



Curriculum-based Outdoor Learning  
Programmes in Country Parks  
General Studies (P.1 – P.3)

# Tree Exploration Student Handbook

Name: \_\_\_\_\_



Class: \_\_\_\_\_

Group: \_\_\_\_\_

Date: \_\_\_\_\_

Please finish the following questions after reading the story about The Fall of Freddie the Leaf (Buscaglia, 2014).

**1. Do you feel pity for Freddie?**

- Yes   No 

**2. Why do/ don't you feel pity for Freddie?**  
(You may choose more than one answer)

It is because

- Freddie cannot see his friends.
- Freddie cannot meet the children playing in the park.
- Freddie can experience the new stage of being a leaf.
- \_\_\_\_\_  
\_\_\_\_\_.

**3. How does Freddie feel about being fallen from the tree?**

- Calm  Scared

**4. What makes Freddie happy when he is still on the tree?**  
(You may choose more than one answer.)

- Freddie loves the weather in winter.
- Freddie loves providing shade to people in the park.
- Freddie loves watching children play around the tree.

Please complete the following questions after reading *Be a tree* (Gianferrari, 2021).

**1. Do you love trees?**

Yes

No

**2. Why should we protect trees?**

(You may fill in your answer)

It is because

trees provide food and shelter to animals and humans.

trees do not provide food and shelter to animals and humans.

\_\_\_\_\_  
\_\_\_\_\_.

**3. Can trees communicate with other trees?**

Yes

No

**4. Which part of the tree is used for communication?**

Leaves

Trunk

Roots

Flowers

# 1. About Country Park

In Hong Kong, a total of 24 country parks are designated for **conservation, recreation and outdoor education purpose**. Country parks are managed by the Agriculture, Fisheries and Conservation Department (AFCD). Country parks are very popular with the public for leisure walks, hikes, barbecues, family picnics and outdoor learning.

## 1.1 Country Parks vs Gardens at school



In Country parks,

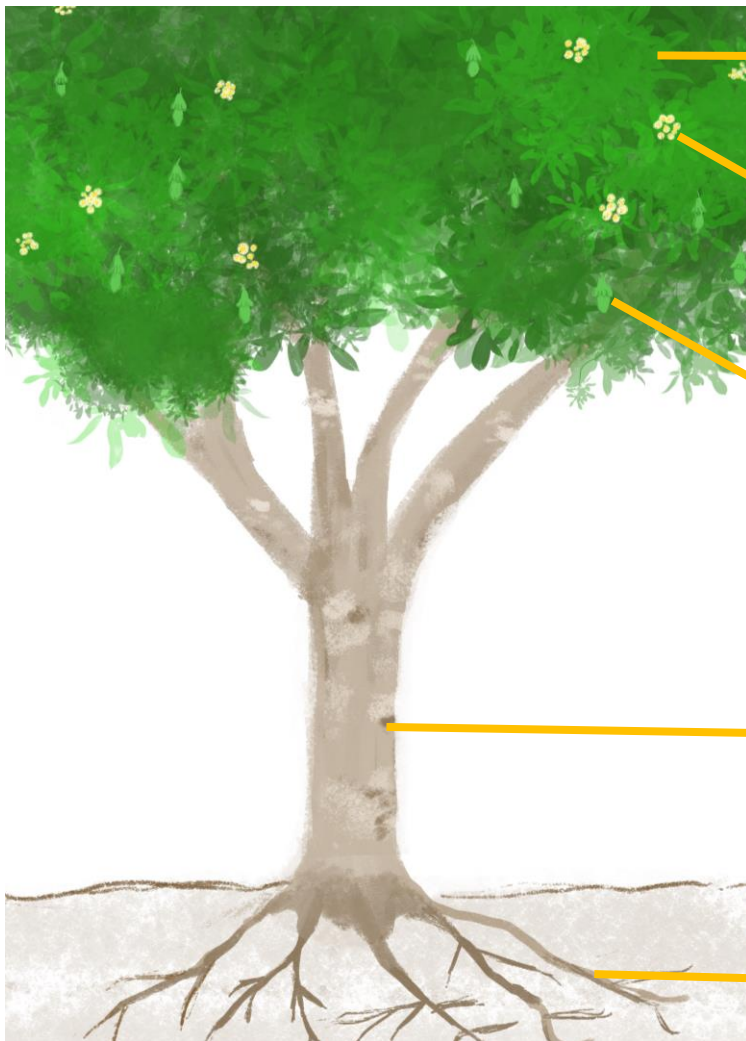
- ✓ We can find more animals and plants in.
- ✓ We can find more habitats such as natural stream, woodland and grassland.
- ✓ We can find more educational and recreational facilities, such BBQ site, tree walk and visitor center.
- ✗ Country parks do not use pesticides.

### Note

Can you identify the characteristics of country parks and gardens at school?  
Please circle the correct answer.

|                                    | Country Parks | Gardens at school |
|------------------------------------|---------------|-------------------|
| Species diversity                  | High / Low    | High / Low        |
| Habitats diversity                 | High / Low    | High / Low        |
| Human maintenance and interference | Basic / Extra | Basic / Extra     |

## 1.2 Tree Parts and Functions



Leaf takes in air and sunlight to make food.

Flower attracts pollinators to move pollen to another flower.

Fruit stores and disperses seeds. It allows the plant to reproduce.

Trunk supports tree. It carries water and minerals from the ground. It transports sugar from leaves to the roots.

Root absorbs water and nutrients in soil.

### Note

Which part of the tree grows underground?

- \_\_\_\_\_

What animal lives on trees? Can you name **one**?

- \_\_\_\_\_

What do animals do on trees?

- \_\_\_\_\_

## 1.3 The Process of Photosynthesis

During photosynthesis, plants absorb **sunlight** and take in carbon dioxide and **water** from the **air** and soil to produce oxygen and glucose (sugar). They store glucose (sugar) and release oxygen back into the air.

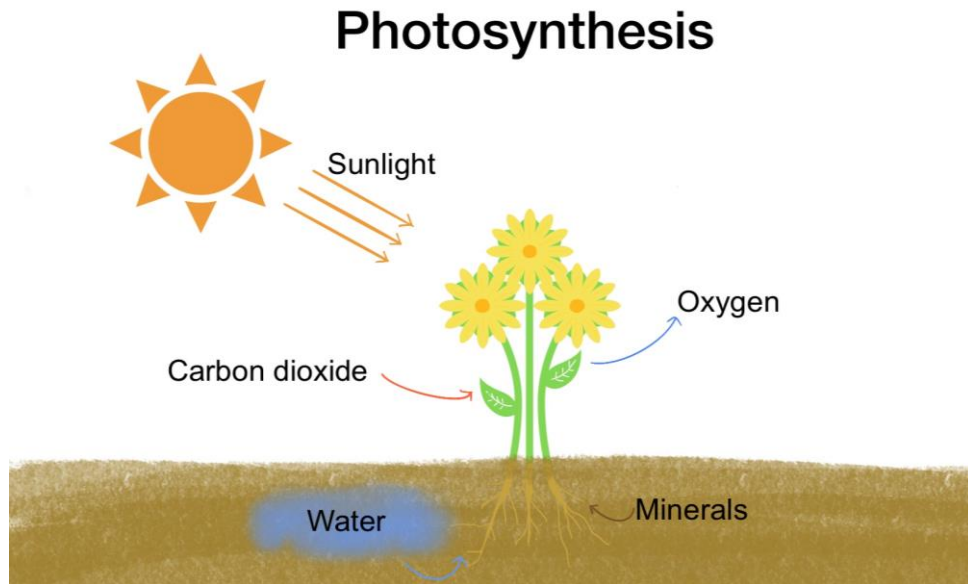


Fig. 1.1: The process of photosynthesis

### Note

The three important elements of plants' growth include:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

During the process of photosynthesis, plants absorb oxygen / carbon dioxide from the air and release oxygen / carbon dioxide back into the air.

(Circle the correct answers)

### 1.3.1 Life Cycle of Trees

How do seeds become trees? The first root breaks through the **seed** and grows downward. And the **seedling** starts to grow bigger with more leaves and becomes a young tree. A **young tree** is thinner and has smoother bark. A seedling matures and becomes a **tree** with a larger trunk and more leaves. Most of the mature trees will then start to grow **flowers and/ or fruits**.

## Life Cycle of Trees

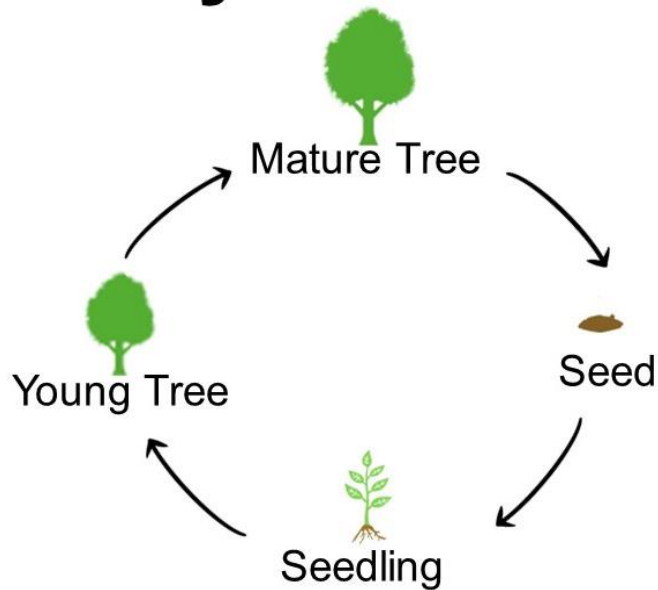


Fig. 1.2: The life cycle of trees

### 1.3.2 Seasonal change of Trees

Have you ever seen the leaves of plants changing colours? What time of year does this happen?

Trees change through seasons. Plant growth is limited in the fall due to the drop of temperature and reduction of sunlight from autumn to winter. Leaves fall can help trees to retain moisture in winter.



Fig. 1.3: Seasonal change of Trees

#### Extended Knowledge

##### 1. Do leaves only fall in autumn and winter?

A deciduous tree loses its leaves in each year. In autumn, the leaves on deciduous trees change colour and fall off. Evergreen tree has their green leaves all year round.

Leaves do not only fall in autumn or winter. Leaves eaten by caterpillars, blown by winds or infected by bacteria will result in making fallen leaves.





**Worksheet A**

**A. Drawing and predicting:**

**i. Imagine a tree which you may find in country parks and draw it down in the box below. What is the leaf colour and size of tree?**

**Size**

|       |       |
|-------|-------|
| Tall  | Short |
| Small | Big   |

**Colours**

|        |        |
|--------|--------|
| Green  | Black  |
| Yellow | Orange |
| Red    | Blue   |
| Brown  | Pink   |
| Purple | White  |

**ii. What do people and animals do in country parks?**

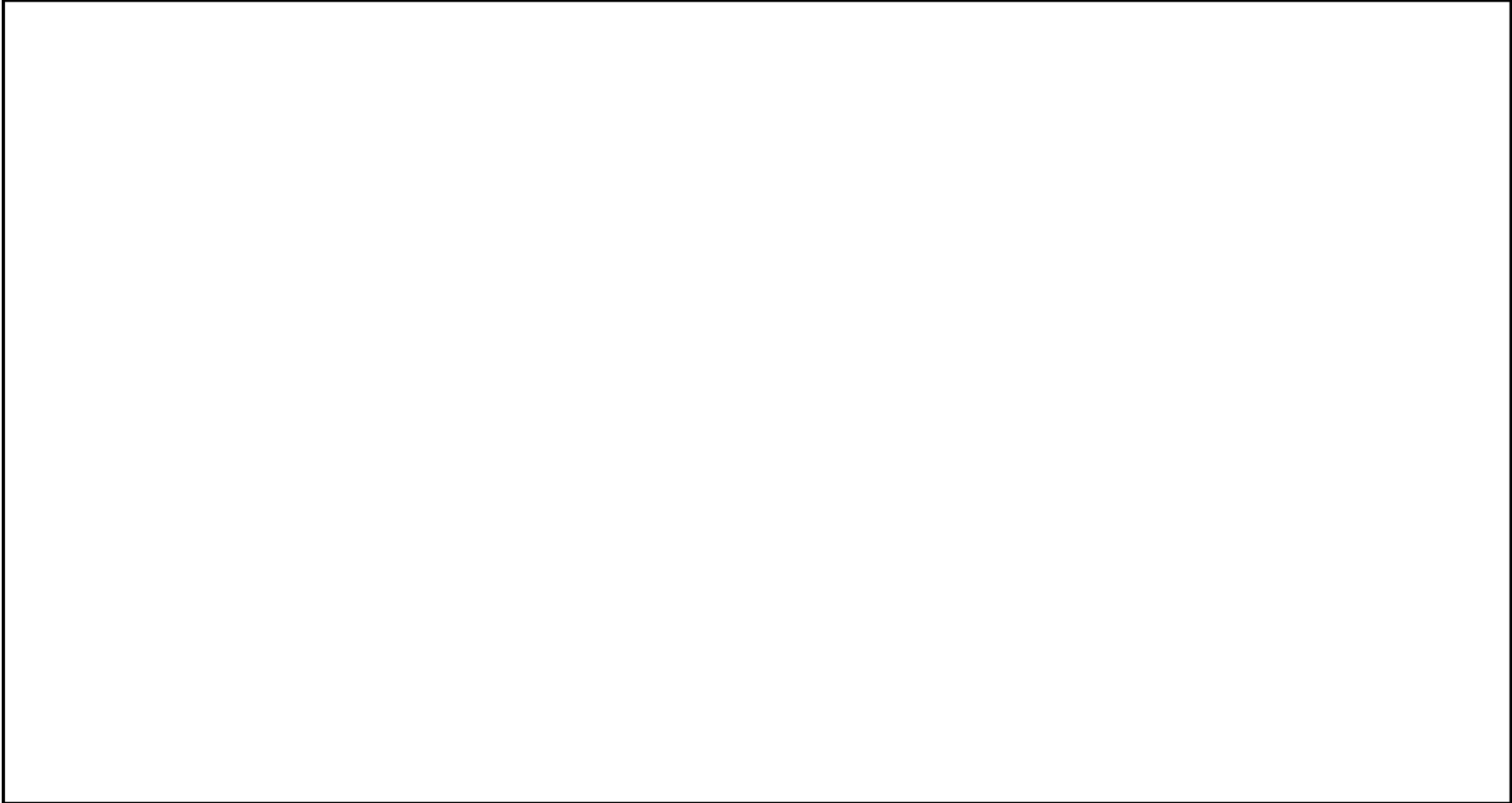
Eat      Sleep      Drink

Hike      Play      Learn

Take pictures      Rest      Sing

Fly      Climb      Walk

1. Imagine a **tree** which you may find in the country park and draw it in the box below.
2. What is the leaf colour and size of tree?
3. What animals do you find on or around the tree?
4. What do people and animals do in country parks?



**Worksheet B**

**A. Drawing and predicting:**

**i. Imagine a tree which you may find in country parks and draw it in the box below. What is the leaf colour and size of tree? What shape is the leaf?**

**Size**  
Tall Short  
Small Big

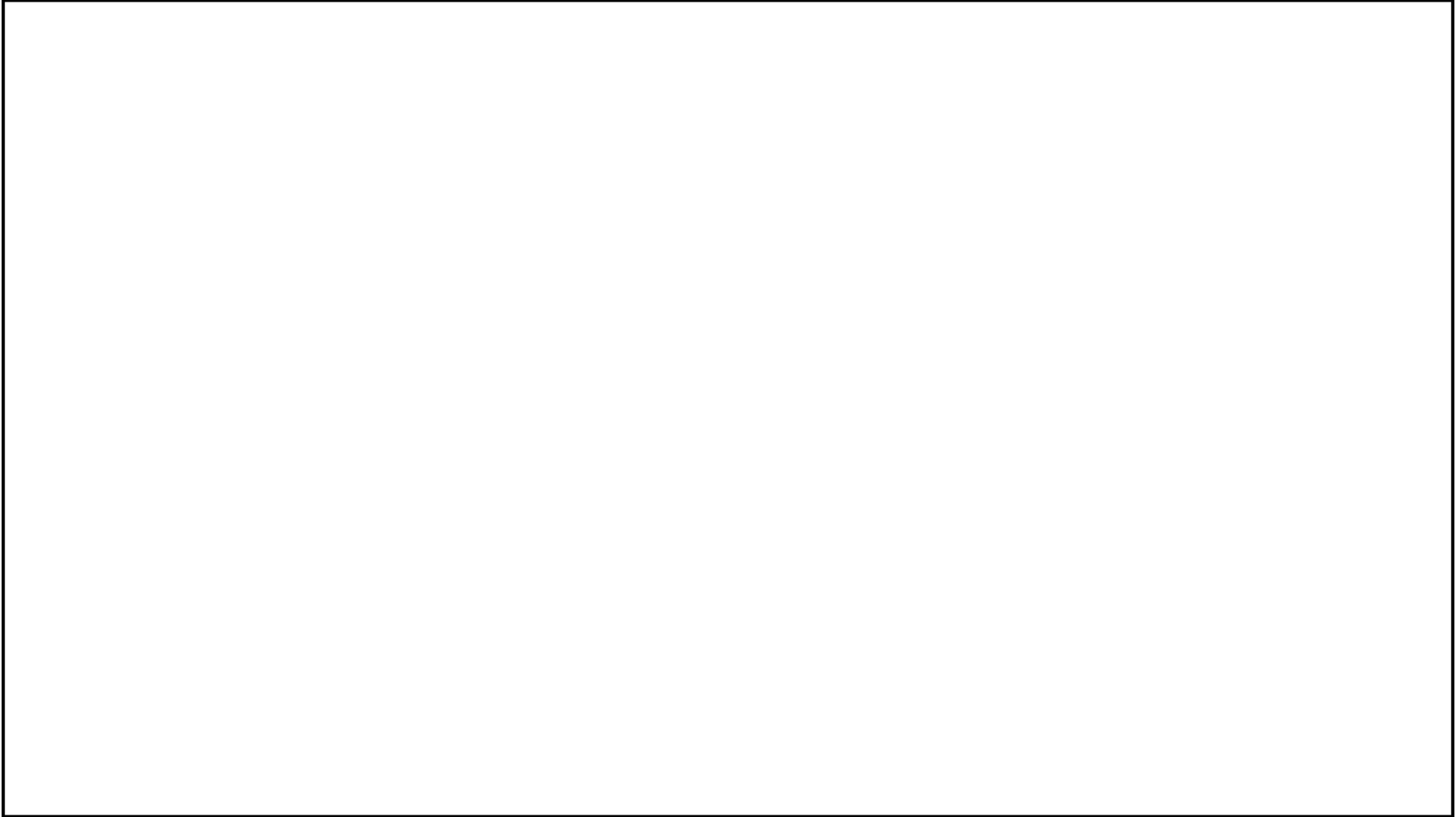
**Colours**  
Green Black Brown  
Blue Red Pink Purple  
White Yellow Orange

**Leaf shapes**  
Ovate Oblong Round  
Heart-shaped Hand-shaped

**ii. What do people and animals do in country park?**

Eat Sleep Drink   
Hike Play Learn   
Take pictures Rest Sing   
Fly Climb Walk

1. Imagine **a tree** which you may find in the country parks and draw it in the box below.
2. What is the leaf colour and size of tree? What shape is the leaf?
3. What animals do you find on or around the tree?
4. What do people and animals do in country parks?



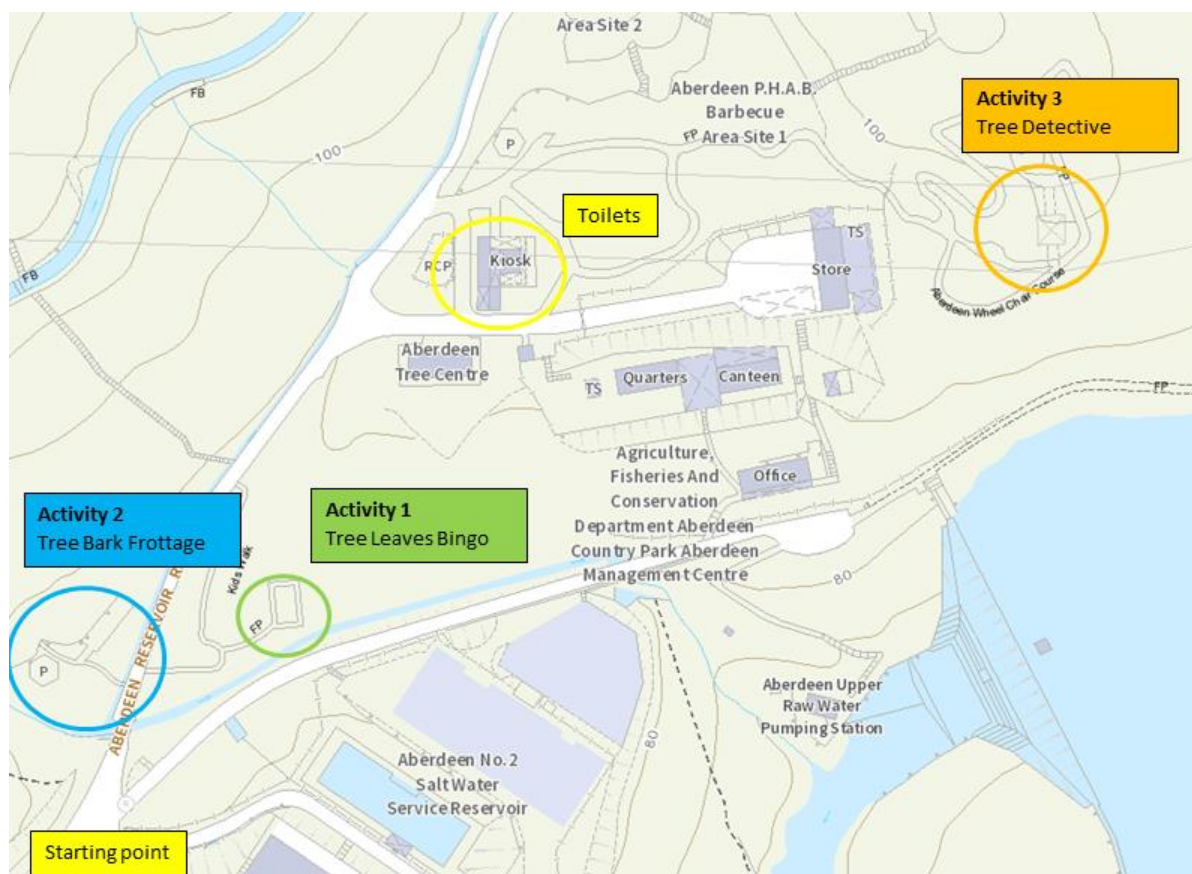
## 1.4 Safety tips and precautions

No matter what outdoor activities you do, safety should always be the top priority. Now please read the following safety tips and precautions carefully, and keep in mind the principle of “Safety First” during the field trip.

1. Follow the instructions of teachers. Running, yelling and leaving without permission are not allowed.
2. Wear appropriate clothing, such as light-coloured long-sleeved clothing and sneakers.
3. Avoid stepping on steep slopes or slippery rocks.
4. Cherish the natural environment and take your litter home.
5. Stay calm during an emergency and seek help from teachers.

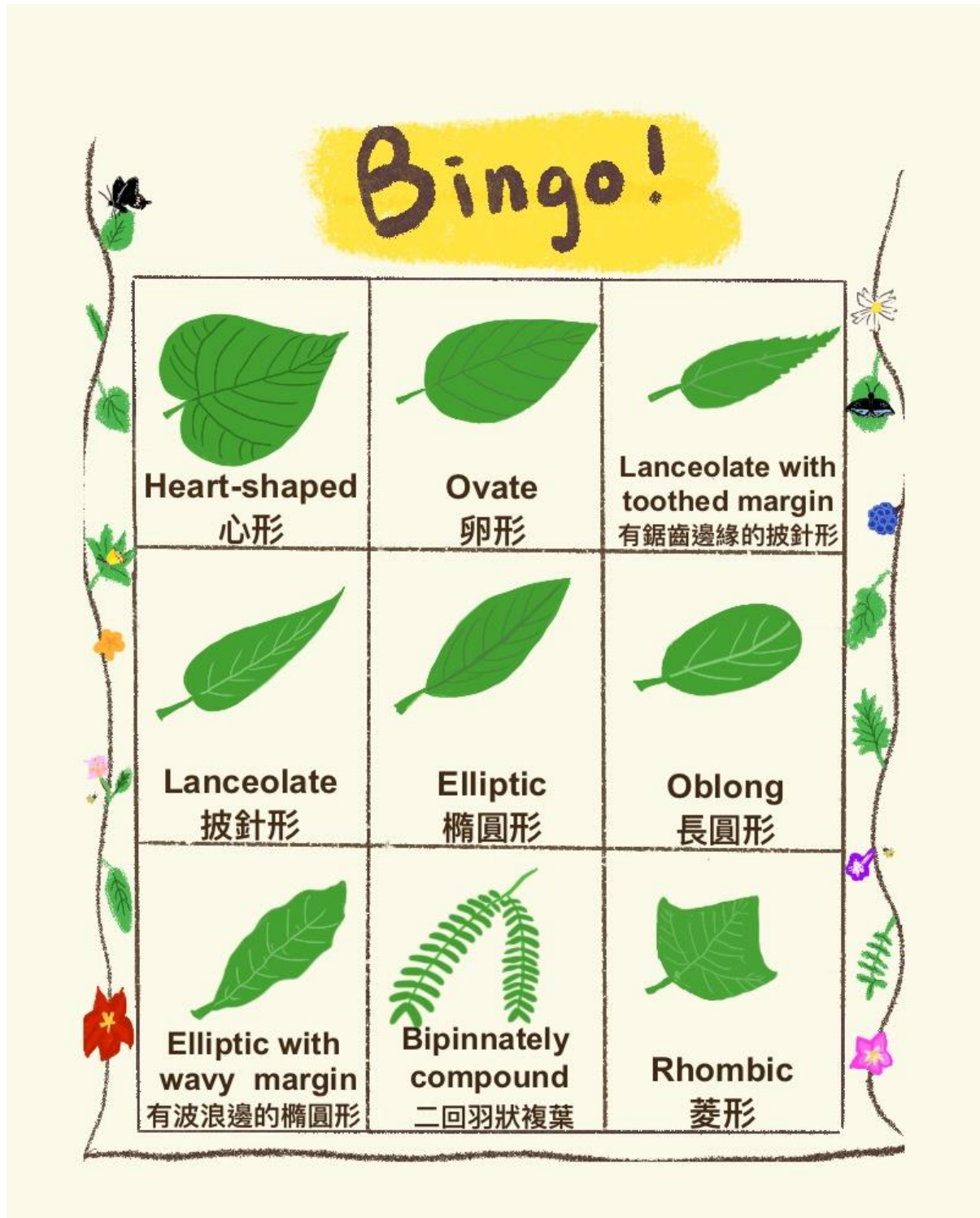


## 1.5 About Field Trip



## 2.1 Activity (1): Tree Leaves Bingo!

Welcome to the Kids Walk! You can find plants with different leaf shapes here. You can walk around and complete the bingo below. You can also make use of the plant's information sheet on p.15-16 for more information about the plants.




**Common plants in Kids Walk (On-site plants are subject to change)**




Chinese name: 九節,山大刀

English common name:  
**Wild Coffee**

Scientific name:  
***Psychotria asiatica* L.**

 Mar-Sep

 Jun-Feb


It is also known as a common shrub in Hong Kong. The scar-like patterns on the stem are obvious. It has leathery green leaves. Its leaves are elliptic with a smooth margin. It has a cluster of small green and white flowers. Red and orange fruits come out in the fruiting period.



Chinese name: 紅葉金花

English common name:  
**Red-leaved Mussaenda**

Scientific name:  
***Mussaenda erythrophylla*  
Schumach. & Thonn.**

 Jun-Aug

 --


It is a common shrub plant that is introduced to Hong Kong for ornamental use. It has ovate leaves with an obvious red vein. Bright red calyxes and white flowers which bloom in summer can attract butterflies and other insects to visit.




Chinese name: 假馬鞭

English common name:  
**Jamaica Vervain**

Scientific name:  
***Stachytarpheta jamaicensis***

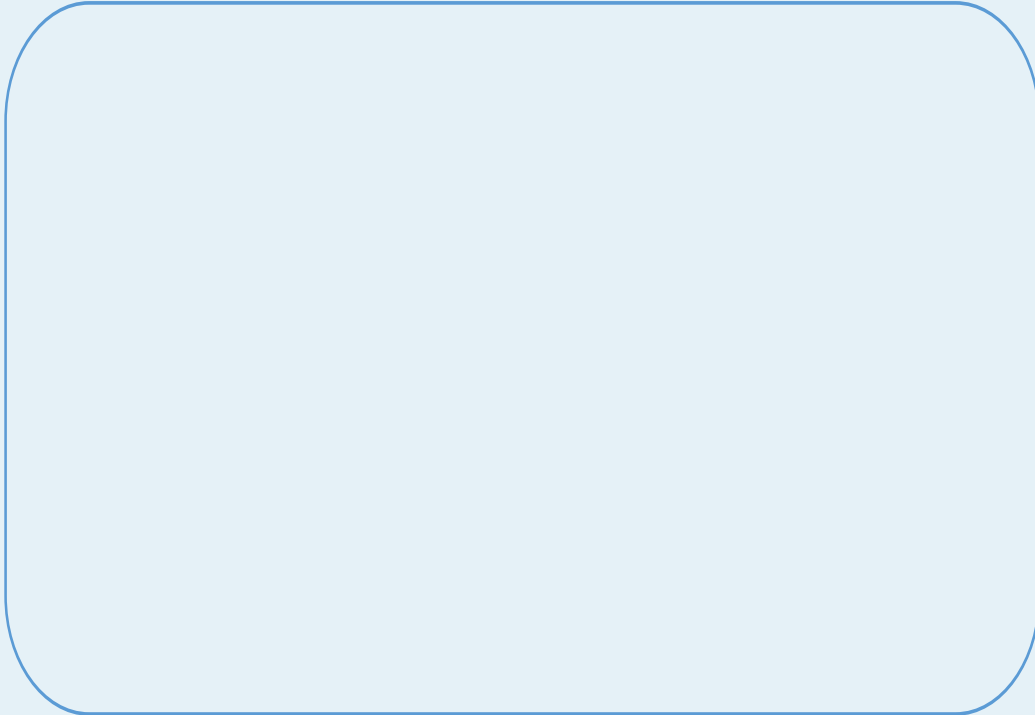
 Aug

 Sep-Oct

It is also known as “long spike shrub” because of its long and stringy spike. Apart from this, it has jagged leaves, and the shape of the leaves is like crumpled paper. It blooms with purplish blue flowers, which are attractive to a variety of butterflies.



**1. What is your favourite leaf shape? Please draw it below.**



**2. What shape is it? (Please tick your answer)**

|   |                                   |
|---|-----------------------------------|
| <input type="checkbox"/> Heart-shaped         | <input type="checkbox"/> Oblong   |
| <input type="checkbox"/> Ovate                | <input type="checkbox"/> Rhombic  |
| <input type="checkbox"/> Lanceolate           | <input type="checkbox"/> Elliptic |
| <input type="checkbox"/> Bipinnately compound |                                   |

**3. Which types of leaf margin does it have? (Please tick your answer(s))**

|                                 |                                  |
|---------------------------------|----------------------------------|
| <input type="checkbox"/> Smooth | <input type="checkbox"/> Toothed |
| <input type="checkbox"/> Wavy   |                                  |

**4. What colour is it?**

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## 2.2 Activity (2): Tree Bark Frottage

Check out your frottage and discuss with your groupmate, then answer the following questions:

You cannot see all the features of tree barks in your frottage. Try to observe and touch the tree barks. And examine the features about the tree barks. (Please tick your answer(s))

1. What is the texture of the first tree bark?

|                                    |                                   |
|------------------------------------|-----------------------------------|
| <input type="checkbox"/> Smooth 光滑 | <input type="checkbox"/> Rough 粗糙 |
|------------------------------------|-----------------------------------|

2. What is the pattern of the first tree bark?

|  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> Scaly 鱗片狀               | <input type="checkbox"/> With dots 點狀 |
| <input type="checkbox"/> With vertical stripe 直紋 |                                       |







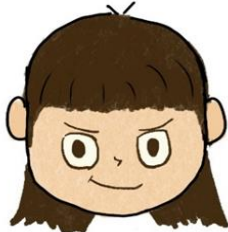

3. What is the texture of the second tree bark?

|                                    |                                   |
|------------------------------------|-----------------------------------|
| <input type="checkbox"/> Smooth 光滑 | <input type="checkbox"/> Rough 粗糙 |
|------------------------------------|-----------------------------------|

4. What is the pattern of the second tree bark?

|  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> Scaly 鱗片狀               | <input type="checkbox"/> With dots 點狀 |
| <input type="checkbox"/> With vertical stripe 直紋 |                                       |

How do you feel when you touch the trees? Please tick the boxes below, you may choose more than one.

|   |  |
|---|--|
|  <p><b>Calm 平靜</b></p>     |  <p><b>Worried 擔心</b></p>    |
|  <p><b>Happy 開心</b></p>    |  <p><b>Scared 害怕</b></p>     |
|  <p><b>Excited 興奮</b></p> |  <p><b>Surprised 驚奇</b></p> |
|  <p><b>Brave 勇敢</b></p>  |  <p><b>Sad 不開心</b></p>     |

2. Why did you feel so?

**I feel**

**because**

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## 2.2 Activity (3): Tree Detective

According to the set of leaves your group has found,

1. What is / are the colours of the leaves? (Please  your answers)

|                                       |                                 |
|---------------------------------------|---------------------------------|
| <input type="checkbox"/> Red          | <input type="checkbox"/> Yellow |
| <input type="checkbox"/> Brown        | <input type="checkbox"/> Black  |
| <input type="checkbox"/> Green        | <input type="checkbox"/> Orange |
| <input type="checkbox"/> Other: _____ |                                 |

2. What is / are the textures of the leaves? (Please  your answers)

|                                       |                                  |
|---------------------------------------|----------------------------------|
| <input type="checkbox"/> Soft         | <input type="checkbox"/> Smooth  |
| <input type="checkbox"/> Rough        | <input type="checkbox"/> Fragile |
| <input type="checkbox"/> Other: _____ |                                  |





3. Look up the trees! Can you compare the leaves on trees and fallen leaves? (Please circle your answers)

Leaves that firmly attached to the branches absorbs sunlight, take in carbon dioxide and receive water and nutrients from trees in the process of photosynthesis with green pigment called chlorophyll. Therefore, most of the leaves on trees are green / brown and more durable / fragile compared to fallen leaves.

4. Do you remember Freddie? What makes him happy in life? Share your thoughts to your classmate

### 3.1 Types of plants: herbs, shrubs, trees and climbers

Plants can be categorised into herbs, shrubs, trees, and climbers. Check out the following part and see the features of different types of plant.

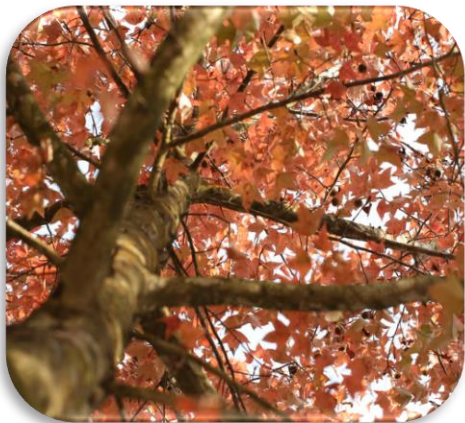
| A. Herbs   | B. Shrubs   |
|--|---|
| <p data-bbox="400 660 572 694">Mint 廣防風</p>  | <p data-bbox="951 660 1219 694">Rose Myrtle 桃金娘</p>  |
| <ul data-bbox="256 1249 663 1348" style="list-style-type: none"> <li>• Short-sized with few branches</li> </ul>                | <ul data-bbox="842 1279 1214 1317" style="list-style-type: none"> <li>• Shorter than trees</li> </ul>                                   |
|   |   |
| <ul data-bbox="256 1910 580 1948" style="list-style-type: none"> <li>• With soft stems</li> </ul>                              | <ul data-bbox="842 1877 1321 1989" style="list-style-type: none"> <li>• With multiple bushy and woody stems</li> </ul>                  |

## C. Trees

Sweet Gum 楓香



- Taller than shrubs



- With a main thick and woody trunk

## D. Climbers

Birdwood's Mucuna 白花油麻藤



- With long stems



- Need nearby plants to support its growth

## 3.2 Flowering and non-flowering plants

Plants can also be categorised into flowering and non-flowering plants. Check out the following part and see the differences between flowering and non-flowering plants.

### A. Flowering plants



Lantana 馬纓丹



Rose Myrtle 桃金娘

### B. Non-flowering plants



Maidenhair Fern 鐵線蕨



Chinese Red Pine 馬尾松

Flowers of flowering plants attract pollinators, including insects, birds and small mammals, to help with pollen spreading.

Non-flowering plants such as ferns and pine trees do not have flowers.

They produce spores and cones to produce new offspring.

## 3.3 Pollinators

Pollinators are not only limited to bees and butterflies. Here are some other examples:



Wasp Moth



Ladybug



Blow Fly

### *Extended Knowledge*



The smell and look of flowers attract pollinators, for example, moths, beetles, birds and bats. When they are feeding on the flowers, pollens stick on their body. These pollinators keep spreading pollens from one to other flowers. This process helps plants to reproduce.





**Note**

Can you identify different types of plants? Please tick the correct answer.

| Plant A: Camel's Foot 首冠藤   | Types of plant  |
|---|---|
|   | <ul style="list-style-type: none"><li><input type="checkbox"/> Herbs</li><li><input type="checkbox"/> Shrubs</li><li><input type="checkbox"/> Trees</li><li><input type="checkbox"/> Climbers</li></ul> |
|  <p data-bbox="268 1568 853 1653">Features: long and thin stem, climb on nearby object</p> | <ul style="list-style-type: none"><li><input type="checkbox"/> Flowering plants</li><li><input type="checkbox"/> Non-flowering plants</li></ul>   |

**Note**

**Plant B: Levine's Syzygium 山蒲桃**



Features: with a main trunk, a cluster of yellow and white flowers

**Types of plant**

- Herbs
  - Shrubs
  - Trees
  - Climbers
- 
- Flowering plants
  - Non-flowering plants