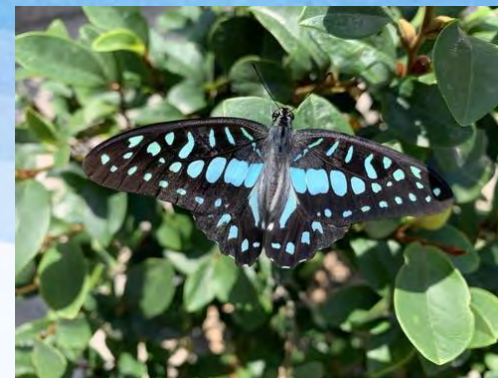




通過全方位學習推廣可持續發展教育

培基小學
馮家輝主任



學校的角色



了解

- 與校長和教師了解可持續教育的理念

規劃

- 如何在校園內外周圍進行可持續教育

推廣

- 在網上和實體不同方法去推廣、宣傳和教育

學校的角色



實踐

- 課堂、學藝活動、小息
- 在課後及週末進行

檢視

- 期間檢視每個活動的進展情況
- 再加以改善

展望

- 老師和學生處理數據，總結成果
- 將成果運用在課程或校園內外當中，以達至可持續發展教育
- 大家提升對大自然和生物多樣性的認識和了解

立德樹人重啟迪 創造空間育全人



小學教育 課程指引

(試行版)



課程發展議會編訂
香港特別行政區政府教育局公布，供學校採用
二零二二年

從綠色「生態園」出發推展可持續發展教育與 STEAM 教育

學校 D 一直致力推動環境教育，提供多元及生活化的環保活動（如：環保劇場、環保工作坊、環保大使計劃），以培養學生成為綠色公民。學校近年利用校園空間及回收環保物料建造「生態園」，園內設有不同的學習區域，包括果園區、小動物區、蝴蝶區、香草園、爬蟲教室、小花圃、陸龜飼養區、魚菜共生區及「與種同樂」區等，不但提高了學生愛護自然環境的意識，更讓他們透過觀察及照料園內的動植物，學會尊重和珍惜生命，體會愛與關懷的重要。「生態園」提供了一個全方位學習的真實環境及共通課題，使學生能「跳出課室」愉快地進行探究學習。例如為解決園內多蚊的問題，學生自發在網上搜尋資料，發現在園內種植香草可以驅蚊，遂主動協助學校種植香草，寓學習於生活。



發展跨課程學習

學校進一步把價值觀教育、常識科及 STEAM 教學內容自然連繫起來，發展成跨課程學習，提供學生綜合運用知識、技能、價值觀和態度的機會。為配合常識科的學習範疇「人與環境」，各級有一個課題到生態園學習；高小學生又會學習製作誘蚊器及智能澆水器、運用編程技巧編寫「自動餵食器」及「生態園天文台」程式，以及參與綠色耕種等，讓他們透過親身體驗學習，達至常識科及 STEAM 教育的學習目標。



進行戶外考察或校內觀察環境生態的學習活動

目標

- 1. 學習環境生態和生物多樣性
- 2. 懂得分析收集得來的資料和數據
- 3. 使用資訊科技及編程應用的能力運用解決環境生態上的需要。
- 4. 培養人與環境正確的價值觀。



進行戶外考察或校內觀察環境生態的學習活動

	戶外考察的學習方式	校園內的學習方式
模式	戶外參觀	在校園附近進行觀察
收集數據的地點	香港不同的自然生態 (如米埔、海下灣)	校園內外的生態 (環保生態園及附近叢林)
使用收集數據的方法	應用程式 CounterDeRecord Popplet	應用程式 iNaturalist
對象	學生	學生和老師



A stylized, colorful illustration of a landscape. The foreground features rolling green hills with a dark brown path winding through them. On the left, there are three stylized trees: a large green one, a smaller purple one, and a cluster of orange ones. A small red bird is flying in the sky above the trees. The background consists of layered, wavy bands of blue and white, suggesting a sky or distant hills.

校園內的學習模式

在培基小學植物的資料



- 利用平板電腦/手機掃描牌上的二維碼 (QR code)
- 現有約60種植物具校本資料



中藥園及蝴蝶園



在培基小學的動物資料 (蝴蝶)





學校內外的環境



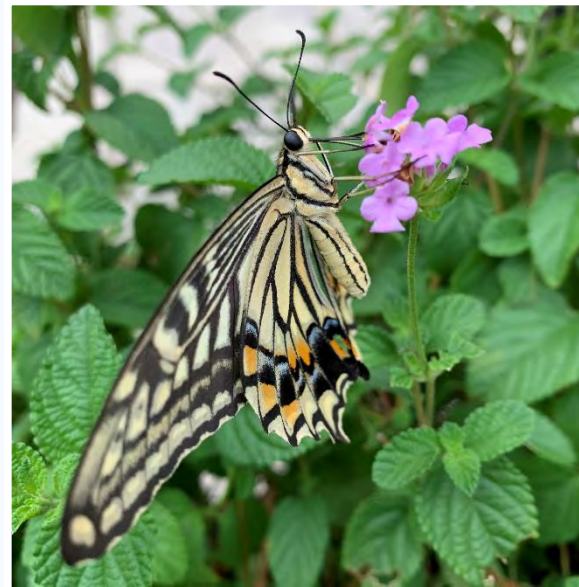
讓學生觀察由校園繁殖的蝴蝶的生命週期－交配、產卵、卵、幼蟲、蛹及成蟲(蝴蝶)。

蝴蝶屋



吸引蝴蝶到來覓食和產卵、讓學生認識相關蜜源植物、寄主植物和蝴蝶的關係。

蝴蝶園



柑橘鳳蝶－在學校繁殖了共有7代。

2018-2019 蝴蝶 × STEM：亞軍及最受歡迎獎 (綠色力量)



◀ 星星局長現身 蝴蝶 × STEM博覽

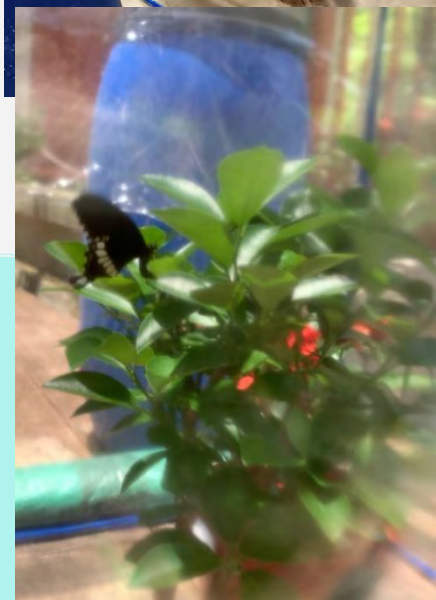
昨日是「全城愛蝶日」，環境局局長黃錦星現身支持「蝴蝶×STEM博覽」，見證小學生化身成「小科學家」、「蝴蝶普查員」、「蝴蝶大使」同「蝴蝶兵團」，仲同佢哋打成一片，一同拍照留念。「星星局長」其後在社交網站發文指，近年政府加強生態保育，包括制定香港首份城市級《生物多樣性策略及行動計畫》；郊野公園方面，政府正規劃紅花嶺為新郊野公園；偏遠鄉郊方面，新設「鄉郊保育辦公室」，加強保育如沙羅洞等蝴蝶蜻蜓生態天堂。

局長又預告，環境局和漁護署將於十至十二月，舉辦第五屆《香港生物多樣性節》，與各界合力推廣保育生物多樣性，歡迎大家到時一齊撐！另外，局長今日將率領貿易發展局、環保業界代表及

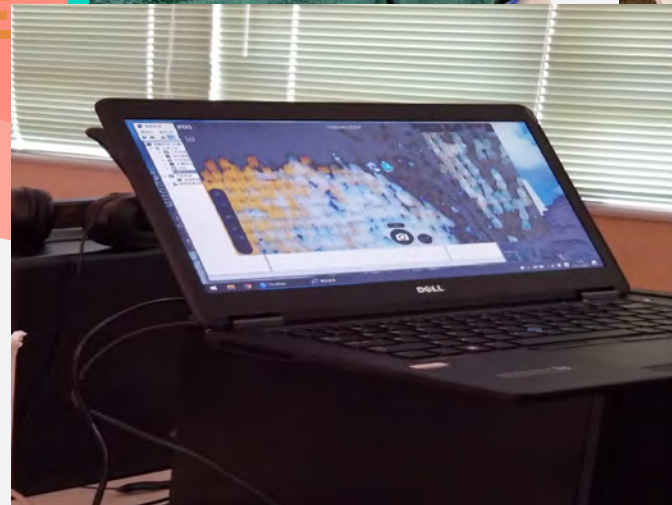
相關專業人士和學者組成的交流團前往佛山，出席大灣區綠色循環經濟交流會和參觀處理固體廢物的環保產業園。



蝴蝶 × STEM 增設空間讓蝴蝶交配產卵持續供應給學生 飼養及作科研活動 (2019-2020 及 2020-2021)



製作自動化蝴蝶養殖箱 (2020-2022)



蝴蝶 × STEM 走進課室(2019-2020)



在培基小學的動物資料 (雀鳥)



綠色大搜索 (康文署及香港觀鳥會, 2014-2015至2019-2020)

1819: 亞軍及最突出雀鳥帽子設計獎



1920: 冠軍及最突出雀鳥帽子設計獎





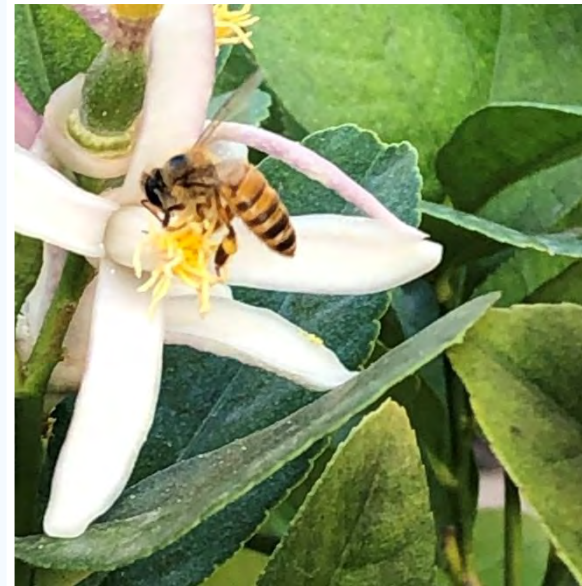
推廣和實踐

製作網上宣傳短片介紹校園的動植物

學生- 小息 (安排每天一班學生到蝴蝶園或環保生態園)



增加校園生物多樣性



參與WWF城市自然挑戰賽 (2020-2021)

展覽資料

到校講座

到校指導

教學套



學校舉行了有關生物多樣性公民科學講座 (費用由WWF贊助)



WWF 專家及職員到校支援的工作坊



最多觀察記錄



Hong Kong Inter-School City Nature Challenge 2020

The ECF - Hong Kong Inter-School City Nature Challenge (HKISCNC) is a friendly month-long competition in which Hong Kong schools find and log the most species in and around their campus, gathering more data on Hong Kong's urban biodiversity.

[Read More >](#)

[Project Journal](#)

Overview	76,578 OBSERVATIONS	2,461 SPECIES	838 IDENTIFIERS	2,976 OBSERVERS	Stats
----------	------------------------	------------------	--------------------	--------------------	-----------------------

Leaderboard

Sort By: [Observations](#) | [Species](#) | [Observers](#)

	HKISCNC'20 - Stewards Pooi Kei Primary School	21,255
	HKISCNC'20 - Sha Tin College & Sha Tin Junior School	15,869
	HKISCNC'20 - Yuen Long Long Ping Estate Tung Koon Primary School	7,500

最多物種



Overview

76,578
OBSERVATIONS

2,461
SPECIES

838
IDENTIFIERS

2,976
OBSERVERS

 **Stats**

Leaderboard

Sort By: [Observations](#) | [Species](#) | [Observers](#)



HKISCNC'20 - Stewards Pool Kei Primary School

977



HKISCNC'20 - Yuen Long Long Ping Estate Tung Koon Primary School

724

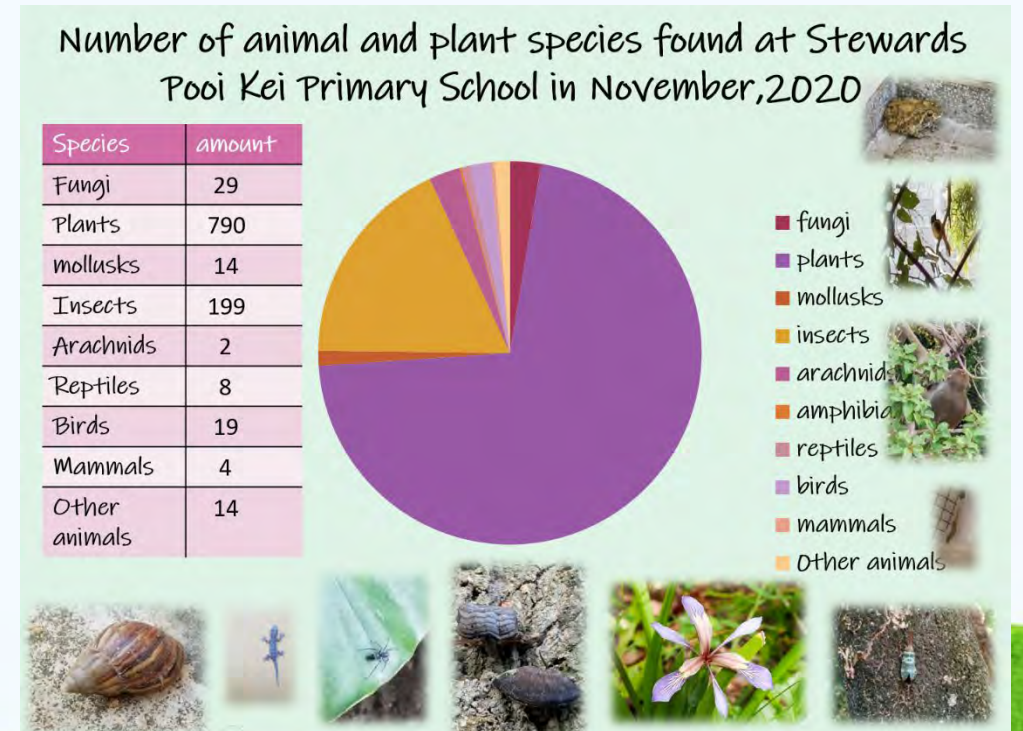


HKISCNC'20 - The Chinese Foundation Secondary School

677

檢視活動的成果及其持續性

- 高年級(J5,6)學生利用Excel 製作圖表；
- 在學藝活動上討論及了解校園的生物多樣性；
- 協助學校推行校園生物多樣性政策，
如：討論食物鏈的關係，規劃如何增加植物物種的數量和品種，吸引動物覓食和棲息。
- 學生希望持續去觀察和了解本地的生物多樣性。



A stylized, colorful illustration of a landscape. The foreground features rolling green hills with a dark brown path winding through them. On the left, there are three stylized trees: a green one, a purple one, and an orange one. A small red bird is flying in the sky above the trees. The background consists of layered, wavy bands of blue and white, suggesting a sky or distant hills.

戶外考察的學習模式

戶外考察 - 米埔自然保護區



附錄 2a

米埔自然保護區
MAI PO NATURE RESERVE

米埔自然保護區，
濕地，探索。

小學教育項目

本會設有三個不同戶外實地考察的專題，教師可根據不同的教學需要申請：

- 米埔小世界
- 小鳥的故事
- 濕地小偵探

以上活動均為免費活動，費用由教育局支付

米埔自然保護區位於香港西北面，是香港唯一被列入國際重要濕地的核心地域。一起走進米埔自然保護區，探索這片珍貴的濕地。

混合式學習旅程

考察前活動
網上預習
課前預習單
(選擇性參與)

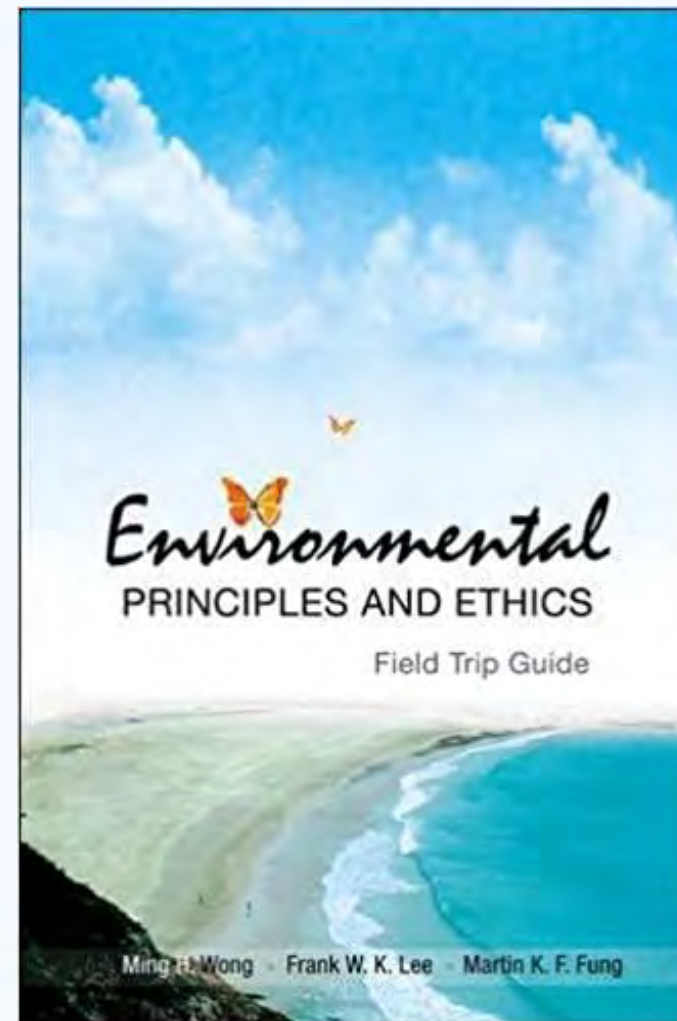
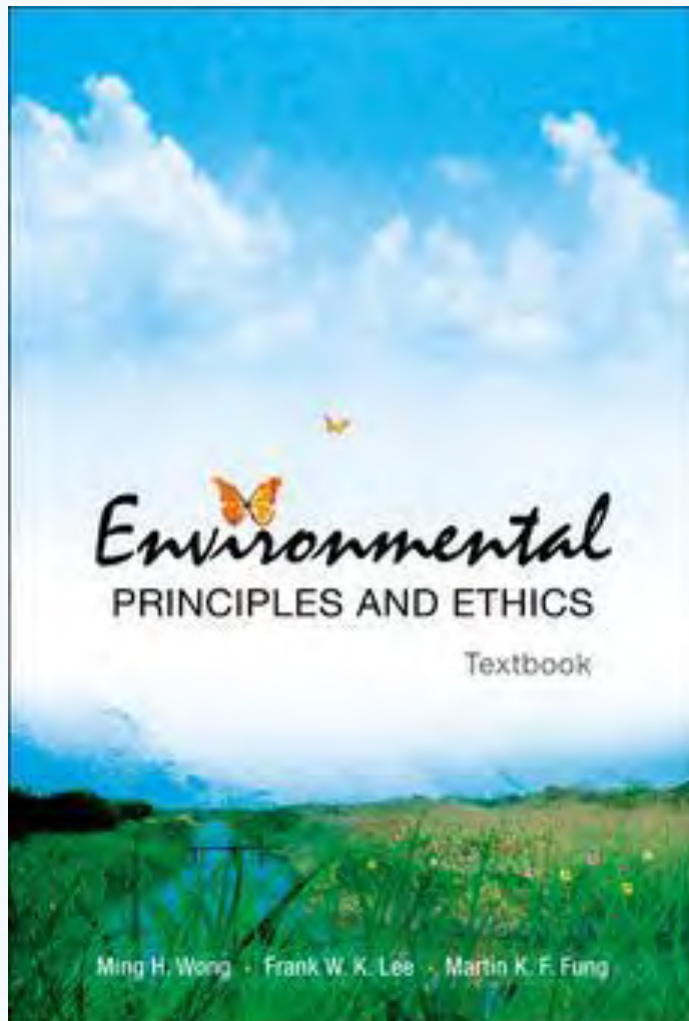
戶外實地考察
三個不同專題

考察後活動
網上跟進活動
(選擇性參與)

戶外活動形式	學習目的
• 觀鳥 • 觀察昆蟲 • 感官探索及遊戲	• 鼓勵學生欣賞濕地的自然美 • 認識濕地對人類及野生動植物的重要性及價值



戶外考察 – 米埔自然保護區



戶外考察 - 米埔自然保護區

Wetlands 濕地

3.1 Wetlands



Precious wetlands in Mai Po

As “cradles” of biological diversity, wetlands host many plant and animal genetic resources. They supply water and food nutrients on which many species of plants and animals depend. Wetlands also function as stream and flood control, groundwater replenishment, water purification, sediment and nutrient retention, climate change mitigation, and shoreline stabilization and protection.

In addition, wetlands are breeding and nursery grounds for fish (i.e. *gei wai* farming), and for many other aquatic or marine crops for human use, bringing significant economic benefits. Thus, they enhance the health and welfare of the local people. Besides, wetlands also contribute to recreation, education and ecotourism by enriching the scenic beauty and strengthening the traditional and cultural heritage.



gei wai farm

In Hong Kong, the varieties of wetland are often associated with inter-tidal mudflats, fishponds, sea-grass beds, coral reefs, rocky shores, rivers and streams, freshwater marshes, irrigated agricultural land and reservoirs.

Key Species in Wetlands

Wetland is well-known for its rich diversity of animals and plants. Undoubtedly, the migratory birds and mangroves found in wetlands are of great ecological value. Besides, there are also many important fauna and flora such as aquatic plants, mammals, reptiles, amphibians, freshwater fish, butterflies and moths, dragonflies, etc.

Vegetation



Wetlands are precious ecological habitats, where water serves as the main control of the environment. At low tide, wetlands include areas of marine water where the depth could be as low as six metres. They cover coastal habitats including coral reefs, mudflat and mangrove forests. According to the nature of the water sources, wetlands can be classified as marine, estuarine, riverine, palustrine and artificial.

Wetlands 濕地

1) Mai Po Nature Reserve

In 1995, the Hong Kong Government listed a 1,500-ha area of the Deep Bay wetlands in the northwestern New Territories under the Ramsar Convention. As the sixth largest mangrove stands in China, the area has discovered more than 20 animal and plant species new to science.

The commercial fishponds within the Ramsar Site were ecologically important by indirectly providing feeding habitats for birds. In winter, when the fishponds are filled with harvesting fishes such as Mulletts and Carps, waterbirds especially egrets, herons and the “Flagship” Black-faced spoonbills (*Platalea minor*) are attracted to these ponds to feed on the non-commercial fishes (like *Gambusia affinis*) and shrimps (like *Macrobrachium nipponense*) trapped in the shallow water.

Mai Po Nature Reserve is an important habitat for over 10,000 migratory birds every year. Over 250 species have been recorded here, and more than half this number are migrants from December to February. The key species include Egrets (site holds about 30% of Hong Kong), Pied Avocets (about 6,000 recorded in 2003), Dalmatian Pelicans and Saunder's Gulls (both are endangered species), Black-faced Spoonbills (one-quarter of the world population winters recorded and about 300 individuals spotted in the winter of 2004-05), Waders and Shovelers.

Entry to Mai Po Nature Reserve is restricted under the Wild Animals Protection Ordinance. Individual or groups can join the guided ecotours offered by the World Wide Fund for Nature Hong Kong. During the tour, visitors may watch birds from hides; walk trails by fishponds and traditional shrimp ponds (*gei wais*); and head along a floating boardwalk that leads between mangroves to a hide on the edge of the Deep Bay mudflats bordering Hong Kong and mainland China.



Entrance



Walking through mudflats



Bird-watching hide



Mudflat in the Deep Bay



Group _____

Stewards Pooi Kei Primary School

J6 Science Excursion – Mai Po Nature Reserve

Find the ones everywhere (The inhabitants and the habitats.)

STEM Worksheet

Name: _____ Class: _____ Class no: _____ Date: _____

1. Which kinds of birds that you can see? Where can you see them?

Use ○ and △ to indicate that you can see in the woodlands and mudflats respectively.



2. What are the characteristics of birds for their identification?

Their sizes, shapes, shapes of bills, legs, feet and eyes, colouration and conspicuous marks or patches, bird calls and their behaviours are the characteristics of birds for their identification.

3. What are the differences of the common characteristics between birds found in woodlands and in mudflats?

Birds (woodlands): bird call with higher pitch, smaller in size, more colouration or patterns, shorter legs, usually found in grasslands or woodlands.

Birds (mudflats): bird call with lower pitch, large in size, less colouration or patterns, longer legs, usually found in mudflats, ponds or wetlands.



米埔常見鳥類

Common Bird Species in Mai Po

for a living planet

留鳥

Resident Birds

1

小白鷺



Little Egret
Egretta garzetta
Great Egret
Egretta alba

2

大白鷺

3

池鷺



Chinese Pond Heron
Ardeola bacchus

非繁殖羽 Non-breeding plumage



繁殖羽 Breeding plumage

4

小
水
鴨



Little Grebe
Tachybaptus ruficollis

5

黑
水
雞



Common Moorhen
Gallinula chloropus

6

白
胸
苦
惡
鳥



White-breasted Waterhen
Amaurornis phoenicurus

7

白
胸
翡
翠



White-throated Kingfisher
Halcyon smyrnensis

8

普
通
翠
鳥



Common Kingfisher
Alcedo atthis

9

白
鵲
鴿



White Wagtail
Motacilla alba

10

珠
頸
斑
鳩



Spotted Dove
Streptopelia chinensis

11

白
頭
鵪



Chinese Bulbul
Pycnonotus sinensis

12

棕
背
伯
勞



Long-tailed Shrike
Lanius schach

13

灰
頭
鷦
鶯



Yellow-bellied Prinia
Prinia flaviventris

14

鵲
鴿



Oriental Magpie Robin
Copsychus saularis

15

黑
鳶
(
麻
鷹
)



Black Kite
Milvus migrans



米埔常見鳥類

Common Bird Species in Mai Po

for a living planet

候鳥

Migratory Birds

1

鸕
鶿



Great Cormorant
Phalacrocorax carbo

2

黑
臉
琵
鷗



Black-faced Spoonbill
Platalea minor

3

紅
嘴
巨
鷗



Caspian Tern
Sterna caspia

4

赤
頸
鴨



Eurasian Wigeon
Anas penelope

5

針
尾
鴨



Northern Pintail
Anas acuta

6

黑
翅
長
腳
鷗



Black-winged Stilt
Himantopus himantopus

7

反
嘴
鷗



Pied Avocet
Recurvirostra avosetta

8

環
頸
鷗



Kentish Plover
Charadrius alexandrinus

9

紅
嘴
鷗



Black-headed Gull
Larus ridibundus

10

家
燕



Barn Swallow
Hirundo rustica

11

澤
鷗



Marsh Sandpiper
Tringa stagnatilis

12

紅
腳
鷗



Common Redshank
Tringa totanus

13

白
腰
杓
鷗



Eurasian Curlew
Numenius arquata

14

黑
尾
塍
鷗



Black-tailed Godwit
Limosa limosa

15

蒼
鷺



Grey Heron



世界自然(香港)基金會 WWF Hong Kong

米埔常見蝴蝶

Common Butterfly Species in Mai Po



1

黃紋孔弄蝶



Contiguous Swift
Polytremis lubricans lubricans

2

玉帶鳳蝶



Common Mormon
Papilio polytes polytes

3

美鳳蝶



Great Mormon
Papilio memnon agenor

4

寬邊黃粉蝶



Common Grass Yellow
Eurema hecabe hecabe

5

酢漿灰蝶



Pale Grass Blue
Zizeeria maha serica

6

小眉眼蝶



Dark-brand Bush Brown
Mycalesis mineus mineus

7

黑脈蛺蝶



Red Ring Skirt
Hestina assimilis assimilis

8

幻紫斑蛺蝶



Great Egg-fly
Hypolimnias bolina kezia

9

中環蛺蝶



Common Sailer
Neptis hylas hylas

10

串珠環蝶



Large Faun
Faunis eumeus eumeus

11

虎斑蝶



Common Tiger
Danaus genutia genutia

12

藍點紫斑蝶



Blue-spotted Crow
Euploea midamus midamus

讓學生實地認識濕地對人類和動植物的關係和重要性 (配合6年級科學科植物與環境及動物與環境的課題)

聽聽黑臉琵鷺的故事



用望遠鏡觀察米埔自然保護區的鳥類



讓學生實地認識濕地對人類和動植物的關係和重要性
(配合6年級科學科植物與環境及動物與的課題)

學生記錄這次戶外考察見到的**鳥類**
品種和數量



學生記錄這次戶外考察見到的**蝴蝶**
品種和數量



讓學生實地認識濕地對人類和動植物的關係和重要性
(配合6年級科學科植物與環境及動物與的課題)

學生在觀鳥屋觀察及記錄這次戶外
考察見到的鳥類品種和數量



讓學生實地認識濕地對人類和動植物的關係和重要性
(配合6年級科學科植物與環境及動物與的課題)



Practical Worksheet for Wetland Field Trips

1) Area of site visited: _____ hectares

2) Name 4 animal species that you found in the site:

_____ Distinctive features: _____

_____ Distinctive features: _____

_____ Distinctive features: _____

_____ Distinctive features: _____

3) Name 3 mangrove plants that you found in the site:

_____ Distinctive features: _____

_____ Distinctive features: _____

_____ Distinctive features: _____

4) Problems encountered by mangroves in the site:

5) How can mangroves adapt to the tough conditions of wetland?

6) Please suggest some of the ways to conserve wetland:

戶外考察後

- 學生先會分享米埔所見到的生態作分享，看看發現的鳥類和蝴蝶位置與其習性的關係，了解生物如何適應濕地的環境，讓學生明白保育濕地對人類和動植物的重要性。
- 之後整理數據 (鳥類和蝴蝶品種和數量)，和校園內的數據作出簡單的比較。
- 學生從戶外考察加深對課本中的知識，亦學習如何在實地作出觀察、欣賞和收集數據。
- 培養他們對自然生態保育的價值觀。

戶外考察－海下灣海岸公園

附錄 2f



**海下灣，
海洋，發現。**

小學教育項目

本會設有兩個不同戶外實地考察的專題，教師可根據不同的教學需要申請：

- 鯊魚冒險記
- 海下小偵探

混合式學習旅程

考察前活動
網上直播・跟住牠
暢遊海下
(選擇性參與)

戶外實地考察
兩個不同專題

考察後活動
網上跟進活動
(選擇性參與)

戶外活動形式

- 乘坐玻璃底船觀賞珊瑚群落
- 沙灘考察
- 感官探索活動
- 角色扮演

學習目的

- 鼓勵學生欣賞海洋的自然美
- 觀察海洋生物的特性
- 實踐可持續生活模式



戶外考察－海下灣海岸公園

Streams and Shorelines 河流及海岸

3.3 Streams and Shorelines

Hong Kong has around 1,650 square kilometres of sea area including a wide variety of different marine habitats which contain a great diversity of marine life. Its coastline is around 800 kilometres long and supports a great variety of coastal and marine ecosystems. These include rocky shores, sand-flats (sandy shores) and mudflats (muddy shores). Mangrove communities and sea-grass beds can be found on the intertidal shores. The distribution and the great diversity of water ecosystems in Hong Kong are related to several different ocean currents and to freshwater water discharges from the Pearl River Delta into the western Hong Kong waters.

There are different tidal zones along the shores: the **Splash Zone**, the **Intertidal Zone** and the **Subtidal Zone**. The Intertidal Zone can be divided into high, mid and low intertidal depending on the relative times that these areas spend underwater: the high intertidal zone is exposed to air for long periods twice per day, the mid-intertidal zone is exposed to air briefly once or twice per day, and the low intertidal zone is exposed only during the lowest tides.



Beautiful shorelines

The splash zone above the high tide line is almost always exposed to air, and receives most of its water in the form of spray. The subtidal zone is the coastal marine area below the intertidal zone, that is, below the lowest tide line of the year. Both the tidal cycle and the seasonal variation affect the distribution of the intertidal species.



Streams

There are no large rivers in Hong Kong due to the scarcity of flatlands caused by rising sea levels following the last glaciation around 10,000 years ago.

However, small rivers, hill streams, lowland streams and even some artificial channels support a rich biota, including a great variety of fish, benthic invertebrates, and mammals adapted to riverine wetlands.

Hong Kong's stream organisms are greatly affected by the seasonal Monsoon rainfall. The flow increase caused by these rains can reduce animal populations through drift as well as reducing algal densities through abrasion; also, there is a strong relationship between benthic animals and the sediments that they live on, and water currents determine the particle structure of streambeds so therefore they also determine the distribution and abundance of the organisms that inhabit streams.

Streambed particles of various sizes at different positions of a stream channel are related to different water current forces: In shallow areas with a relatively fast water current, such as riffles, the stream beds are mainly composed of boulders and cobbles whereas in areas with slower or reduced water currents, such as pools, they are mainly composed of fine particles such as silt, clay and fine sand.

Streams and Shorelines 河流及海岸

2) Hoi Ha Wan Marine Park

Hoi Ha Wan Marine Park is a sheltered bay with pristine water quality that provides a good marine environment for a great variety of marine organisms, which is located north of the Sai Kung West Country Park. The seaward boundary of the park is an imaginary line drawn from the tip of Heung Lo Kok to the tip of Kwun Tsoi Kok over the northern end of Flat Island (Ngan Chau) and the northern end of Moon Island (Mo Chau).



Hoi Ha peninsula

It covers about 260 hectares of sea area and boasts well populated coral communities including 59 of the 88 stony coral species recorded in Hong Kong. Hard corals of the *Cyphastrea* spp., *Echinophyllia* spp., *Favia* spp., *Favites* spp., *Goniopora* spp., *Leptastrea* spp., *Lithophyllon* spp., *Pavona* spp. and *Platygyra* spp. species are predominant in either one or more coral sites within the Marine Park.



Seashore at Hoi Ha

Over 120 species of reef-associated fish such as groupers, snappers and parrotfish have been recorded in this Marine Park, besides a wide variety of marine animals such as sponges, tube-worms, soft corals, sea cucumber crabs, starfish and jellyfish.



Mangroves along the shore

Various true mangrove species including *Kandelia candel*, *Aegicera corniculatum*, *Excoecaria agallocha* and *Bruguiera gymnorrhiza*, *Avicennia marina* and *Lumnitzera racemosa* have been recorded in Hoi Ha Wan Marine Park. Mangrove areas commonly act as nursery grounds for juvenile fish and other intertidal and subtidal invertebrates.



Grapsus albolineatus



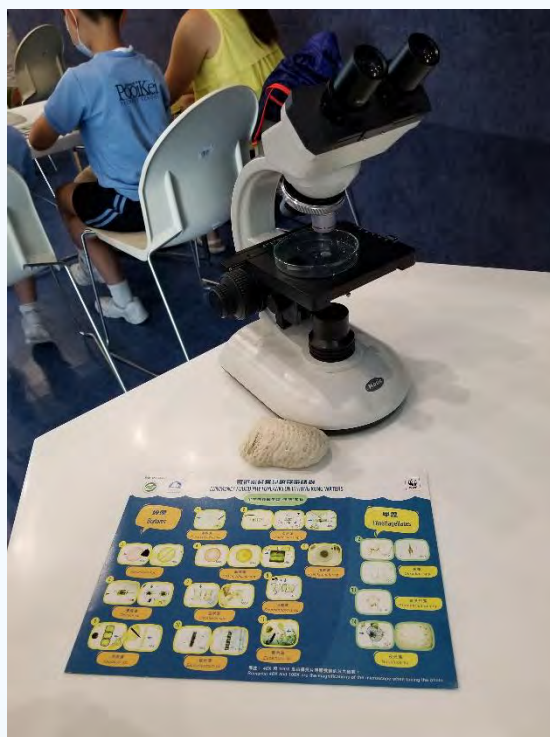
Seahorse

Transportation: Take **Green minibus No. 7** from Sai Kung Town to Hoi Ha Village or take **KMB No. 94** from Sai Kung Pier to Wong Shek Pier and get off at Ko Tong and walk along the Hoi Ha Road for about 60 minutes.

Suggested Time: 6 hours at the site.

學生在海下灣海岸公園探索和認識其沿岸和海洋環境，藉此明白它們的重要性並學習如何保育環境。

用顯微鏡觀察海水的微生態



學生在海下灣海岸公園探索和認識其沿岸和海洋環境，藉此明白它們的重要性並學習如何保育環境。

聽導師講解海下灣海岸公園的生態



學生在海下灣海岸公園探索和認識其沿岸和海洋環境，藉此明白它們的重要性並學習如何保育環境。

乘坐玻璃底船觀察海底的珊瑚群落



Practical Worksheet for Stream/shoreline Field Trips

1) Area of site visited: _____ hectares

2) Name 3 animal species that you found in the site:

_____ Distinctive features: _____

_____ Distinctive features: _____

_____ Distinctive features: _____

3) Name 3 plants that you found in the site:

_____ Distinctive features: _____

_____ Distinctive features: _____

_____ Distinctive features: _____

4) Problems encountered at shorelines / streams in the site:

- _____
- _____
- _____

5) How can animals survive in the tough conditions of intertidal zones/streams?

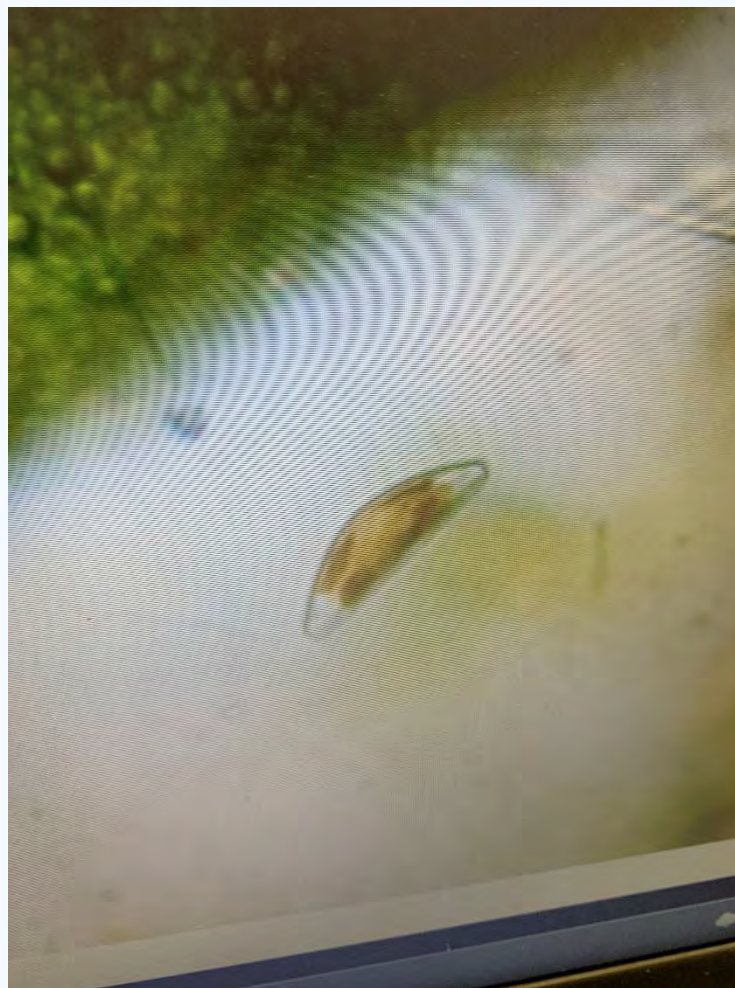
- _____
- _____

6) Please suggest some of the ways to conserve shorelines / streams:

- _____

學生在海下灣海岸公園探索和認識其沿岸和海洋環境，藉此明白它們的重要性並學習如何保育環境。

顯微鏡下環保生態園水中的生態



戶外考察 – 元洲仔教育中心

附錄 2b



**元洲仔，
可持續發展，改變。**

小學教育項目

本會設有兩個不同戶外實地考察的專題，教師可根據不同的教學需要申請：

- 自然藝術家
- 綠色童盟

來到大埔元洲仔自然環境保護研究中心，你能夠學到更多有關生物多樣性的知識及如何實踐可持續生活模式。

混合式學習旅程

考察前活動
網上觀看影片
(選擇性參加)

戶外觀察活動
現場實地考察

考察後活動
網上觀看影片
(選擇性參加)

戶外活動形式	學習目的
• 觀察植物 • 協作藝術 • 可持續生活模式遊戲 • 角色扮演	• 鼓勵學生欣賞大自然之美 • 認識本地動植物 • 推動學生實踐可持續生活模式



藉著以大自然物料創作藝術品，讓學生認識更多本地生物和植物品種(配合二、三年級科學科的課程)，亦了解到在生活中保護環境的重要性。



藉著以大自然物料創作藝術品，讓學生認識更多本地生物和植物品種，亦了解到在生活中保護環境的重要性。

學生去認識本地生物和植物品種



藉著以大自然物料創作藝術品，讓學生認識更多本地生物和植物品種，亦了解到在生活中保護環境的重要性。

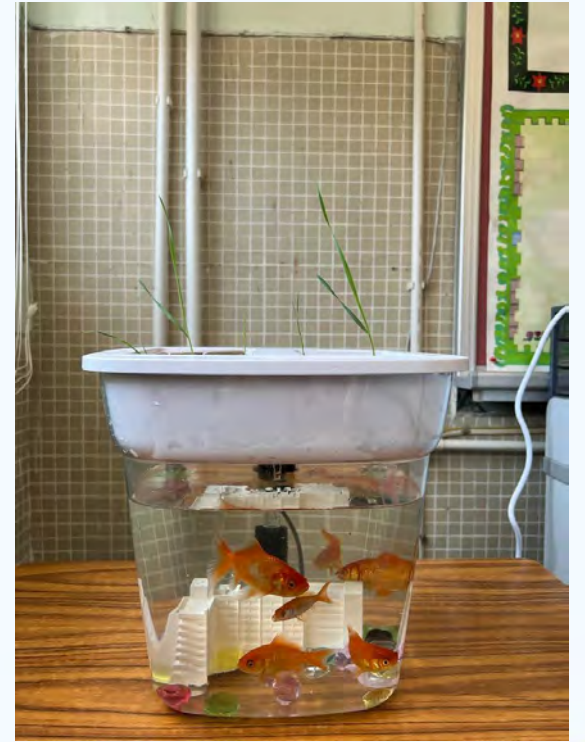
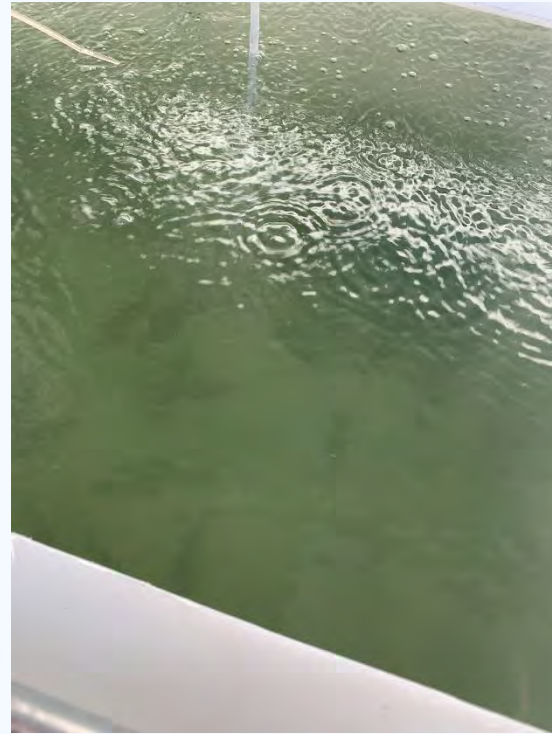
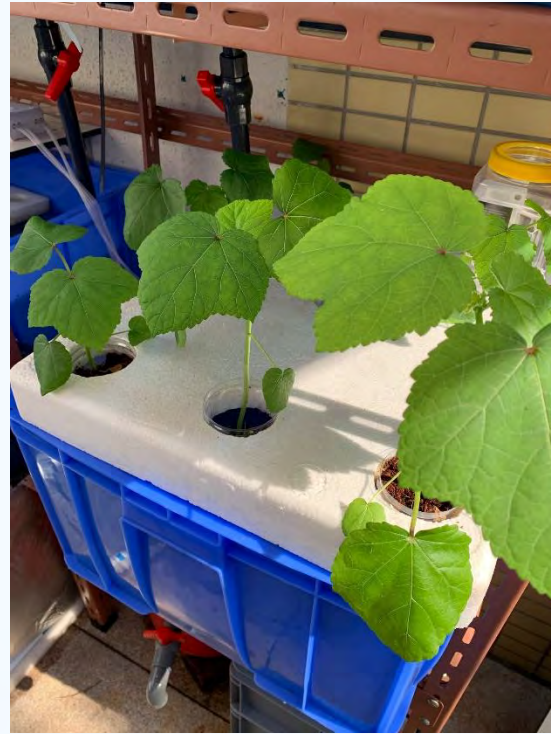
學生去認識本地生物和植物品種



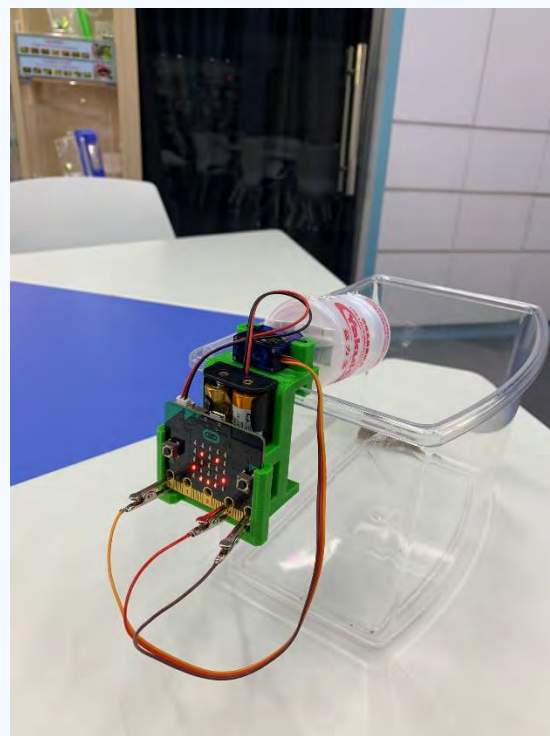
學藝活動的蝴蝶大使種植蝴蝶蜜源植物及寄主植物－馬利筋、柑橘、金銀花及檸檬等等



學生參與魚菜共生STEM動手做的體驗性學習和運作



跨學科活動以STEM動手做和Micro:bit編程為學校環保生態園植物製作自動澆水器，為魚菜共生系統製作自動餵魚器



謝謝大家

