

From Observation to Protection – Biodiversity

Biodiversity and sustainable development are deeply interconnected. Yet, in Hong Kong, biodiversity is under constant pressure, and many species—especially insects—are often misunderstood or even feared. Through education, schools can spark curiosity—starting with insects, to help students appreciate the close bonds between humans, nature, and other living beings, and inspire future conservation advocates. Most importantly, education helps extend this awareness to a wider range of stakeholders, fostering collective action to safeguard nature.

Let's take a look at how three schools awarded the Outstanding Award in the “2024 Best Green Education Initiative Award” embraced experiential learning, giving students the chance to get up close with insects and contribute to biodiversity conservation.

Education Initiative 1: From “Chrysalis” to “Butterfly”

[Initiated School: TWGHs Lui Fung Faung Memorial Kindergarten]



Theme

- A life education exploration activity centred on butterflies



Learning Objectives

- Develop an understanding of the butterfly life cycle and its connection to everyday life
- Nurture teamwork, observation and problem-solving skills through the experience of rearing caterpillars into butterflies
- Cultivate respect for life and an attitude of cherishing and caring for nature



Targets

- All students, teachers and parents
- General public



Content

Classroom Learning

- Used the picture book “*The Very Hungry Caterpillar*” as a starting point to help students understand the butterfly's lifecycle (metamorphosis).





Content (con'd)

Planted lemon trees in the school garden



Reared caterpillars in the classroom



Organised a Butterfly Release Ceremony



Experiential Learning

- Lemon trees attracted butterflies to lay eggs, which then hatched into caterpillars.
- Children closely observed the structure of the lemon tree and the characteristics of the larvae, thereby deepening their understanding of insects' living habits.
- Children worked together to create a "home for caterpillars" — a rearing box to keep them safe.
- "Butterfly Ambassadors" took responsibility for feeding the caterpillars and recording their growth through artwork.
- Children, parents and community members were invited to participate in a "Butterfly Release Ceremony", setting the butterflies free and letting them return to nature.



Highlights

- The initiative centred on the butterfly life cycle. Through experiential learning, children observed and recorded the metamorphosis process, enhancing understanding of the interconnection between the growth of living organisms and the natural environment, thereby fostering a respect for nature.
- The initiative was designed as a continuous programme, demonstrating that Environmental Education is not a one-off activity but an ongoing learning journey.
- The initiative involved not only teachers and students but also parent volunteers and community members, extending Environmental Education beyond the school to families and the wider community.

Education Initiative 2: Journey with Butterfly -

An Eco-Environmental Expedition

[Initiated School: Kwong Ming School]



Theme

- An interdisciplinary programme integrating outdoor ecological classroom elements, with butterflies as the main theme



Learning Objectives

- Enhance students' interest in nature and deepen their understanding of ecological conservation through observation activities
- Foster a sense of responsibility for protecting the environment and encourage the adoption of sustainable practices in daily lives
- Engage parents, kindergarteners and community members in activities to promote environmental action within the community



Targets

- All students and parents
- General public



Content

- Utilised the Butterfly Garden as an outdoor classroom, providing students with real-life learning experiences.
- Integrated the theme of "butterfly" into interdisciplinary curricula from Primary 1 to Primary 6, with learning topics extended through a spiral approach based on the framework of "Cognition, Affection and Action".
- Assessed the effectiveness of the activities through questionnaires, student work, observation records and participant feedback.

1

Lower-grade students:
developed interest in nature



Highlights of subject-based activities:

- Learnt about the butterfly life cycle (General Studies)
- Shared observations and reflections after visiting the Butterfly Garden (English)
- Read butterfly-related materials (Library Studies)
- Developed an attitude of caring for animals



Content (con'd)

2

Middle-grade students: Explored ecosystems and engaged in simple conservation actions



3

Upper-grade students: Discussed conservation issues and promoted conservation messages



Highlights of subject-based activities:

- Read articles and news reports about butterflies to understand the relationship between humans and butterflies (Chinese)
- Measured and recorded the growth data of butterfly larvae (Mathematics)
- Learnt about nectar plants for butterflies and host plants for their larvae (General Studies)

4

Whole-school participation and community outreach



- Held butterfly release activities regularly to cultivate students' attitude of respecting life
- Invited public to participate in the activities organised in the Butterfly Garden during Open Days and Parent Days, to share students' learning outcomes and disseminate conservation messages



Highlights

- The school-based curriculum connected multiple subjects and groups, integrating the “Cognition, Affection and Action” framework into learning and teaching. Students across all grades and teachers were involved, with diverse activities designed to meet different learning abilities and interests.
- The school valued students' learning journeys while respecting life. After eclosion, the butterflies were released back into nature, with students invited to witness the process. Throughout the rearing process, efforts were made to minimise negative impacts on the ecosystem while instill proper values related to Life Education.
- The school actively shared its experience and achievements, contributing to the promotion of environmental awareness beyond the campus.

Education Initiative 3: Firefly Campus Breeding Programme

[Initiated School: St. Paul's Secondary School]



Theme

- A firefly breeding initiative in response to the Sustainable Development Goals (SDGs) 4, 15 and 17



Learning Objectives

- Explore the diversity of aquatic insects in Hong Kong and the major environmental challenges faced by fireflies
- Develop teamwork skills through the process of breeding and caring for fireflies
- Foster students' sense of responsibility and empathy toward the environment, respect for life and appreciation of biodiversity



Targets

- Form 1 to Form 4 students and their parents

(*The target group primarily included students with special educational needs and Form 1 newcomers)



Content

- Collaborated with an external organisation – the “Firefly Conservation Foundation” to design and implement the programme.

Activities	Topics
Briefing Session	Programme Briefing
Lesson 1	Local Insect Ecology and Biodiversity (Study of diverse species and natural habitats of aquatic insects)
Lesson 2	The Secret Life of Fireflies (Introduction to local environmental challenges and the importance of protecting firefly habitats)
Lesson 3	Firefly Rearing Procedures (Hands-on firefly rearing activity)
	Students reared fireflies on campus
	Parent-child Firefly Release Activity

A Holistic Learning Journey

Knowledge Construction

- Guided by professionals to ensure accuracy and quality

Hands-on Practice

- Turned knowledge into actions



Content (con'd)

Consolidation of Knowledge through Field Study

- Released the reared fireflies at Luk Keng.
- Learnt about mangrove ecology, including common plant and insect species.
- Conducted post-activity questionnaires and personal reflections to gather feedback from students and parents, collecting both quantitative and qualitative data to evaluate changes in students' knowledge, skills and attitudes towards the environment.



Included parents' participation



Highlights

- Participant selection was carefully considered, involving SEN students and Form 1 newcomers. This inclusive approach helped enhance students' school engagement and motivation to learn, and fostered a stronger sense of belonging within the school community.
- Students were actively involved in the caring and nurturing of fireflies, which fostered a sense of ownership and responsibility. Life and Values education were embedded throughout the process, encouraging reflection on the value of life and the importance of environmental stewardship.
- A senior student mentor was assigned to guide the junior participants. This "Train-the-trainer approach" promoted cross-grade collaboration while fostering leadership and communication skills development.
- Parents were invited to participate in the firefly release activity, which enabled them to better understand their children's learning experiences, while also further promoting environmental conservation messages within the wider community.

Summary

Biodiversity is the cornerstone of sustainable development, and education is the starting point for change. An outstanding environmental education initiative enables students to understand their relationship with nature, recognise that humanity is inherently part of the natural world, and realise that every action we take creates ripples in the ecosystem.

By using insects as an entry point and combining diverse experiential learning activities, the programmes not only enhance students' awareness of insects and the importance of biodiversity, but also nurture an attitude of cherishing nature. Students build a sense of environmental responsibility, and are inspired to become future advocates for biodiversity conservation, extending the spirit of environmental stewardship to their families and the wider community.