

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 4-6 Science
Secondary 1-4 Geography

Theme:	Learning Journeys
Name of Activity:	Secondary Forest Habitat in Bukit Batok Nature Park
Venue/s:	Bukit Batok Nature Park
Duration:	1.5 – 2 hrs
Level/s:	Primary 4-6, Secondary 1-4
Pre-requisite/s	Nil

Introduction:

During the learning journey, students will gain an insight of the secondary forest habitat in Bukit Batok Nature Park. Students will get to learn about the interesting plants and wildlife that can be found in an established secondary forest habitat. Furthermore, students will be able to appreciate the importance of forests in their daily lives. 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 parks 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 appreciate the important role played by forests 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 secondary forests.
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 Bukit Batok Nature Park.
- 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 Bukit Batok Nature Park. 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 Bukit Batok Nature 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 useful plants and trees in their school garden.</p> <p><u>Worksheet Activity</u></p> <ul style="list-style-type: none"> Students are answer the questions on the useful plants and trees in their school garden. <p><u>Briefing on Learning Journey to Bukit Batok Nature Park</u></p> <ul style="list-style-type: none"> Students are given a briefing on the scenario and learning journey objective. 	30mins	Annex 1a	<ul style="list-style-type: none"> To enable students find out about useful plants and trees in their school garden. To enable students to learn more about useful plants and trees in their school garden. To prepare students and to provide information on the park that they will be visiting.
Development	<p><u>Exploration of the features in Bukit Batok Nature Park</u></p> <ul style="list-style-type: none"> Students are divided into pairs/groups to research on Bukit Batok Nature Park. <p><u>Discussion Questions</u></p> <ul style="list-style-type: none"> Each pair/group will work on the question and pen down their answers in the worksheet provided. 	20 mins	Annex 1	<ul style="list-style-type: none"> To enable students to have prior knowledge on Bukit Batok Nature 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 Bukit Batok Nature Park. 	10 mins		<ul style="list-style-type: none"> To sum up students' learning on Bukit Batok Nature Park.

Lesson Structure: During Learning Journey				
Lesson 2 Introduction	<u>Bukit Batok Nature Park</u> <ul style="list-style-type: none"> Students will read the factsheet on Bukit Batok Nature 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 Bukit Batok Nature Park and what they can expect to see during the learning journey.
Development	<u>Breakup Session</u> <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. 	2 periods (60 mins)	Annex 3 , 3a, 4	<ul style="list-style-type: none"> To enable students to explore Bukit Batok Nature Park.
Closure	<u>Reflection</u> <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 Bukit Batok Nature Park. To allow students to evaluate how their group works.
Lesson Structure: Post Learning Journey				
Lesson 3 Introduction	<u>After the visit</u> <ul style="list-style-type: none"> Students are to form into groups of 4-5 and discuss and reflect on what they have learnt. Students are to discuss this using their post-visit reflection worksheet found in Annex 5. 	1 period (30 mins)	Annex 5 (Post-visit Reflection)	<ul style="list-style-type: none"> To allow students to sum up what they have learnt.
Development	<u>Task</u> <ul style="list-style-type: none"> Each group is read the task in Annex 6 and submit the poster on Bukit Batok Nature Park. Rubrics for the submission of the poster can be found 	4 periods (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.

	in Annex 7.			
Closure	<p><u>Class Activity</u></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 3a

Flora found at Bukit Batok Nature Park

Curtain Fig (*Ficus microcarpa*)

- Brown, wasp

Simpoh Air (*Dillenia suffruticosa*)

- Bees, hisses, arils

Some uses of the Simpoh Air

- The large leaves of the Simpoh Air were used to wrap food such as fermented soyabean cakes (tempeh).
 - The large leaves are also formed into shallow cones to contain traditional food like rojak.
 - The Simpoh Air sends out very deep tap roots to reach underground water sources. So much so that their presence suggests an underground water source, and some people use the plant as a guide to decide where to dig a well.
 - Simpoh Air is used to staunch bleeding wounds as part of traditional medicinal uses.
 - The fruit pulp may be used to wash the hair (Brunei)
- The timber is not useful because it is twisted and very hard.

Tembusu Tree

- Adverse, bridges

Durian Tree

- Bats, odour, fragrant

Rambutan

- Hair, red

Some uses of the Rambutan tree

- The rambutan fruit is eaten raw, made into jams or is cooked.
- The seeds are sometimes roasted and eaten.
- The Malays use a decoction of the roots to treat fever.
- It is also used in relieving diarrhoea.
- The leaves are used as poultices to relieve headaches.
- Young shoots are used to dye yellow silk to green.

Breadfruit

Some uses of the Breadfruit tree

- In Hawaii and some Polynesian islands, being fat was beautiful, therefore, princesses were fed huge amounts of food such as breadfruit which were high in fat and carbohydrate.
- In Asia, breadfruit is usually treated as a vegetable and picked before ripe for use in cooking, the flesh is often cut into chunks and par-boiled before being added to coconut milk and other seasonings to make a curry-like dish.
- Breadfruit can also cut into very thin slices for deep-frying and flavoured with salt, chilli powder or sugar syrup.
- The seeds of the breadnut may also be boiled in salt water and served as a snack.
- In the Bahamas, a decoction of the breadfruit leaf is believed to lower blood pressure, and is also said to relieve asthma.

- Ashes of burned leaves are used on skin infections.
- Toasted flowers of the breadfruit tree are also rubbed on the gums as a remedy for an aching tooth.
- Some countries also use the tree for ornamental purposes as its dark green leaves provide good shade.

Mango

Some uses of the Mango Tree

- In Thailand, a premium dessert, known as *kao niow ma-muang*, is prepared by mixing fresh mango slices in sweet sticky rice and coconut cream.
- The mango is often preserved in syrup and canned.
- Mangoes are traditionally preserved as pickles and chutneys or cut into strips and dried in the sun.
- In India, it is commonly believed that mango chutneys act as a diuretic and help promote appetite.
- The mango peel is kept as a by-product as it produces pectin which is essential for setting jellies and jams.
- Mango flowers are occasionally used to treat diarrhoea in India.
- In China and Malaya the bitter seed is said to have astringent properties, and is used as a vermifuge.
- In Singapore, it is customary to see a string of mango leaves adorning the entrance of Indian homes. This practice serves to remind the families of their ancestors agrarian roots.

Yellow Stem Fig (Ficus fistulosa)

- Trunk, yellow

Tree Ferns and Elephant ferns

- Evolved

Annex 3c

War Memorial at Bukit Batok

- Japanese

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