

Background Information for Teachers

Information on Learning Journeys Organisation

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

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 3-6 Science

Theme:	Learning Journeys
Name of Activity:	MacRitchie Guided walk
Venue/s:	MacRitchie Reservoir Park
Duration:	1-1.5hrs
Level/s:	Primary 3-6
Pre-requisite/s	Nil

Introduction:

During the learning journey, students will learn about the importance of MacRitchie Reservoir Park in Singapore. Students will also find out about the important role of rainforests and the changes that the surrounding area has undergone in the last 100 years. Today, although MacRitchie is covered mainly with secondary forest tree species, it still nurtures some of the last precious patches of primary rainforests in Singapore. Student get to interact with the forest vegetation and enhance their knowledge and interests in the biodiversity of flora and fauna found in Singapore. 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 forests and greenery.

Objectives of this Learning Journey:

1. Students will have fun as they walk and appreciate and at the same time learn about Singapore's natural heritage.
2. Students will be aware of the importance of forests and the role they play in Singapore.
3. Students will gain greater awareness on Singapore's natural heritage and enhance their knowledge and interests in the various species of flora and fauna that exists in Singapore
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 Reservoir Park.
- Guides assisted by teachers from the school, will lead and direct students in making various observations on the natural heritage and the flora and fauna that exist here at MacRitchie Reservoir Park. This will allow students to learn more about the natural vegetation 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 Reservoir Park.
- 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
Lesson Structure: Pre-Lesson Journey				
Lesson 1 Introduction	<p>Students will be introduced to plants and trees found in Singapore.</p> <p><u>Worksheet Activity</u></p> <ul style="list-style-type: none"> Students are to work on the questions on nature useful plants and trees, and fragrant plants. They are to pen down their answers in the worksheet provided. <p><u>Briefing on Learning Journey to MacRitchie Reservoir Park</u></p> <ul style="list-style-type: none"> Students are given a briefing on the scenario and learning journey objective. 	40mins	Annex 1a and 1b	<ul style="list-style-type: none"> To enable students know more about plants and trees. To enable students to learn more about the uses of plants and trees and their fragrance. To prepare students and to provide information on the park that they will be visiting.
Development	<p><u>Exploration of the features in</u></p> <ul style="list-style-type: none"> Students are divided into pairs/groups to research on MacRitchie Reservoir Park. <p><u>Discussion Questions</u></p> <ul style="list-style-type: none"> Each pair/group will work on the questions and pen down their answers in the worksheet provided. 	20 mins	Annex 1c	<ul style="list-style-type: none"> To enable students to have prior knowledge on MacRitchie Reservoir Park before going on their learning journey. To motivate the students to learn and have a sense of ownership in their learning. To incorporate the elements of cooperative and collaborative learning.
Closure	<p><u>Reflections</u></p> <ul style="list-style-type: none"> Students to share their thoughts and reflections on MacRitchie Reservoir Park. 	10 mins		<ul style="list-style-type: none"> To sum up students' learning on MacRitchie Reservoir Park.

Lesson Structure: During Learning Journey				
Lesson 2 Introduction	<p><u>Bukit Timah Nature Reserve</u></p> <ul style="list-style-type: none"> Students will read the factsheet on MacRitchie Reservoir Park before commencing on their learning journey. 	10 mins	Annex 2	<ul style="list-style-type: none"> To enable the students to know more about the MacRitchie Reservoir Park and what they can expect to see during the learning journey.
Development	<p><u>Breakup Session</u></p> <ul style="list-style-type: none"> Students are divided into different groups with the guides to explore the different features and areas. Teachers are to ensure that students ask the guides the relevant questions which are found in the worksheets. 	3 periods (90 mins)	Annex 3a-3d	<ul style="list-style-type: none"> To enable students to explore MacRitchie Reservoir Park.
Closure	<p><u>Reflection</u></p> <ul style="list-style-type: none"> Teachers to get students to share their thoughts on the visit. 	20 mins		<ul style="list-style-type: none"> To sum up students' learning at MacRitchie Reservoir Park To allow students to evaluate how their group works.
Lesson Structure: Post Learning Journey				
Lesson 3 Introduction	<p><u>After the visit</u></p> <ul style="list-style-type: none"> Students are to form into groups of 4-5 and complete the Discussion Questions. <p><u>Post Reflection</u></p> <ul style="list-style-type: none"> Students are to discuss and reflect on what they have learnt in their groups. Students are to discuss this using their post-visit reflection worksheet found in Annex 6. 	2 periods (60 mins)	Annex 4 (Post-visit Discussion Questions) Annex 5 (Post-visit Reflection)	<ul style="list-style-type: none"> To allow students to sum up what they have learnt.

Development	<p>Task</p> <ul style="list-style-type: none"> • Each group is read the task and submit the poster on encouraging students in the school to do their part to protect the rainforests in MacRitchie. • Rubrics for the submission of the poster can be found in Annex 7. 	4 period (120 mins)	Annex 6 (Task) Annex 7 (Rubrics)	<ul style="list-style-type: none"> • To consolidate students' learning through the completion of the allocated task.
Closure	<p>Class Activity</p> <ul style="list-style-type: none"> • Teachers are to go through the worksheet answers with students. 	1 period (30 mins)	Annex 8 (Answers)	<ul style="list-style-type: none"> • To sum up students' learning.

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Annex 1a and 1b

- Accept any reasonable answers.

Annex 1c

- It resulted from an increase in demand for water in the mid-19th century, which grew beyond the capacity of ox-drawn water carts.

Annex 3b

- Singapore Rhododendron – Poh Chai Pills
- Rubber Tree – Furniture and packing crates
- Ant Plant – Food
- Tembusu – Anti-Bacterial
- Nibong Palm – Spikes
- Leaf Litter Plant – Taller
- Petai – Garlic
- Chestnut Tree – Oak
- Cheng Tng Tree – Nutritious
- Lianas – Detrimental

Annex 3c

E.g. Green Crested Lizard

Describe the species:

- Slender body with small and bumpy scales
- Spiny crest on the back of its neck
- A very long tail
- Generally a plain bright bluish green
- Has a dark ring around the eyes, and dark brown patch on the ears and the tip of the tail

Where is this species usually found:

- Very well camouflaged among the green vegetation where it may perch motionless
- Found in bushes and trees usually in forested areas and inland wild places

One amazing fact about this species:

- Eats insects such as beetles, flies and ants
- Mother lizard lays 1-4 large, spindle-shaped eggs which are buried in the soil

A photograph or drawing of the species:



Annex 3d

- Buttress Roots – Prevent
- Licuala Palm – Wedge-shaped
- Calophyllum Tree – Anti-AIDS
- Butterfly Climber – Mirror
- Wild Ixora – Attracts
- Chemperai Tree - False

Annex 4

- Dragonflies and Damselflies: Dragonflies and damselflies are extremely sensitive to polluted water and are able to thrive only in clean water. At the same time, the dragonfly and damselfly nymphs feed on mosquito larvae in the water. To help conserve the survival of these insects, it is crucial that we avoid polluting the water with our litter or releasing animals into the water.
- Red Leaves: It is actually a sun shielding mechanism. The red pigments protect leaves from light damage by directly shielding the more delicate chlorophyll molecules. By acting as antioxidants, they protect the plant from permanent damage. These non-green pigments serve a number of other functions. They assist in the photosynthesis process. Studies also indicate that the red colour of young leaves in some tropical trees wards off animals that might eat them. Upon maturity, these leaves rapidly turn green.