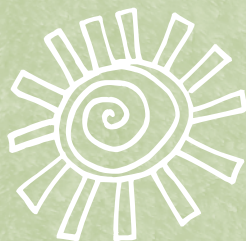


Community In Bloom Kidz

Teacher's Guide for Pre-School





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Foreword



The 'Community In Bloom' programme was launched in 2005 with the dual aims of nurturing a gardening culture and introducing gardening as a healthy hobby for everyone. NParks has since developed the 'Community In Bloom Schools' Programme, which aims to promote gardening among schools and help them develop innovative gardens that are both beautiful and educational. With the pre-schoolers in mind, the 'Community In Bloom Kidz' was set up to cater to this group of children.

This book contains gardening engaging activities that capture young children's attention and interests, value-add to the curricula and encourage self-directed learning. They are specially designed to turn gardening activities and nature appreciation into mini projects and your school garden into an outdoor classroom, where the young can develop care for our nature. Through the various activities, basic skills like science process skills, project management skills and teamwork, are introduced to them.

We hope that through these engaging gardening activities, your pre-schoolers will grow a love for gardening and be more involved in the school garden.

Wishing you and the young ones many hours of joy and learning as you garden your school!

We thank 'My First Skool' for their contribution to this teacher's guide.





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Aims of This Programme

This book aims to help you conduct engaging, creative gardening activities which are powerful in helping children learn:

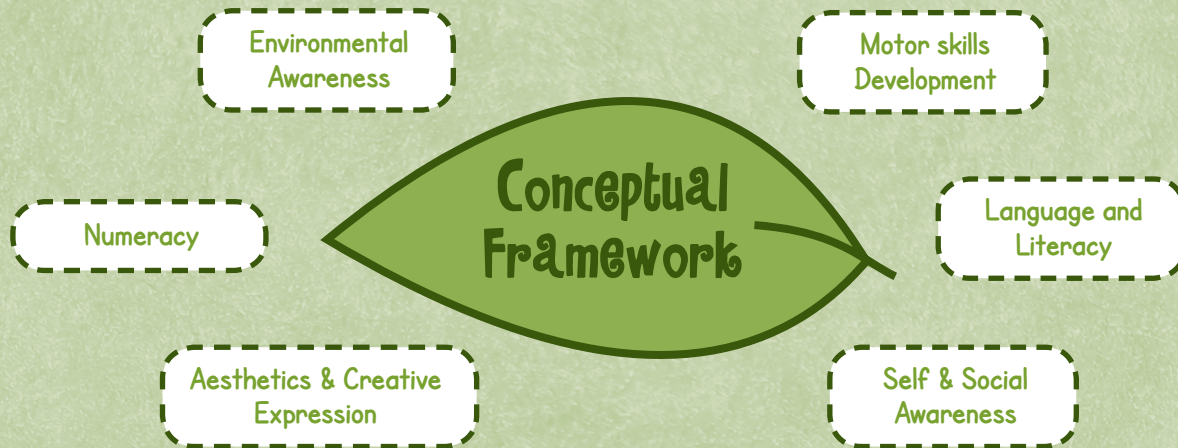
- * The wonder of living things
- * The importance of plants
- * Basic ecological principles
- * Respect for life and care for the environment
- * About the biodiversity of living things in Singapore
- * Basic gardening knowhow



Highlights



Kindergarten Curriculum Conceptual Framework



How to Start?



1. **Choose activities** that suit your learning objectives and schedule.
2. **Plan** the Scheme of Work using Annex 2 (page 36) and summary of activities (pages 6 and 7).
3. **Read** the lesson plan, make preparations and get the materials. Tips on conducting CIB Kidz activities can be found on page 4.
4. **Recce** (conduct a reconnaissance) the school grounds or nearby park to decide where to conduct each activity. Do not select an area too near a road or car park as this is unsafe. The garden should not be too near classrooms as children might be noisy and affect others. Check if the area has Fire/Kerranga ants (which can give painful bites) or any other potentially dangerous animals (bees, wasps, etc).

5. **Conduct it.** Demonstrate and guide children as they carry out the activities.
6. Help pupils **think about their experiences and reflect** what they had learnt by asking questions, getting them to express themselves in drawing, acting or writing (where most appropriate). Some suggested questions and conclusion points are included in each lesson plan.



Tips on Conducting CIB Kidz Activities

1. **Duration of activity** The recommended duration of each activity is given in the summary table. This does not include time moving to and from the garden or toilet time before the activity.

2. **Safety** These are some things to be aware of:

- ✿ Lightning – Stop all outdoor activities if there is lightning around your preschool. Check the weather forecast if the sky around your centre is dark and likely to rain. You could:
 - Visit the NEA website www.weather.gov.sg
 - Phone the Lightning Advisory number at 62826821
- ✿ Hygiene – Get children to wash their hands thoroughly after each activity, especially after handling plant parts and soil.
- ✿ Check the area for potentially “dangerous” animals like fire ants, bees, wasps, centipedes. Get children to be aware of these animals as they carry out the activity.
- ✿ Sap from plants can cause rashes and pollen may trigger asthma. Be watchful of these. Ask children to inform you if they have been stung, injured, have rashes or are not feeling well.
- ✿ Always have an equipped First Aid Kit at hand.



Be careful of Fire Ants!



Do not go outdoors if there is heavy rain or lightning (thunderstorm)

3. **Conduct a briefing**

- ✿ Introduce the activity. Explain what children need to do and the sequence of the activities.
- ✿ Brief children on the safety issues found on page 4.

4. **Debrief the activity** Debriefing allows you to see what children have learnt and expand on these. Always encourage children to share their experiences. Some suggested debriefing questions are given to help you with the technical facts.
5. **Take photos** and show them to your children to help them remember their experience. These are also important for the year-end school reports.
6. **Extension activity** Each lesson has a suggested extension activity for you to continue the learning and interest in topics covered.



Summary Community In Bloom Kidz Activities

No	Title	Duration	Learning Outcomes for Children:	Kindergarten Curriculum Conceptual Framework	Handout	Suggested Extension Activities
1.	Sensing Your Garden	45 min	<ul style="list-style-type: none"> Become more aware of the main elements in a garden. Develop positive feelings about nature. Develop their observational skills (senses). 	Environmental Awareness, Science, Language, SEL, Motor Skills Development	None	Draw or make a collage of a "garden".
2.	Plant Parts	45 min	<ul style="list-style-type: none"> Recognise the main parts of plants and understand some of their functions. 	Environmental Awareness, Science, Language, SEL, Motor Skills Development	Handout 2 - Template for plant collage	Pin up children's art pieces in class.
3.	Celebrate Plants	1 hour	<ul style="list-style-type: none"> Recognise that there is a large variety of plants. Plants can be distinguished by their different parts (e.g. leaf types, shape, colour). 	Environmental Awareness, Science, Language, Motor Skills Development	None	Do a leaf rubbing or leaf printing.
4.	Living Giants	1 hour 45 min	<ul style="list-style-type: none"> Distinguish between trees and shrubs. Recognise that trees are beneficial. Appreciate the grandness of trees, especially old trees. 	Environmental Awareness, Science, Language, SEL, Motor Skills Development	None	Study a large tree (e.g. Heritage Tree).
5.	Fruit Basket	45 min	<ul style="list-style-type: none"> Be more aware of fruits and their seeds. 	Environmental Awareness, Science, Language	None	Activities 6, 7 and 8

No	Title	Duration	Learning Outcomes for Children:	Kindergarten Curriculum Conceptual Framework	Handout	Suggested Extension Activities
6.	Ready, Set, Grow!	1 hour 20 min (May take about 4 - 5 days)	<ul style="list-style-type: none"> Observe germination – how a seed develops. Better understand seeds, how to plant and care for them. Recognise that plants need water and sunlight. 	Environmental Awareness, Science, Language, , Motor Skills Development, Maths	Handout 6 - How A Seed Grows	Activities 7 and 8
7.	A Healthy Soil Recipe	45 min	<ul style="list-style-type: none"> Children learn to plant (Part 1). Recognise that plants need good soil. Handle and better understand soil. Become aware of hygiene after outdoor/gardening. 	Environmental Awareness, Science, Language. Maths, Motor Skills Development	None	Activity 8
8.	Let's Grow Food!	55 min (May take about 3 weeks)	<ul style="list-style-type: none"> Children learn to plant (Part 2). Recognise that plants give us food. 	Environmental Awareness, Motor Skills Development, SEL, Maths	Handout 8 - Watch my Vegetables Grow!	Make a slideshow of the growing plants.
9.	Garden Safari	1 hour	<ul style="list-style-type: none"> Develop skills to observe animals in a garden or nearby park. Better understand urban animals. 	Environmental Awareness, Science, Language, SEL	Handout 9 - Common Garden Animals (animal cards)	Keep tadpoles or caterpillars to observe their life-cycles.
10.	Jacob Ballas Children's Garden Adventure	2 hours	<ul style="list-style-type: none"> Develop nature skills. Explore a larger garden/park of different themes as a consolidation of the previous lessons. 	Environmental Awareness, Science, Language, SEL, Motor Skills Development	Handout 10 - Scavenger Hunt List	Make a slideshow of the field trip

1. Sensing Your Garden

Kindergarten Curriculum Conceptual Framework

Environmental Awareness,
Science, Language, SEL,
Motor Skills Development

Duration (45 min)

30 min - Exploration at garden
15 min - Debrief

Materials

Index cards, markers and
mahjong or flipchart paper

Preparation

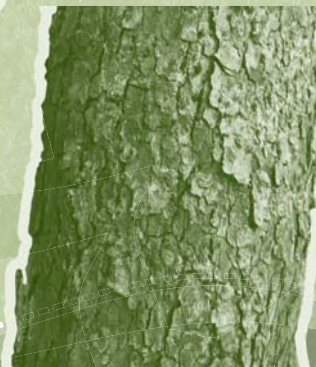
On a mahjong paper, draw
2 large circles or rectangles.
Write the phrases "**WHAT IS
ALIVE**" on one paper, and
"**WHAT IS NOT ALIVE**" on
the other.

Outcomes

- Become more aware of the main elements in a garden.
- Develop positive feelings about nature.
- Develop their observational skills (senses).

How To Conduct

1. Ask children what their 5 senses help them do (our senses help us see, hear, smell, touch and taste).
2. Explain that they are going to sense the school garden and find out all about it.
3. Bring children to the garden.
4. Ask them what they can:
 - * See (plants, animals – birds and butterflies flying, road, car park, fence, path, clouds, sun, etc.)
 - * Hear (birds chirping, cars)
 - * Feel (wind, sun – how hot it is)
 - * Smell (flowers, soil)
 - * Touch (bark of trees, different types of leaves – smooth, hairy, rocks, wooden objects). Bring children around the garden to touch things of different texture.
5. Explain that we will not be eating or tasting anything from the garden.
6. Return to class for the debrief after 30 min.





Debrief

1. Ask children to recap the things they have seen and write each item on an index card.
2. Place the mahjong paper on the ground. Have children move the index cards and classify the things they had seen according to whether these were alive or not alive. Here are some suggested answers:

WHAT IS ALIVE?			
Plants	Animals	Insects	Bees
Trees		Butterfly	Birds

WHAT IS NOT ALIVE?			
Sun	Soil	Drain	Rocks
Wind	Car Park	Building	Fence

What your flipchart paper could look like

3. Ask children if going to the garden was fun. (Yes, gardens are fun places – they are like a classroom – an outdoor class room where we can learn many things!)

Conclusion

- ✿ We have found that in a garden, there are things which are alive and not alive.
- ✿ All of these things work together to make the garden what it is.
- ✿ We will learn more about all these over the next few weeks.



Extension Activities

Draw a garden or make a collage of a garden, including all the things they had observed.

2. Plant Parts

Kindergarten Curriculum Conceptual Framework

Environmental Awareness,
Science, Language, SEL,
Motor Skills Development

Duration (45 min)

15 min - Introduction
30 min - Craft

Materials

Coloured craft paper, scissors,
sticky tape, glue, yarn. Optional:
potted plant (preferably with flowers
and fruits) and a few vegetable plants
(preferably with roots, and flowers).

Preparation

Cut the yarn into lengths of about
5cm. Photocopy Handout 2 for
the class if you are using the
given template.

Outcomes

- Recognise the main parts of plants and understand some of their functions.

How To Conduct

1. Bring the children to the garden or bring a plant to class.
2. Get children to observe the plant and point out the main parts – stem, leaves, roots, flowers and fruits (if any).
3. Optional: Pass around the several vegetable plants for children to feel and describe.
4. Draw a picture of a plant (on the whiteboard) as shown here and explain the main functions of each part:



Main parts of a plant

- * **Roots:** to absorb water, nutrients and minerals from the soil and anchor the plant to the ground (so it will not fall over).
- * **Stem:** to hold up the leaves to get sunlight and transfer water up from the roots to the leaves.
- * **Leaves:** to make food in sunlight.
- * **Flowers and fruits:** to make seeds, so that the plant can make more plants (reproduce).



Debrief

1. Ask children to make a plant collage. Get them to cut out their own shapes of leaves, stems or flowers from coloured craft paper. Alternatively, use the given template on Handout 2 - Colour in the parts, cut them out and paste them together to form a plant using glue or sticky tape. You can use yarn for the roots.

2. Demonstrate the process if you have to.

3. When children have finished, ask a few to share about their “plants”.

4. Some suggested questions:

* How are plants important? (Plants make food in the sunlight - animals and people eat plants. Plants clean our air. Optional: Plants also make oxygen for us to breathe and remove carbon dioxide from the air.)

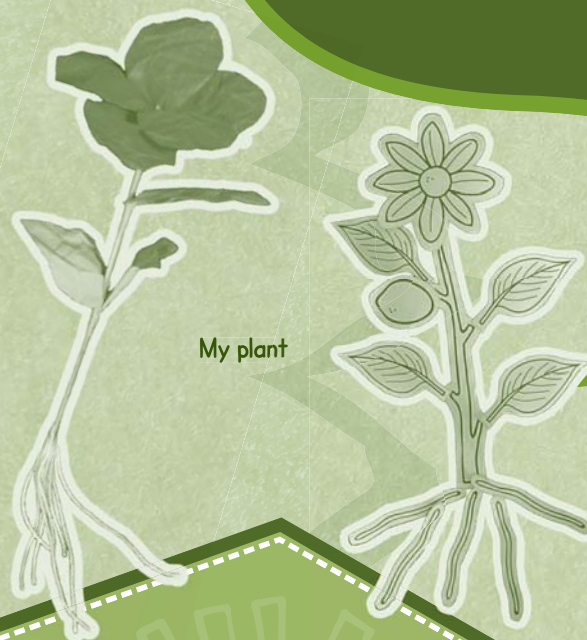
* What happens to a plant if the leaves are damaged, plucked or eaten by animals? (It has fewer leaves to make food for the plant. However, animals eating leaves is natural, but people should not go around damaging or plucking leaves.)

* Which parts of the plant do people eat? (Leaves, stems, fruits. Some people “eat” flowers! E.g. Chrysanthemum flowers can be made into a drink).

Conclusion

* Plants are very important - they give us food and clean the air.

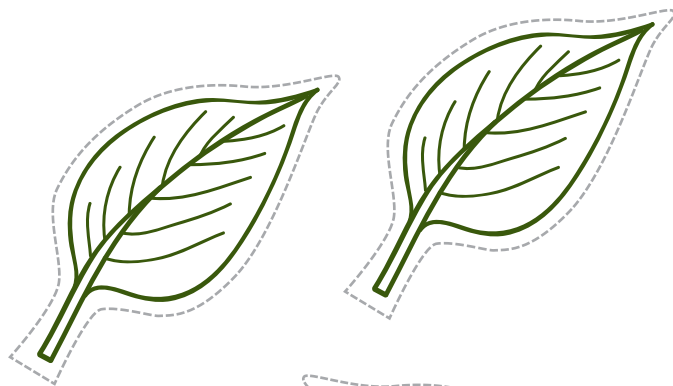
* A plant is made up of different parts and each part has a different function.



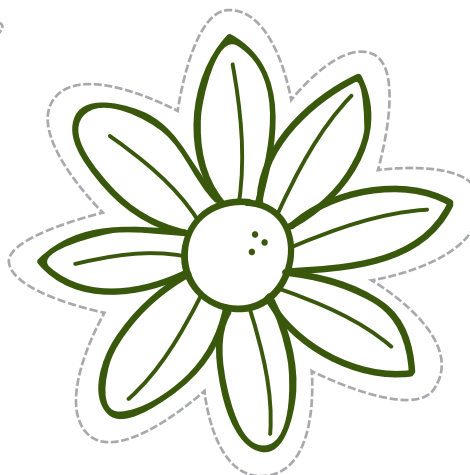
Extension Activities

Pin up children's art pieces in class and create a “garden”!

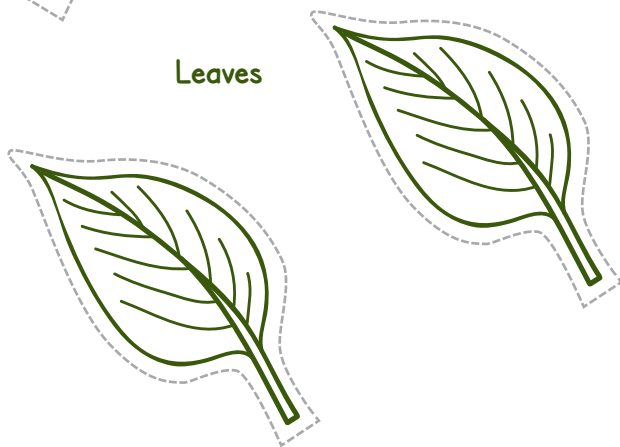
Handout 2: Template for Plant Collage



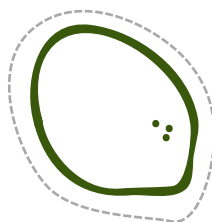
Leaves



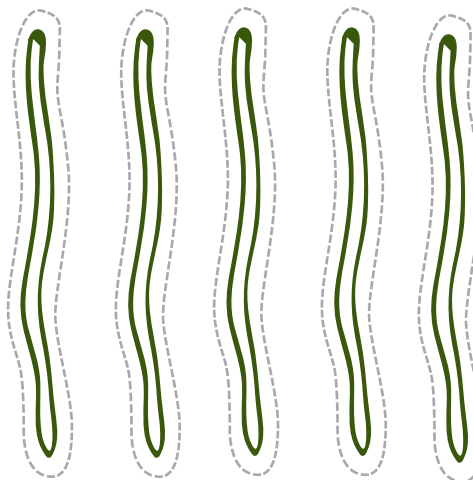
Flower



Stem



Fruit



Roots

3. Celebrate Plants

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Science,
Language, Motor Skills Development

Duration (1 hour)

30 min - Garden walk and 'I Spy' game
30 min - Debrief

Materials

A basket or bag and mahjong or
flipchart paper.

Preparation

Conduct a reconnaissance of the
area in the garden or park that you
will be bringing the children to.

Outcomes

- Recognise that there is a large variety of plants.
- Plants can be distinguished by their different parts (e.g. leaf types, shape, colour).

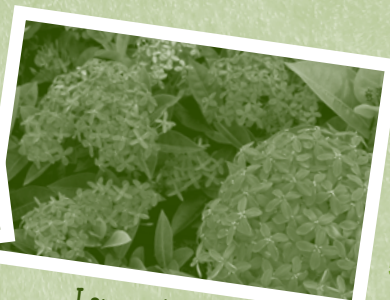


How To Conduct

1. Bring the students on a short walk around the garden or a nearby park.
2. Explain that the class will be moving through the garden/park to play an 'I Spy' game and collect some unusual leaves.
3. Show children the bag/basket they are to put the collected leaves in. Explain to children to look underneath the leaves before they pick them up – there might be insects hiding under the leaf. Remind them not to pluck any leaf but only collect those on the ground.
4. Start the 'I Spy' game. Choose a plant you can see. Make a sentence with a description of it using colours or shape. Children will try to find it and point it out to you. E.g. "I spy with my eyes, a red flower". Here are some items in the garden/park you can choose: green grass, brown trunks, brown soil, red flowers, oval leaves and round fruits.
5. Find a shaded place or return to the classroom for the debrief.



I spy a green and white leaf!



I spy red flowers!

Debrief

1. Ask children what they have learnt during the 'I Spy' game (e.g. most flowers in the school are red, leaves come in many shapes and sizes).
2. Empty the collected leaves on a mahjong paper and sort them out in different ways: size, shape, colours. Observe the edges of the leaves. After sorting the leaves, point out how leaves differ:



Different kinds of leaves

- * Leaf edges can be smooth, wavy or jagged.
 - * Leaves can be oval, round, heart-shaped, etc.
 - * Leaves can be of different shades of green, yellow, red and spotted (e.g. green and white/cream).
3. Point out some unusual leaves to help children appreciate their beauty.
 4. Suggested questions:
 - * Why do leaves have holes in them? (Eaten by insect e.g. caterpillars, beetles, etc.)
 - * Refer to earlier chapter on plant parts - what do leaves do for trees? (They make food for the trees when the sun shines. Highlight the special roles that the different parts of plants do to help them grow healthy.)

Conclusion

The plant world is a wonderful one. It has so many varieties of unique plants and they serve a wonderful and most important purpose of keeping balance in nature.

Extension Activities

Do leaf rubbing or leaf printing with the leaves that you have collected.

4. Living Giants

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Science,
Language, SEL, Motor Skills
Development

Duration (1 hour 30 min)

45 min - Introduction and walk-about

30 min - Dough play

15 min - Debrief

Materials

Whiteboard, whiteboard marker,
modelling dough/salt dough and a
Singapore \$5 dollar note.

Preparation

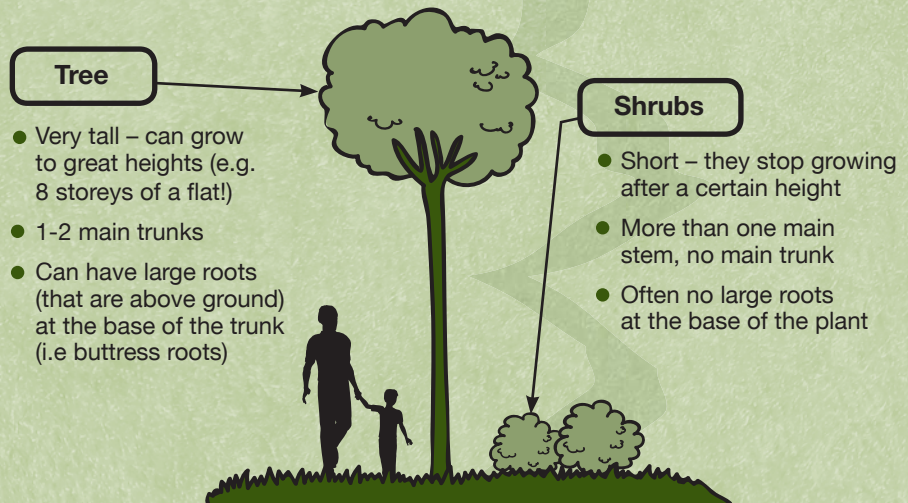
Conduct a reconnaissance of the
area in the garden or park that you
will be bringing the children to.

Outcomes

- Distinguish between trees and shrubs.
 - Recognise that trees are beneficial.
 - Appreciate the grandness of trees, especially old trees.

How To Conduct

1. Draw a tree and a shrub/bush on the whiteboard.
2. Ask children to compare the difference between them:



3. Bring children to the school grounds to look at one or two trees (preferably different types and one which is large). At each tree, ask children to feel and describe the bark the tree's leaves, flowers or fruits and study them. Are there any animals on the tree?
4. Show children a shrub/bush and point out how it is different from a tree (it is shorter, many stems, no main trunk, no large roots at the base of the trunk).
5. Return to class to start the craft activity.
6. Distribute the modelling dough/salt dough and get children to make trees and shrubs that show the characteristics in your whiteboard drawings.



Debrief

1. Recap the difference between a shrub and a tree. Point to a few plants around to see if they can distinguish a tree from a shrub.
2. Praise children for their beautiful sculptures of trees and shrubs.
3. Suggested questions:
 - * How are trees important? (Like all plants, they clean our air and give us food like fruits to eat e.g. mangoes, apples. They can also provide shade, cool the garden and provide wood for making things. Trees also provide food and shelter to many animals e.g. birds build their nests in trees; lizards, spiders and ants live on trees.)
 - * Show children a Singapore \$5 note with a Tembusu tree on it. Explain that this Tembusu tree is found in Singapore Botanic Gardens and is about 100 years old! We need to treasure and protect our old trees.



The Tembusu tree on a Singapore \$5 Note

Conclusion

- * Trees are important to people as they can give us food, shade, cool our surroundings and clean our air.
- * Trees also provide food and shelter for animals and keep them alive.



Extension Activities

Study a large tree and all the plants and animals living on it. You could bring children to see a Heritage tree near your Pre-school centre. Find out more about Heritage trees from the website:
<http://www.nparks.gov.sg/heritagetrees>

5. Fruit Basket

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Science,
Language

Duration (45 min)

20 min - Fruit exploration

25 min - Observe fruits in the garden

Materials

1-3 fruits like mango, rambutan, papaya, apples and grapes (do not buy bananas or seedless forms of fruits), cutting board, knife, paper, markers and other fruits like Angsana and Kapok.

Preparation

Conduct a reconnaissance of the garden to see if you can find any fruits which are in season.

Outcomes

- Be more aware of fruits and their seeds.



How To Conduct

1. Ask children:

- ✿ What are some fruits they love to eat? (E.g. apples, grapes, oranges, water melon.)
- ✿ What are found inside fruits? (Seeds)
- ✿ What colours do fruits come in? (E.g. yellow, orange, purple, and red. Fruits are very colourful!)

2. Explain that many plants contain seeds which are protected in fruits.

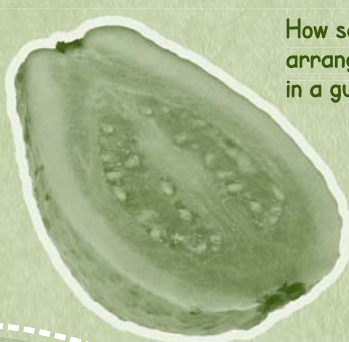
3. Show children a few fruits. Ask children to guess what the fruit looks like inside – where are the seeds?

4. Cut the fruits to show children what each type of fruit looks like inside. Compare the different fruits (e.g. number of seeds in each fruit, the arrangement of seeds inside).

5. Remove one seed from each fruit and compare the sizes and shapes of seeds.

6. If you have some, show children some dry fruits like Angsana, the pods of Broad-leaf Mahogany and Kapok, etc. Explain that not all fruits are fleshy. Some are dry and hard. Show children the seeds within the pods.

7. Optional: Ask children to draw the fruits and seeds.



How seeds are
arranged
in a guava



What a papaya looks like inside

8. Bring children to the garden to look for fruits. Explain that some fruit trees only flower and fruit in certain seasons, which is why sometimes you do not see any fruits. Other plants, like Lime, may fruit all year round.
9. Bring children to a shady place or return to the class to debrief the activity.

The dry fruit of an
Angsana tree



The fruit of a
Mahogany tree



Debrief

1. Recap that there is a wide variety of fruits. They come in different shapes and sizes; some are fleshy and some are dry.
2. Explain that for the fruits we eat, some grow in cold countries and cannot grow in Singapore (e.g. apples, oranges, pears).
3. Ask children if they can name some local fruits. These can grow in warm, tropical countries like Singapore. Examples are mangoes, rambutans, chikus, pineapples, watermelons and papayas.
4. Explain that fruits are good for our health – they contain vitamins, minerals and fibre. We should eat two servings of fruits every day.

Conclusion

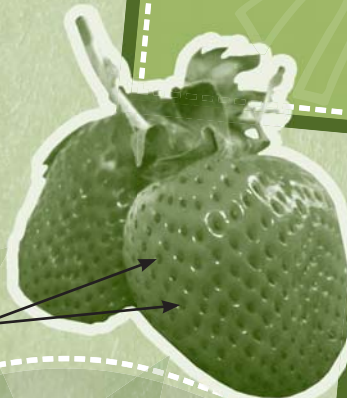
- * There are many types of fruits. Some can be eaten, others cannot. Some are fleshy, while others are dry.
- * Fruits protect the seeds within them.
- * Fruits are good for our health.



Extension Activities

Activities 6, 7 and 8.

The seeds of
strawberries
are on the
outside!



6. Ready, Set, Grow!

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Science,
Language, Motor Skills Development,
Maths

Duration (1 hour 20 min)

20 min - Briefing

40 min - Planting

This project may take about 4-5 days
to complete.

20 min - Debrief

Materials

Whiteboard, whiteboard marker,
permanent markers, small, clear
plastic cups, green bean seeds,
container for water, cotton wool
and tissue paper. Optional: Tray
for each class

Preparation

Choose a shady area outdoors
or indoors for this activity.
Photocopy Handout 6.

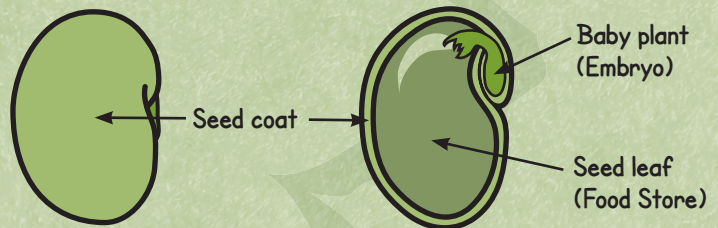
Outcomes

- Observe germination – how a seed develops.
- Better understand seeds, how to plant and care for them.
- Recognise that plants need water and sunlight.



How To Conduct

1. Recap how children have learnt about different types of plants, trees and plant parts.
2. This activity will help children learn how seeds grow and what they need.
3. Show children some green bean seeds. Explain that we cook green beans as a dessert or grow them and eat the sprouts. Get a few children to draw a seed on the whiteboard. Use one of these drawings to explain the parts of a seed:



Outside of a seed

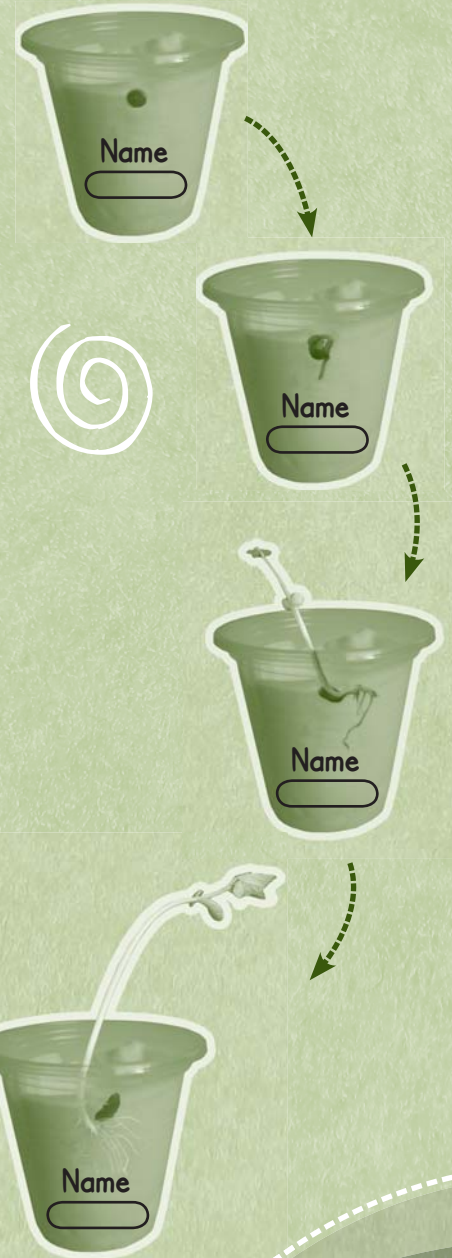
Inside of a seed

4. Draw the insides of the bean to show that there is a tiny baby plant inside. Around the baby plant are seed leaves, which store the food for the embryo to grow.



Germination Process

5. Divide children into teams and show them how to set up their seed-growing experiment:
 - * Write their names near the bottom of the cup, using permanent markers.
 - * Place cotton wool around the sides of the plastic cup and wet it. Fill the middle part of the cup with tissue paper. Wet this too.
 - * Place 3-4 green bean seeds between the cotton wool and the side of the cup. Position the beans as far away from each other, about 1cm from the top of the cotton wool.
6. Recap the step, distribute the materials and ask children to start the activity.
7. When all groups have completed placing the beans into their cups, gather everyone together to brief children what they need to do. They are to place their cups in a sunny place, check the cups every day to make sure that the cotton does not dry up and most importantly, observe how the seed grows.
8. Distribute Handout 6 and run through the stages of growth that their seeds will go through.
9. Optional experiment: You could do another experiment by keeping a few cups in a dark place to see whether seeds can grow without light.
10. Collect all the cups on trays and place them at a sunny spot. Optional: Place a few cups in a dark spot (e.g. in a cupboard).
11. Schedule a time over the next 4 days for children to observe (and draw their seed/seedlings).
12. After a week, when all the plants have grown, debrief the activity.



Debrief

1. Summarise how the children's seeds grow using the diagrams on Handout 6.
2. Praise children for being responsible in taking care of their seeds.
3. Get children to act out how a seed grows.
4. Suggested questions:
 - * What do seeds need to grow? (Water and sunlight.)
 - * What if a growing seed cannot get any light? (It will still grow but the leaves will be yellow and the stems will be extra long. However, if it does not get any sun, it will soon die because it cannot make any food.)
5. After the debrief, transplant the plants to garden or compost them.



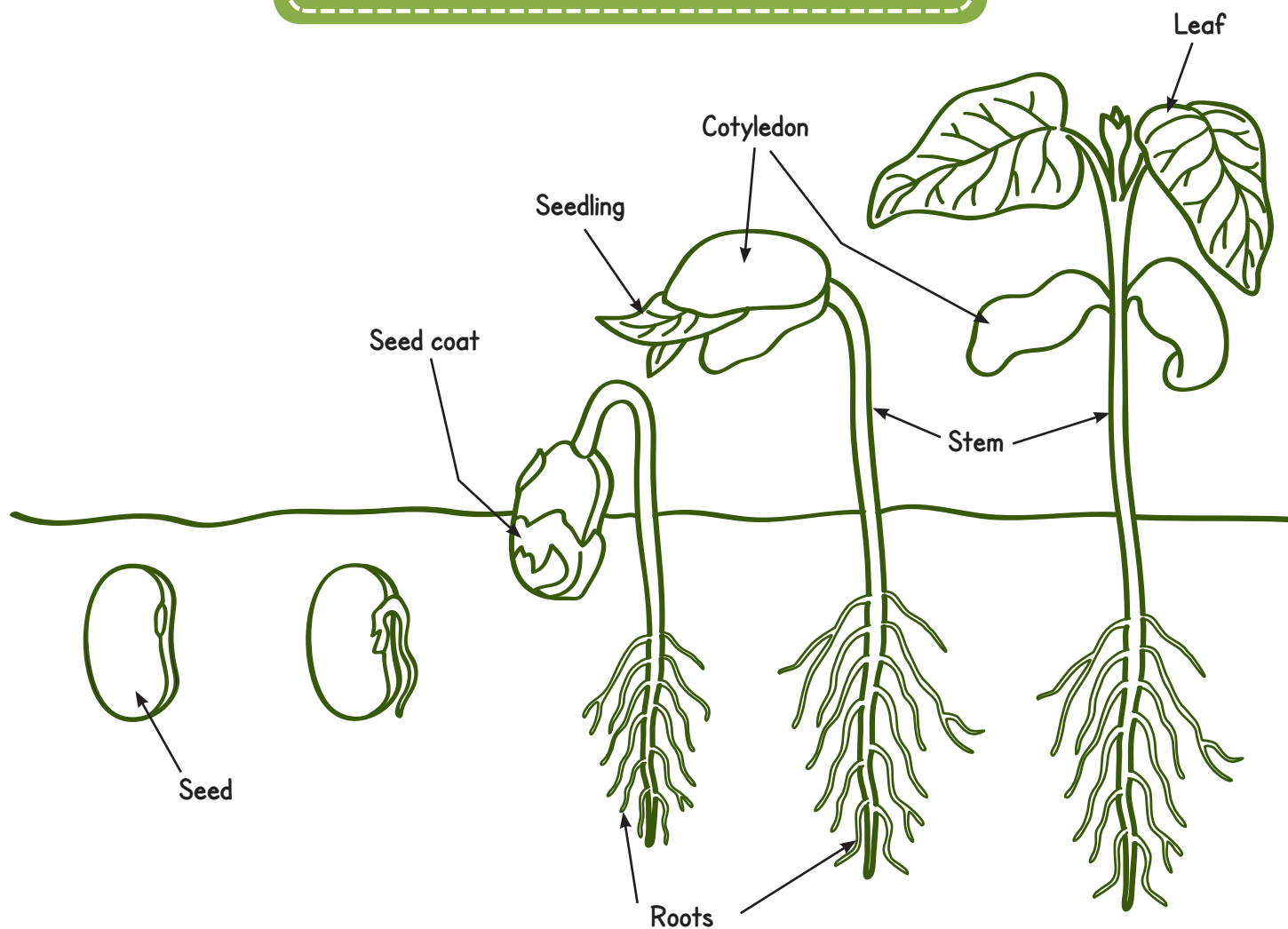
Conclusion

- * Seeds need water to start growing and sunlight when their new leaves appear.
- * We need to be responsible to care for our plants.

Extension Activities

Activities 7 and 8.

Handout 6: How a Seed Grows





Outcomes

- Children learn to plant (Part 1).
- Recognise that plants need good soil.
- Handle and better understand soil.
- Become aware of hygiene after outdoor/gardening activities and practise it.

7. A Healthy Soil Recipe

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Science, Language, Maths, Motor Skills Development

Duration (45 min)

35 min - Mixing soil
10 min - Debrief

Materials

Large containers for mixing soil (e.g. shoeboxes or plastic containers), plastic/paper cups and spoons (use recyclables if possible); from a nursery - a bag of sand, burnt earth and compost.

Preparation

Choose a shady area outdoors for mixing soil. Lay out all the materials.

How To Conduct

1. Activities 7 and 8 are linked. Here, we will prepare the soil and in Activity 8, we will plant the seeds. These activities can be done individually or as a team.
2. Bring children to a shaded work area for mixing soil. Show children some soil and ask what it is (soil). What does it do for a plant? (Gives plants something to hold on to, so it can grow up straight; give plants water, air and nutrients.)
3. Explain that plants need good soil so that their roots can get:
 - * just the right amount of water and plant food – to grow strong and healthy
 - * air – for the plant parts to stay alive.
4. One of the first and very important part of gardening is to make sure your plant has good soil. Explain that the children will learn to make a good soil “recipe” for their plants.
5. Introduce all the “ingredients” that are needed to make good soil:



One cup of sand



One cup of compost

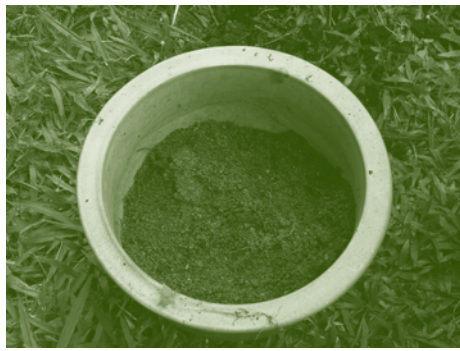


One cup of burnt earth

6. Demonstrate how to mix the “ingredients” well in a container. Explain that it is important for the soil to be even.
7. Distribute the materials and “ingredients” to each team (e.g. 3-5 children per container) and let them mix the soil.
8. After all teams have completed the mixing, place all their containers/boxes in a shaded area where it will not get wet. We will keep this for the next gardening activity.

Debrief

1. Suggested questions you can ask:
 - ✿ Why do plants need good soil? (To grow strong roots which can take up plant food and anchor the plant to the ground.)



mixed soil

- ✿ What else does a plant need to grow strong and healthy? (Water, light and fertilisers.)
2. Discuss the need to wash their hands thoroughly.
 3. Collect and keep the used spoons for Activity 7.

Conclusion

Plants need good soil so that their roots can get:

- ✿ just the right amount of water, minerals and nutrients – to grow strong and healthy.
- ✿ air – for the plant parts to stay alive.

Extension Activities

Activity 8 - Let's Grow Food!

8. Let's Grow Food!

Outcomes



- Children learn to plant (Part 2).
- Recognise that plants give us food.

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Motor Skills Development, SEL, Maths, Music and Movement

Duration (55 min)

10 min - Introduction

45 min - Planting

This project may take about 3 weeks to complete.

Materials

Seeds of green vegetable (e.g. Chye Sim, Amaranth/Bayam, Kang Kong), soil mix (from Activity 7), spades or spoons (Activity 7) and watering cans with water. Optional: Digital camera and gardening scissors.

Preparation

Write out the planting song on a vanguard sheet. Choose a shaded or indoor area for this activity. Place the containers of mixed soil from Activity 7. Lay out all the materials. Photocopy Handout 8 for each team.

Spade



How To Conduct

1. Teach children this song about planting (it goes to the tune of Old MacDonald had a Farm):
I will plant a garden green
Then I'll watch it grow.
I'll dig some holes here in the soil,
In a nice straight row.
With a dig-dig here,
And a dig-dig there,
Here a dig, there a dig,
Everywhere a dig-dig,
I will plant a garden green,
Then I'll watch it grow.



(Original)

Demonstrate the actions and get the children to sing and dance along.

2. Explain that children will grow some green vegetables using the soil that they have mixed. This activity can be done individually or as a team.
3. Go to the shaded work area.
4. Demonstrate how to plant the seeds:
 - * Show children the seed packet. Explain what vegetables they will grow into and read the instructions together.
 - * Make shallow holes using their fingers at regular intervals (e.g. 4cm apart).
 - * Place 1-3 seeds in each hole and cover up with soil. The seeds should not be planted too deep as it will be hard for them to grow to the surface of the soil.
 - * Water the seeds.
5. Distribute the materials and get children to start planting. Check on the children to see they are planting the seeds correctly.

6. When children have completed planting, place all the containers in a sunny spot in your school. Show children how you place a small pinch of fertiliser in one spot for every container. Fertilisers will provide the plants with nutrients and minerals for healthy growth.
7. Schedule a time (e.g. once or twice a week) over the next 3 weeks for teams to observe their plants (draw or photograph them), measure their lengths.
8. Distribute Handout 8 and explain how to fill in the details.
9. Arrange for the school staff or roster the children to water the plants every day.
10. If there are pests (like caterpillars or beetles), remove them from the plant by hand. Do not spray pesticides.



Measure your plant to see how fast it grows!

Lettuce



Conclusion

- * Plants give people food like vegetables, fruits, etc.
- * Plants also give us shade, clean air, medicines, raw materials for furniture and buildings.

Debrief

After 3 weeks, debrief the activity:

1. Praise children for being responsible in taking care of their seeds.
2. Reiterate how the seeds grow using Handout 6.
3. Recap what plants need to grow healthily (water, sunlight and fertilisers/food/minerals).
4. Ask children to describe how their plant grew. Go through the results on Handout 8 and trace the lengths of the plants.
5. Bring children to the plants and harvest the vegetables – cut the plants just above the ground with a sharp scissors or gardening scissors (secateur).
6. If the plants have died, buy some vegetables to show children what the plants were supposed to look like. Discuss why the plants died (e.g. it was eaten by snails, insects).
7. Suggested question: What are the other things that plants provide for us? (Shade, clean air, decorations, medicines, raw materials for furniture and buildings.)

Extension Activities

- * Make a slideshow of the growing plants (Take photos at different stages).
- * Grow plants like Corn, Sunflower or Lady's Fingers. These may take 2-3 months for them to reach full size.

Handout 8: Watch my Vegetables Grow!

Start Date:

	Day	Length of plant/s (measure 1-3 plants)
Week 1		
1.	Date:	
2.	Date:	
Week 2		
3.	Date:	
4.	Date:	
Week 3		
5.	Date:	
6.	Date:	

9. Garden Safari

Kindergarten Curriculum Conceptual Framework

Environmental Awareness,
Science, Language, SEL

Duration (1 hour)

30 min - Exploration of garden
30 min - Debrief of observation

Materials

Scissors. Optional: Binoculars and
nature guide books (Singapore
Science Centre Guide - A Guide To
Urban Creatures).

Preparation

Conduct a reconnaissance of the
area in the garden or park that you
will be bringing the children to.
Photocopy Handout 9 for each
team.



Common Mynah

Outcomes

- Develop skills to observe animals in a garden or nearby park.
- Better understand urban animals.



Branded Imperial Butterfly

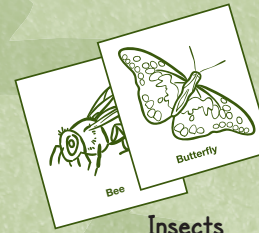
How To Conduct

1. Ask children what animals they have already seen in the garden (butterflies and birds like Mynahs, crows).
2. Tell children that in this activity, they will all pretend to be explorers on a safari – they will go on a trail in the school garden or nearby park to spot and observe animals.
3. Brief children on what to be careful of and how to spot animals: listen out for sounds (bird calls); look for movements (by flying animals, movement among the leaves); be quiet and not to go too near animals when they see one (so as not to frighten the animals away).
4. Bring children to the garden. Divide them into teams and distribute Handout 9 to each team.
5. Explain what they have to do. You will bring them to different parts of the garden and they will have to follow you and spot any of the animals on Handout 9.
6. When you have completed a few sections in the garden, bring children to a shaded area or back to the classroom to debrief the activity.



Debrief

1. Go through Handout 9 and check if the class has seen every animal on it. Ask a few children to share about some animals, like what they were doing (e.g. the changeable lizard basking in the sun, birds eating, chirping, etc.)
2. Ask teams to cut out the individual pictures of animals on Handout 9 to make cards.
3. Classify the animals according to different groupings. Here are some suggested ways:
 - * Large and small animals
 - * Those which can fly and those which cannot
 - * Scientific classification – insects (butterfly, bee, caterpillar, grasshopper, ant), birds (e.g. Mynah), reptiles (changeable lizard), amphibians (toad), arthropods (spider, centipede), worms (earthworms), molluscs (snail), etc.
 - * Those which are found in the air, ground or on plants
 - * Potentially dangerous ones (centipede, bee, spider)
4. Explain about garden pests. Some animals like grasshoppers, caterpillars and snails make holes in leaves or damage the plants. Others, like aphids, suck plant juice. Garden pests make plants unhealthy or kill them! Gardeners are always finding ways to remove them.
5. Discuss how we should not hurt animals. The garden is their home (natural habitat) and we are the visitors. We need to be careful of potentially dangerous animals like bees, wasps, centipedes. However, there is no need to kill them – just stay away from them.
6. Optional: Give each child a copy of Handout 9 for him or her to colour and make his/her own set of animal cards.



Insects



Birds



Reptiles



Worms

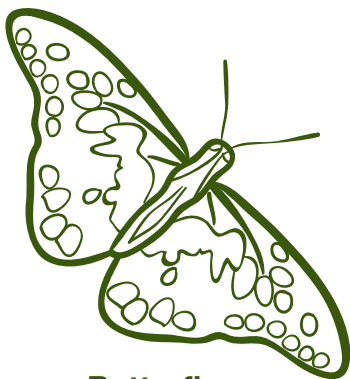
Conclusion

- * There are many types of animals in a garden/park.
- * We should not hurt animals as they are living things too. For those that can hurt us, just be careful and keep away from them.

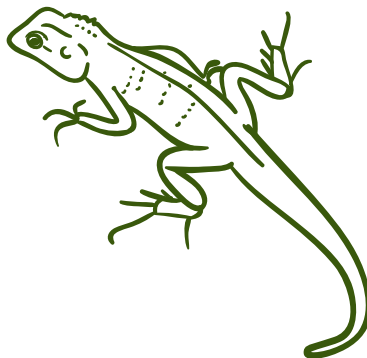
Extension Activities

Keep tadpoles or caterpillars to observe their lifecycles.

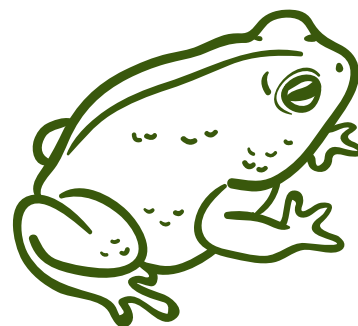
Handout 9: Common Garden Animals



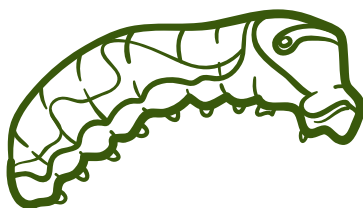
Butterfly



Changeable Lizard



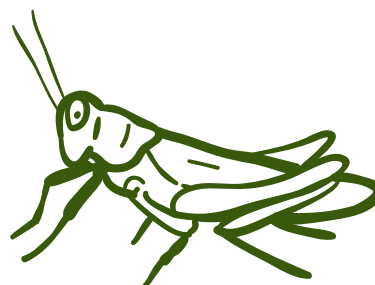
Toad



Caterpillar



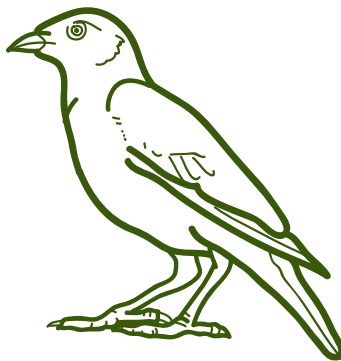
Bee



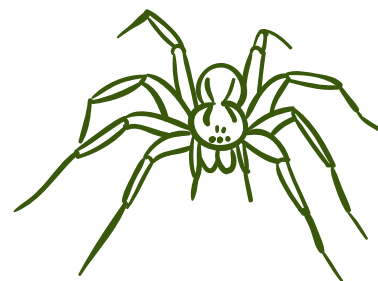
Grasshopper



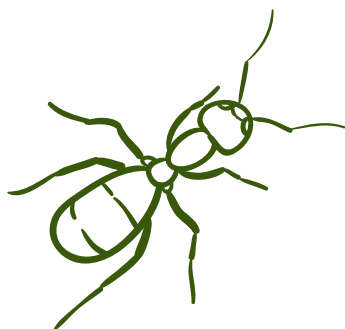
Centipede



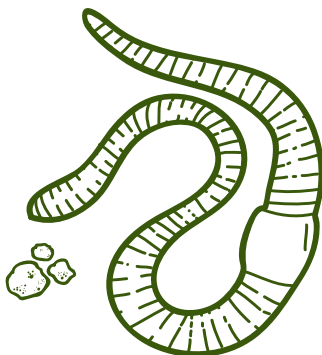
Mynah



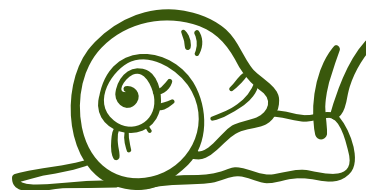
Spider



Ant



Earthworm or their
worm cast



Garden Snail

10. Jacob Ballas Children's Garden Adventure

Outcomes

- Develop nature skills.
- Explore a larger garden/park of different themes as a consolidation of the previous lessons.

Kindergarten Curriculum Conceptual Framework

Environmental Awareness, Science, Language, SEL, Motor Skills Development

Duration (2 hours)

30 min - Scavenger Hunt
10 min - Debrief
20-30 min - Picnic
30-45 min - Other parts of the garden

Materials

Handout 10, pencils for each team, and digital camera. Optional: Prizes.

Preparation

Arrange for transport and food, and distribute indemnity forms to be signed. Divide children into teams of 3-5. Photocopy a scavenger list on Handout 10 for each team.

How To Conduct

1. If you have enquiries for the field trip or your group is greater than 30 persons, please contact the Singapore Botanic Gardens Visitor Centre @ Tel: 64717361 or Email: NPARKS_SBG_Visitor_Services@nparks.gov.sg
2. Bring children to Jacob Ballas Children's Garden.
3. Take photos of children carrying out the activities and exploring different parts of the garden.

30 min Scavenger Hunt

4. Explain that the first activity is a scavenger hunt.
5. Distribute the handout for each team and explain what they have to do. You will lead the children on a route and they will have to spot and find all the items on the scavenger hunt list. When they find an item, they tick it off. Read out the list for children who cannot read.
6. Start the walk and move around the garden. Along the way, you can point out interesting plants, animals and other features you encounter along the way.
7. When children have found all of the items, bring them to a shaded area to debrief the hunt.

20-30 min Picnic

8. Have a picnic. Suggested areas are shaded or waterfall areas.
9. Clean up all rubbish after the picnic.

30-45 min Other parts of the garden

10. Let children play at the tree house, explore the water garden and try the suspension bridge.



Debrief

Debrief the Scavenger Hunt

1. Praise the class for their good observational skills.
2. Commend first few teams which have completed the scavenger hunt. Optional: Give out prizes.
3. Run through the items, asking children more about them:
 - * For plants – What shape, size or colour were the leaves and fruits? What was the bark of the plant like?
 - * For animals – Where were they found? What were the animals doing?
4. Explain/talk about the need to:
 - * Have plants around us
 - Recap how plants help us (give us shade, cools the school and city, give us clean air, materials, food, etc.).
 - Plants also make the place beautiful and inspiring, making people happy.
 - Plants give animals food and shelter.
 - We can always choose to have plants around us – by doing gardening and having them in our homes and school.
 - * Protect and conserve plants in our country
 - Plants need taking care of – watering when there is no rain, fertilising, etc.
 - It is also important to protect our trees, so other people will not damage or cut them down.
 - Singapore has many types of plants. We can all help to protect them by not plucking or damaging plants and keeping our parks clean.



A digital camera to take photographs

Conclusion

- * Plants are important to us!
- * We can help care for plants and our parks.

Extension Activities

Make a slideshow of the field trip (take photos during the field trip).

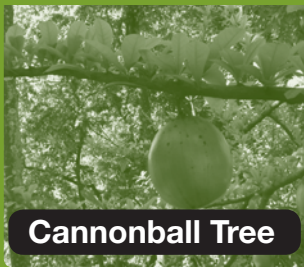
Handout 10: Scavenger Hunt List

Welcome to Jacob Ballas Children's Garden!

Can your team spot a:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Fruit | <input type="checkbox"/> Pandan Plant |
| <input type="checkbox"/> Flower | <input type="checkbox"/> Mushroom |
| <input type="checkbox"/> Red Leaf | <input type="checkbox"/> Lizard |
| <input type="checkbox"/> Cannonball Tree | <input type="checkbox"/> Butterfly |
| <input type="checkbox"/> Banana Plant | <input type="checkbox"/> Bird |

Tick those your team has found!



Cannonball Tree



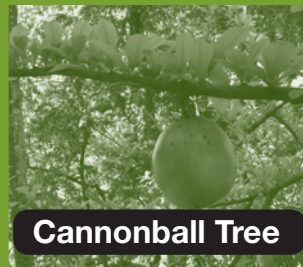
Banana Plant

Welcome to Jacob Ballas Children's Garden!

Can your team spot a:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Fruit | <input type="checkbox"/> Pandan Plant |
| <input type="checkbox"/> Flower | <input type="checkbox"/> Mushroom |
| <input type="checkbox"/> Red Leaf | <input type="checkbox"/> Lizard |
| <input type="checkbox"/> Cannonball Tree | <input type="checkbox"/> Butterfly |
| <input type="checkbox"/> Banana Plant | <input type="checkbox"/> Bird |

Tick those your team has found!



Cannonball Tree



Banana Plant

Annex 1: Resources

Web Resources

NParks Websites

Community In Bloom, NParks Website

http://www.nparks.gov.sg/cib_intro.asp

NParks Website

<http://www.nparks.gov.sg>

Plant Reference

<http://www.floraweb.nparks.gov.sg>

NParks Gardening Blog - Garden Voices

http://www.nparks.gov.sg/blogs/garden_voices/

Heritage Trees

<http://www.nparks.gov.sg/heritagetrees>

Other Websites

Green Culture Singapore – Website and Discussion Forum

<http://www.greenculturesg.com/>

Singapore Gardening Society

<http://www.gardeningsingapore.org/>

Books

NParks Publications

1001 Garden Plants in Singapore, (2nd Edition)

Boo Chih Min, Kartini Omar-Hor, Ou-Yang Chow Lin.
National Parks Board, Singapore 2006.

ISBN 981-04-9268-5

Community In Bloom – A Concise Guide to Tropical Gardening. National Parks Board

Grace S.Y. Lim-Leng. Singapore 2007.

ISBN 981-05-6796-0

Trees of Our Garden City, (2nd Edition)

Other Publications

Singapore Science Centre Guide Books:

A Guide to the Wildflowers of Singapore,

A Guide to Herbs and Spices

A Guide to Common Horticultural Shrubs

A Guide to Common Butterflies of Singapore

A Guide to Medicinal Plants

A Guide to Common Garden Animals

A Guide to Fruits and Seeds

Annex 2: Teacher's Planning Sheet for Community In Bloom Kidz Activities

Class: _____

Session:	Term: <input type="text"/> Week: <input type="text"/>	Activity	Equipment/ Materials	Preparation
1.				
2.				
3.				
4.				
5.				
6.				
7.				

Notes



Notes





