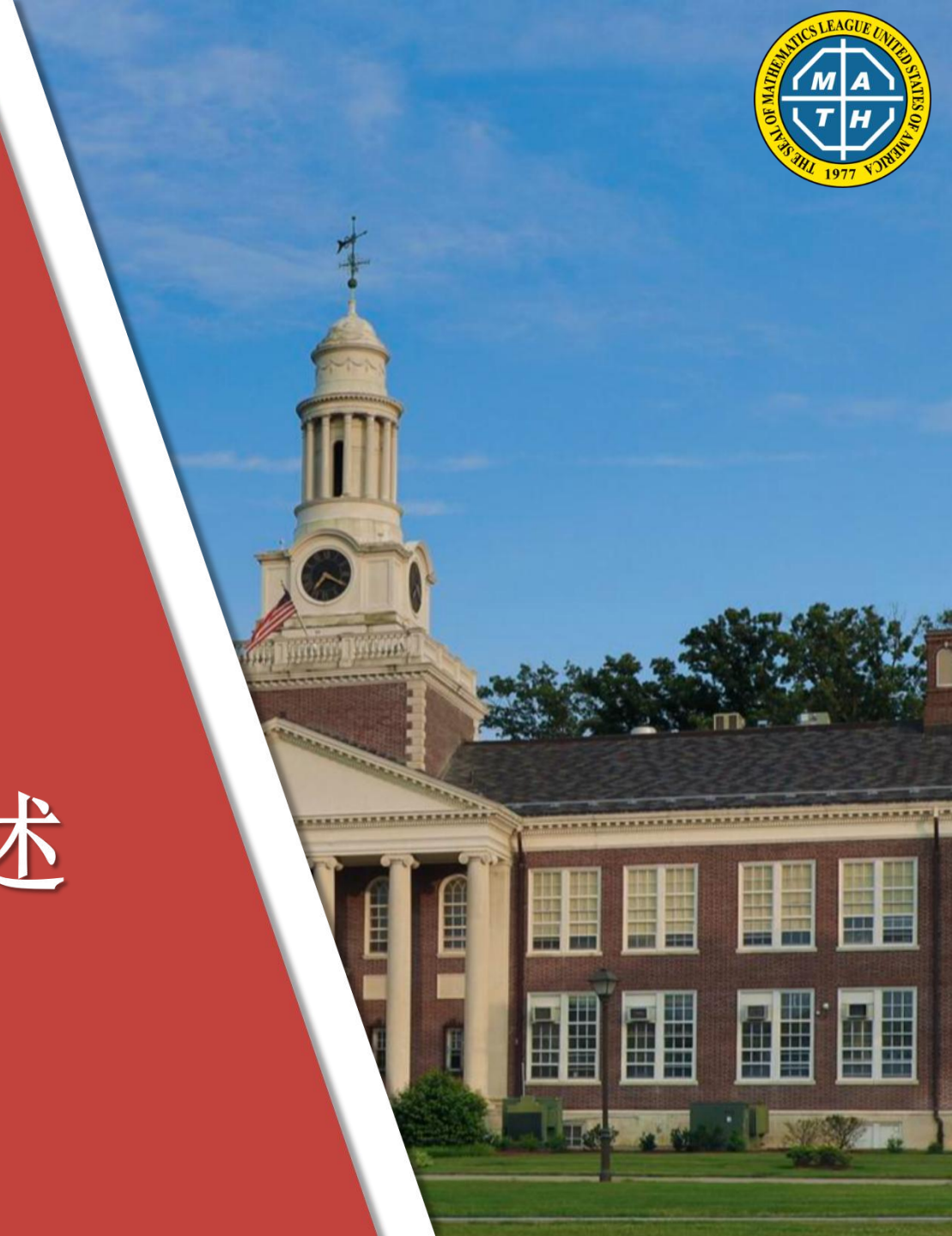
CHAPTER 01

Math League
决赛和数学夏令营概述



决赛和数学夏令营概述

2026年美国 Math League 决赛和数学夏令营的内容包括决赛及在美国大学教授的指导下学习数学。
普林斯顿大学数学系 (Princeton University Mathematics Department)、 哥伦比亚大学数学系 (Columbia University Mathematics Department)、 威廉姆斯学院 (Williams College)、 Swarthmore College 等美国著名大学的教授指导参加决赛和夏令营的学生学习数学。

When:

3-5 年级组：2026年7月11日(check-in date)到7月18日(check-out date)

6-10 年级组：2026年7月19日(check-in date)到7月27日(check-out date)

Note：6-10年级组，组委会安排了同行老师。

Who:

来自美国、 加拿大、中国等世界各地的成绩优异的学生

Where:

The College of New Jersey

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CHAPTER 02

“对孩子的英语不是很自信，担心影响营地上课比赛生活”

常见问题：“孩子英语不是很好，我担心会影响他/她在美国 Math League 营地期间的比赛、上课、和生活”

首先，英语好不好，没有绝对的标准，都是相对的。任何一种语言都包含以下几种元素： 词汇量、阅读理解、写作、听、说等。

如果英语不是母语是第二语言，从长远的角度看，词汇量、阅读理解、写作的能力是最重要的，有了词汇量、阅读理解、写作的基础，听和说就比较容易水到渠成。

然后，我们看学生在美国营地的情况。这里可以粗略分为三个部分：

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美国营地日程安排

3-5年级组

参考: 2025年美国 Math League 决赛和数学夏令营4-5年级组课程表:

Math League 2025 Schedule (Grades 4-5)

Time	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul
8:00 AM		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
8:30 AM								
9:00 AM		Math Lecture & Math Activities (Professor: Miller, Title: Egg Drop Mathematics: it IS all it's cracked up to be!)	Math Lecture & Math Activities (Professor: Marcus, Title: The mountain climber problem)	Math Tournament (Speed Round, location: Decker)	Math Lecture & Math Activities (Professor: Hagen, Title: Scavenger Hunt)	Math Lecture & Math Activities (Professor: Rauh, Title: Modular Origami I)	Math Lecture & Math Activities(Professor: Dr. Rui, Title: Eight Little Squirrels)	Depature Day (International students, 8:30 - 10:00 AM, Townhouse West Lounge)
9:30 AM								
10:00 AM								
10:30 AM		Math Lecture & Math Activities (Professor: Miller, Title: Pirates and Math: Dividing the Spoils and Game Theory)	Math Tournament (Individual Round, Part I, location: Decker)	Math Lecture & Math Activities (Professor: Devlin, Title: Ten truths and a lie)	Math Lecture & Math Activities(Professor: Einstein, Title: How big is infinity?)	Math Lecture & Math Activities(Professor: Rauh, Title: Modular Origami II) Departure (for North American Students, 9:00 - 11:00 AM, Townhouse West Lounge)	Math Lecture & Math Activities(Professor: Barranca, Title: Applied Mathematics: Puzzles from Past to Present)	
11:00 AM								
11:30 AM								
12:00 PM		Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	
12:30 PM								
1:00 PM								
1:30 PM	Arrival at Campus (All students, check in time: 2:30 - 6:30 PM, Town House West Lounge) Opening dinner at Student Center (Room 225, starting at 5:45 PM), followed by ice breaker at Decker around 7:30 PM. Return to Townhouse West by 9:30 PM for fire drill.	Note: Starting at 1:00 PM!	Math Lecture & Math Activities (Professor: Luo, Title: The Beauty of Quantum Computing from a Mathematical Perspective)	Math Lecture & Math Activities (Professor: Whitehead, Title: Apollonian Circle Packings)	Math Lecture & Math Activities(Professor: Gomez, Title: Stepping into Other Dimensions of Space)	Field Trip (Princeton Univeristy and Vicinity)	Math Lecture & Math Activities(Professor: Mourya, Title: Welcome to Computer Science!)	
2:00 PM		Math Lecture & Math Activities (Professor: Ellis, Title: Four Numbers Game)						
2:30 PM								
3:00 PM		Break	Break	Break	Break		Break	
3:30 PM		Math Tournament (Team Round, location: Bliss)	Math Tournament (Individual Round, Part II, location: Decker)	Math Tournament (Relay Round, location: Decker)	Math Lecture & Math Activities(Professor: Ellis, Topic: The Futurama Theorem)		Tournament Summary ( )	
4:00 PM								
4:30 PM								
5:00 PM		Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()		Recreational activities ()	
5:30 PM								
6:00 PM		Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	
6:30 PM								
7:00 PM		Talent Show, Part 1 (location: Decker)	Talent Show, Part 2 (location: Decker)	movie night (Decker)	Math League Award Ceremony (starting at 7 PM, location: Cromwell Lounge)	Reading, Journal Writing, Quiet time	Reading, Journal Writing, Quiet time	
7:30 PM								
8:00 PM								
8:30 PM								
9:00 PM								
9:30 PM								
10:00 PM	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	

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美国营地日程安排

6-10年级组

参考: 2025年美国 Math League 决赛和数学夏令营6-9年级组课程表:

Math League 2025 Schedule (Grades 6-9)

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul
8:00 AM		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
8:30 AM									
9:00 AM		Math Lecture & Math Activities(Professor: Barranca, Title: Applied Mathematics: Puzzles from Past to Present)	Math Lecture & Math Activities (Professor: Devlin, Title: Ten truths and a lie)	Math Lecture & Math Activities (Professor: Ellis, Title: Modular Origami)	Math Tournament (Speed Round, location: Social Science)	Math Lecture & Math Activities (Professor: Hagen, Title: Scavenger Hunt)	Field Trip (Princeton Univeristy and Vicinity)	Math Lecture & Math Activities (Professor: Miller, Title: Pirates and Math: Dividing the Spoils and Game Theory)	Depature Day (International students, 8 - 11 AM, Townhouse East Lounge)
9:30 AM									
10:00 AM									
10:30 AM		Math Lecture & Math Activities(Professor: Mourya, Title: Mission: Decode and Defend)	Math Lecture & Math Activities (Professor: Einstein, Title: How big is infinity?)	Math Tournament (Individual Round, Part I, location: Social Science)	Math Lecture & Math Activities (Professor: Nacin, Title: Secrets of Latin Square Cage Puzzles)	Math Lecture & Math Activities (Professor: Whitney, Title: The Points of Life)	Departure (for North American students, 8 - 11 AM, Townhouse East Lounge)	Math Lecture & Math Activities(Professor: Nacin, Title:)	
11:00 AM									
11:30 AM									
12:00 PM		Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	
12:30 PM									
1:00 PM									
1:30 PM	Arrival at Campus (International students, check in time: 1- 5 PM, Townhouse East Lounge) Icebreaker at night in Decker	Math Lecture & Math Activities (Professor: Shapiro, Title: Introduction to Mathematical Physics) Arrival at Campus (North America students, 2 - 5PM, Townhouse East Lounge)	Math Tournament (Team Round, location: Social Science)	Math Lecture & Math Activities(Professor: Myer, Title:)	Math Lecture & Math Activities(Professor: Rauh, Title: "Water Bomb Base")	Math Lecture & Math Activities (Professor: Whitney, Title: The Points of Life)	Math Lecture & Math Activities(Professor: Marcus, Title: The mountain climber problem)	Math Lecture & Math Activities(Professor: Luo, Title: The Beauty of Quantum Computing from a Mathematical Perspective)	
2:00 PM									
2:30 PM									
3:00 PM		Break	Break	Break	Break	Break		Break	
3:30 PM		Math Lecture & Math Activities (Professor: Shapiro, Title: Topology in Physics)	Math Lecture & Math Activities (Professor: Ellis, Title: A variety of hat problems)	Math Tournament (Individual Round, Part II, location: Social Science)	Math Tournament (Relay Round, location: Decker + Cromwell)	Math Lecture & Math Activities (Professor: Whitney, Title: The Points of Life)	Math Lecture & Math Activities (Professor: Miller, Title: Egg Drop Mathematics: it IS all it's cracked up to be!)	Tournament Summary ( )	
4:00 PM									
4:30 PM									
5:00 PM		Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()		Recreational activities ()	
5:30 PM									
6:00 PM		Dinner (Student Center room 100, starting at 6 PM) and Orientation in Decker	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	
6:30 PM									
7:00 PM			Talent Show, Part 1 (location: Decker)	Talent Show, Part 2 (location: Decker)	Movie night (Decker)	Math League Award Ceremony (location: Decker)	Reading, Journal Writing, Quiet time	Reading, Journal Writing, Quiet time	
7:30 PM									
8:00 PM									
8:30 PM									
9:00 PM									
9:30 PM									
10:00 PM	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	

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第一部分：营地生活

每12名学生一组

每组2名counselor

营地配备懂双语
(英语和中文)老师

官方人工客服

营地生活

放松时刻

才艺表演

参观普林斯顿大学

颁奖典礼

官方人工客服

第二部分：决赛

官方人工客服

第三部分：在美国大学教授的指导下学习数学

✓ 回答提问

✓ 主动展示

✓ 热情投入

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常见问题：“孩子英语不是很好，我担心会影响他/她在美国 Math League 营地期间的比赛、上课、和生活”

第一部分是生活, 学生在营地是分组活动，每组有12名学生，有两个counselor(辅导员)负责管理。营地有懂双语(英语和中文)的老师随时帮助学生。

第二部分是决赛，决赛时提供决赛题目的中文参考翻译服务，学生可以使用英汉词典， 也可以咨询懂双语(英语和中文)的老师。

第三部分是在美国大学教授的指导下学习数学，美国大学教授使用英文指导学生学习数学。

为了更好地理解和吸收美国大学教授的指导, 学生在赴美之前需要参加赛前学习和培训，详情请参考官网。

还可以参加组委会老师针对中国学生开发的提高数学的英文阅读理解能力的课程。如需要可以联系官方人工客服。

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以下是参加美国 Math League 决赛和夏令营的两名学生(一名小学生和一名初中生)在教授的指导下撰写的数学论文 (已在著名数学学术期刊上发表)。

GEOMETRIC PROOFS OF THE IRRATIONALITY OF SQUARE-ROOTS FOR SELECT INTEGERS

ZONGYUN CHEN, STEVEN J. MILLER, CHENGHAN WU

1. Introduction

The positive integers $1, 2, 3, \dots$ are not surprisingly one of the most important sequences in mathematics, and typically the first encountered. Quickly one meets interesting sub-sequences, such as the primes $(2, 3, 5, 7, 11, \dots)$, the perfect squares $(1, 4, 9, 16, 25, \dots)$ and the Fibonacci numbers $(1, 2, 3, 5, 8, \dots)$ to name just a few. These are well studied and arise in numerous places; see the On-line Encyclopedia of Integer Sequences [OEIS] for details and properties of these and others.

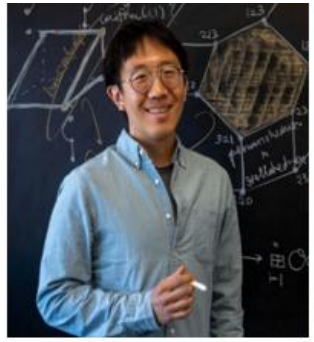
Almost all integers have irrational square-roots, with the percent of $n \le x$ with $\sqrt{n} \notin \mathbb{Q}$ approximately $100 \cdot x^{-1/2}\%$. The standard proof uses the property that if a prime p divides a product xy then $p|x$ or $p|y$ or both (see for example [MS] for a proof) and the Fundamental Theorem of Arithmetic (every integer can be written uniquely as a product of primes in increasing order; see [HW]).

> Assume a non-square $n > 1$ has a rational square-root; thus we can write $\sqrt{n} = a/b \in \mathbb{Q}$ with a, b relatively prime integers and without loss of generality it suffices to consider n that are square-free, as if $n = m_1 m_2^2$ then $\sqrt{n} = \sqrt{m_1} \cdot m_2$. Then $nb^2 = a^2$. As $n > 1$ is square-free, there is a prime p that divides n. Thus $p|a^2$ so $p|a$ and we can write a as αp. Substituting yields $nb^2 = \alpha^2 p^2$; as n is square-free and a multiple of p, we must have n/p is an integer relatively prime to p and thus $p|b^2$. A similar argument now shows $b = \beta p$, contradicting a and b are relatively prime and therefore $\sqrt{n}$ is irrational.

There's a lot of interesting history on this proof; if we don't use the property that if a prime divides a product then it divides at least one factor, we can mimic the above argument, but only by essentially reproving the result case by case. For example, if $n = 2$ then we would have $2b^2 = a^2$. If $a = 2\alpha + 1$ is odd then $a^2 = 4\alpha^2 + 4\alpha + 1$ is odd, and thus cannot be a multiple of 2, and thus $a = 2\alpha$. Similarly if $n = 3$ we would have $3b^2 = a^2$ and 3 must divide the right hand side as it divides the left. We can write $a = 3\alpha + r$ with $r \in \{0, 1, 2\}$ and note

$$a^2 = 9\alpha^2 + 6\alpha r + r^2 = 3(3\alpha^2 + 2\alpha r) + r^2,$$

授课教授（部分）



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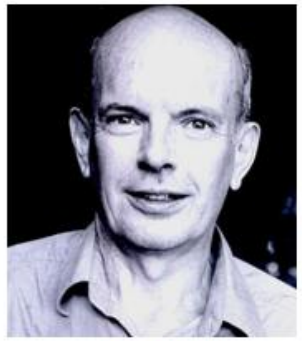

Neil Sloane
AT&T Bell Labs

Steven Miller
Williams College

Glen Whitney
National Museum of Math

Pat Devlin
Swarthmore College

Michael Thaddeus
Columbia University

Arthur Benjamin
Harvey Mudd College

Pravesh Kothari
Princeton University

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CHAPTER 03

如何提高数学的英文阅读理解能力

如何系统、科学地提高数学的英文阅读理解能力

3 个阶段(组成成分):

1. 词汇量 (Words)

2. 句子(Sentences) “这个句子的每个单词我都懂，但是不能确定整个句子的意思。”

3. 段落/文献/教材/专题(passages/articles), 数学不只是做题和打比赛。用英文撰写数学论文 (mathematical papers)。

第一阶段: (词汇量，Words)

1. **Numbers**
2. **Operations**
3. **Geometry**
    a. **Triangles**
    b. **Quadrilaterals**
    c. **Circles**
    d. **Solid Geometry**
    e. **…**
4. **Number Theory**
5. **Combinatorics**
6. **Algebra**
7. **…**

Numbers

数: 个十百千万…
One, two, three, …, ten, dozen, hundred, thousand, million, billion, trillion
tenth, hundredth (one percent), thousandth,
1234: one thousand two hundred thirty-four

twelve hundred thirty-four

twelve thirty-four

2022:

万: ten thousand
十万: hundred thousand
百万: million
千万: ten million
亿: hundred million

A thousand: 1,000
A million: 1,000,000
A billion: 1,000,000,000
A googol: a “1” followed by one hundred zeros.
A googolplex: a “1” followed by a googol of zeros.
A googolplexian: a “1” followed by a googolplex of zeros.

Operations

运算: 加减乘除乘方开方对数

Arithmetic operations

Addition (+)

$$\left.\begin{array}{r}\text{term} + \text{term}\\ \text{summand} + \text{summand}\\ \text{addend (broad sense)} + \text{addend (broad sense)}\\ \text{augend} + \text{addend (strict sense)}\end{array}\right\} = \text{sum}$$

Subtraction (−)

$$\left.\begin{array}{r}\text{term} - \text{term}\\ \text{minuend} - \text{subtrahend}\end{array}\right\} = \text{difference}$$

Multiplication (×)

$$\left.\begin{array}{r}\text{factor} \times \text{factor}\\ \text{multiplier} \times \text{multiplicand}\end{array}\right\} = \text{product}$$

Division (÷)

$$\left.\begin{array}{rl}\dfrac{\text{dividend}}{\text{divisor}} & \\ & = \text{quotient}\\ \dfrac{\text{numerator}}{\text{denominator}} & \end{array}\right.\begin{array}{l}\text{fraction}\\ \\ \\ \text{ratio}\end{array}$$

Exponentiation

$$\text{base}^{\text{exponent}} = \text{power}$$

*n*th root (√)

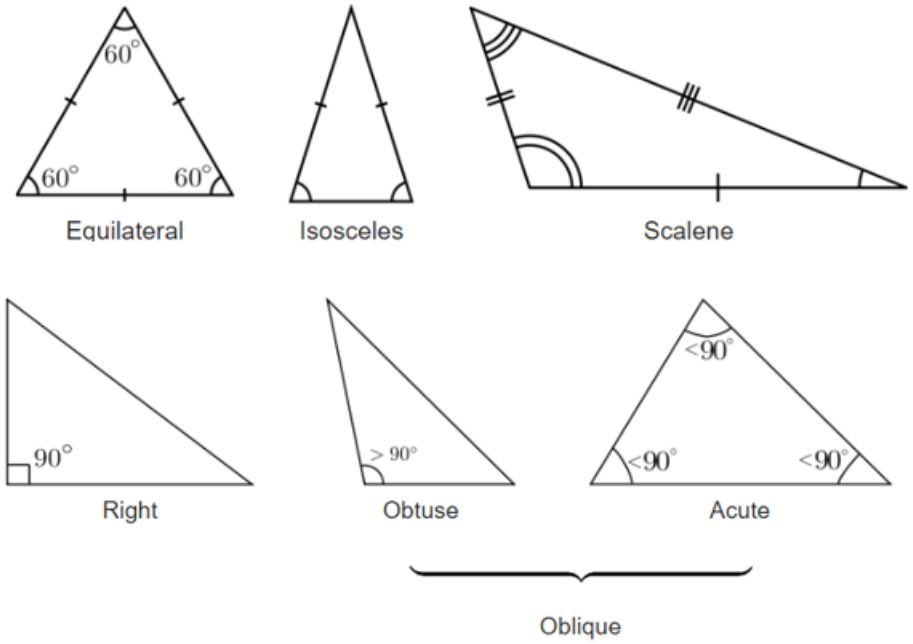
$$\sqrt[\text{degree}]{\text{radicand}} = \text{root}$$

Logarithm (log)

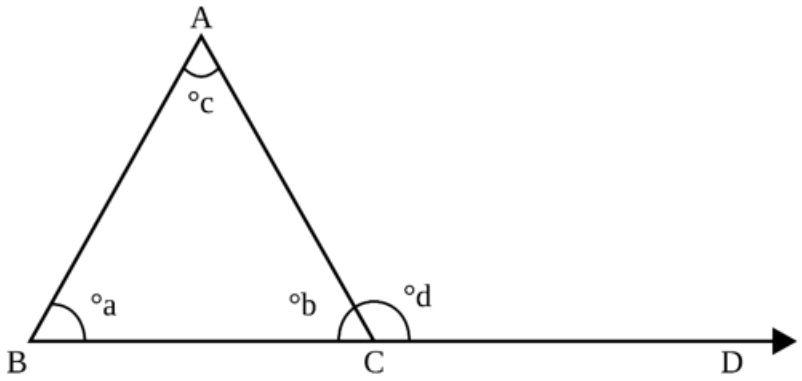
$$\log_{\text{base}}(\text{anti-logarithm}) = \text{logarithm}$$

Geometry

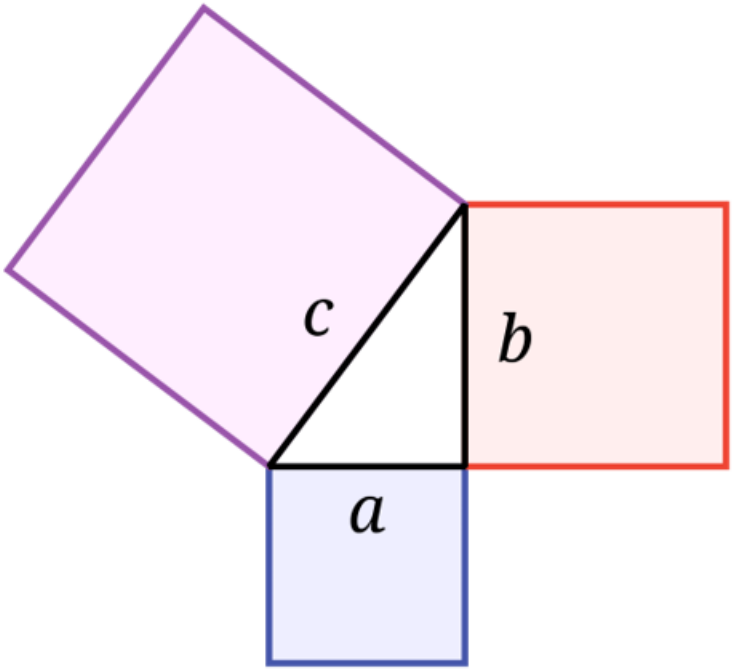
Triangles



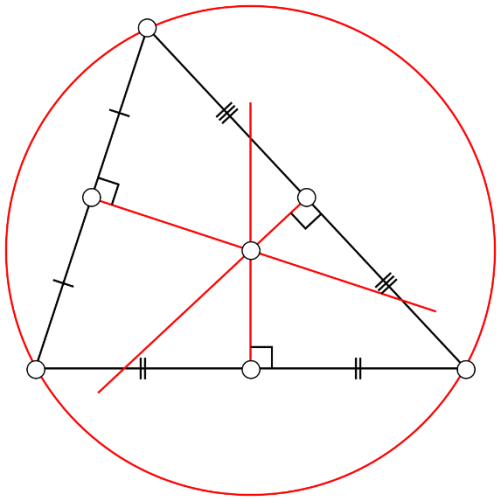
Edges, vertices (vertex), angles



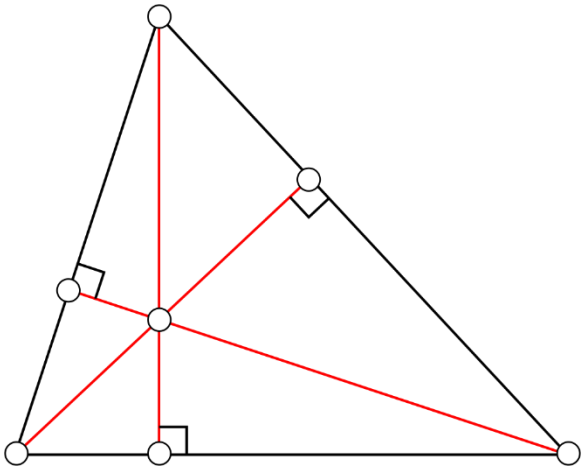
Interior angles, exterior angles,



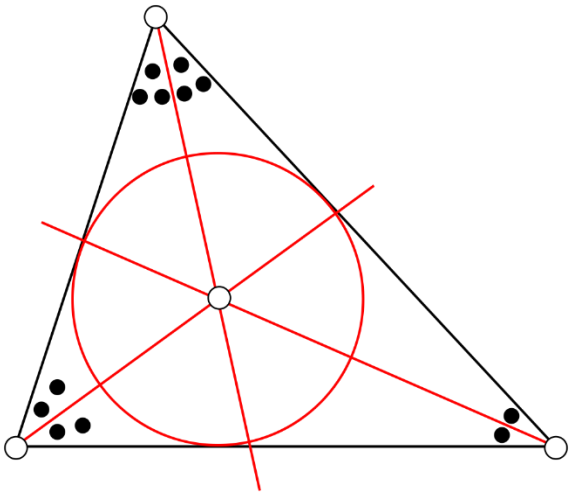
Hypotenuse, legs, the Pythagorean theorem



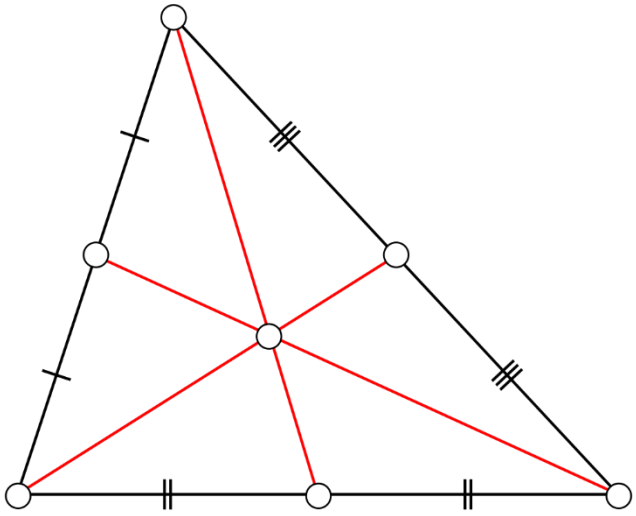
Perpendicular bisector, midpoint, circumcenter, circumcircle



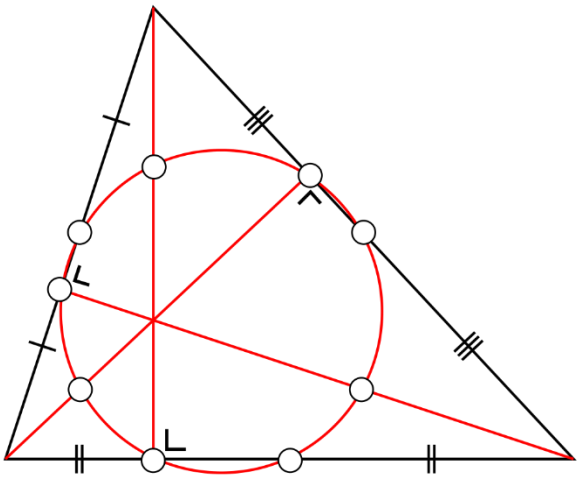
Altitude, base, foot, orthocenter



Angle bisector, incenter, incircle, inradius

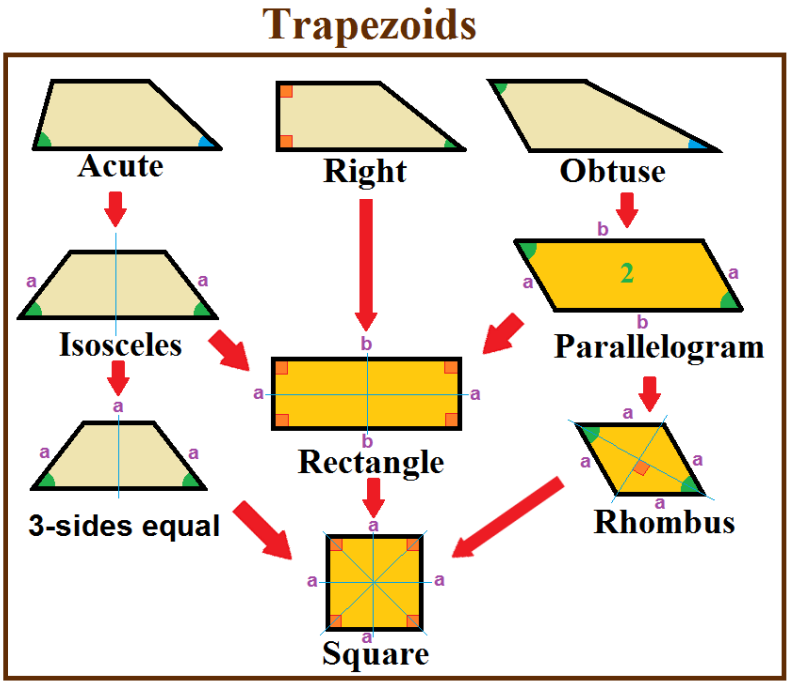


Median, centroid, center of mass,



Nine-point circle

Polygon: triangle, quadrilateral, pentagon, hexagon, heptagon, octagon,



Circles:

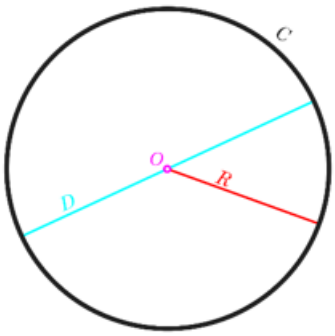


Figure: A circle (black), which is measured by its circumference (C), diameter (D) in cyan, and radius (R) in red; its center (O) is in magenta.

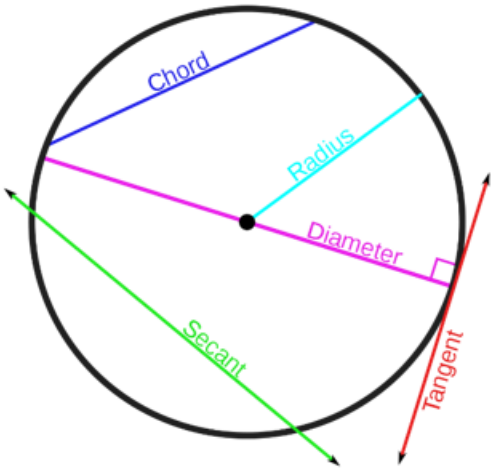


Figure: Chord, secant, tangent, radius, and diameter

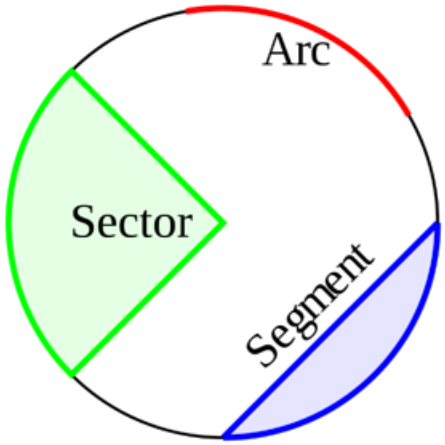


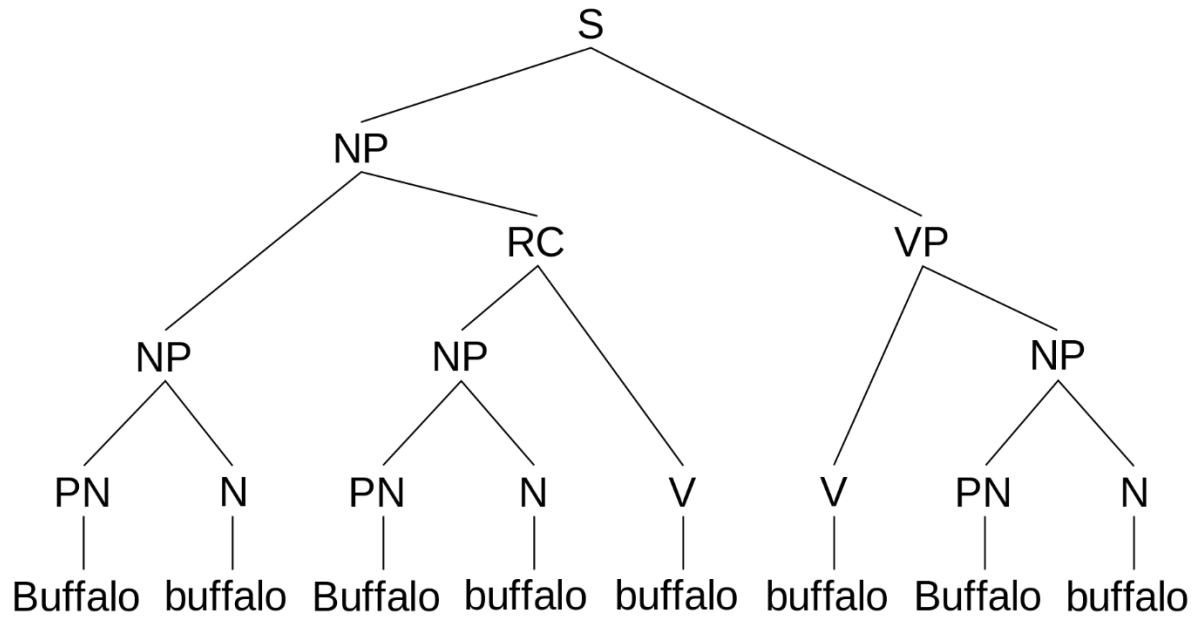
Figure: Arc, sector, and segment

第二阶段: 句子(Sentences)

“这个句子的每个单词我都懂，但是不能确定整个句子的意思。”

Buffalo buffalo Buffalo buffalo buffalo buffalo Buffalo buffalo.

Buffalo:



Simplified parse tree

S = sentence

NP = noun phrase

RC = relative clause

VP = verb phrase

PN = proper noun

N = noun

V = verb

1.

A is 5 times faster than B. – A 比 B 快 5 倍。- 为什么这样说是有歧义的?

A is 5 times as fast as B. – A 是 B 的 5 倍。

2. 以下 3 个问题的精确翻译是什么?
   a. A farmer was asked how many pigs he had. "Well," he said, "if I had just as many more again, plus half as many more, plus another 1.5 times more, I would have three dozen." How many pigs did he have?

   b. The 2nd act of a 3-act play is 1/3 the length of the entire play. If the 1st act is twice as long as the 3rd, what fraction of the play is the 3rd act?

   c.

   (*Time Limit: 7 minutes*) What is the greatest possible length of the shortest altitude of a right triangle whose hypotenuse has length 17?

3. ratio (比和比例) and percentage (百分数、百分比). 以下列出了 5 个中国学生比较难以理解、或者容易混淆和出错的例子:

   d. 21 of 2% fat milk + 31 of 3% fat milk = 51 of ?% fat milk.

   e. Lee the crow ate *a* grams of feed that was 1% seed, *b* grams of feed that was 2% seed, and *c* grams of feed that was 3% seed. If combined, all the feed he ate was 1.5% seed. What is *a* in terms of *b* and *c*?

   f. If a bank were to raise the interest rate on a savings account from 3% to 4%, the statement that "the interest rate was increased by 1%" is ambiguous and should be avoided. The absolute change in this situation is 1 percentage point (4% − 3%), but the relative change in the interest rate is:
   (4%-3%) ÷ 3% = 0.33... = 33 1/3%
   So, one should say either that the interest rate was increased by 1 *percentage point* , or that the interest rate was increased by 33 1/3%.

   g. Percent changes applied sequentially do not add up in the usual way. For example, if the 10% *increase* in price considered earlier (on the $200 item, raising its price to $220) is followed by a 10% *decrease* in the price (a decrease of $22), the final price

will be $198, not the original price of $200. The reason for the apparent discrepancy is that the two percent changes (+10% and −10%) are measured relative to different quantities ($200 and $220, respectively), and thus do not "cancel out".

h.

A shopkeeper makes a profit of 20% of the selling price of an article. The percent profit the shopkeeper makes on the cost is

A) 20% B) 25% C) 40% D) 80%

段落/文献/教材/专题(passages/articles), 数学不只是做题和打比赛。用英文撰写数学论文 (mathematical papers)。

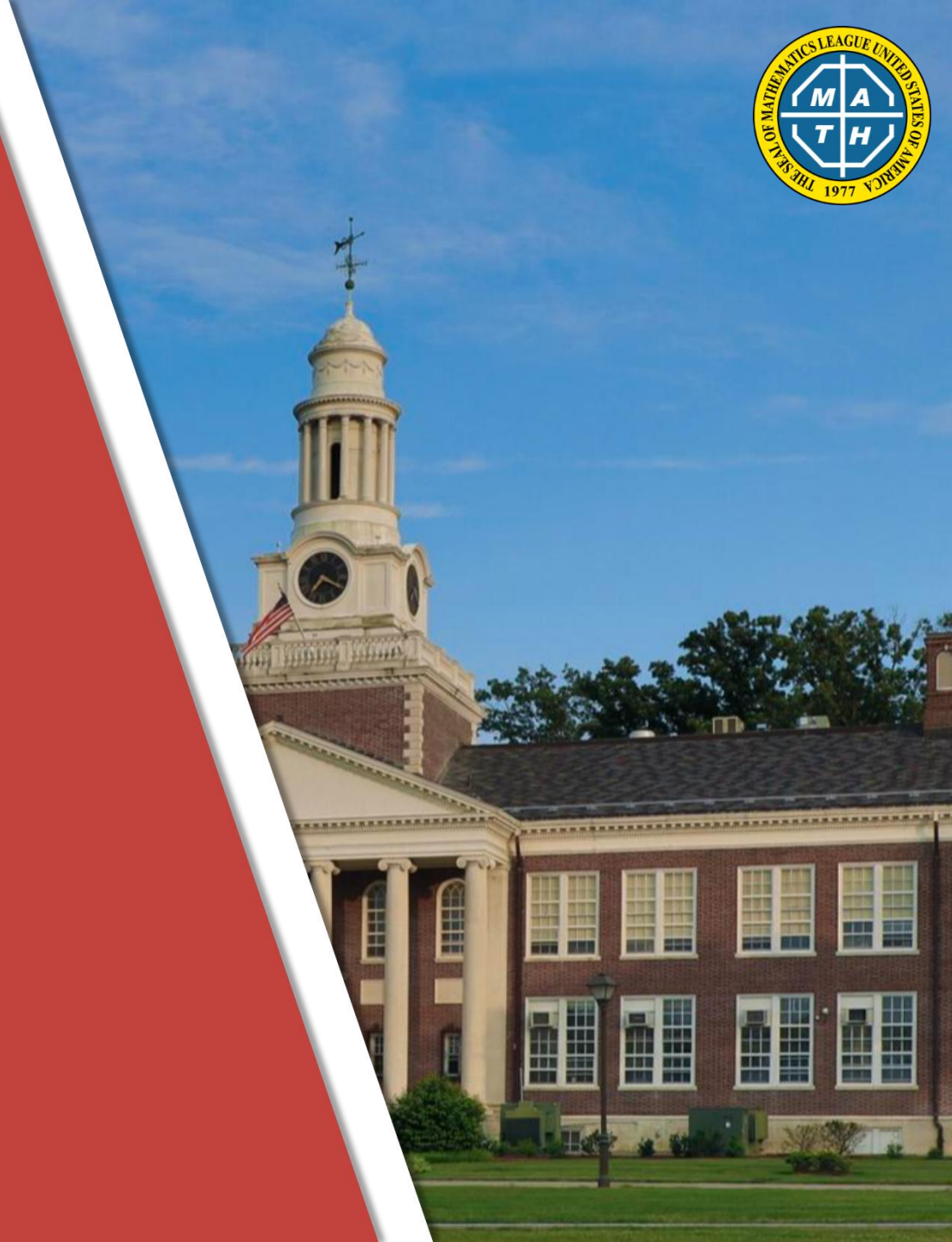
如果你想了解美国 Math League 组委会 Rainier 博士开设的“如何系统、科学地提高数学的英文阅读理解能力”的课程，请微信联系 Rainier 博士。谢谢！祝顺利！

CHAPTER 04

如何提升数学的英文听说能力

STEP ONE

基础准备



攻克数学专业词汇

制作专属单词本：不要按字母顺序背，要按主题分类。例如：

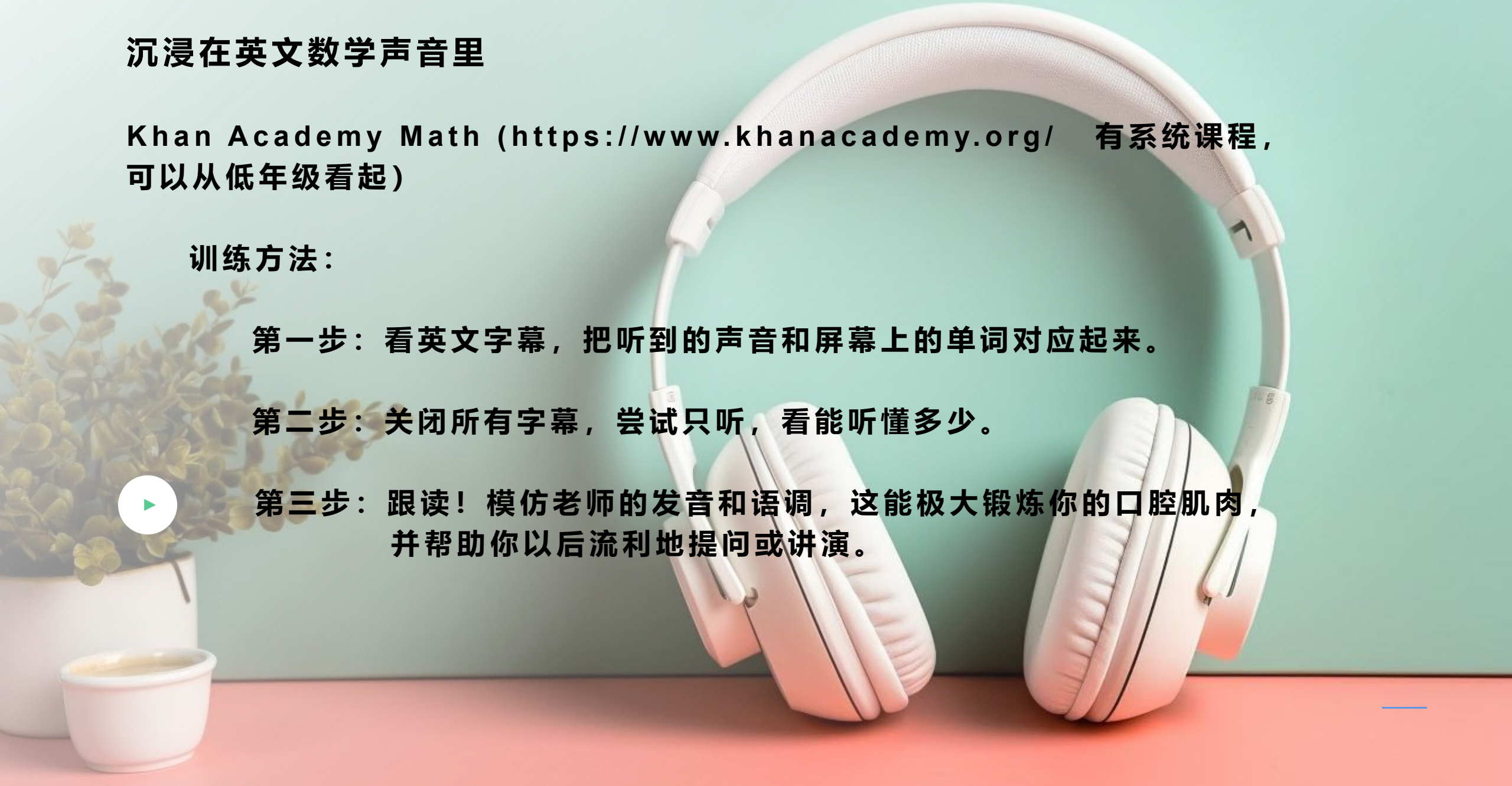
算术：add, subtract, multiply, divide, fraction, decimal, percentage, numerator, denominator...

几何：angle, triangle, rectangle, perimeter, area, volume, parallel, perpendicular...

代数：equation, variable, solve, simplify, expression...

课堂指令：calculate, prove, explain, simplify, compare, what is the value of...?

“沉浸式”学习：在做中文数学题时，有意识地想一下这些术语用英文怎么说。比如，看到“解这个方程”，就想到“solve this equation”



沉浸在英文数学声音里

Khan Academy Math (https://www.khanacademy.org/ 有系统课程，可以从低年级看起)

训练方法：

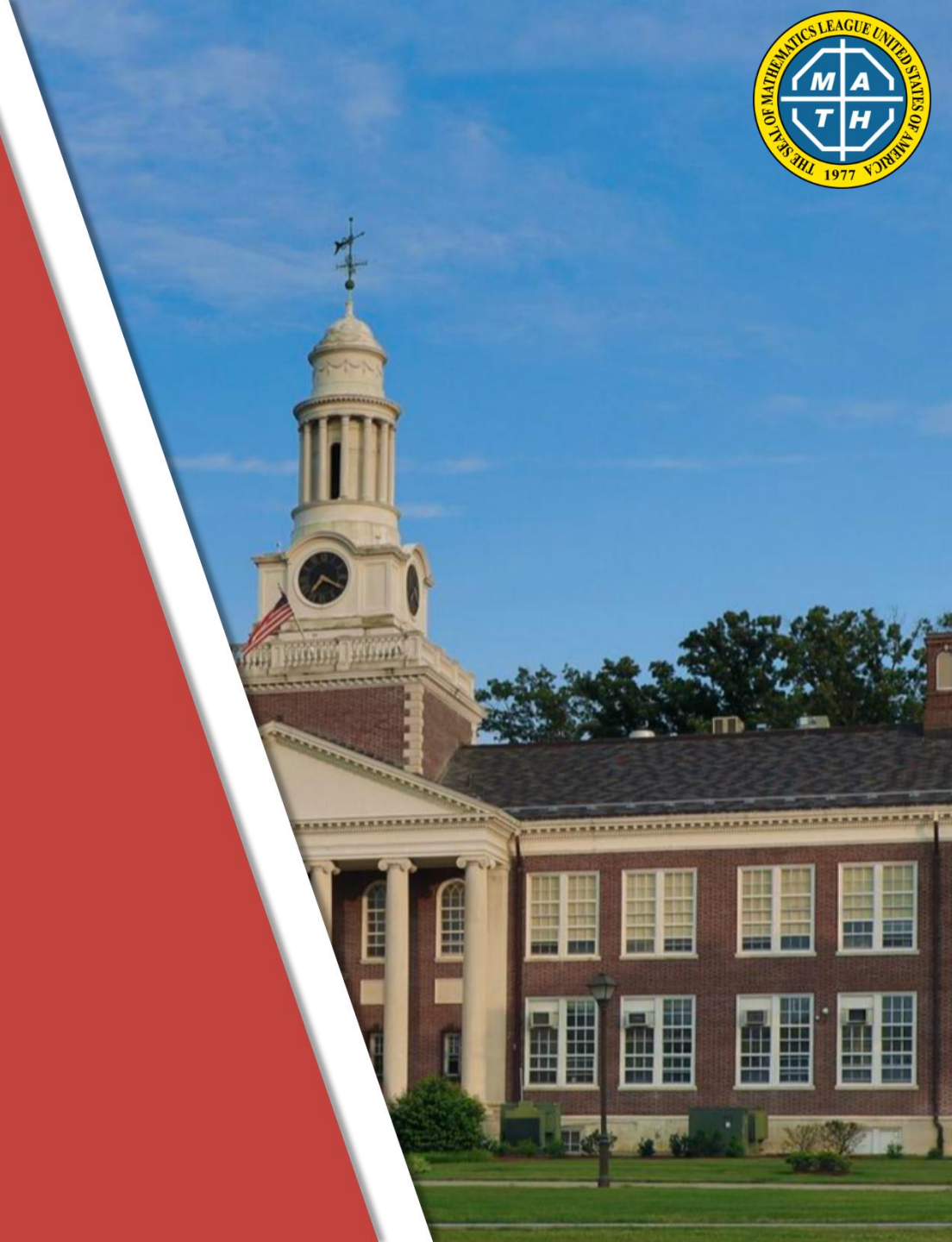
第一步：看英文字幕，把听到的声音和屏幕上的单词对应起来。

第二步：关闭所有字幕，尝试只听，看能听懂多少。

第三步：跟读！模仿老师的发音和语调，这能极大锻炼你的口腔肌肉，并帮助你以后流利地提问或讲演。

STEP TWO

角色模拟



“自言自语”练习法

当你做一道数学题时，尝试用英文说出你的整个思考过程。不要在乎语法完美，关键是能表达清楚。

例子：题目是“1/2 + 1/3 = ?”

你的自言自语："Okay, I need to add one-half and one-third. They have different denominators. I need to find a common denominator. The least common multiple of 2 and 3 is 6. So, one-half equals three-sixths. One-third equals two-sixths. Now, three-sixths plus two-sixths equals five-sixths. So, the answer is five-sixths."

这能极大地锻炼你组织数学语言的能力。

01

丰富词汇量

对比日常英语，题目词汇量有所增加，常常会被意想不到的单词打个措手不及

02

题目需要前瞻性

需要我们预先根据题干猜测题目大意

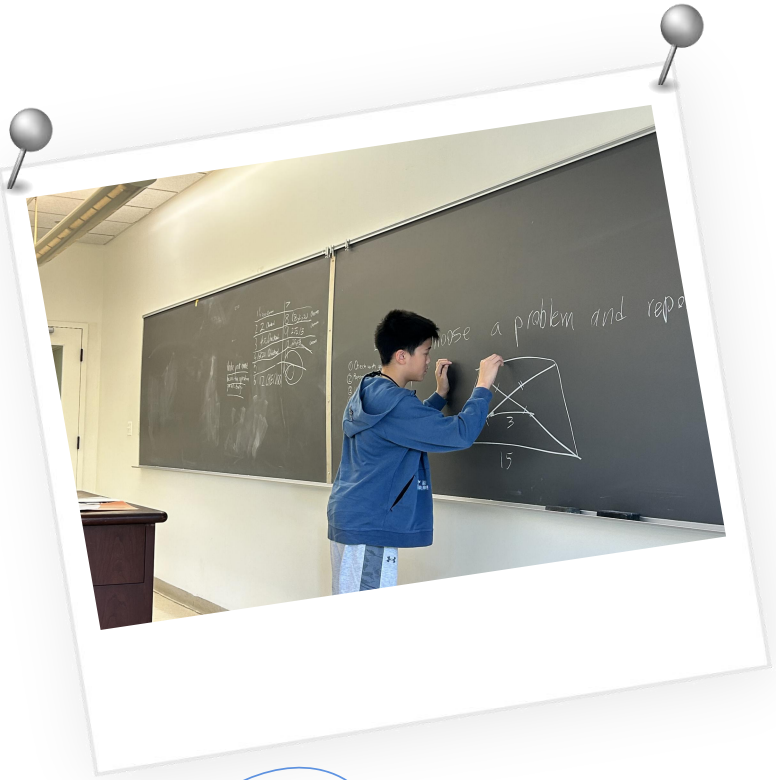
03

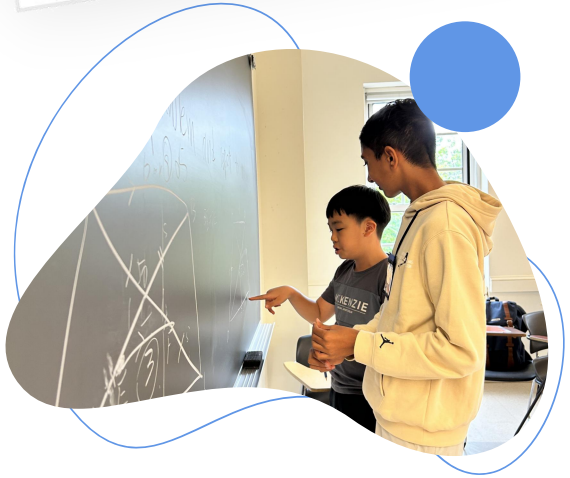
提高理解速度

在题目信息处理上需要有更快速的反应力，对处理信息的要求变高

扮演讲题者

- 寻找“陪练”
  - ① 找你的同学，朋友或家人，或者找一个在线的语言交换伙伴。
  - ② 给他们一个任务：让他们拿着你的英文数学题，听你讲题，让他们随时打断你，问你 “Why?" 或 "Can you explain this step?"。然后你来讲解并演示用英语解答。直到你用简洁的语言把题目和解法讲清楚，他们学会了。
- 如果找不到伙伴也可以自己把讲解录下来，请家人听，看是否讲清楚了。





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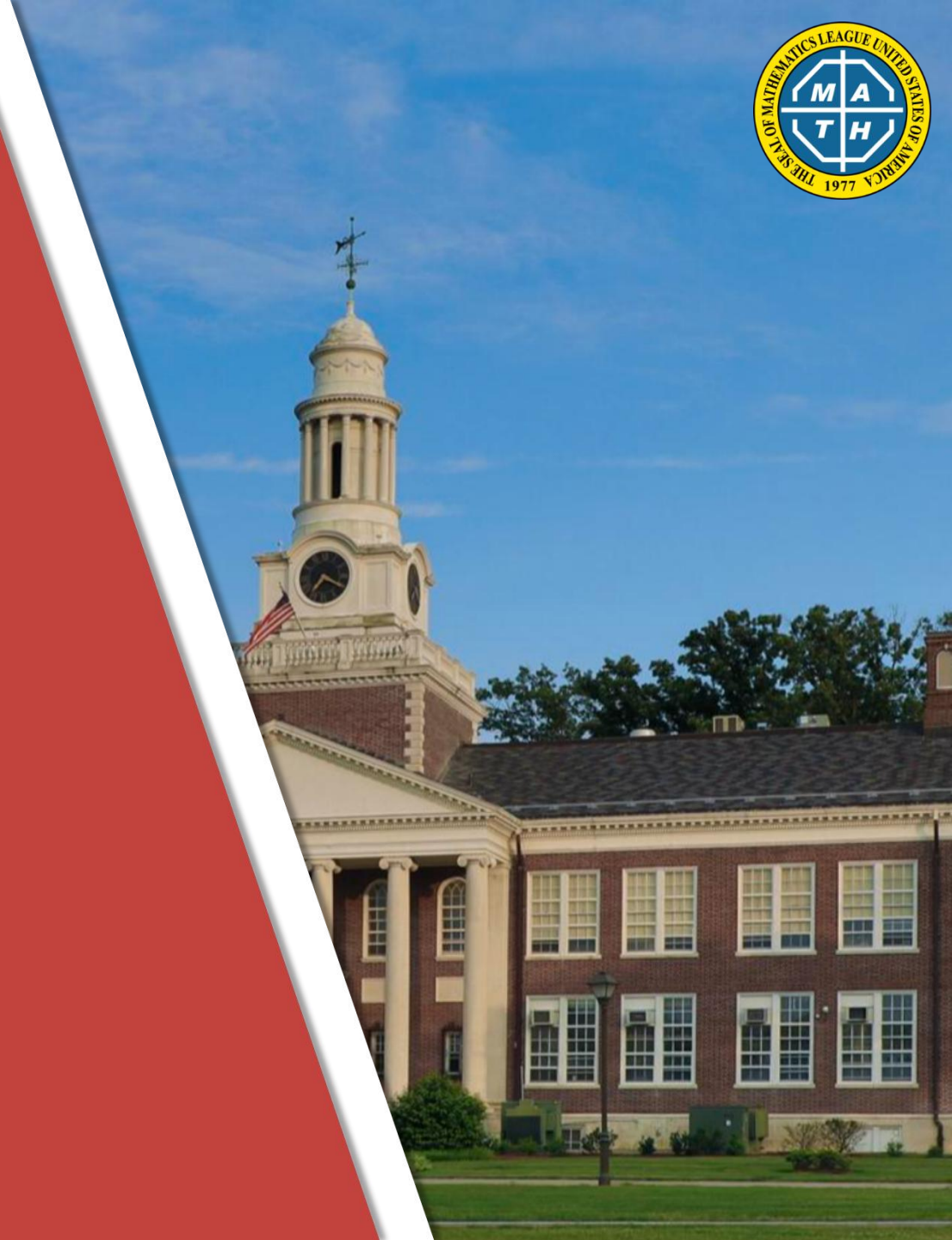
STEP THREE

现场应用



预习夏令营课堂上的课题

查看夏令营日程的课程主题，提前查好相关主题的英文词汇和教学视频。
做到心中有数，上课时不慌。

01

课程内容组成

02

相关的背景和词汇

03

希望课上解决的难点关注点

授课内容主题

1. From the Quadratic Formula to Differentiation (从二次公式到微分)
2. Mathematics in History, Applications, and Enjoyment (数学的历史、应用和乐趣)
3. Mathematics and Music (数学与音乐)
4. The Wonderful World of Permutations (奇妙的排列世界)
5. Using Randomness in Proofs (在证明中使用随机性)
6. Mathematics and Games (数学与游戏)
7. Stable Machine (稳定的机器)
8. Famous Sequence (著名序列)
9. Tensegrity Polyhedra (张力多面体)
10. Grundy's Game (格兰迪游戏)
11. Apollonian Circle Packings (阿波罗尼安圆填充)
12. Diving into Dimensions (维度探索)
13. How to Use Math to Build a Safe World? (如何用数学构建一个安全的世界？)
14. What's Your Favorite Number? (你最喜欢的数字是什么？)
15. The Art of Problem Solving (解题的艺术)
16. Unlocking Math Magic: Exploring Numbers with AR & VR (揭开数学魔法：用AR和VR探索数字)
17. Knot Theory (结理论)
18. Checking Divisibility Using Finite Automata (使用有限自动机检查可除性)
19. NIM and JIM
20. Introduction to Mathematical Physics (数学物理导论)
21. Modular Origami (模块折纸)

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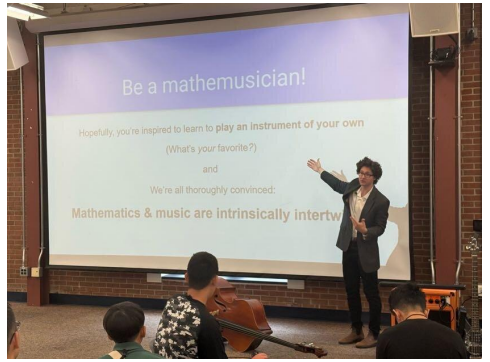
课上“抓大放小”

不要纠结于每个词！你不需要听懂老师的每一个笑话或者每一个非关键的形容词。你的任务是抓住关键词

今天的主要话题（比如：Today we are going to learn about the Pythagorean theorem.）

题目中的数字和核心指令（比如："So, find the area of this circle."）

善用视觉信息：紧紧盯着老师的板书、幻灯片和手势，这些是帮助你理解的最佳工具。



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课前交友

课前主动去找你觉得友好的生活在英语国家的懂中文的同学，约好课上坐在一起，遇到你没听明白的地方。"Hey, I didn't quite get the last part. Can you tell me your understanding?"

这是一个绝佳的交朋友和互相学习共同进步的机会！

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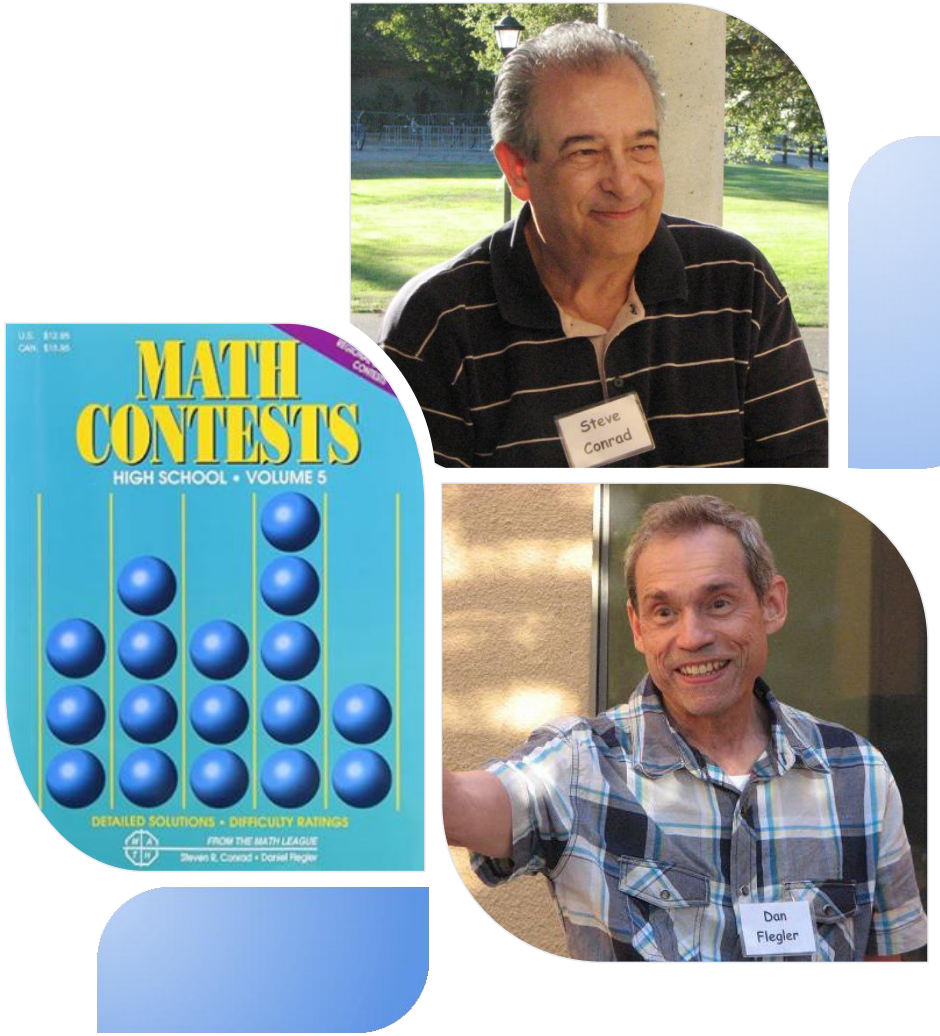
同样你借鉴了今天讲座的内容，通过自驱训练，自主提升，或许夏令营课堂上你get到教授讲述的精妙思维，听得很High，别的同学，向你请教协助，你要逻辑清晰的给同学讲述。输出的过程是你自己提升的最好方式。

这也是*Math League创始人：Mr. Steven R. Conra 和 Mr. Daniel Flegler* 传授给我们的学习法。

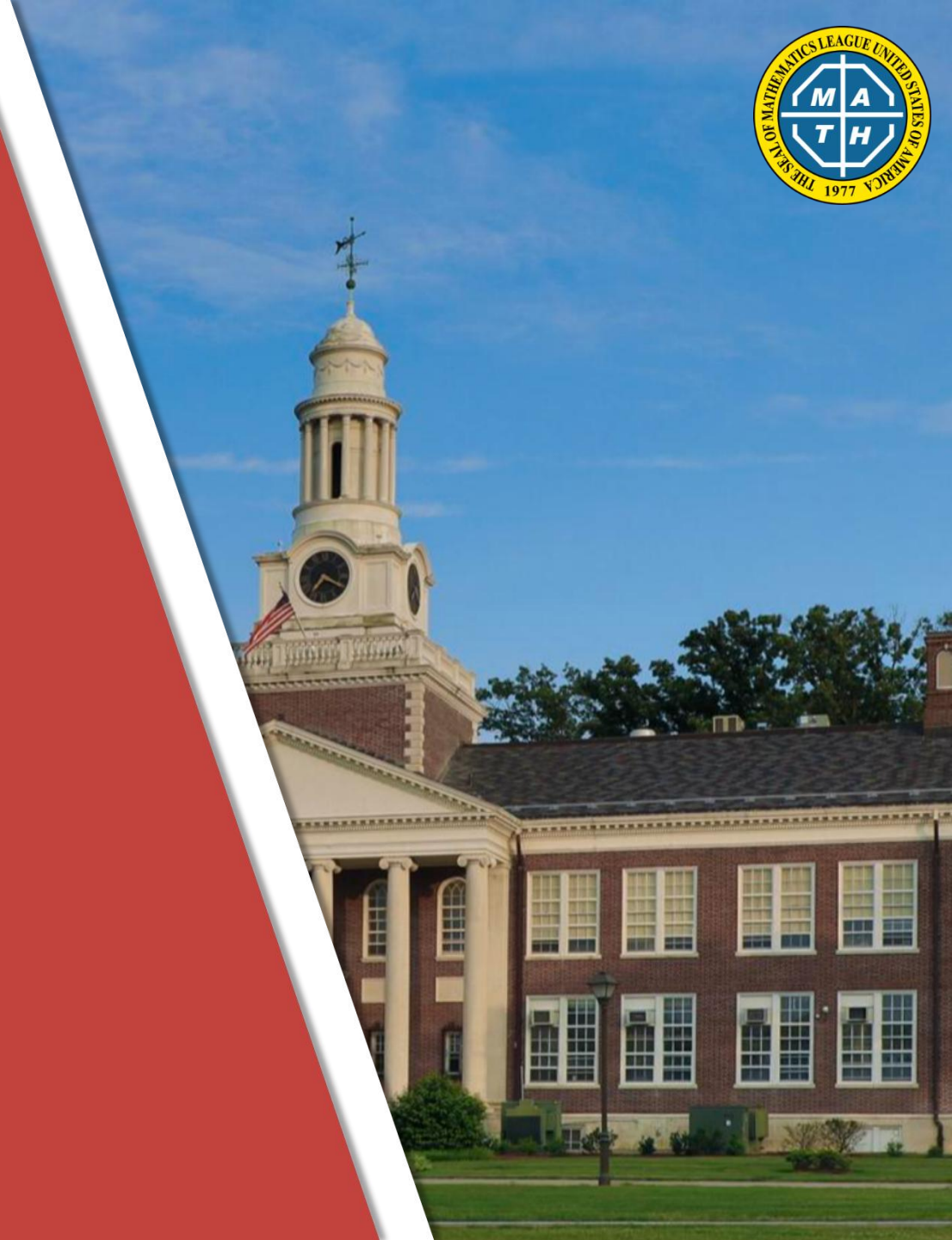


总结：提升数学的英语听说能力建议行动清单

1. 隔天：看20分钟英文数学视频（从有字幕到无字幕）；
2. 每周：背诵一个类别的数学单词，做一套英文数学题；
3. 随时：用英文自言自语你的解题思路；
4. 周末：进行角色扮演，模拟给人讲题；
5. 夏令营中：预习主题，听课抓大放小，交友邻座。

CHAPTER 05

互动答疑



互动答疑

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CHAPTER 06

联系我们

联系我们

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- 美国 Math League 官网: www.mathleague.world

感谢收听，欢迎报名参加，期待在美国与你相聚！