



考察大埔滘自然護理區的生物多樣性 Investigating Biodiversity in Tai Po Kau Nature Reserve

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. 辨認本港常見的陸地生物，並將其分類
Classify and identify local and common terrestrial living organisms ;
2. 量度生態系統中的非生物因素 Measure abiotic factors in an ecosystem;
3. 識別生態系統中生物與生物之間的關係
Distinguish interrelationships between living organisms in an ecosystem;
4. 說明非生物因素如何影響生物 Describe how abiotic factors affect living organisms;
5. 記述人類活動如何影響自然環境 Record and describe how human activities affect the natural environment;
6. 組織和分析數據作簡報之用 Analyze and organize data for presentation;
7. 與他人合作進行科學探究 Cooperate with others and work together in a scientific investigation;
8. 欣賞自然，尊重生物 Appreciate nature and respect living things.

程序 Schedule

| | |
|---------------|-------------------------------|
| 9:00 - 09:50 | 簡介 Briefing |
| 10:00 - 13:00 | 考察 Field work |
| 13:00 - 14:00 | 午膳 Lunch |
| 14:00 - 15:30 | 資料整理 Data processing |
| 15:30 - 16:15 | 分組匯報 Group presentation |
| 16:15 - 16:30 | 討論及總結 Discussion & summary |

儀器和工具 Equipment and tools

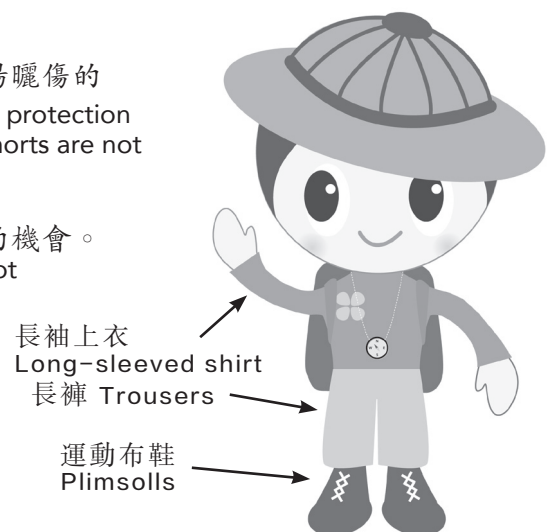
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|---|--------------------------|----|----------------------------------------|
| 1 | 寫字夾板 (x1) Clipboard | 6 | 溫度濕度計 (x1) Thermohygrometer |
| 2 | 光強度計 (x1) Light meter | 7 | 計數器 (x1) Counter |
| 3 | 風速計 (x1) Anemometer | 8 | 微距望遠鏡 (x1) Macroscope |
| 4 | 尼龍線 (x1) Nylon thread | 13 | 《生物圖錄》(x1) Wildlife Pictorial Guide |
| 5 | 指南針 (x1) Compass | 14 | 平板電腦 (x1) Tablet computer |

衣著 Clothing:

1. 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，不應穿著短褲。 Long-sleeved shirt and trousers for better protection against mosquito and insect bites, as well as preventing sunburn. Shorts are not recommended.
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 nest or being injured by plant leaves and thorns, do not get into places with dense vegetation.



1. 考察地點 Field site

考察地點分別是大埔滘公園和大埔滘野外研習園，每處地點選取100平方米作為調查範圍，在兩處調查範圍分別記錄各項生物因子和非生物因子。The field sites are Tai Po Kau Garden (TPKG) and Tai Po Kau Outdoor Study Centre (TPKOSC). Designate 100 m² as the area of study in each site. Record biotic factors and abiotic factors in each site.

2. 生境描述 Describing the habitat

簡單描述兩處調查地點的生境狀況，包括地形、植被、地質、附近土地用途等相關資料等，並繪製簡圖，以顯示環境概況。Briefing describe the nature of the two habitats, including topography, vegetation, geology, nearby land uses and other relevant information. Also draw sketch maps to show the environment.

| 大埔滘花園 Tai Po Kau Garden | 大埔滘野外研習園 Tai Po Kau Outdoor Study Centre |
|----------------------------|---------------------------------------------|
| 簡述 Brief description | 簡述 Brief description |
| 簡圖 Sketch map | 簡圖 Sketch map |

3. 量度非生物因子 Measuring abiotic factors

- 風向：舉起一條幼細的尼龍絲，配合指南針，找出風向。Wind direction: Raise a piece of light nylon thread, with the aid of a compass, find out the wind direction.
- 風速：利用風速計，向著風向，找出風速；在不同位置 and 不同時間進行量度，並計算出平均數值。Wind speed: Use an anemometer, facing the wind direction, and measure the wind speed. Repeat measurement at different time and different locations. Take average.
- 空氣溫度和濕度：利用電子溫度濕度計，在不同位置進行量度，並計算出平均空氣溫度和濕度。Air temperature and humidity. Use a thermohygrometer to measure air temperature and humidity. Repeat measurement at different time and different locations. Take average.
- 光強度：利用光強度計，在不同位置進行量度，並計算出平均光強度。Light intensity: Use a light meter to measure light intensity. Repeat measurement at different time and different locations. Take average.

| | 大埔滘花園 TPKG | | | | | 大埔滘野外研習園 TPKOSC | | | | |
|---------------------------------|------------|--|--|--|--|-----------------|--|--|--|--|
| 風向風速 Wind direction, wind speed | | | | | | | | | | |
| 溫度 Temperature | | | | | | | | | | |
| 濕度 Humidity | | | | | | | | | | |
| 光強度 Light intensity | | | | | | | | | | |

6. 調查人類對環境的影響 Investigating human impacts on the environment

在考察地區調查並記錄各項可能對該生態系統構成影響的人類活動，包括當時發生及曾經發生的活動，拍攝照片記錄，並簡單說明各項活動可能造成的影響。

In the field sites, investigate and record any human activities which may have impact to the habitat, both current and previous. Take photo records. Briefing describe the impacts.

| | 人類活動 Human activities | 影響類型 (可同時出現多於一項) Types of impact (may have more than one) | 簡單說明 Brief description |
|----|-----------------------|--------------------------------------------------------------------|------------------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

影響類型 Types of impact

1. 生境消失 Habitat lose
2. 生境分割 Habitat fragmentation
3. 植被焚毀 Burning of vegetation
4. 植被踐踏 Trampling on vegetation
5. 固體廢料 Solid wastes
6. 水污染 Water pollution
7. 空氣污染 Air pollution
8. 噪音 Noise
9. 光污染 Light pollution
10. 泥土侵蝕及沖積 Soil erosion and sedimentation
11. 河溪水量減少 Reduction of stream water flow
12. 野生動植物被採 Collection of wild animals and plants
13. 野生動物被驚擾 Disturbance to wild animals