


Gifted Education Fund: Off-school Advanced Learning Programmes

Programme No. 2022-06 (For primary students)

Title of Programme	Mathematical Exploration and Modelling for Gifted Students in Hong Kong Primary Schools
Programme Provider	Department of Mathematics and Information Technology, The Education University of Hong Kong
Theme	STEAM-related Mentorship Programme; Self-initiated Research Study
Maximum No. of Participants and Class Level in the 2022/23 School Year	25 students (Primary 4-5)
Pre-requisite	Applicants should demonstrate outstanding performance and aptitude in Mathematics in schools and show an interest in computer programming/modelling/applications.
Programme Delivery Period	From May 2023 to January 2024 (9 months) (tentative)
Medium of Instruction	Course Material: English Class teaching/ Discussion: English supplemented with Cantonese
Objectives	<ul style="list-style-type: none">• To promote the interest of gifted students at upper primary level in mathematics, and strengthen their knowledge of foundation mathematics;• To extend and enhance their mathematical knowledge and skills through exploration of number theory and modelling, Euclidean geometry, making mathematical models by paper-folding and paper-cutting, and handling of data by simulations with online tools such as GeoGebra;• To develop the potential and talents of gifted students in mathematics by engaging them in project learning of mathematics under mentorship and support; and• To nurture positive values and attitudes among the students such as perseverance, resilience against adversity, diligence and willingness to collaborate with people.
Programme Outline	This programme extends and enhances the knowledge and skills of gifted students through exploration of selected mathematics topics. Through lessons and project learning of real-life mathematical problems, students will not only develop their potential and talents in mathematics, but also build up positive values and attitudes essential for personal growth and development.

	<p>The programme consists of two phases.</p> <p>Phase 1: Foundation Part (32 hours in total)</p> <ul style="list-style-type: none"> • 16 lessons (2 hours each) • This phase provides a solid mathematics foundation for the students and prepare them for the next phase of the programme. Major topics covered include: <ol style="list-style-type: none"> (1) Number theory and Modelling; (2) Introduction to Euclidean Geometry; (3) Making Models by Paper-folding and Paper-cutting for Primary Pupils; and (4) Data Handling: Simulations with GeoGebra. • Besides class teaching, ample opportunities will be arranged for students to participate in exploratory minds-on and hands-on learning activities related to mathematics. <p>Phase 2: Extended Part (14 hours in total)</p> <ul style="list-style-type: none"> • 2 lessons (2 hours each) by mentors and 10 bi-weekly meetings (1 hour each) with mentors for advices and guidance on individual projects • Students will conduct project learning under mentorship and support in this phase. The following 4 topics/ tasks are available for the students' projects: <ol style="list-style-type: none"> (1) Number theory and Modelling; (2) Euclidean Geometry through Hands-on Exploration; (3) Making Geometry Models by Paper-folding; and (4) Data Handling: Simulations with GeoGebra. • The 2 lessons provide relevant mathematics knowledge, tools, guidelines and references that students need to initiate their research projects. The instructors/ mentors will help students choose and decide the research topics and scopes for their projects. • Students will submit a report and present their work and results in a showcase event by the end of the programme. Parents, teachers, instructors/ mentors and other guests will attend the event and ask questions after each presentation.
Admission Fee	Free of charge
Application Method	<p>Application form can be downloaded from the following webpage:</p> <p>https://www.edb.gov.hk/en/curriculum-development/curriculum-area/gifted/ge_fund/gef/programme/current.html</p>  <p>Please complete the application form and send it by post <u>on or</u></p>

	<p><u>before 21 April 2023</u> to the following address:</p> <p>Department of Mathematics and Information Technology Rm 19A, 1/F, Block D4, The Education University of Hong Kong 10 Lo Ping Road, Tai Po, New Territories (Attn: Mr William MA)</p>
Documents to be Submitted along with the Application	<ul style="list-style-type: none"> • A photocopy of report card (from Primary Three onwards)
Enquiry	<p>Mr William MA (Project Assistant, The Education University of Hong Kong)</p> <p>Tel No.: 2948 7942 Email: mchunhung@eduhk.hk</p> <p>or</p> <p>Tel No.: 2948 7824 Email: mit@eduhk.hk</p>
Date of Announcement of Result	By late May 2023 (tentative)