



# 生物多樣性速查 (下花山) Bioblitz (Ha Fa Shan)

姓名 Name \_\_\_\_\_

組別 Group \_\_\_\_\_

日期 Date \_\_\_\_\_

## 學習目標 Learning goals

完成課程後，學生應能 After the course, students should be able to:

1. 製作生境地圖 Construct habitat maps
2. 應用各種生態調查方法 Apply different ecological survey methods
3. 辨認和分類一些本港常見生物物種 Identify and classify some common species in Hong Kong
4. 解釋一些生態現象 Explain some ecological phenomena
5. 與他人合作進行考察和資料整理工作 Cooperate with others to do field investigation and data processing
6. 製作簡單科學報告 Make simple scientific report
7. 欣賞自然，尊重生物 Appreciate the wonder of nature and respect living things

## 程序 Schedule

09:00 - 10:00	簡介 Briefing
10:00 - 12:30	考察 Field work
12:30 - 13:30	午膳 lunch
13:30 - 14:00	生態現象調查 Ecological Phenomenon Survey
14:00 - 14:30	顯微鏡觀察 Microscopic observation
14:30 - 15:15	數據分析 Data analysis
15:15 - 16:30	匯報及總結 Presentation & summary

## 儀器和工具 Equipment and tools

1	寫字夾板 Clipboard (x1)	
2	平板電腦 Tablet computer (x1)	
3	數碼相機 Digital camera (x1)	
4	軟尺 Measuring tape (x1)	
5	圖鑑 Pictorial Guides (x1)	
6	雙筒望遠鏡 Binocular (x1)	
7	微距望遠鏡 Macroscope (x1)	

## 你知道嗎？ Do You Know?

生境類型複雜多變的中國是地球上其中一個生物多樣性最高的國家。根據中國科學院發佈的《中國生物物種名錄2023版》，中國有超過47,000種植物和69,000種動物。

China, with its complex and diverse habitats, is one of the most biodiverse countries on Earth. According to the "Catalogue of Life China 2023" published by the Chinese Academy of Sciences, China has over 47,000 plant species and 69,000 animal species.



## 衣著 Clothing

1. 不應穿著短褲。穿著長袖上衣和長褲能更有效防止蚊蟲叮咬，亦可減低被太陽曬傷的機會。  
Shorts are not recommended. Long-sleeved shirt and trousers for better protection against mosquito and insect bites, as well as preventing sunburn.
2. 不應穿著拖鞋或涼鞋，而應穿著運動布鞋，以減低腳部受傷的機會。  
A pair of plimsolls for preventing injuries. Slippers and sandals are not recommended.

## 安全 Safety

1. 避免踏足陡斜和濕滑的岩石表面。  
Avoid stepping on steep and wet rock surfaces.
2. 切勿闖入植物生長茂密的地方，以免觸及蜂巢或被植物割傷。  
To prevent being attacked by wasps from disturbed wasp nests or being injured by plant leaves and thorns, do not get into places with dense vegetation.



## 1. 生境調查 Habitat Survey

在考察過程中，辨認下列各種生境，並將各種生境所佔位置繪畫在提供之地圖（第六頁）上。

During field study, identify different types of habitat listed below and draw the occupied area of each habitat on the map provided (page 6).

草地 Grassland	灌叢 Shrubland	天然樹林 Natural Woodland	植林 Plantation
農地 Farmland	廢棄農地 Abandoned Farmland	引水道 Catchwater	溪流 Stream

## 2. 沿樣條數算 Transect Count

沿一段路徑步行，沿途記錄下列三類動物的物種數目，並嘗試記錄牠們的一些特徵。

- 鳥類：記錄路徑兩旁看見和聽到叫聲的雀鳥物種。
- 蝴蝶、蜻蜓和豆娘：記錄路徑兩旁10米距離內看見的蝴蝶、蜻蜓和豆娘物種。

Along the path, count the following 3 types of animals and try to record their characteristics:

- Bird: record all bird species seen or heard on either side of the path.
- Butterfly, dragonfly and damselfly: record all species within 10m on either side of the path.

### 蝴蝶 Butterfly

### 蜻蜓和豆娘 Dragonfly and Damselfly

### 鳥類 Bird

物種數目 No. of Species	特徵 Characteristic	物種數目 No. of Species	特徵 Characteristic	物種數目 No. of Species	特徵 Characteristic
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
11		11		11	

## 3. 定點數算 Point Count

分別在兩個位置進行10分鐘定點數算，記錄下列三類動物的物種數目，並嘗試記錄牠們的一些特徵。

- 鳥類：記錄看見和聽到叫聲的雀鳥物種。
- 蝴蝶、蜻蜓和豆娘：記錄直徑10米範圍內看見的蝴蝶、蜻蜓和豆娘物種。

Conduct a 10-minute point count at two different sites respectively. Count the following 3 types of animals and try to record their characteristics:

- Bird: record all bird species seen or heard.
- Butterfly, dragonfly and damselfly: record all species seen within a radius of 10 meters.



地點一 Site 1: \_\_\_\_\_

### 蝴蝶 Butterfly

### 蜻蜓和豆娘 Dragonfly and Damselfly

### 鳥類 Bird

物種數目 No. of Species	特徵 Characteristic
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

物種數目 No. of Species	特徵 Characteristic
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

物種數目 No. of Species	特徵 Characteristic
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

地點二 Site 2: \_\_\_\_\_

### 蝴蝶 Butterfly

### 蜻蜓和豆娘 Dragonfly and Damselfly

### 鳥類 Bird

物種數目 No. of Species	特徵 Characteristic
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

物種數目 No. of Species	特徵 Characteristic
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

物種數目 No. of Species	特徵 Characteristic
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	



## 4. 樣方數算 Quadrat Count

在指定位置放置一個 2米 X 2米的樣方，按下列分類記錄樣方內所有生物物種數目，並嘗試記錄特徵。

Place a 2m x 2m quadrat in the designated area. Count the species of the organisms listed below. Try to record their characteristics.

昆蟲 Insects	草本及攀援植物 Herbs & Climbing Plants	灌木 Shrubs	其他節肢動物 Other arthropods	其他動物 Other animals	其他生物 Other living organisms

## 5. 主動搜查 Active searching

在指定範圍內仔細搜查各種生物，按下列分類記錄樣方內沒有記錄過的生物物種數目，並嘗試記錄其特徵。

Search the designated area thoroughly. For the species not found in the quadrat, count the species of the organisms listed below listed below. Try to record their characteristics.

昆蟲 Insects	草本及攀援植物 Herbs & Climbing Plants	灌木 Shrubs	其他節肢動物 Other arthropods	其他動物 Other animals	其他生物 Other living organisms

## 6. 深入觀察生物 Comprehensive observation on living organisms

選擇一種動物和一種植物，對其形態、適應特徵、行為、與其他生物的關係等進行深入觀察和記錄。

Select one animal species and one plant species. Observe and record their morphology, adaptations, behaviour, relations with other living organisms, etc., in details.

深入觀察的動物 Animal observed in detail	
深入觀察的植物 Plant observed in detail	



## 7. 生態現象調查 Ecological Phenomenon Survey

尋找以下幾項生態現象的實例，觀察、拍攝並作簡單描述。

Look for the examples of each of the following ecological phenomena. Observe, take photos and briefly describe.

<b>偽裝 Camouflage</b> 身體顏色圖案與環境或物件相似 Body colour and pattern very similar to the environment or other objects	
<b>警戒色 Warning colouration</b> 以鮮艷顏色或對比強烈的顏色作為警戒訊號排拒捕食者 Bright colours or contrasting colours as warning signal to deter predators	
<b>擬態 Mimicry</b> 一種生物與另一種生物相似，以獲取己方或雙方的保護 Similarity of one species to another which protects one or both	
<b>寄生 Parasitism</b> 一種生物從另一種生物身上攝取營養並損害對方利益 One organism obtains nutrient from another at the expense of it	
<b>互利共生 Mutualism</b> 兩種生物形成互相向對方提供利益的關係 Two organisms of different species exist in a relationship in which each individual benefits from the activity of the other	

## 8. 問題討論 Discussion

### A) 生境地圖 Habitat map

簡單描述考察地點的生境分佈並說明與該區生物多樣性和生物分佈的關係。

Briefly describe the distribution of habitats in the field study area. Explain the relations of habitat distribution to the biodiversity and distribution of living organism in the district.

### B) 各種取樣方法的比較 Comparison of different sampling methods

列舉曾應用的每種取樣方法的優點和缺點，並利用所得考察數據加以說明。

List the pros and cons of each sampling methods applied. Use the data obtained from the field to explain.

### C) 生物多樣性報告 Species diversity report

利用考察所得數據，撰寫簡單的下花山地區生物多樣性報告。

Use the data obtained from the field, write a brief report on the species diversity of Ha Fa Shan district.

### D) 詳細生物報告 Detail species report

製作某種生物的詳細觀察報告。

Make a detailed observation report on a particular species.

### E) 生態現象報告 Ecological phenomenon report

利用考察所得數據，製作涉及一個或多個生態現象的報告。

Use the data obtained from the field, make a report on one or more ecological phenomena.



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下花山生境地圖 Habitat map of Ha Fa Shan

