

Pre-School Educational Resources on Singapore, a City in a Garden, and its Biodiversity

Teachers' Training Workshop

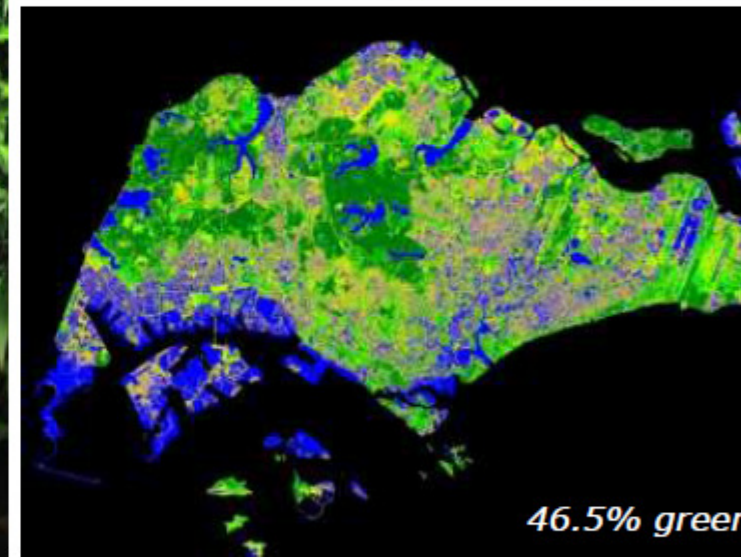
ECDA Conference, 26 Sept, Session D

Presented by: Ms Nicky Ng,
National Parks Board
Manager, Community Engagement



Vision – Given by our Founding Prime Minister Lee Kuan Yew

Singapore as a City in a Garden -
“Where people can live, work and play in a garden”



In a nutshell ...

- Provide and enhance the greenery of our City in a Garden
- Enhance quality of life through creating memorable recreational experiences and lifestyles
- Manage 4 nature reserves and 50 major parks, roadside greenery, island-wide Park Connector Network
- Scientific authority in nature conservation
- Monitor and coordinate measures to ensure the health of Singapore's biodiversity

Singapore is Home to

2,145 native vascular plants

64 mammal species

384 bird species

317 butterfly species

110 reptile species

28 amphibian species

125 dragonfly species

86 freshwater fish species



What do all the numbers mean?

- **There are more tree species in Bukit Timah Nature Reserve than the United Kingdom, or Canada, and possibly many other temperate countries.**
- **Our bird species is more than 60% of the species in UK or 75% of those found in France**



City Biodiversity Index

(Singapore Index)

- May 2008 – Initiated by Minister Mah Bow Tan at 9th Conference of Parties to the Convention on Biological Diversity (CBD) in Bonn, Germany
- Feb 2009 – Hosted 1st Expert Workshop on the Development of the City Biodiversity Index (CBI)
- Test-bedded by 7 cities (Curitiba, Joondalup, Edmonton, Brussels, Montreal, Nagoya and Singapore)
- Oct 2010 – Target for formal adoption at the 10th Conference of Parties to the Convention on Biological Diversity (COP-10) at Nagoya



Singapore– A City in a Garden Video

Agenda

1. Introduction to NParks and our City in a Garden vision
2. Introduction to Preschool Resources
3. Activities for a lesson plan
4. Presentation by other schools



Training objectives



At the end of this session, you will be able to:

1. Use the resource materials effectively for your lesson
2. Carry out at least 6 lessons using the preschool resource materials
3. Engage students in the flora and fauna of Singapore and encourage their participation during your lessons

INTRODUCTION

Pre-school Educational
Resources on “Our City in a
Garden” and its Biodiversity



Objectives

- 1) To provide every kindergarten in Singapore with a treasure chest of educational resources
- 2) Raise awareness of our City in a Garden
- 3) Encourage pre-school teachers to use local examples



Educational Resources for Pre-Schools

Educational resources for pre-schools which feature Our City in a Garden and its biodiversity



Posters



Picture Word Cards



Picture Book

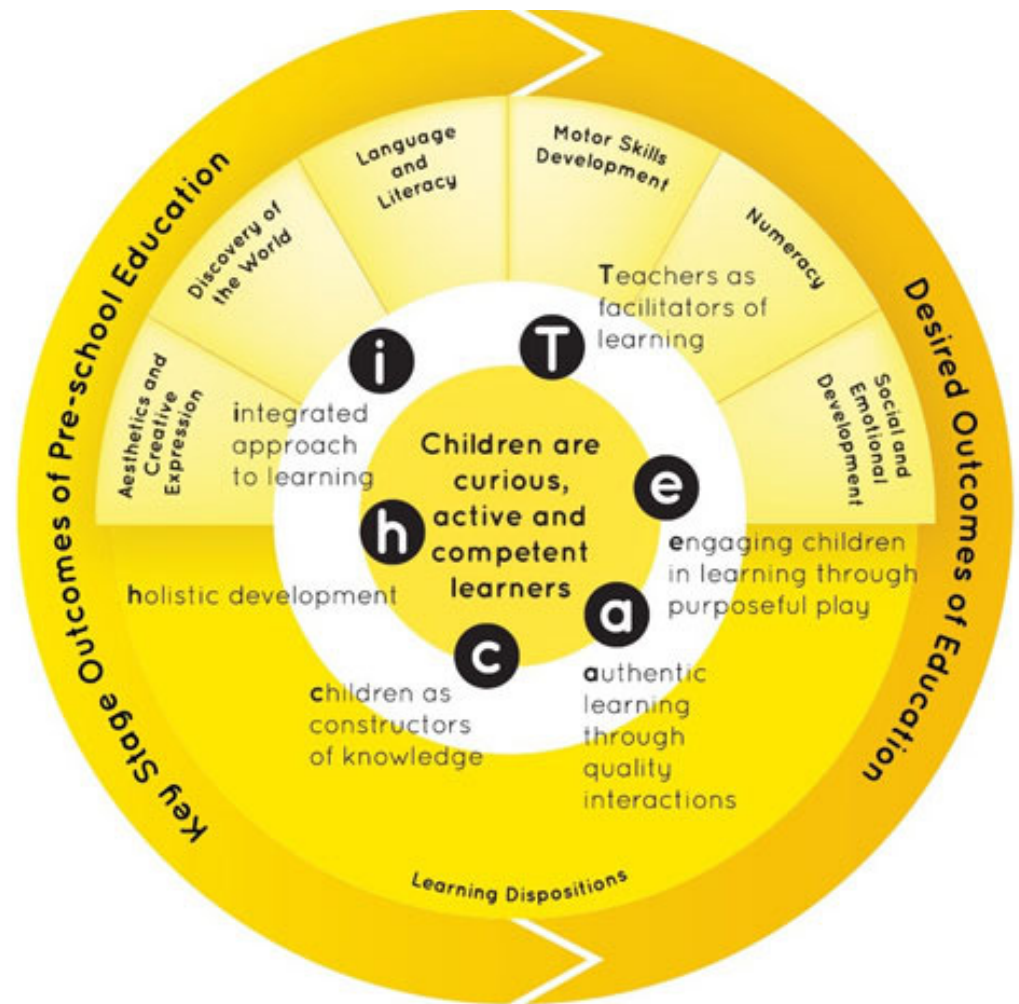


Videos



Educational Card Game

- Resources are In line with new kindergarten curriculum, the 6 learning areas in Nurturing Early Learners
- Launched during the Festival of Biodiversity on 27 June 2015
- Domains addressed: Discovery of the World (knowing the local ecosystem of flora and fauna), Language and Literacy (storybook, posters), Numeracy (posters).



New Kindergarten curriculum framework launched in Feb 2013, currently in testing phase with 5 MOE Kindergartens

Implementation

- All Kindergarten 1 & 2 preschoolers in Singapore (5-6 years old)
- Each pre-school receives two sets
- Supported by the Garden City Fund's Plant-A-Tree Programme (Education and Conservation) fund.



Testing Resources in Pre-schools

- Done during the creation of the resources, to ensure the resources were pitched at the right level
- First reading of the picture book done on 27 Jan 2015
- Full set of resources tested out in schools like Kinderland and My First Skool



Pilot Run in Pre-schools

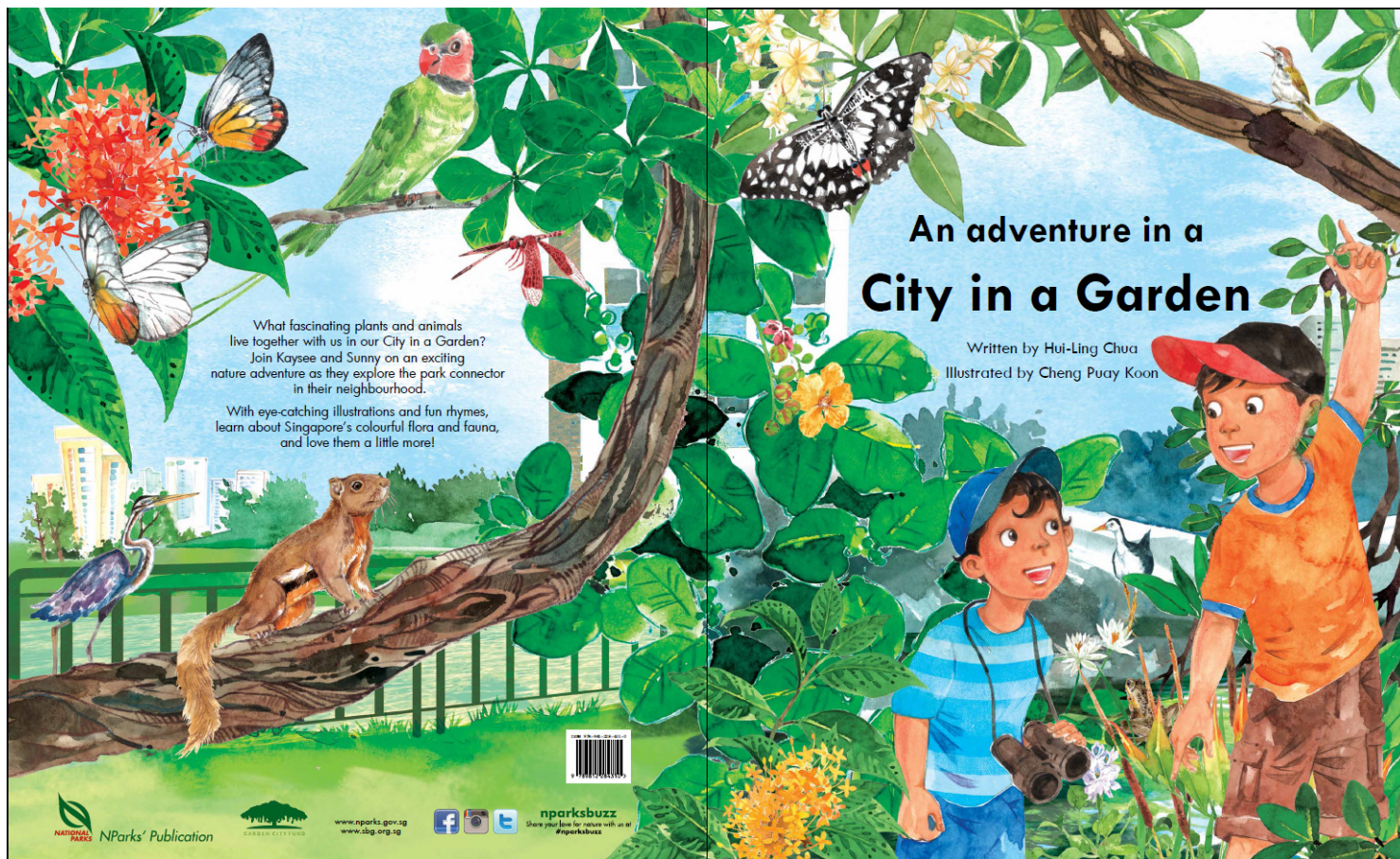
- Done after the creation of the resources, to allow teachers to try out the resources prior to the launch, and share their teaching ideas with us
- Participating Pre-schools:
 - 1) My First Skool
 - 2) [Sparkletots](#)
 - 3) Pegasus International Preschool
 - 4) [EtonHouse Vanda](#)

Picture Book

Title: An adventure in a City in a Garden

Author: Hui-Ling Chua

Illustrator: Cheng Puay Koon



Animals

in our City in a Garden



Fruits

in our City in a Garden



Banana



Breadfruit



Cempedak



Coconut



Custard Apple



Dragonfruit



Durian



Guava



Jackfruit



Jambu Ayer



Langsat



Lime



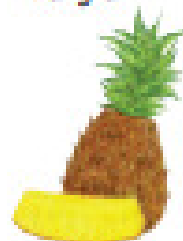
Mango



Mangosteek



Papaya



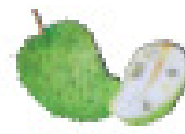
Pineapple



Pomelo



Rambutan



Soursop



Starfruit



Let's Count

in our City in a Garden

| | | | |
|------------|--|------------|---|
| 1 one |  | 6 six |  |
| 2 two |  | 7 seven |  |
| 3 three |  | 8 eight |  |
| 4 four |  | 9 nine |  |
| 5 five |  | 10 ten |  |



Flowers

in our City in a Garden



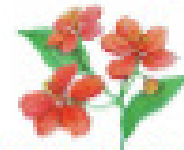
Bamboo Orchid



Bat Lily



Bougainvillea



Climbing Bauhinia



Frangipani



Heliconia



Hibiscus



Lipstick Plant



Malayan Ixora



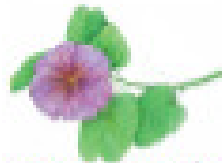
Orange Jasmine



Pigeon Orchid



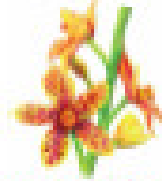
Pink Mempat



Sea Morning Glory



Tembusu



Tiger Orchid



Torch Ginger



Vanda Miss Joaquim



Water Snowflake



White Costus



Yellow Flame



Picture Word Cards

A Preschool Educational Resource on Singapore, a City in a Garden, and its Biodiversity



Fish Poison Tree



Common Parasol Dragonfly

Common Parasol Dragonfly

(*Neurothemis fluctuans*)

Group: Insects

Size:

Wingspan: 2.5 cm
Head-abdomen length: 3.5 cm

Habitat:

Freshwater habitats, gardens, parks, urban areas

Where to find it:

Most ponds in public parks around Singapore

Description:

Its body is reddish and its wings are almost entirely brownish red. The males have a brownish-red thorax and abdomen. The females are duller in colour and have clear wings.

Ecological roles:

The larvae feed on mosquito larvae and other small animals. Adult dragonflies feed on insects including mosquitoes.

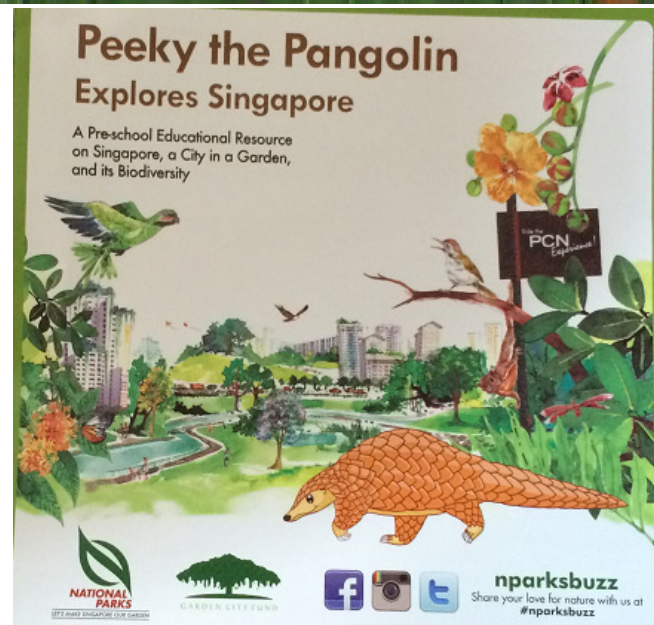
Fun Fact!

Dragonflies provide natural control of mosquito populations, and help to prevent mosquito-borne diseases such as dengue.





Educational Card Game



Videos

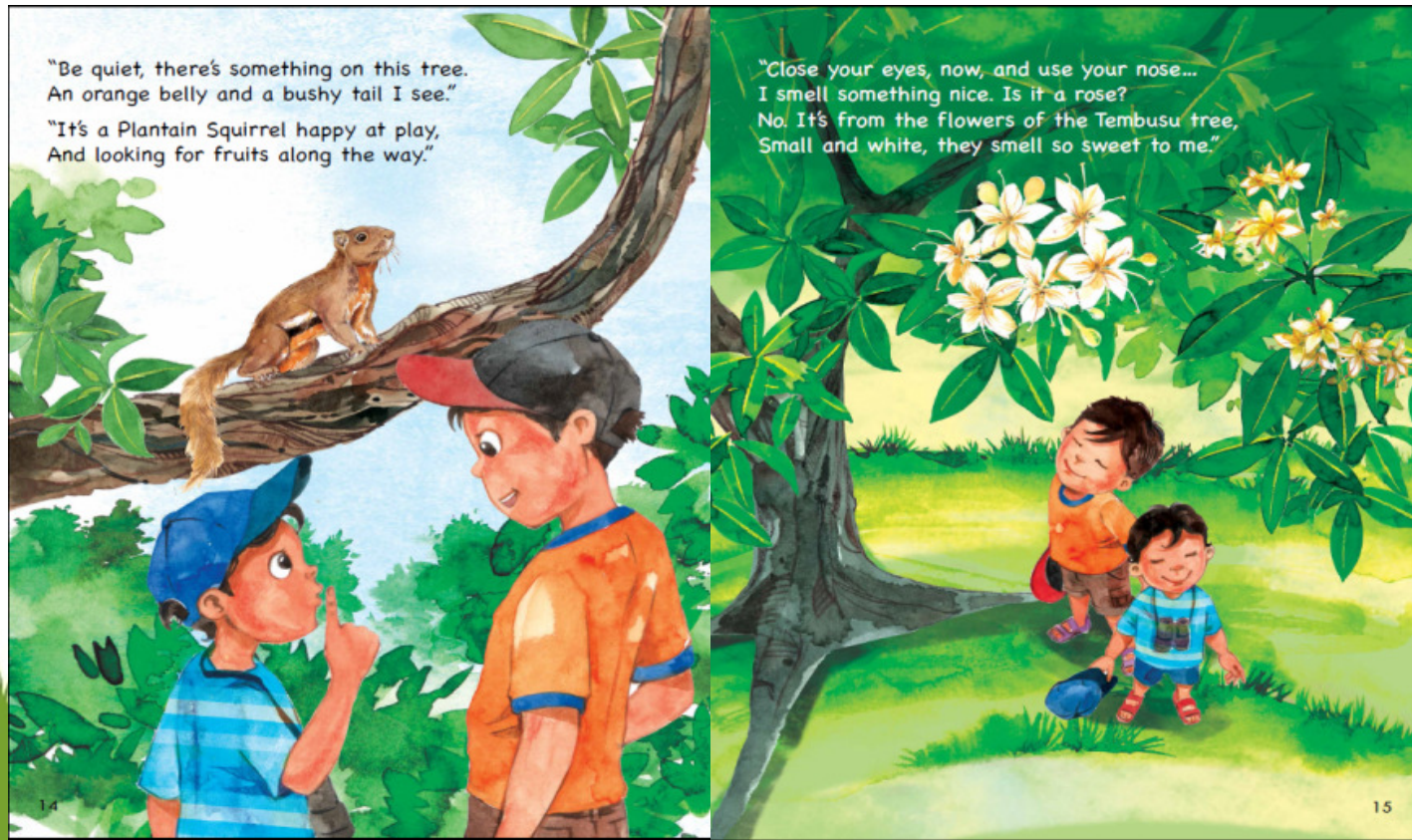
Picture Book

Title: [An adventure in a City in a Garden](#)

Synopsis: Kaysee and Sunny explore the Park Connector in their neighbourhood, and encounter biodiversity along the way.

Author: Hui-Ling Chua

Illustrator: Cheng Puay Koon



Teaching notes

Introduction to the Book

1. Read the 'Introduction to Our City in a Garden' to the children.
2. Ask the children if they can name some of the plants and animals that they have seen around Singapore.
3. List these plants and animals and ask the children to pay special attention during the story to see if they can find any of them.

Optional activity: Ask the children to look at the picture on the cover of the book. Divide them into small groups and have them choose a plant or an animal. Ask one group to come to the front of the class and describe what their plant or animal looks like, while the rest of the class guesses what they are describing. Rotate the groups until all the groups have taken a turn.



Reading and Re-reading the Story

1. Read the story once through, pacing deliberately for clear articulation, using varied tone of voice and rhythm to capture the children's interest and to stimulate their imagination. Do not pause to ask questions at this first reading.

2. After reading the story, ask the children if they can remember the plants and animals in the book.

3. Make a list of all the plants and animals that they can remember. Talk about the plants and animals briefly, basing the discussion on the children's level of interest and experience with them.

4. Read the story again, pointing at the words as you read. Slow down when you read the names of the plants and animals, and encourage the children to say them along with you.



Learning about the Different Plants and Animals

1. Go through the 'Biodiversity Featured in the Story' section with the children.
2. Highlight each plant and animal, drawing the children's attention to the photographs and the illustrations. Discuss the facts with the children.
3. If there are children who have had encounters with these animals, allow them to share about their experiences.

Reading Development

Comprehension

1. Ask questions to help the children with the understanding of the events in the story.

Questions may include:

- Why did Sunny not want to go out to explore?
- How do Cattails and Swamp Ferns help to keep the water clean?
- How do dragonflies keep the mosquitoes away?
- Why did the children put the caterpillar back on the tree?

2. Get the children to retell the sequence of the plants and animals Sunny and Kaysee encountered while exploring our City in a Garden.

Rhyming Words

1. Ask the children to look for pairs of words that sound alike, e.g. see and me, pair and there, seek and eek, it and sit, fro and go, grow and low, play and way, nose and rose, etc.

2. Read the story aloud again and slow down when reading the rhyming words to encourage the children to join in if they can.

3. Ask the children to give you pairs of rhyming words and together, make up silly sentences using these words.

Examples of such sentences may include:

What's on my head, I think it's a/an ?
What's in the box, I think it's a/an ?

Suggestions

- **Guess the next word:** Read the story to your students, and stop before a rhyming word to let your children guess the word that comes next. You can use this same strategy when reading predictable books, which repeat a familiar phrase throughout the story.
- **Rhyming around the house:** You can even rhyme around the house by saying the names of simple objects — such as chair, toy, or door — and letting your student think of rhyming words.
- This can help develop their phonemic awareness
- As students manipulate words and sounds to create simple rhymes, they become aware of word and letter patterns that will help them develop decoding skill



Reading Development

Onomatopoeia

1. An onomatopoeia is a word which imitates the natural sound of a thing (for the teacher's information only).
2. Find the words in the story that try to capture the sound of one of the animals featured (e.g. "cheep", "peep" or "squawk").
3. Ask the children to close their eyes and listen for sounds around them, and repeat the sounds as they hear them.
4. Try to spell these 'words' together as a class (e.g. the sound of a vehicle horn heard outside might be written as "pngor-pngor", or an engine idling at a traffic junction might sound like "chugga-chugga"). You can also spell the sounds of anything you hear in the classroom, such as chairs being pulled out or pushed in.



Create an Adventure in our City in a Garden

1. Take the children to explore a park or a park connector. You may also consider bringing paper and colour pencils for the children to sketch what they see.

2. Ask the children to look out for as many animals as possible, especially for the ones in the story. At suitable points, ask the children to close their eyes and listen for sounds, or to smell what is around and share what they see, hear and smell. Record these with cameras or sound technology to review them together in class.

3. Write to parents to encourage them to bring their children out often to explore the parks and park connectors in their neighbourhood, or in other parts of Singapore. Ask the family to record their explorations and discoveries in writing and/or with photographs. The children can use them to share about their experience with their friends in class.



Posters

- 1) Native Animals
- 2) Numbers Poster (Featuring Animals)
- 3) Flowers
- 4) Fruits



Suggestions

- When you first introduce the chart, you have to run through the items with them line by line. Subsequently, you can get them to name the flower/fruit or animal you are pointing to.
- A classification activity can also be done using the charts, record their observations on the board:
 - Fruits by number of seeds
 - Colour of skin of fruits/ flowers
 - Colour of flesh of fruits
 - On land/ in water
 - Animals by number of legs
- **The 'Name Game'**: Using only one chart, get a student to come up and pick his/her fav species on the chart. Write it at the back of the board/ paper and students can guess what the particular student has picked by asking questions based on the characteristics/ features of the item. Only 'yes/ no' answer is allowed. "Is the skin of the fruit green in colour?" "Is the fruit spiky?" "Is the animal standing on the tree branch?"
- The 'Let's Count' chart is suitable for the Nursery kids. With more practice, they can also name the animal followed by the number—numeracy
- For K1s, students can create their own animal number chart, fruit number chart etc.

Picture Word Cards

- Front: Picture of flora/fauna, with its name
- Back: Facts on the flora/fauna for the teacher
- Set of 30 cards ([animals](#) & [plants](#))



Front

Back

Suggestions

- Identification Activities: Reveal a certain part of the picture or cover the picture and describe the animal/ plant species using the info at the back of the card. Let students guess which one it is.
- Outdoors/ Motor skills development –Point or race to the flash cards: Stick flash cards around the playground/ on the floor with hula hoops. Say one of plant/ animal and students point or race to it. Students can then give the instructions to classmates.
 - For Nursery, you can extend this by saying "walk like a pangolin to the pangolin".
 - For K1/ K2, you can add on to the level of difficulty by saying "if you have long hair, swim to the forest fighting fish" etc.

Educational Card Game

- To be put in the play corner in the classroom
- A game for matching, and speed of visual and verbal responses. Skills required: accurate observation and quick reactions
- Snap: easy for pre-schoolers to play on their own, without teacher supervision
- [26 different cards](#) x 2



Front



Back

Variations

- This is suitable for about 4-8 players
- The dealer deals the cards to the players face up, one card to each player in turn, forming a face up pile in front of each player.

1. When the top cards of two piles match, the owners of those two piles must call the name of the animal.

OR

2. Each player chooses a different animal at the start of the game. When the top cards of two piles match, the owners of those two piles must call the name of the **other** player's animal.

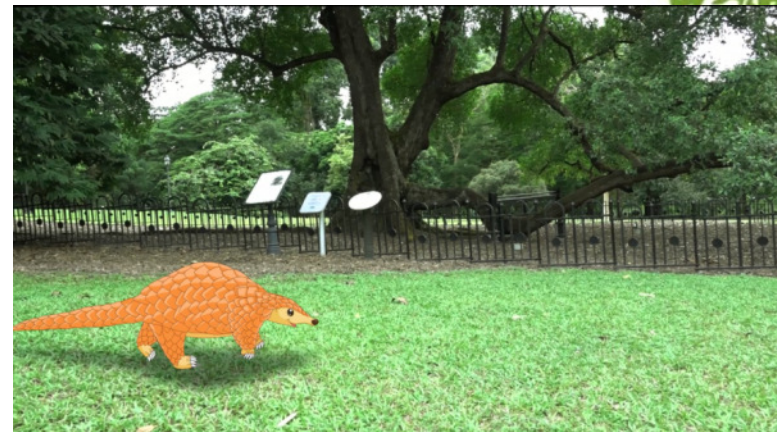
- The first to do so correctly wins the other player's pile and places it under their own.
- The winner is the player who has most cards when the deck runs out.

Videos

Peeky the Pangolin, acts a narrator for the videos.

Peeky will be an animation, against a background of real footage.

- 1) Peeky the Pangolin explores Singapore, a City in a Garden
- 2) Peeky the Pangolin explores Singapore's Trees
- 3) Peeky the Pangolin explores Singapore's Wildlife



Learning Goals for Language and Literacy



Key knowledge/ skills/ dispositions

- *Enjoy listening to stories and rhymes*
- *Talk about personal experiences with others (e.g. tell his/ her friends about an outing to a park)*
- *Ask simple questions (e.g. who, what, where etc)*
- *Respond appropriately to 'who what where' questions*
- *Have print and book awareness*
- *Recognise beginning and ending sounds in words (e.g. creating word families 'bat', 'mat' etc)*
- *Recognise familiar/ sight/ high frequency words*
- *Show understanding of the story by responding to questions and talking about the characters and events*

Meet a tree*

- A well known game for groups of at least two: one person is blindfolded and the other leads their partner into a park or nature area to meet a special tree.
- Encourage the blindfolded partner to explore the tree – what does it feel like? Is the bark rough or smooth? Get them to feel it with their hands and their cheeks. Are there other plants growing on the tree such as ferns? Can they put their arms around it? What does it smell like? How old do they think it is it?
- Feel all the way around the roots of the tree.
- Once the blindfolded partner has explored the tree, lead them back to where you started, take the blindfold off and now ask them to find their tree with their eyes open.
- Swap roles!
- <http://www.sharingnature.com/nature-activities/>



Peeky the Pangolin explores Singapore's Wildlife



Guided Walk

Useful links:

- <https://www.nparks.gov.sg/gardens-parks-and-nature/walks-and-tours/going-on-a-diy-walk>
- <https://www.nparks.gov.sg/learning/teaching-and-learning-resources>
- <https://www.nparks.gov.sg/learning/teaching-and-learning-resources/worksheets>

Questions to ask for recalling information:

- What do you remember about...in the book?
- What happened the last time we...?
- Can you name the ...?

Questions for directing attention:

- What do you see/ hear/ feel/ smell?
- What colours and patterns do you see on the wings of the butterfly?
- What is the texture of the fruit like? What is the texture of the leave? What does the shape of the tree look like?
- Why do you think the butterflies are hovering over the flowers? Why do you think they like the nectar? What if there are no more butterflies in the world?

Learning Journeys

Useful links:

- Activities for families: <https://www.nparks.gov.sg/activities/family-time-with-nature>
- Dairy Farm Nature Park: <https://www.nparks.gov.sg/activities/workshops-and-guided-walks/c-dairy-farm-nature-park>
- HortPark: <https://www.nparks.gov.sg/activities/workshops-and-guided-walks/c-hortpark-and-southern-ridges>
- Singapore Botanic Gardens (Jacob Ballas Children's Garden): <https://www.nparks.gov.sg/activities/workshops-and-guided-walks/c-singapore-botanic-gardens>

What does it mean for you?

- The educational resources have been delivered to all ECDA pre-schools in Jul 2015/ Aug 2015 except for 75 preschools.



- Let us know if you have been using the educational resources in class, and any feedback you have on them.
 - Nicky Ng, nicky_ng@nparks.gov.sg
 - Gina Leong: gina_leong@nparks.gov.sg

FAQs

Do I need to pay for the resources?

- No, this project is supported by the Garden City Fund's Plant-A-Tree Programme (Education and Conservation) fund.

What level are these resources targeted at?

- The resources were designed with K1 & K2 students in mind. But the schools that did the test-run with us also used the resources with their Nursery students, so it is ultimately up to your discretion, depending on the ability of your students.

FAQs

How many sets will I receive?

- Each pre-school receives two sets.

Can I purchase additional sets?

- We currently don't have plans to put this educational package on sale. However, should you be interested, please drop us an email. If there is sufficient demand, we will look into putting this package up for sale.
 - Nicky Ng, nicky_ng@nparks.gov.sg
 - Gina Leong: gina_leong@nparks.gov.sg

Sharing by *My First Skool*

Sharing by
PCF Sparkletots Preschool

Thank You



nparksbuzz

Share your love for nature with us at
#nparksbuzz

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