香 港 資 優 教 育 學 苑
The Hong Kong Academy for Gifted Education

Primary Online Programmes Outlines

小學網上課程大綱

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Humanities

E1ELL001O

Programme Title	Wait WHAT? English Idioms and Word Play (E1ELL001O)
Introduction	It's a piece of cake! As you sow, so shall you reap. How much you know about idiom? The English language is full of idioms. Native speakers of English use idioms all the time. This means that communication with native speakers of English can be quite a confusing experience. In other words, selectly and actively learning idioms will be useful to you. Through three different online modules, you will learn what idiom is, the stories behind idioms and its usage in daily life. **Module 1: What is an Idiom** Introduce you to idioms as a concept, clearly define idioms in relation to literary devices **Module 2: Idioms and Culture** Help you look at idioms as cultural artifacts with stories behind them, and guide you to understand cultural shifts and international history through idioms **Module 3: Idioms in Daily Life** Expose you to idioms in daily use e.g. in conversation, TV/film, art, etc. Equipped with these skills, you will be able to apply idioms in your English usage!
Programme Type/level	Introductory Online Learning Programme (Non Token-required)
Target Participants	P4 to P6 HKAGE student members
Medium of Instruction	English
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: 1. Synthesize idioms in their English usage; 2. Explore colloquial expressions and their relationship to daily life; 3. Examine the origin of and the cultural influence on new vocabulary.
Duration	12 hours
Application	Click here for application.

Mathematics

E1MAT007O

Programme Title	Algebra I 代數一(E1MAT007O)
Introduction	Algebra is one of the major mathematical topics. Using innovative and interactive teaching materials, this online learning programme enables students to gain fundamental knowledge of algebra, such as the classification of numbers, the concepts of rate, ratio and errors. **Module 1 : Rational and Irrational Numbers** • Study the concepts of rational and irrational numbers • Distinguish whether a number is rational or irrational **Module 2 : Errors** • Recognise different kinds of errors • Learn to calculate errors and understand the application of errors **Module 3 : Rate and Ratio** • Recognise the difference between rate and ratio • Apply rate and ratio to suitable situations **Module 4 : Sequence** • Observe the general pattern of a sequence • Handle simple application problem in sequence
Programme Type/level	Introductory Online Learning Programme (Non Token-required)
Target Participants	P4 to P6 HKAGE student members
Medium of Instruction	English
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: 1. Distinguish between rational and irrational numbers; 2. Evaluate the meaning and calculate different types of errors; 3. Generate the patterns of number sequence; 4. Manipulate algebraic expressions by using laws of indices.
Duration	15 hours
Application	Click here for application.

E1MAT008O

Programme Title	Algebra II 代數二(E1MAT008O)
Introduction	Algebra is one of the major mathematical topics. Using innovative as well as interactive teaching materials, this online learning programme enables students to gain fundamental knowledge of algebra, such as factorization of simple polynomials, linear equations in two unknowns and identities **Module 1 : Factorization** • Understand factorization as a reverse process of expansion; • Factorize polynomials by taking out common factors and grouping of terms; • Factorize polynomials by using identities including difference of two squares, perfect square expressions; • Factorize polynomials by cross-method. **Module 2 : Linear Equations in Two Unknowns** • Formulate and solve simultaneous equations by algebraic methods; • Explore simultaneous equations that are inconsistent or that have no unique solution. **Module 3 : Identities** • Explore the meaning of identities and distinguish between equations and identities; • Discover and use the identities: difference of two squares.
Programme Type/level	Introductory Online Learning Programme (Non Token-required)
Target Participants	P4 to P6 HKAGE student members
Medium of Instruction	English
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: 1. Factorize polynomials by taking out common factors, grouping of terms, identities (including difference of two squares and perfect square expressions) and cross-method; 2. Formulate and solve simultaneous equations by algebraic methods; 3. Explore simultaneous equations that are inconsistent or that have no unique solution; 4. Evaluate the meaning of identities and distinguish between equations and identities; 5. Discover and use the identities: difference of two squares, the perfect square expression, difference and sum of two cubes.
Duration	15 hours
Application	Click here for application.

E1MAT005O

Programme Title	Coordinate Geometry I 座標幾何 I (E1MAT005O)
Introduction	Geometry and coordinate system, which solve many mathematical problems from different perspectives with different approaches, are major mathematical topics and relate closely to each other. Using innovative and interactive teaching materials, this online learning programme lets students learn about the properties of Cartesian coordinate system, polygons and polyhedrons so as to sharpen their geometrical problem solving skills, improve their spatial thinking ability and enhance their self-directed learning skills. **Module 1: Coordinate Geometry** • Study the concept of coordinate system • Learn to calculate the distance between two points on a horizontal line or a vertical line **Module 2: Areas and Volumes** • Learn to draw the cross-sections of simple solids • Explore the method of making models of polyhedrons **Module 3: Applications of Areas and Volumes** • Recognize different types of prisms, including cubes and cuboids • Understand and apply the formula for the total surface areas and volumes of prisms and pyramids **Module 4: Applications of Coordinate Geometry** • Explore the slopes of horizontal line and vertical line • Apply Mid-point Formula and Section Formula
Programme Type/level	Introductory Online Learning Programme (Non Token-required)
Target Participants	P4 to P6 HKAGE student members
Medium of Instruction	English
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: 1. Interpret the position and slope in Cartesian coordinate system. 2. Derive perimeter, area and volume equations of different polygons and polyhedrons. 3. Apply the properties of different polygons and polyhedrons to solve geometry problems. 4. Use Cartesian coordinate system to solve 2D shape geometry problems.
Duration	12 hours
Application	Click here for application.

Sciences

E1PHY001O

Programme Title	Introduction to Physics 物理入門(E1PHY001O)
Introduction	Mechanics, electricity and heat are the three major disciplines in physics. Many daily life examples can be explained from the knowledge in these areas. In this online programme, students learn about concepts such as Newton's Laws of Motion, circuit, electromagnetism and heat transfer in four modules. This programme provides students enough physics knowledge to enable them to further study other physics disciplines in the future. **Module 1: Newton's Law of Motion 1** • Examples of contact forces and non-contact forces • Idea of Newton's First Law of motion and its application • Properties of friction **Module 2: Newton's Law of Motion 2** • Idea of Newton's Second Law of motion and its application • Properties of gravity • Idea of Newton's Third Law of motion and its application **Module 3: Electricity & Magnetism** • Open circuit and closed circuit • Simple circuit diagrams • Series circuit and parallel circuits • Relationship between electricity and magnetism, e.g. electromagnet **Module 4: Heat** • Heat and Energy • Conduction, convection and radiation • Daily life examples in heat transfer
Programme Type/level	Introductory Online Learning Programme (Level 1) (Non Token-required)
Target Participants	P4 to P6 HKAGE student members
Medium of Instruction	English
Intended Learning Outcomes	Upon completion of the programme, participants should be able to: 1. Critically reflect the concepts in mechanics; 2. Analyze electricity concepts via circuit investigation; 3. Illustrate the relationship between electricity and magnetism; 4. Compare different types of heat transfer.
Duration	12 hours
Application	Click here for application.