

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 natural heritage and biodiversity found in Singapore.
- Learn that Sungei Buloh functions as an important site for birds and other wildlife especially in the East Asian Migratory flyway. (Conservation)
- Exposed to the natural sciences with a local context, through the natural and diverse interest within the reserve. (Education)
- Provides an alternative form of recreation to encourage an appreciation of the beauty and diversity of wildlife. (Recreation)
- To contribute to ornithology and biological knowledge regionally and internationally. (Research)
- Understanding Singapore: Its constraints, Challenges and Opportunities that with the ever changing landscape, our heritage 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:
 Secondary 1-2 Geography
 Secondary 3-4 Social Studies
 (Topic on 'Governance' and 'Globalisation')

Theme:	Learning Journeys
Name of Activity:	Mangrove Mania in Sungei Buloh Wetland Reserve
Venue/s:	Sungei Buloh Wetland Reserve
Duration:	1.5 – 2 hours
Level/s:	Secondary 1-4
Pre-requisite/s	Nil

Introduction:

During the learning journey, students will learn about the importance of Sungei Buloh Wetland Reserve as an important site for migratory birds and other wildlife. Students will learn about the success of the government in sustaining a wetland reserve like Sungei Buloh. With a biodiversity of rich flora and fauna that the wetland reserve has to offer, students will get to interact with the birds, wildlife and the flora in the mangroves. 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 learn about nature.
2. Students will gain a greater appreciation and understanding of nature and importance of biodiversity and get to enhance their knowledge and interests in the mangrove and the various species of flora and fauna that exist in Singapore.
3. 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.
4. Students will learn about the history and creation of Garden City and know more about Singapore's vision and planning for the City in a Garden.
5. Students will also learn how the National Parks Board balances nature with the physical environment and recognise the important principles of governance in policy formulation and implementation and recognise that policies are changed to meet the changing needs of the society and nation.

National Education Message:

- Singapore is our homeland and this is where we belong.
- 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:

- The students will go on a learning journey to Sungei Buloh Wetland Reserve.
- Guides, assisted by teachers, will lead and direct students in making various observations on natural heritage, birds and wildlife found in Sungei Buloh.
- This will allow students to learn more about the importance of Sungei Buloh to meet the above learning objectives.
- Students will complete worksheets and take primary data (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 Sungei Buloh Wetland Reserve.
- 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.

	<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. <p><u>Newspaper Article</u></p> <ul style="list-style-type: none"> Students to complete the reading of the newspaper article on Sungei Buloh 		Annex 2 Annex 3	<p>learn and have a sense of ownership in their learning.</p> <ul style="list-style-type: none"> 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 on Sungei Buloh based on the video they have watched and the newspaper article that they have read. 	15 mins		<ul style="list-style-type: none"> To sum up students' learning on Sungei Buloh.
Lesson Structure: During Learning Journey				
Lesson 2 Introduction	<p><u>Sungei Buloh Wetland Reserve</u></p> <ul style="list-style-type: none"> Learning Journey will be more fruitful if it is conducted during "low tide". Refer to NEA website http://app2.nea.gov.sg/tidetime.aspx or call Sungei Buloh for information. Students to view the Mangrove Forest Exhibition as a precursor to their tour. Teacher to provide students with the Mangrove Flora and Mangrove Fauna Checklists and Information Sheets which can be downloaded from the given website. 	30 mins	http://www.NParks.gov.sg/cms/index.php?option=com_content&view=article&id=193&Itemid=174	<ul style="list-style-type: none"> To enable the students to know more about the mangroves 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 of the wetland reserve. Teachers are to ensure that students ask the guides the relevant questions that are found in the worksheets. Some of the information can be found in the exhibition display boards in Sungei Buloh. 	3 periods (90 mins)	Annex 5	<ul style="list-style-type: none"> To enable students to explore Sungei Buloh.

Closure	<p>Reflections</p> <ul style="list-style-type: none"> Teachers to get students to share their thoughts on Sungei Buloh. 	15 mins		<ul style="list-style-type: none"> To sum up students' learning at Sungei Buloh. To enable students to reflect on the achievements of NParks and their possible involvement in making the nature reserve a better place. To allow students to evaluate how their group works.
Lesson Structure: Post Learning Journey				
Lesson 3 Introduction	<p>After the visit</p> <ul style="list-style-type: none"> Students are to form into groups of 4-5 and discuss and reflect on what they have learnt. Discuss this using their post-visit reflection found in Annex 6. 	30 mins	Annex 6 (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 student OR each group is read the task and submit a report on the "Success of the Singapore's government efforts in maintaining a wetland nature reserve". The template of the written report can be found in Annex 8. Rubrics for the submission of the report can be found in Annex 9. 	1 period (30 mins)	Annex 7 (Task) Annex 8 (Template) Annex 9 (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. 	15 mins	Annex 9 (Answers)	<ul style="list-style-type: none"> To sum up students' learning.

What are the features of Governance?

- Leadership is Key.
- Reward for work, work for reward.
- Anticipating Change, Staying Relevant.
- Stake for everyone, Opportunity for all.

What is the meaning of Anticipating Change and Staying Relevant? And why is it important to Singapore?

- Meaning: To be prepared in anticipating future challenges for Singapore as well as to have a far-sighted view of the future in order to ensure the country remains competitive in a globalised world.
- It is important to Singapore because of our natural constraints such as resource as well as physical constraint such as land. The government needs to plan ahead in projects and have a vision for Singapore's future to maintain its economic and social stability.

In your opinion, how do you think our government decides on policies and implement them?

- Some policies are created because certain key issues have very high priority e.g. defence, education...
- Some policies are decided after careful considerations and weighing of the cost and benefits with the implementation of policies e.g. cost of transport, ERP gantry prices...
- Policies are discussed during Parliamentary sessions and representatives from different government agencies can voice out their concerns.

What is the concept of City in the Garden?

- To create, sustain and enhance the green infrastructure of our city. It is also to enhance the quality of life through the creation of memorable recreational experiences and lifestyles.

Who are NParks? What are their roles?

- NParks = National Parks Board.
- Responsible in managing 50 major parks and 4 nature reserves in Singapore. They also monitor and coordinate measures to ensure the health of Biodiversity in Singapore; their aim is also to conserve the eco-system in land scarce Singapore.

How much money does it take to maintain Sungei Buloh? What are the budget constraints?

- Rough estimate

What is BIODIVERSITY? Why is that important?

- Biodiversity is ecological diversity. Singapore is rich in mangroves and has a good coral ecosystem as well as a significant array of plants and animal species.
- It is important to maintain a good biodiversity index in a country to ensure a balance of the ecological system of a country.

Do you know that Sungei Buloh was destined to be a high tech farm.

What are the challenges of land-scarce Singapore?

- Land needs to be fully utilised (no wastage).
- Not enough resources to develop projects and hence the need for careful planning.
- Land used for a certain purpose needs to have returns (or Long-Term benefits).

Why do you think the Singapore government is willing to develop Sungei Buloh?

- To maintain Singapore's Biodiversity Index.
- To keep a part of Singapore's heritage.
- Sungei Buloh is part of the government's efforts in conservation.

What are the advantages of keeping Sungei Buloh?

- Keep certain areas of Singapore natural.
- Provide a place for the migratory bird season.
- Get Singaporeans to appreciate nature.
- Global movement of preserving Earth.

What are the disadvantages of keeping Sungei Buloh? E.g. Costs

- 130ha of land is "a lot of land".
- Land can be used to develop high tech farming - making food which will allow Singapore to be less dependent on neighbouring countries for food supply.
- Can Sungei Buloh sustain?

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