

Gifted Education Fund: Off-school Advanced Learning Programmes

Title of Programme	Urban Ecology x GIS: Talent Education Programmes for Gifted Students
Programme Provider	Outdoor Wildlife Learning Hong Kong Limited (Supporting organisation: Science Unit, Lingnan University)
Theme	<ul style="list-style-type: none"> • STEM-related Mentorship Programme • Humanities and Social Science Research Programme • Self-initiated Research Study
Maximum No. of Participants and Class Level in the 2020/21 School Year	32 students (Secondary 2-3)
Pre-requisite	No special background knowledge or skills are required.
Programme Duration	About 12 months
Medium of Instruction	Course Material: English supplemented with Chinese Class teaching/Discussion: Cantonese supplemented with English
Objectives	<ul style="list-style-type: none"> • To broaden and enhance gifted students' knowledge in ecology and biodiversity; • To develop students' research skills related to the plants, birds, insects, amphibians and reptiles in the urban areas and also the skills required to apply the geographic information systems (GIS) in collating and presenting ecological data and findings useful for conservation of the environment; and • To cultivate students' positive values and attitudes such as the roles of individuals in promotion of sustainable development, respect of life, appreciation of urban design, civic responsibility, etc.
Programme Outline*	<p>This programme aims to enhance gifted students' knowledge of ecology and biodiversity and equip them with the skills to collect and analyse relevant first-hand data from field studies. Students will collaborate and establish a Geographic Information System (GIS) that documents and presents a picture to people of the ecology in the urban areas of this international city. They will also develop positive values and attitudes that foster the personal growth and the development of the community. The programme consists of five phases.</p> <p>Phase I</p> <ul style="list-style-type: none"> • 7 core sessions (42 hours in total) on theories and applications related to ecology, biodiversity and GIS

Phase II

- In groups of 4, students will participate in a research study under the guidance of a mentor. They will explore and define research scope and direction, conduct literature review and submit a research proposal.
- Led by the mentors, students will conduct field studies in groups of 4 (4 sessions, 4 hours for each session).
- Students will take part in consultation sessions (2 sessions, 2 hours each) and, in groups of 4, meet the ecology experts and the mentors who will give advice and guide them to conduct the research study.
- Students will meet with GIS instructors and learn how to make use of GIS in their research study (2 hours).

Phase III

- Students will survey and gather information and data for their research study (total no less than 24 hours in 4 months).
- During the consultation sessions (2 sessions, 2 hours each), the ecology experts and their mentors will offer advices and guidance to the students on their research study.

Phase IV

- Students will practice using the GIS for data storage, presentation and analysis during the practical sessions (2 sessions, 2 hours each).
- Based on the data, research findings and analysis, students will compile and submit a report for their research study, and publish a web-based ecology map (around 40 hours).

Phase V

- Students will showcase their learning outcomes and deliverables to the audience at a graduation ceremony cum sharing session by the end of the programme.