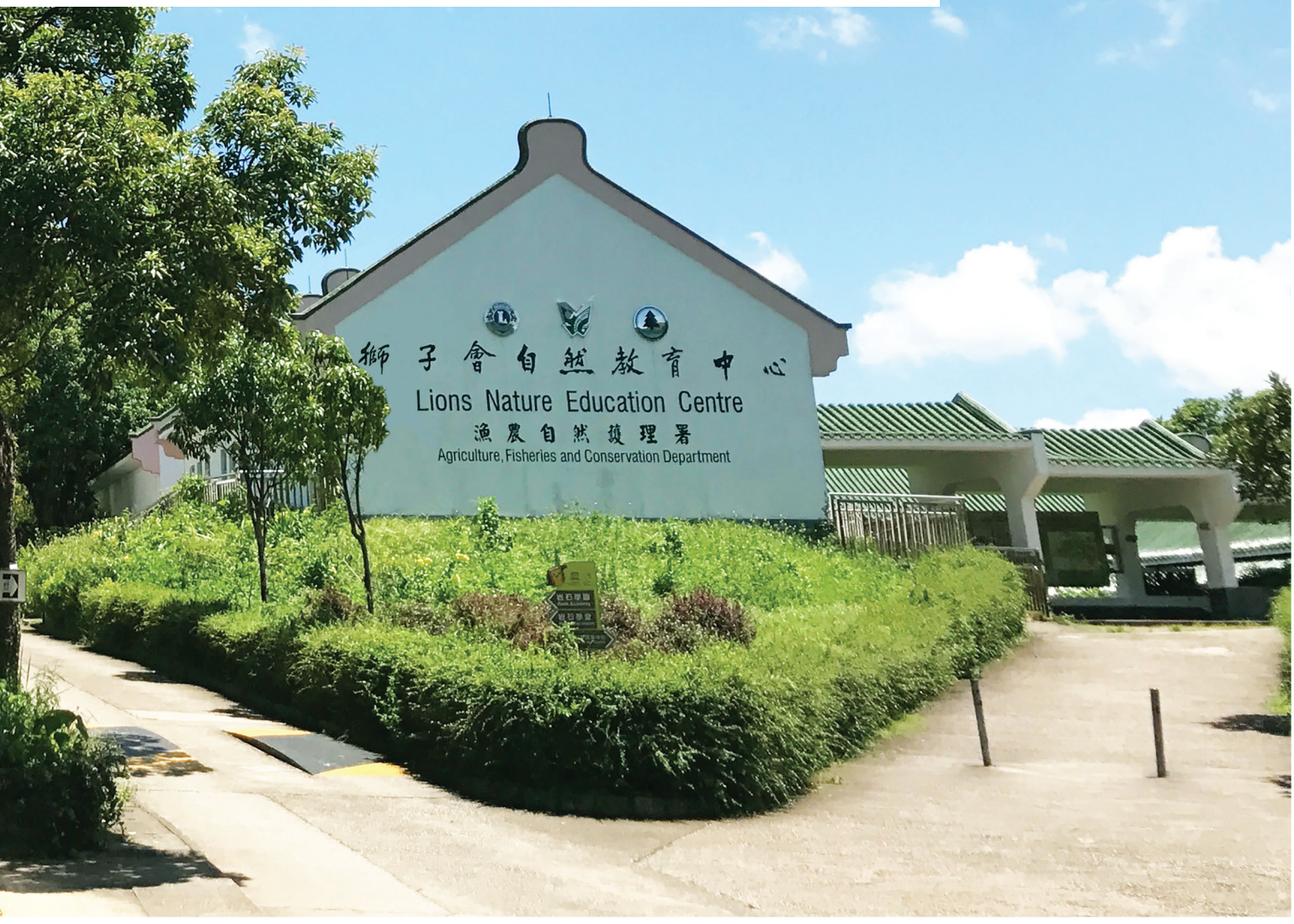
Education Bureau

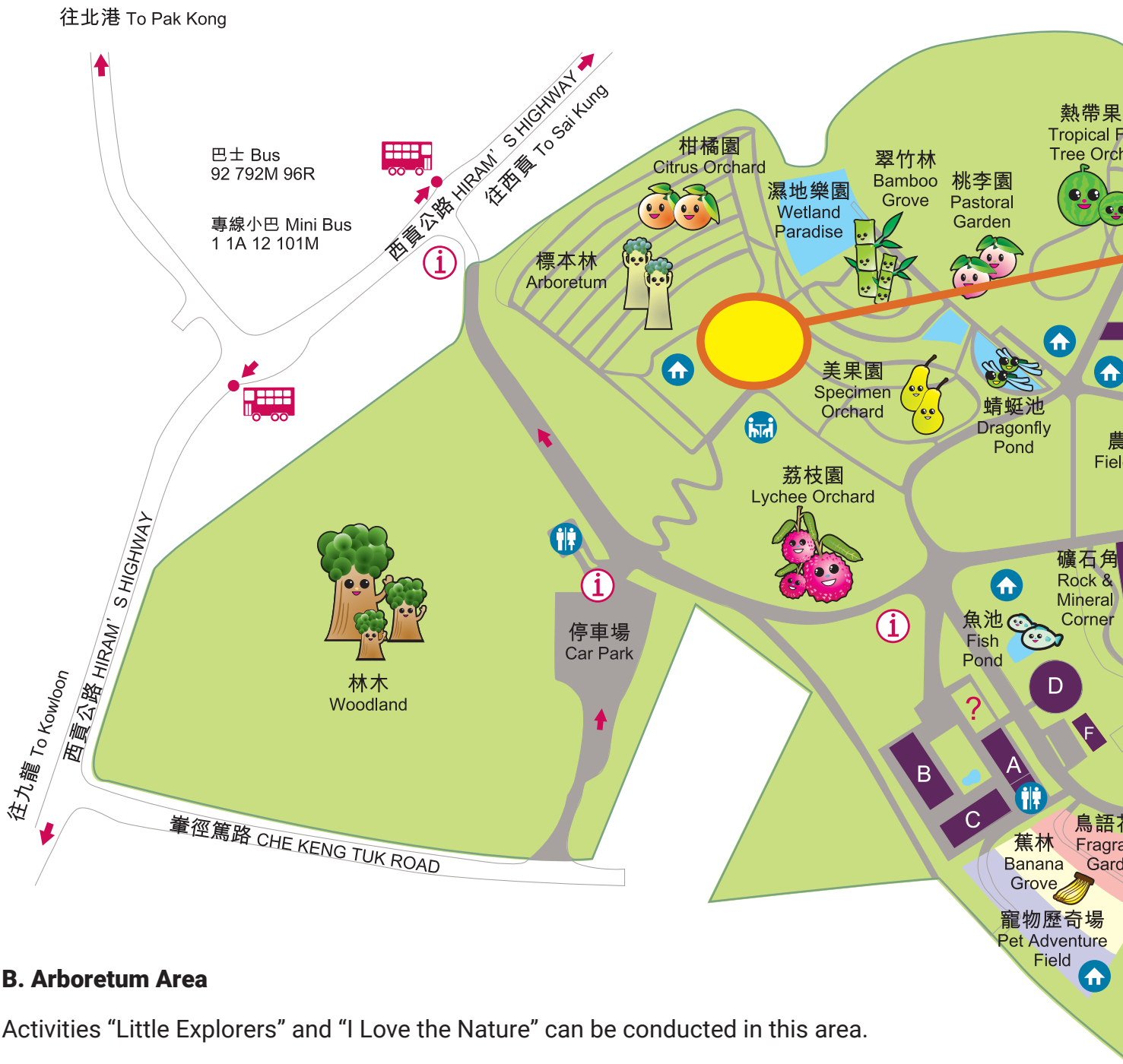
Agriculture, Fisheries and Conservation Department

Countryside Adventure

Learning Activity Resource Package
Education Bureau

Teacher's Guide





B. Arboretum Area

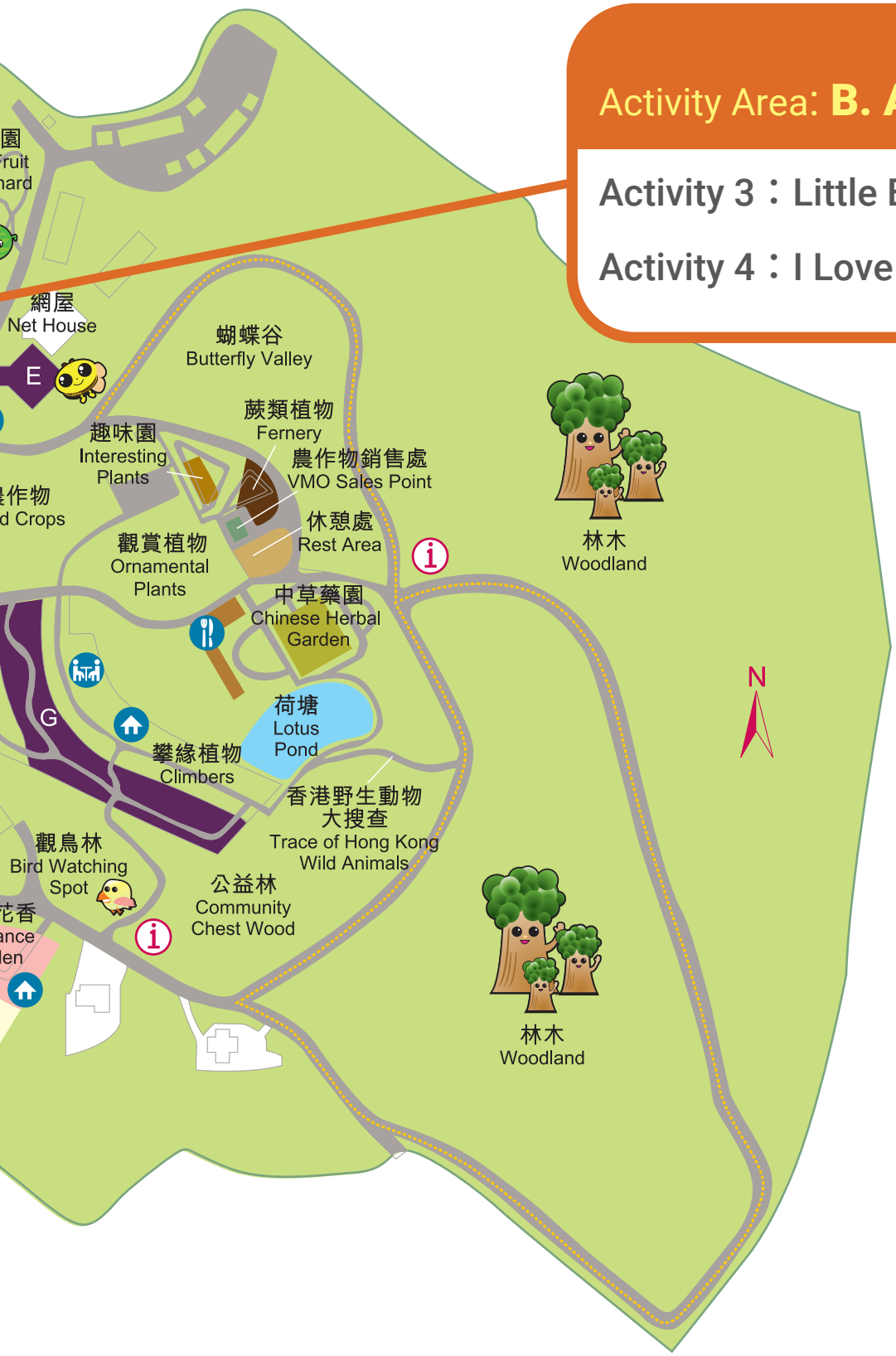
Activities “Little Explorers” and “I Love the Nature” can be conducted in this area.

Area Introduction

AFCD Lions Nature Education Centre is surrounded by forest and woodland. Apart from the seasonal crops in the Field Crops, a variety of trees and fruit trees are grown in other areas. Children can have observations and explorations in this area, surrounded by tall trees. They can conduct various kinds of games in the spacious open area, appreciate and enjoy the fun provided by the nature, so as to nurture children's awareness in care for the environment and preserving trees.

Safety Precautions

- Teachers should remind children not to walk away from the designated activity area.
- Teachers should remind children of safety when collecting the required items (such



- A Geopark Visitor Centre
- B Fisheries Hall
- C Agriculture Hall
- D Shell House
- E Insectarium
- F Rock Classroom
- G Rock Academy

as leaves, twigs or branches, etc.) for the activity. Teacher should observe children and prevent them from touching sharp or dangerous objects.

- Children will touch trees or leaves in the activity, teachers should arrange children to wash their hands afterwards.

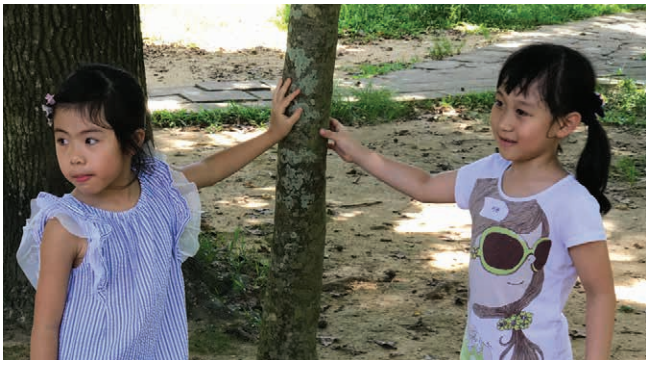
Design Rationale

- Trees are the important natural resources in the nature, and closely related to human life. Not only can trees make the environment more appealing and improve the air quality, but also provide shelters for birds. Children see trees in their daily lives, but not necessarily woodland or forest, and they may not be able to touch trees.
- In the third activity "Little Explorers", children can experience being surrounded by the woodland, observe the characteristics of different trees carefully, admire the appearance and beauty of trees, so as to bring forth the message of treasuring and preserving trees.
- In the fourth activity "I Love the Nature", apart from observing and exploring the trees, children can enjoy playing various group games in the spacious outdoor environment. This does not only provide children with sufficient space to stretch their gross and fine motor muscles, it also allows them to learn and help one another. When children engage in play, they can also learn about the early mathematics and science concepts, so children can enjoy learning through play in the nature.
- The group games for the three class levels are only proposed activities, teachers may adjust according to children's interest and ability.

Teaching Skills

- Teachers should be open-minded and encourage children to explore freely and solve problems.
- During the exploratory activities, teachers should allow children to freely choose what to observe and explore under safe conditions. There is no need to force or restrict children to use tools; for example, they can just use their eyes and hands to observe and touch the trees.
- During free exploration/creation, teachers should observe children's performance to provide guidance and appropriate assistance when needed; yet avoid dominating/ interrupting children's exploration/creation process.
- Teachers should remind children to love the nature, not to take away any stones, fallen leaves or branches in the area. Therefore, teachers are recommended to bring along a camera to record children's creative work.
- Teachers can use words or pictures to record the process of the activities. When inviting children to share, teachers can write down their interesting questions and discoveries for further exploration and sharing at school.
- According to actual situations and children's interests, teachers may conduct extended activities at school.

Activity 3: Little Explorers



Proposed Class Level	K1
Name of Area	Arboretum Area
Proposed Number of Participants	6 people in a group
Duration	Around 30 minutes
Teaching Aids/ Materials	Free loan from AFCD Lions Nature Education Centre through advance registration: • A magnifying glass per group • Cross section of tree trunks (for extended activity)
Children's Developmental Characteristics 3-4 years old	Enjoy using five senses to explore new things
Proposed Learning Objectives	**[Knowledge]** Children are able to know tree has different parts **[Skill]** Children are able to differentiate the characteristics of leaves and barks **[Attitude]** Children are able to care for trees
Focus of Activity	Enable children to use senses to observe and explore the shapes of leaves and the texture of barks.
Proposed Activity Plan (Procedures)	**Introduction** Teacher asks children: What do you see here? Let children share their feelings about trees. **Process** • Teacher invites children to observe and explore the surroundings and choose a favourite tree in the designated activity area.

- Teacher invites them to touch the barks gently and asks them how they feel about them.
- Teacher asks them if they can find fallen leaves on the ground, then asks them to pick up two leaves to observe their characteristics.
- Teacher distributes magnifying glasses for children to have more in-depth observation on the characteristics of leaves.
- Teacher encourages them to exchange their leaves and share their findings after observation.

Conclusion (Sharing)

Teacher summarises children's sharing that different species of trees have different appearances, such as tree height, size, colour, leave shapes and crown shapes, etc.

Possible Adjustments	Children may think all trees are the same. Teachers should maintain an open-minded attitude and encourage children to observe closely.
Reference Questions for Teachers (Select questions according to circumstances and in line with the proposed learning objectives)	Through a series of open-ended questions, teacher guides children to observe, compare and contrast the characteristics of trees and leaves. **Before the Activity** • What do you see in this area? • What are their colours? **During the Activity** • Find a tree you like and gently touch its trunk, how do you feel? • Do you like this feeling? What is it like? • What do you see on the ground? • How do you feel when touching the leaves? • Try to pick up two leaves, what are the differences in them? • Then try to look at them closely under a magnifying glass, what have you discovered? **After the Activity** • When examining details of leaves, can you tell the differences with or without the aids of magnifying glass? • Do you prefer to observe the leaves with a magnifying glass or just your bare eyes, and why?

Extended Activities	Based on the rationale of this activity, teachers may develop other extended activities to fit into the themes of the school-based curriculum, for example: **Activity 1** During the process of exploration, children may discover some trees have thicker trunks and some are thinner. Teachers can have extended exploration to point out that trees will not only grow taller but also thicker, so the age of a tree is related to the thickness of its trunk. Teachers may invite children to guess which tree is older. If children cannot visualise the logic behind, teachers can integrate with a mathematics activity (simple measurement), measure the circumference of different tree trunks with strings, then compare the lengths of the strings. Children may also use the cross section of trunk (provided by the AFCD) to observe the tree rings (or annual rings) or calculate the age of the tree. **Activity 2** From the extended activity of "I am a Little Farmer", children may have had the planting activity. Teachers can invite children to take pictures or use drawings to record the growing process of the little plant.
Supplementary Information for Teachers	If children ask further about the age of a tree, teachers may refer to the following information, but not required for teaching. *Using the circumference of trunks to compare the age of different trees is only a rough estimation, as the species of different trees, weather, and other growing conditions will affect the growth of a tree. Using annual rings to estimate the age of a tree will be more accurate. If we cut across a tree trunk, we will see the coverage of rings on the cross section and those are the annual rings. We can count the number of annual rings to find out the age of a tree, as each ring represents one year.*

Proposed Class Level	**K2**
Name of Area	Arboretum Area
Proposed Number of Participants	6-8 people in a group
Duration	Around 30-45 minutes
Teaching Aids/ Materials	Free loan from AFCD Lions Nature Education Centre through advance registration: • A magnifying glass per group • A4-sized clipboards • Cross section of tree trunks (for extended activity) Prepared by teachers: • A colour shade card per group (Appendix 2) • White paper / pencils / lead-free crayons / pencil sharpeners
Children's Developmental Characteristics 4-5 years old	• Able to use language to describe different things • Able to draw pictures as children's fine motor skills and eye-hand coordination are getting mature
Proposed Learning Objectives	**[Knowledge]** Children are able to know there are veins on leaves and patterns on barks **[Skill]** Children are able to observe leaf veins and make leaf rubbing **[Attitude]** Children are able to appreciate the beauty of trees
Focus of Activity	Enable children to use senses to observe, explore, compare and contrast, and describe the characteristics of trees.
Proposed Activity Plan (Procedures)	**Introduction** Teacher asks children to form a circle, then share their observation and feelings about trees and woodland. **Process** • Teacher invites children to observe and explore the surroundings and choose a favourite tree in the designated activity area.

- Teacher invites them to use a magnifying glass to observe the tree trunks. They can also touch the barks gently. Teacher asks them what they have discovered.
- Children can share their observations freely, they may discover the marks on the bark of trunk, tree holes, or insects. When they are sharing, they may discover every tree is different.
- Teacher asks them if they can find fallen leaves on the ground, then asks them to pick up two leaves to observe, and compare and contrast their characteristics.
- Teacher distributes magnifying glasses and colour shade cards for children to have more in-depth observation on the differences in leaves. Generally, children may just share that leaves are in a particular colour. The colour shade card can help them differentiate various shades of the colours.
- Children can make leaf rubbing to observe the leaf veins in a more in-depth manner.
- Teacher encourages them to exchange their leaves and share their findings after observation.

Conclusion (Discussion and Sharing)

- Teacher summarises children's sharing that different species of trees have different appearances , such as tree height, size, colour, leave shapes and crown shapes, etc.
- There are many trees in this area, and each one of them is responsible for the formation of woodland which is beneficial to human beings. Teacher can further discuss the benefits with children at school.

Possible Adjustments

- Though children may be able to draw, they may not be familiar with techniques in leaf rubbings, teacher can make demonstrations if so.
- When comparing leaves, teacher may guide children to observe closely, and use magnifying glasses or colour shade cards for comparison.

Reference Questions for Teachers
(Select questions according to circumstances and in line with the proposed learning objectives)

Through a series of open-ended questions, teacher guides children to observe, compare and contrast the characteristics of trees and leaves.

Before the Activity

- What do you see in this area?
- How are the trees in this area different from the trees you normally see?

During the Activity

- Take a look at the marks on the leaves, what are they called?
- What do you think they look like?
- Can you use a piece of paper to make leaf rubbing?
- Try to pick up two leaves and make leaf rubbings. Do they look the same?
- What kind of differences have you discovered?
- Why do leaves have marks?
- Try to observe leaves under a magnifying glass, what can be discovered?

After the Activity

- Besides making leaf rubbing, what else can you put under the paper for rubbing?
- Are all leaves green in colour?
- Can you share the colour(s) you have observed?

Extended Activities

Based on the rationale of this activity, teachers may develop other extended activities to fit into the themes of the school-based curriculum, for example:

Activity 1

Teachers can invite children to colour the paper of leaf rubbing activity conducted in the Arboretum area, then use the colour shade card for comparison and make further discussion and sharing at school.

Activity 2

During the process of exploration, children may discover some trees have thicker trunks and some are thinner. Teachers can have extended exploration to point out that trees will not only grow taller but also thicker, so the age of a tree is related to the thickness of its trunk. Teachers may invite children to guess which tree is older. If children cannot visualise the logic behind, teachers can integrate with a mathematics activity (simple measurement), measure the circumference of different tree trunks with strings, then compare the lengths of the strings. Children may also use the cross section of trunk (provided by the AFCD) to observe the tree rings (or annual rings) or calculate the age of the tree.

Supplementary Information for Teachers	If children ask further about the age of a tree, teachers may refer to the following information, but not required for teaching. *Using the circumference of trunks to compare the age of different trees is only a rough estimation, as the species of different trees, weather, and other growing conditions will affect the growth of a tree. Using annual rings to estimate the age of a tree will be more accurate. If we cut across a tree trunk, we will see the coverage of rings on the cross section and those are the annual rings. We can count the number of annual rings to find out the age of a tree, as each ring represents one year.*

Proposed Class Level	**K3**
Name of Area	Arboretum Area
Proposed Number of Participants	8 people in a group
Duration	Around 30-45 minutes
Teaching Aids/ Materials	Free loan from AFCD Lions Nature Education Centre through advance registration: • A magnifying glass per group • A4-sized clipboards • Cross section of tree trunks (for extended activity) Prepared by teachers: • A colour shade card per group (Appendix 2) • White paper / pencils / lead-free crayons / pencil sharpeners
Children's Developmental Characteristics 5-6 years old	• Able to use drawings and words to make simple records • Able to draw simple objects
Proposed Learning Objectives	**[Knowledge]** Children are able to know the different shapes, colours and textures of trees and leaves **[Skill]** Children are able to draw shapes of trees and leaves **[Attitude]** Children are able to appreciate the beauty of nature
Focus of Activity	Enable children to use senses to observe and explore the surroundings, then try to use words, symbols or drawings to express their feelings about the nature.
Proposed Activity Plan (Procedures)	**Introduction** Teacher asks children: What do you see here? Let children share their feelings about trees and woodland. **Process** • Teacher invites children to observe and explore the surroundings and choose a favourite tree in the designated activity area.

- Teacher invites them to use a magnifying glass to observe the tree trunks. Children can also touch the barks gently. Teacher asks them what they have discovered.
- Children can share their observations freely, they may discover the marks on the bark of trunk, tree holes, or insects. When they are sharing, they may discover every tree is different.
- Teacher asks them if they can find fallen leaves on the ground, then asks them to pick up two leaves to observe, compare and contrast their characteristics.
- Teacher distributes magnifying glasses and colour shade cards for children to have more in-depth observation on the differences in leaves. Generally children may only share that leaves are green in colour, and the fallen leaves (dried leaves) are yellow or brown in colour. When they have more in-depth observation, they may discover different leaves are in different shades of green.
- Teacher may use dried leaves to guide children to think about the relationship between water and trees.
- Teacher encourages them to exchange their leaves and share their findings after observation.
- Teacher invites them to draw the trees and leaves they have observed to express their feelings about the nature. If children can write, they can use simple words or symbols, too.

Conclusion (Discussion and Sharing)

- Teacher invites children to share what they have drawn to bring out that different species of trees have different appearances, such as tree height, size, colour, leave shapes and crown shapes, etc.
- There are many trees in this area, each one of them is responsible for the formation of woodland which is beneficial to human beings. Teacher can further discuss the benefits with children at school.

Possible Adjustments	Children may encounter difficulty when using words, symbols or drawings to express their feelings about the nature, teacher can provide timely assistance.
Reference Questions for Teachers (Select questions according to circumstances and in line with the proposed learning objectives)	Through a series of open-ended questions, teacher guides children to observe, compare and contrast the characteristics of trees and leaves. **Before the Activity** • What do you see in this area? • How are the trees in this area different from the trees you normally see? • Can you guess how many trees are planted in this area?

During the Activity

- Can you draw your favourite tree?
- Can you name different parts of this tree?
- What are the shapes of its leaves?
- Why do leaves change their colours?
- Do you think trees need to drink water?
- How do trees drink water?
- Do you think trees need to eat?
- How do trees eat?
- What do you think trees will eat?

After the Activity

- Can you guess if trees grow the same way as human beings?
- If you were a tree, how would you like to be treated by human beings?

Extended Activities

Based on the rationale of this activity, teachers may develop other extended activities to fit into the themes of the school-based curriculum, for example:

Activity 1

Teachers can invite children to colour their artworks drawn earlier in the Arboretum area for further sharing and discussion at school.

Activity 2

Teachers can discuss with children about the characteristics of the "evergreen trees" to enable children to understand not all trees will drop their leaves in autumn and winter. The leaves of deciduous trees will change colour before falling off. On sunny days, teachers can arrange outdoor sketching with children to appreciate and record the beautiful scenery of the nature.

Activity 3

During the process of exploration, children may discover some trees have thicker trunks and some are thinner. Teachers can have extended exploration to point out that trees will not only grow taller but also thicker, so the age of a tree is related to the thickness of its trunk. Teachers may invite children to guess which tree is older. If children cannot visualise the logic behind, teachers can integrate with a mathematics activity (simple measurement), measure the circumference of different tree trunks with strings, then compare the lengths of the strings. If children have experience in using rulers, they can also use a measuring tape to measure and compare. Children may also use the cross section of trunks (provided by the AFCD) to observe the tree rings (or annual rings) or calculate the age of the tree.

Supplementary Information for Teachers	If children ask further about the age of a tree, teachers may refer to the following information, but not required for teaching. *Using the circumference of trunks to compare the age of different trees is only a rough estimation, as the species of different trees, weather, and other growing conditions will affect the growth of a tree. Using annual rings to estimate the age of a tree will be more accurate. If we cut across a tree trunk, we will see the coverage of rings on the cross section and those are the annual rings. We can count the number of annual rings to find out the age of a tree, as each ring represents one year*.

Appendix 2

Colour Shade Card