

## **Background Information for Teachers**

Information on Learning Journeys Organisation

<b>Name of organisation</b>	<ul style="list-style-type: none"><li>• National Parks Board (NParks)</li></ul>
<b>When was the organisation founded?</b>	<ul style="list-style-type: none"><li>• 1990</li></ul>
<b>Learning Objectives stated by the organisation</b>	<ul style="list-style-type: none"><li>• Combining the visual delights and rich biodiversity of our parks, gardens &amp; nature reserve with thoughtfully planned recreational activities, NParks facilitates visitors' communion with Nature</li></ul>
<b>What is the purpose of the organisation?</b>	<ul style="list-style-type: none"><li>• NParks conserves, creates, sustains and enhances the green infrastructure of our City in a Garden.</li><li>• Responsible for providing and enhancing the greenery of Singapore</li><li>• NParks also monitors and co-ordinates measures to ensure the health of Singapore's biodiversity.</li></ul>
<b>What is the mission and vision of the organisation?</b>	<ul style="list-style-type: none"><li>• Mission: To create the best living environment through excellent greenery and recreation, in partnership with the community.</li><li>• Vision: Let's make Singapore our Garden</li></ul>
<b>How is the organisation so important to Singapore?</b>	<ul style="list-style-type: none"><li>• The organisation is important as National Parks Board (NParks) is responsible for providing and enhancing the greenery of the City in the Garden.</li><li>• Beyond green infrastructure, NParks is committed to enhancing the quality of life through creating memorable recreational experiences and lifestyles.</li><li>• NParks manages over 300 parks and 4 nature reserves. Adding to this is the extensive streetscape, or roadside greenery, that forms the backbone of our City in a Garden.</li><li>• An island-wide Park Connector Network is also being developed to link major parks and residential areas.</li><li>• As Singapore's scientific authority on nature conservation, NParks monitors and coordinates measures to ensure the health of Singapore's biodiversity.</li><li>• This supports the overall thrust of our urban biodiversity conservation model, which aims to conserve representative eco-systems in land-scarce Singapore for future generations.</li><li>• NParks is also the lead agency in the efforts to continually upgrade the Landscape Industry in Singapore.</li><li>• It works closely with industry partners to</li></ul>

promote good work practices and create a thriving, innovative and professional industry that will support Singapore's aspirations of being a City in the Garden.

**What are the NE messages / NE learning journey objectives that can be highlighted through this learning journey?**

**NE Messages:-**

- Cultivate a sense of ownership for the environment where Singapore is our homeland, this is where we belong.
- Cultivate a sense of nationalism and pride in the students where we have confidence in our future.

**Learning Objectives.**

- Provide students with relevant knowledge on the importance of natural heritage in Singapore.
- Instil a sense of connection on how changes from the past influence our present.
- Understanding Singapore: Its constraints, Challenges and Opportunities that with the ever changing landscape, our natural history might disappear if no one spreads word of it

**In what ways can the learning journey be relevant to students? (This can related to both personal experiences and curriculum matters)**

The visit can be tied with:  
Primary 4-6 Science  
Secondary 1-4 Geography

<b>Theme:</b>	Learning Journeys
<b>Name of Activity:</b>	A Walk on the Canopy
<b>Venue/s:</b>	MacRitchie TreeTop Walk
<b>Duration:</b>	1.5 – 2 hrs
<b>Level/s:</b>	Primary 4-6, Secondary 1-4
<b>Pre-requisite/s</b>	Nil

**Introduction:**

During the learning journey, students will gain an insight of Singapore’s tropical rainforest at MacRitchie. One will get to see the different levels of the tropical rainforest that has almost been left undisturbed. At the same time, you can catch sight of some of Singapore's natural heritage of indigenous flora and fauna. Given the rich variety of animals and plants found here, students can interact with nature and enhance their knowledge and interests in them. At the same time, they will also learn about the importance of conserving our natural heritage and develop a sense of commitment and ownership of the nature reserves and greenery.

**Objectives of this Learning Journey:**

1. Students will have fun as they walk and appreciate and at the same time learn about nature.
2. Students will learn about the tropical rainforests in Singapore.
3. Students will gain greater awareness of the biodiversity of flora and fauna and enhance their knowledge and interests in the various species that exist in one of Singapore’s parks.
4. Students will learn about the importance of conserving our natural heritage, develop a sense of commitment and ownership of the parks and green, and to protect our home and rich history

**National Education Message:**

- The importance of national defence where Singapore is our homeland and we must ourselves defend Singapore as no one else will defend her for us.
- This is tied in with the need to protect the natural heritage of Singapore as well because it will be lost if we do not protect them.

**Approaches**

**Programmes/Activities:**

- Students will go on a learning journey to MacRitchie TreeTop Walk.
- Guides assisted by teachers from the school, will lead and direct students in making various observations on the flora and fauna that exist here at MacRitchie TreeTop Walk. This will allow students to learn more about the nature and flora and fauna to meet the above objectives.
- Students will complete worksheets and take primary data (e.g. note taking and photographing) of all information which is required for the completion of an assignment or project.

**Deployment:**

- Guides will do a live commentary on the visit to MacRitchie TreeTop Walk.
- School teachers are deployed to assist and also to help monitor and discipline students on site.

**Assessment and Review:**

- Students will complete the worksheets and activities individually or as a group.

- Students will be debriefed after the learning journey.
- As a post-activity, students will complete a reflection on their learning journey.
- Students will complete a feedback form.
- Students will complete an assignment or project based on their learning journey.

Lesson	Outline of Lesson	Period/s	Resources	Remarks
<b>Lesson Structure: Pre-Lesson Journey</b>				
Lesson 1 Introduction	<p>Students will be introduced to nature reserves in Singapore.</p> <p><b><u>Worksheet Activity</u></b></p> <ul style="list-style-type: none"> <li>Students are to conduct an online research on nature reserves and answer the questions on nature reserves.</li> </ul> <p><b><u>Briefing on Learning Journey to MacRitchie TreeTop Walk</u></b></p> <ul style="list-style-type: none"> <li>Students are given a briefing on the scenario and learning journey objective.</li> </ul>	30mins	Annex 1a	<ul style="list-style-type: none"> <li>To enable students find out about the nature reserves in Singapore.</li> <li>To enable students to learn more about nature reserves in Singapore.</li> <li>To prepare students and to provide information on the park that they will be visiting.</li> </ul>
Development	<p><b><u>Exploration of the features in MacRitchie TreeTop Walk</u></b></p> <ul style="list-style-type: none"> <li>Students are divided into pairs/groups to research on MacRitchie TreeTop Walk.</li> </ul> <p><b><u>Discussion Questions</u></b></p> <ul style="list-style-type: none"> <li>Each pair/group will work on the question and pen down their answers in the worksheet provided.</li> </ul>	20 mins	Annex 1	<ul style="list-style-type: none"> <li>To enable students to have prior knowledge on MacRitchie TreeTop Walk before going on their learning journey.</li> <li>To motivate the students to learn and have a sense of ownership in their learning.</li> <li>To incorporate the elements of cooperative and collaborative learning.</li> </ul>
Closure	<p><b><u>Reflections</u></b></p> <ul style="list-style-type: none"> <li>Students to share their thoughts and reflections on MacRitchie TreeTop Walk.</li> </ul>	10 mins		<ul style="list-style-type: none"> <li>To sum up students' learning on MacRitchie TreeTop Walk.</li> </ul>

Lesson Structure: During Learning Journey				
Lesson 2 Introduction	<p><b><u>MacRitchie TreeTop Walk</u></b></p> <ul style="list-style-type: none"> <li>Students will read the factsheet on MacRitchie TreeTop Walk before commencing on their learning journey.</li> </ul>	10 mins	Annex 2	<ul style="list-style-type: none"> <li>To enable the students to know more about the MacRitchie TreeTop Walk and what they can expect to see during the learning journey.</li> </ul>
Development	<p><b><u>Breakup Session</u></b></p> <ul style="list-style-type: none"> <li>Students are divided into different groups with the guides to explore the different features and areas.</li> <li>Teachers are to ensure that students ask the guides the relevant questions which are found in the worksheets.</li> </ul>	2 periods (60 mins)	Annex 3 , 4 and 4a	<ul style="list-style-type: none"> <li>To enable students to explore MacRitchie TreeTop Walk.</li> </ul>
Closure	<p><b><u>Reflection</u></b></p> <ul style="list-style-type: none"> <li>Teachers to get students to share their thoughts on the visit.</li> </ul>	20 mins		<ul style="list-style-type: none"> <li>To sum up students' learning at MacRitchie TreeTop Walk.</li> <li>To allow students to evaluate how their group works.</li> </ul>
Lesson Structure: Post Learning Journey				
Lesson 3 Introduction	<p><b><u>After the visit</u></b></p> <ul style="list-style-type: none"> <li>Students are to form into groups of 4-5 and discuss and reflect on what they have learnt.</li> <li>Students are to discuss this using their post-visit reflection worksheet found in Annex 5.</li> </ul>	1 period (30 mins)	Annex 5 (Post-visit Reflection)	<ul style="list-style-type: none"> <li>To allow students to sum up what they have learnt.</li> </ul>
Development	<p><b><u>Task</u></b></p> <ul style="list-style-type: none"> <li>Each group is read the task in Annex 6 and submit the poster on MacRitchie TreeTop Walk.</li> <li>Rubrics for the submission of the poster can be found</li> </ul>	4 periods (120 mins)	Annex 6 (Task) Annex 7 (Rubrics)	<ul style="list-style-type: none"> <li>To consolidate students' learning through the completion of the allocated task.</li> </ul>

	in Annex 7.			
Closure	<p><b><u>Class Activity</u></b></p> <ul style="list-style-type: none"> <li>Teachers are to go through the worksheet answers with students.</li> </ul>	1 period (30 mins)	Annex 8(Answers)	<ul style="list-style-type: none"> <li>To sum up students' learning.</li> </ul>

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**Annex 1a**

1. What is a 'nature reserve'?
  - Nature reserve is a natural area protected by law for the conservation and preservation of native flora and fauna. In the case of Singapore, the nature reserves are protected by the Parks7 Trees Act 2005.
  
2. List down 2 similarities and 2 differences between a nature reserve and a park near your home.
  - Similarities: Recreational activities can be conducted in both a park and a nature reserve. You can see both flora and fauna in a park and nature reserve
  - Differences: A nature reserve has greater diversity of animals than a park. A nature reserve contains a greater biodiversity of flora and fauna.
  
3. Do you think that the Central Catchment Nature Reserve is important? Give a reason for your answer.
  - Yes. This is because the Central Catchment Nature Reserve is home to our native flora and fauna. If it is destroyed, our natural heritage will disappear together.

**Annex 3**

**Some Common Plants**

- Coconut palms, cordylines, rattan, spikes, kampong

**Greater Racket-tailed Drongos**

Why do you think these birds stay close to the monkeys?

- By doing so, they cleverly pick up insects and other titbits that are stirred up when the monkeys rustle the vegetation.

**Fishtail Palms**

Explain why this is so.

- It may be an important plant in rehabilitating degraded secondary forests in conjunction with other plantings and introductions of frugivores such as the common palm civets to aid in dispersal.

**Logs**

Explain the role of the fungi play in the rainforest ecosystem.

- They help to break down dead plant matter and return the organic matter back to the forest floor.

**Interesting plant species**

List down some facts about the following plants.

<p>Simpoh Air (<i>Dillenia suffruticosa</i>)</p> <p>Answer: Fruits are eaten by birds. The yellow flowers start to open at 3am and drop off towards the end of the day. Its flowers are pollinated only by carpenter bees.</p>	<p>Mahang Plant (<i>Macaranga bancana</i>)</p> <p>Answer: The Mahang plant has a symbiotic relationship with a species of ants. The plant produces sweet secretions as food and provides shelter in its hollow stems for these ants. The ants will in turn protect the</p>	<p>Elephant Ear Tree (<i>Macaranga gigantea</i>)</p> <p>Answer: Its distinctive leaves are as huge as an elephant's ears. Its fruits are food for birds.</p>
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	plant from caterpillar attack.	
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### Long-tailed Macaques

Observe their movements and behaviours in their natural habitat and record your findings in the boxes below.

Movements	Behaviour
Accept any possible answer.	Accept any possible answer.

Why is it important not to feed the macaques?

- This would disrupt their feeding pattern and adversely alter their behaviour.

### Annex 4

#### TreeTop Walk

List down some information about the suspension bridge and how it was constructed in a sustainable way.

- Answer: ???

Different layers of the forest

What are the different layers of the forest?

- Emergent, Canopy, Tree, Shrub and ground layers

What are the kinds of trees that are found towering over the canopy?

- Answer: Medang (*Litsea elliptica*) and Pulai (*Alstonia angustiloba*)

### Annex 4a

#### A Nature Haven at the TreeTop Walk

##### Rusty Oil Fruit

- Orange, fruits

##### Cheng Tng Tree

- Seed, fibres

##### Birds

- 100, mimicker

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