



Education Bureau



Agriculture, Fisheries and
Conservation Department

Countryside Adventure

Learning Activity Resource Package
Education Bureau

Teacher's Guide



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Introduction

The Government has implemented the kindergarten education scheme (“Scheme”) starting from the 2017/18 school year, one of the medium-/long-term measures is to explore the feasibility of setting up resource centres to meet the needs of kindergartens (KGs) for more space for various learning activities. In order to provide more opportunities for KG students to conduct diversified learning activities in a larger space as soon as possible, the Education Bureau (EDB) has collaborated with Agriculture, Fisheries and Conservation Department (AFCD) to capitalise on the resources (in particular the plants, animals and open area) at the AFCD Lions Nature Education Centre and serve the functions of resource centres for KGs by providing outdoor environment for students’ free exploration and learning through play. EDB has commissioned the Hong Kong Baptist University to develop this Learning Activity Resource Package to help KGs develop students’ positive attitude in caring for nature and appreciation of life. We would like to express our gratitude to AFCD for their support, and professional advice on capitalising the centre resources and the development of the Resource Package which enable KG students to have larger space for exploration and conducting diversified learning activities.

I Design Rationale of the Learning Activity Resource Package



With respect to the above-mentioned Scheme and the learning area of “Nature and Living” in the *Kindergarten Education Curriculum Guide* (2017), this Resource Package aims at developing and fostering children’s curiosity and exploratory spirit; encouraging them to explore the surroundings with multiple senses; understanding the close relationship between the nature and the human life; developing their care and respect for, and appreciation of the natural environment and

resources; and nurturing their attitudes and habits of caring for the nature.

In addition, engaging in outdoor activities and getting close to the nature is significant to children’s growth and development. Through free exploration, interaction with nature, interesting experiments and exploration with multiple senses, these can enhance children’s understanding and their sense of responsibility in protecting the nature.

II Learning Objectives of the “Nature and Living”¹



According to the Kindergarten Education Curriculum Guide (2017) prepared by the Curriculum Development Council, the learning objectives of the “Nature and Living” are as follows:

1. To develop curiosity about the environment and phenomena around and to enjoy exploring the surroundings and nature.
2. To cultivate an objective and open-minded attitude; to acquire basic exploratory skills through observation, questioning and making assumptions; and to develop abilities to solve problems.
3. To appreciate, respect and care for nature, and live an environmentally-friendly life.

¹ Curriculum Development Council (2017). *Kindergarten Education Curriculum Guide*. Retrieved from http://www.edb.gov.hk/attachment/en/curriculum-development/major-level-of-edu/preprimary/ENG_KGECC_2017.pdf



III Teaching Principles and Strategies



- Teachers should encourage children to pay heed to their surroundings and the natural environment, deepen their understanding through observation and discussion, with a view to enabling children to explore and discover knowledge in the natural and authentic environment.
- Teachers should let children explore with their five senses, arouse their curiosity about exploring and inquiring freely, love the environment and appreciate the nature; so as to understand the close relationship between human beings and the nature and develop a positive attitude towards the nature.
- Teachers should create a pleasant atmosphere of exploration that encourages children to interact and learn from one another. Teachers should provide children with timely guidance to stimulate children's interest and build up their confidence in learning. Teachers can encourage children to keep trying without emphasising the "model answers" and rushing to present the results.
- When using technology to aid teaching and learning, teacher should ensure the time engaged in such process should not affect the overall teaching and learning arrangements. As the children's health is also an



IV Roles of Teachers in the Activities

- Prior to the activities, teachers should read the Learning Activity Resource Package carefully, and introduce the activity to children.
- Teachers are not only the “providers” who provide children with necessary time and materials required for activities, but also the “facilitators” and “observers” to render timely guidance and assistance to children during the activities.
- Teachers should explore and discuss with children, such as by using the questioning strategies of 6Ws, i.e. What, Who, When, Where, Why and How, to enhance the fun of activities, and help children stretch their imagination and fully participate in the activities.
- Through observation, teachers should understand children’s performance in the activities, analyse their learning and developmental progress, and make adjustments as appropriate.
- In closing, teachers can invite children to share their experience and feelings, help them consolidate the knowledge, skills and attitude learnt with timely and positive feedback so as to nurture their care for the environment and appreciation of the nature.



A. Activity Arrangements

- Different activities require different manpower including staff, teachers, or volunteers. When organising activities, schools should ensure sufficient manpower to supervise and manage the tasks. Schools need to consider factors like the nature of activities, the extent of areas and geographical environment concerned, as well as children's ability, age and safety, etc. for making appropriate manpower arrangement.
 - Teachers should remind children to care for the nature and public facilities, and encourage them to keep the environment clean and not to litter in the activity areas.
 - Teachers should take note of the latest weather information issued by the Hong Kong Observatory through radio or television before and during the activity. For details, please refer to the latest EDB Circular on "Tropical Cyclones and Heavy Persistent Rain Arrangements for Kindergartens and Day Schools". When bad weather is expected, schools should decide whether to change programme or cancel the activity at the earliest possible time.
- During outdoor activities, teachers should pay attention to/remind children on the following points²:
 - » Teachers should give full attention to the safety of children while ensuring that children stay in designated areas for activities and not to leave without permission. If children need to go to toilet, they must inform their teachers and be accompanied by an adult.
 - » Remind parents in advance that children must put on long sleeve shirts and pants that are light in colour, as well as shoes that cover entire feet, and bring along suitable caps.



- » Remind children to drink adequate amount of water in summer to avoid dehydration or heat stroke.
- » Apply insect repellent on clothes and the exposed parts of the body to avoid mosquito bites.
- » Make sure that there are members with first-aid knowledge in the group.
- » Stay on footpaths and avoid walking through vegetation.
- » Avoid resting on vegetation, or at humid and dark places.
- » Keep quiet, do not shout or run.
- » Take care of the children, do not climb over fences.
- » Do not pick or damage plants, do not disturb or catch animals.
- » Do not touch the wild animals, bird feathers or their droppings. Wash hands right after the activities.



² Country Park Hiking Safety Guidelines of Agriculture, Fisheries and Conservation Department.
Retrieved from



<http://www.afcd.gov.hk/>



B. The Use of the Learning Activity Resource Package

- This Learning Activity Resource Package emphasises developing children's exploratory spirits. Each activity is designed according to developmental characteristics of children and divided into three class levels. Teachers can lead activities according to the proposed learning objectives and content. However, during the exploration, teachers should observe children's responses and performances to make adjustments according to children's ability, interests and actual performance.
- Teachers can align with the themes of their school-based curriculum, and make good use of other facilities and resources from the AFCD Lions Nature Education Centre, to implement the activities in this Learning Activity Resource Package in a flexible manner.
- For aligning the Learning Activity Resource Package with the school-based curriculum:
 - » Once teachers have grasped the rationale, learning objectives and activities of the Learning Activity Resource Package, they may select those learning activities and objectives which are complementary to their school-based curriculum. Schools may allow teachers to flexibly adopt the content of the Learning Activity Resource Package based on individual class levels, learning environment and developmental needs of children.
 - » Learning Activity Resource Package can be adjusted and arranged in a flexible manner according to children's ability and actual performance, such as the activity 1 "I am a Little Farmer" and the activity 2 "Protect the Little Plants" held at the Field Crops can be combined. Similarly, the activity 3 "Little Explorers" and the activity 4 "I Love the Nature" held at Arboretum Area can be combined as well. In addition, it is not a must for teachers to complete all the four activities in one day.



- Based on the needs of the learning activities, teachers may make advance registration with the AFCD Lions Nature Education Centre on the use of venue, collection of Children Activity Booklets free of charge, and the loan of the required teaching aids/materials. All items should be collected and returned after use on the same activity day.
- Teachers can refer to proposed activity plans to bring along other teaching aids.
- Teachers should advise children on the proper use of magnifying glasses and other assisting tools (if applicable).
 - » Teachers should demonstrate how to use a magnifying glass properly: first, place the magnifying glass close to the object, then bring the magnifying glass closer to the eyes until the object looks bigger and clear. Teachers should distribute the magnifying glasses when children are not moving around and alert the fire hazards of using magnifying glass (simply focusing sunlight beam to any objects will cause fire), therefore, children must not use it to look at strong light, such as the sun.
 - » Teachers must keep the magnifying glasses and other assisting tools properly.

Activity Area	Teaching Aids/Materials for Loan
Field Crops	<ul style="list-style-type: none"> • Farming tools (e.g. various sizes of plows and shovels) • Watering tools (e.g. various kinds of containers, and bottles, cups, scoops and buckets made of various materials) • Net building tools (e.g. bamboo rods of various lengths, nets, clips and strings)
Arboretum Area	<ul style="list-style-type: none"> • Magnifying glasses • A4-sized clip boards • Cross section of tree trunks



Explanatory Notes on Activity Plan

Proposed Class Level	Teachers may adjust the activity content according to children's ability. Teachers may adopt the content of other class levels to match with children's learning progress as appropriate
Name of Area	Place for conducting the activity
Proposed Number of Participants	Manpower arrangement can be adjusted according to the number of children. The lower the number per group, the higher the quality of interaction and care for children with diverse needs
Duration	Proposed duration of activity which can be adjusted according to actual situations. Teachers may adjust the content of activity according to children's interest, without interfering children's free exploration as the main consideration factor
Teaching Aids/ Materials	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • Farming tools, watering tools, net building tools, magnifying glasses, A4-sized clip boards and cross section of tree trunks <p>Free collection from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • Children Activity Booklets <p>The following items can be prepared by schools as needed:</p> <ul style="list-style-type: none"> • Colour pens/pencils, A4 paper or drawing paper, pencil sharpeners, rainbow parachutes, beach balls, tennis balls, Plant Information at Field Crops (Appendix 1) and Colour Shade Card (Appendix 2)



Children's Developmental Characteristics	Can be served as reference for adjusting activities
Proposed Learning Objectives	Holistic/balanced learning should cover knowledge, skills and attitude. Teachers may take reference from them when planning activities. The learning objectives can be adjusted according to children's ability and in alignment with the school-based curriculum
Focus of Activity	Summary of learning focus of the activity
Proposed Activity Plan	Activity rundown which can be flexibly arranged according to children's ability and performance
Possible Adjustments	Activity can be modified/adjusted according to children's performance and diverse needs
Reference Questions for Teachers	Teachers' roles in free exploration are to facilitate children's discovery of fascinating things and phenomena in nature, so as to arouse children's interest in learning and become active learners. With regard to the actual situations, teachers may use reference questions to guide and stimulate children's learning motivation
Extended Activities	Depending on the actual situation, extended activity can be conducted either at school or AFCD Lions Nature Education Centre





C. The Use of Children Activity Booklet

In order to consolidate children's learning, after the activities, teachers should use this activity booklet for revision and discussion at school, and conduct the related extended activities.





VI Introduction of the AFCD Lions Nature Education Centre

The AFCD Lions Nature Education Centre is located at Sai Kung, consisting of exhibition halls and outdoor areas, displaying various kinds of field crops and arboretum, rocks and other interesting natural attractions. The Centre covers about 16 hectares, the place was once a government farm and designated as the Tsiu Hang Special Area in 1987. In 1991, the place became a nature education centre.



VII Activity Plans

Activity Area: A. Field Crops

Activity 1 : I am a Little Farmer

Activity 2 : Protect the Little Plants



A. Field Crops

Activities "I am a Little Farmer" and "Protect the Little Plants" can be conducted in this area.

Area Introduction

- Field Crops is located in the valley of the AFCD Lions Nature Education Centre. Seasonal crops such as legumes, aquatic crops, melons, Chinese radish, garlic, chives and leeks, roots and tubers, eggplant & fruit and short-term leafy vegetables (with growing period for 30-40 days). Crop rotation practice will be adopted for each growing season. Children can observe, compare and contrast different

plants such as yam (Tuber type), lettuce (leafy type) and tomato (eggplant & fruit type), and experience the work of a farmer through operating the tools, to understand the growing conditions of crops and the procedures in farming.

Safety Precautions

- Teachers should pay attention to children's use of tools and remind them to give due regard to safety.



- When children are using the tools, teachers should remind them to place the tools carefully to prevent children from stepping on the tools which may cause tripping hazards.
- When children are using the long and short bamboo rods to build the nets, teachers should remind them not to use the rods to point at themselves or others.
- Beware of uneven ground.

Design Rationale

- Children in Hong Kong do not have much opportunity to get close to the fields and countryside, they may not know the farming methods and the source of food. At Field Crops, children can learn about the crops' (or plants') growing conditions; experience the farming procedures; and understand the close relationship between the nature and human life, so as to bring forth the message of loving the nature and cultivate the attitude towards treasuring the food.
- In the first activity "I'm a Little Farmer", children gain a preliminary understanding of the growing conditions of crops (or plants) through plowing and watering the soil. Science activities for children allow them to freely explore, discover problems and try to find out the answers on their own through predictions, hypothesis and experiments. Therefore, this activity not

only allows children to have first-hand experience, but also proactive explorations, predictions and experiments.

- In the second activity "Protect the Little Plants", children can further experience the work of farmers and understand that besides sowing, planting and watering, farmers also have to protect crops from damage caused by pests and other animals. Children love role-play and constructive play activities. In this activity, children will cooperate to build a protection net, which enables them to demonstrate their creativity and team spirit. The purpose of building a protection net is not only for repelling pests, it is also a physical precaution to prevent animals like boars or birds from eating the crops.

Teaching Skills

- Teachers should be open-minded and encourage children to freely explore, self-discover, and solve problems during the activity. Teachers should let children guess or share how to use the tools. They should avoid too much demonstration which will stifle children's thinking.
- During free exploration/construction, teachers should observe children's performance to provide appropriate assistance and guidance; yet avoid dominating children's exploration.

- Prior to the activity, teachers are encouraged to discuss with children about what kind of tools to bring to the field for plowing the soil, which will foster children's interest and commitment. As for K3 children, teachers may discuss and construct concept maps with them to grasp their prior knowledge. Teachers may invite them to prepare and bring a tool for plowing the soil.
- Under safe conditions, teachers should let children freely choose the tools and methods to water and plow the soil. Children should not be asked to use the tools provided only, for example, they may use their own bottles or hands for watering or their own tools for plowing. However, teachers should avoid using the disposable plastic bottles and cups in order to instill the concept of reducing waste source and recycling for environmental protection.
- While inviting children to observe and share the characteristics of various farming tools, they may have other interesting discoveries, such as an inverted reflection in water. Teachers may explore the topic with children in a flexible manner, they may also jot down the questions for further sharing at school.
- To avoid domination, teachers should let children freely suggest and test different methods in building nets.
- The "Agriculture Hall" in the AFCD Lions Nature Education Centre displays animal and crop specimens, and organic produces. Teachers may use other facilities in the Centre flexibly as a reference for teaching.
- According to actual situations and children's interests, teachers may conduct extended activities at school.

Activity 1: I am a Little Farmer



Proposed Class Level	K1	
Name of Area	Field Crops	
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: <ul style="list-style-type: none"> • Farming tools, including plows and shovels in various sizes • Watering tools, including various kinds of containers, and bottles, cups, scoops and buckets made of various materials 	
Children's Developmental Characteristics 3-4 years old	<ul style="list-style-type: none"> • Enjoy role-play activities • Enjoy exploration through body and movement 	
Proposed Learning Objectives	[Knowledge]	Children are able to identify various farming tools, such as plows and shovels
	[Skill]	Children are able to use different tools for watering
	[Attitude]	Children are able to enjoy and appreciate the nature
Focus of Activity	Enable children to have a basic understanding of different farming and watering tools, and provide children with the opportunities to use the tools for plowing and watering.	



Proposed Activity Plan
(Procedures)

Introduction

Teacher leads children to Field Crops and asks questions: What is this place? What do you see? Have you seen the fields before? Do you know the use of the fields? What are the colours of vegetables and fruits? Which is your favourite vegetable or fruit? Let children express freely and share what they have heard/seen so as to understand children's prior knowledge and experience regarding the fields.

Process

- Teacher invites children to experience the work of a farmer.
- Teacher shows them different farming tools (such as plow and shovel) and let them try to use the tools.
- If children cannot use the tools, teacher can give a demonstration.
- After plowing the soil, teacher asks children if they know what else a farmer needs to do (children may respond freely).
- Teacher summarises children's sharing and simulates sowing. Teacher tells them that farmer needs to water the soil for the plants to grow periodically, just like we need to drink water every day. Teacher shows them different watering tools and containers, (such as glass bottles, water bottles, cups, scoops and buckets), then invites them to explore the use of tools and take turns to water the soil.
- During the watering process, teacher observes and pays attention to children's use of the tools, and provides assistance if needed.

Conclusion (Sharing)

- Teacher revises with children about what they have discovered; for example, the tools used to plow and water the soil, and plants need water to grow.
- Finally, teacher may invite them to share their feelings in the fields, for example, is the work of a farmer difficult? Teacher guides them to consider if food comes easily, so as to bring forth the message of care for the nature and treasuring food.

Possible Adjustments

- Children in Hong Kong do not have much opportunity to get close to the fields, and may not understand the work of a farmer. As individual children have different prior knowledge and experience, teachers can understand children's prior knowledge before the field visit, or provide a brief introduction to children about the activity to facilitate children's experience as a farmer.
 - Children may not fully master eye-hand coordination, and teachers may need to assist them in plowing and watering.
-



Reference

Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

According to children's prior knowledge and skills on the activity, teacher guides them in thinking and questioning gradually and progressively.

Before the Activity

- Have you tried watering the plant? If yes, how do you water the plant?

During the Activity

- How do you feel about touching the soil?
- How do we plow the soil?
- How do we water the fields?
- What tools can we use to plow / water?
- How are these tools used?

After the Activity

- Can you share your feelings about being a farmer?
- Do you think water is useful? What are the uses of water?

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

As it takes time for seeds to germinate, teachers can carry out planting activities at school to let children observe the growing process of seeds.

Activity 2

After the field visit, teachers can encourage children to treasure food, such as by responding to the Food Wise Hong Kong Campaign to teach children not to waste food.



Proposed Class Level	K2
Name of Area	Field Crops
Proposed Number of Participants	6-8 people in a group
Duration	Around 30-45 minutes
Teaching Aids/ Materials	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • Farming tools, including plows and shovels in various sizes • Watering tools, including various kinds of containers, and bottles, cups, scoops and buckets made of various materials
Children's Developmental Characteristics 4-5 years old	<ul style="list-style-type: none"> • Enjoy role-play activities • Enjoy questioning and show curiosity about the surroundings
Proposed Learning Objectives	<p>[Knowledge] Children are able to identify various watering and plowing tools</p> <p>[Skill] Children are able to compare and contrast the use of different tools</p> <p>[Attitude] Children are able to enjoy the fun of farming</p>
Focus of Activity	Enable children to compare and contrast different farming and watering tools, enjoy the farming experience and understand that the nature can provide us with food.
Proposed Activity Plan (Procedures)	<p>Introduction</p> <p>Teacher leads children to Field Crops to observe different crops and asks questions: How do farmers grow the vegetables and fruits? What kinds of vegetables do you like or dislike? What would you do if you are given some vegetables you do not like to eat?</p> <p>Process</p> <ul style="list-style-type: none"> • Teacher guides children to think and share about the procedures in farming and the tools required.



- Children should be able to briefly describe the farming process. After teacher invites them to share, children can take turns to try plowing and watering the soil so as to experience the process of farming.
- During the activity, teacher first shows them different farming tools (for example, plow, shovel), then guides them to think, question and share the ways of using the tools and farming methods, and let them have hands-on experience for comparison of tools.
- After plowing the soil, teacher may simulate sowing with children, then show them different watering tools and containers (such as glass bottles, water bottles, cups, scoops and buckets).
- Teacher invites them to select watering tools, then compare and contrast those watering tools. For example, what is the difference in using a scoop and a bottle for watering? Which one is more convenient, a watering can with a handle or a bottle without a handle?

Conclusion (Discussion and Sharing)

- Teacher invites children to share about their farming experience. For example, is it hard to plow the soil? What's the difference in using different watering tools?
- Finally, teacher brings out the message that farmers' work is hard, we need to care for the nature and treasure food.

Possible Adjustments

Children may not know how to use different tools, and may not be able to select appropriate tools; yet there is no urgent need for teachers to hint the correct answers; instead teachers may guide children to observe the characteristics of different tools.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

According to children's prior knowledge and skills on the activity, teacher guides them in thinking and questioning gradually and progressively.

Before the Activity

- Why do we need to water the plants?

During the Activity

- What should be done before sowing?
- What kind of tools can we use for plowing / watering?
- How do we water the fields?
- Under what conditions do we need to water the fields? Why?
- How do we use the plowing and watering tools?
- Compare and contrast the plowing and watering tools, what are the differences?



- Can you guess why farmers need to plow and water the soil?
- Can you guess what happens to seeds after sowing?

After the Activity

- Can you share your feelings about being a farmer?
- As food is precious, what should we do when ordering food?

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

As it takes time for seeds to germinate, teachers can carry out planting activities at school to let children observe the growing process of seeds.

Activity 2

Teachers can revise with children about the watering tools used in the field, and invite children to collect disposable plastic bottles and upcycle them into watering jugs with pierced holes.

Activity 3

After the field visit, teachers can encourage children to treasure food, such as by responding to the Food Wise Hong Kong Campaign to teach children not to waste food.



Proposed Class Level	K3
Name of Area	Field Crops
Proposed Number of Participants	8 people in a group
Duration	Around 30-45 minutes
Teaching Aids/ Materials	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • Farming tools, including plows and shovels in various sizes • Watering tools, including various kinds of containers, and bottles, cups, scoops and buckets made of various materials
Children's Developmental Characteristics 5-6 years old	<ul style="list-style-type: none"> • Enjoy role-play activities • Able to explore and discuss with peers, with the mastery of language development
Proposed Learning Objectives	<p>[Knowledge] Children are able to understand the farming process and food doesn't come easily</p> <p>[Skill] Children are able to select appropriate tools for farming based on their prediction</p> <p>[Attitude] Children are able to appreciate farmers' contribution and treasure food</p>
Focus of Activity	Enable children to predict the effects of using different farming and watering tools, understand that farming takes time through farmer's contribution, so as to learn to treasure food.
Proposed Activity Plan (Procedures)	<p>Introduction</p> <p>Teacher leads children to Field Crops, let them freely share their prior experience about fields and farming, so as to revise the farming methods with them. In addition, teacher may ask questions: Should we buy a lot of vegetables and fruits at one time or according to our actual needs and why?</p> <p>Process</p> <ul style="list-style-type: none"> • Teacher shows different farming tools, leads children to discuss in small groups and share the ways of using the tools.



- Teacher can guide them to observe the characteristics of different tools and predict the effects of using them. For example, what is the difference in watering efficiency by using a water bottle and a watering can with wide spout or rose attachment (like a shower head)? Besides the volume of water and the area to be covered, they can also predict the difference in the amount of soil to be washed away.
- During the experiential farming process, children can understand that different tools have different functions and characteristics. For example, teacher can invite children to observe that a watering can with wide spout or rose attachment (like a shower head) provides fine water streams or droplets which could cover a wider plantation area comparatively.
- Teacher can further guide them to deduce the reasons.
- Teacher can also demonstrate plowing to show the effects, they can also guide the children to understand that soil, air, and water of the nature are the crucial factors for growth of crops.
- Teacher can also guide them to share the major elements involved in plant growth hence to elaborate the purpose of irrigation in farming practice, as well as to make prediction about the growing process of plants.

Conclusion (Discussion and Sharing)

- Teacher can invite children to share the pros and cons by using different farming tools, such as a bigger shovel could scoop up more soil, but it weighs heavier and difficult to manoeuvre.
- After sharing, teacher can reiterate that farmer's job is not an easy one, therefore we should care for the nature and treasure food.
- Teacher can also invite children to share and discuss about ways of avoiding food wastage.

Possible Adjustments

Children may not be able to predict the results based on the characteristics of different tools. Teachers may guide children to use different tools and compare and contrast the effects.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

According to children's prior knowledge and skills on the activity, teacher guides them in thinking and questioning gradually and progressively.

Before the Activity

- Why do we need to water the plants?
- What kind of tools can we use to water the fields?
- Why do we need to plow the soil?
- What kind of tools can we use to plow the soil?



During the Activity

- Please take a look at these plowing / watering tools, how will you use these tools?
- Compare and contrast plowing / watering tools, what are the differences?
- Which tool is better and why? Which tool do you like to use?
- Which types of watering containers can cover a larger irrigation area? Why?
- Can you guess why farmers need to water and plow the soil?
- What would happen if there was no watering and plowing?
- What would happen if there was too much watering?
- Why don't plants in the forest need watering?
- Can we use sewage and clean water to water the crops? Why?
- What do plants need for healthy growth?

After the Activity

- Can you share your feelings about being a farmer?
- What should we do to avoid food wastage?

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

As it takes time for seeds to germinate, teachers can carry out planting activities at school to let children observe the growing process of seeds.

Activity 2

Teachers can revise with children about the watering tools used in the field, and invite children to collect disposable plastic bottles and upcycle them into watering jugs with pierced holes.

Activity 3

After the field visit, teachers can encourage children to treasure food, such as by responding to the Food Wise Hong Kong Campaign to teach children not to waste food.

Activity 2: Protect the Little Plants



Proposed Class Level

K1

Name of Area

Field Crops

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:

- Tools for building nets, such as long and short bamboo rods, nets, clips and strings

Prepared by teachers:

- Plastic tapes / rubber bands

Children's Developmental Characteristics 3-4 years old

- Enjoy construction play
- Able to take turns to use the materials with teacher's assistance

Proposed Learning Objectives

[Knowledge]

Children are able to understand the function of protection nets

[Skill]

Children are able to build protection nets with assistance

[Attitude]

Children are able to care for plants

Focus of Activity

Enable children to build protection nets with assistance to protect the plants.

Proposed Activity Plan (Procedures)

Introduction

- Teacher leads children to Field Crops to observe the crops and asks them: What do you see?



- Some crops are under the nets, teacher asks children: Why are crops covered by nets? Teacher may invite them to observe the nets and netting frames. Children may also touch the nets.

Process

- Teacher invites children to build a protection net together.
- Teacher shows them different construction tools (such as various lengths of bamboo rods and supporting stands), and invites them to explore ways of construction and try to build and secure the netting frame.
- If children cannot successfully secure the frame, teacher can provide demonstration and assistance.
- Then teacher and children can place a net over the frame together, and use clips to fix the net on the frame.
- Teacher can let them smell the scent from Spearmint.
- Teacher summarises that the smell of lemongrass and Spearmint are natural insect repellents. Therefore, we can reduce the use of pesticides or chemical insecticides.

Conclusion (Sharing)

Teacher revises with children on how to protect plants and brings out the message that when we protect plants, we also need to protect the nature. Meanwhile, we should treasure insects as some of them play an important role in pollination and maintaining ecological balance.

Possible Adjustments

Children may encounter difficulty in building the netting frames, yet the experience is more important than result. Teachers can provide assistance when needed.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

According to children's prior knowledge and skills on the activity, teacher guides them in thinking and questioning gradually and progressively.

Before the Activity

- Why are there some nets covering crops?

During the Activity

- How can we secure the netting frames?
- Why do some crops need to be covered by nets and some don't?
- What is the smell of Spearmint?

After the Activity

- What have we done today? Do you like it?
- Why do we need to build nets?



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

Science activities for children may integrate with different learning domains (such as art activity) to consolidate learning. While sharing on how to protect plants, children may mention scarecrows can keep birds away from crops. Teachers can make little scarecrow puppets with children to decorate small pot plants at school.

Activity 2

Teachers can make mosquito-repellent sachets with children by putting lemongrass, dried orange peel or lemon peel into small cloth bags. Children can decorate the small bags with drawing.

Supplementary Information for Teachers

AFCD Lions Nature Education Centre will plant seasonal crops with different varieties from time to time. Children may enquire further why there are different crops planted in the fields, how this diversified planting strategy can control the impact of pests and what the other benefits are, teachers may refer to the following information, but not required for teaching.

Seasonal Planting

Strategically adjust crop planting schedules to avoid the likelihood of a serious infestation. For example, larva likes to eat the brassica plants. In summer, avoid planting brassica plants such as choy sum, but planting melons instead.

Besides seasonal planting, there are crop rotation and alternate planting.

Besides, children learn not only how to protect crops, but also the roles of insects in the nature, for example:

- *Larva or caterpillar eats vegetable leaves, but the adult butterfly and moth help pollinate crops.*
 - *Aphid sucks juice from crops; ladybug is farmers' good helper as it preys on aphid.*
 - *Dragonfly is also farmers' good helper as it preys on insects which can control the pests on crops.*
 - *With the help of these beneficial insects, the natural enemies of pests, use of chemical pesticides can be avoided, thus these farmers' good helpers can be conserved.*
-



Proposed Class Level	K2
Name of Area	Field Crops
Proposed Number of Participants	6-8 people in a group
Duration	Around 30-45 minutes
Teaching Aids/ Materials	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • Tools for building nets, such as long and short bamboo rods, nets, clips and strings <p>Prepared by teachers:</p> <ul style="list-style-type: none"> • Plastic tapes / rubber bands
Children's Developmental Characteristics 4-5 years old	<ul style="list-style-type: none"> • Enjoy construction play, able to engage in games which require cooperation with peers • Able to show empathy to surroundings and willing to take care of small animals and plants
Proposed Learning Objectives	<p>[Knowledge] Children are able to understand preliminarily various ways of protecting plants</p> <p>[Skill] Children are able to build protection nets with peers</p> <p>[Attitude] Children are able to care for plants and insects</p>
Focus of Activity	Enable children to design the netting frame for protection nets and solve problems with peers, and to know there are natural ways to expel pests.
Proposed Activity Plan (Procedures)	<p>Introduction</p> <ul style="list-style-type: none"> • Teacher invites children to observe different crops and asks them: What is the function of using nets to cover crops? (Children may share freely) • Based on children's sharing, teacher tells children the nets are used to protect plants. <p>Process</p> <ul style="list-style-type: none"> • Teacher invites children to cooperate with one another to build a protection net.



- Teacher shows them different construction tools (such as various lengths of bamboo rods and supporting stands), guides them to think and share about the steps of building a net. Teacher invites them to freely design, then build and secure the netting frame. Teacher should not restrict their ways of construction.
- Children should be able to design a protection net by themselves. Yet teacher should observe their work and provide assistance if needed.
- Then teacher invites them to place a net over the frame together, and think about how to fix the net on the frame.
- Teacher can show them the crops not covered by protection nets. Children may see the labels of plants such as Mint, Perilla and Pepper, etc., and know that smells can expel pests.
- Teacher can let them get close to touch and smell the herbs, and find that we can use natural ways to expel pests, so as to reduce the use of pesticides and chemical insecticides.

Conclusion (Discussion and Sharing)

Teacher revises and shares with children about ways of protecting plants and natural ways of expelling pests to protect the nature. Meanwhile, we should treasure insects as they play an important role in pollination and maintaining biological balance.

Possible Adjustments

Children may not be used to cooperating with peers, teachers can guide them to listen to peers' opinions and express their own views.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

According to children's prior knowledge and skills on the activity, teacher guides them in thinking and questioning gradually and progressively.

Before the Activity

- What did you see in Field Crops?
- What are the functions of the nets?

During the Activity

- What do we need to build before covering with nets?
- How can we build and secure the netting frame?
- Can nets be blown away? How can we fix the net on the frame?
- Why do some crops need to be covered by nets and some don't?
- For those plants not covered by nets, what do they have in common?
- What is the smell of Spearmint?

After the Activity

- What else can we do to protect plants?



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

Activity 1

While sharing on how to protect plants, children may mention scarecrows can keep birds away from crops. Science activities for children can also integrate with different learning domains (such as art activity) to consolidate learning. Teachers can make little scarecrow puppets with children to decorate the small pot plants at school.

Activity 2

Teachers can make mosquito-repellent sachets with children by putting lemongrass, dried orange peel or lemon peel into small cloth bags. Children can decorate the small bags with drawing.

Supplementary Information for Teachers

AFCD Lions Nature Education Centre will plant seasonal crops with different varieties from time to time. Children may enquire further why there are different crops planted in the fields, how this diversified planting strategy can control the impact of pests and what the other benefits are, teachers may refer to the following information, but not required for teaching

Seasonal Planting

Strategically adjust crop planting schedules to avoid the likelihood of a serious infestation. For example, larva likes to eat the brassica plants. In summer, avoid planting brassica plants such as choy sum, but planting melons instead.

Besides seasonal planting, there are rotation planting and alternate planting.

Besides, children learn not only how to protect crops, but also the roles of insects in the nature, for example:

- *Larva or caterpillar eats vegetable leaves, but the adult butterfly and moth help pollinate crops.*
 - *Aphid sucks juice from crops; ladybug is farmers' good helper as it preys on aphid.*
 - *Dragonfly is also farmers' good helper as it preys on insects which can control the pests on crops.*
 - *With the help of these beneficial insects, the natural enemies of pests, use of chemical pesticides can be avoided, thus these farmers' good helpers can be conserved.*
-



Proposed Class Level	K3
Name of Area	Field Crops
Proposed Number of Participants	8 people in a group
Duration	Around 30-45 minutes
Teaching Aids/ Materials	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • Tools for building nets, such as long and short bamboo rods, nets, clips and strings <p>Prepared by teachers:</p> <ul style="list-style-type: none"> • Plastic tapes / rubber bands / reusable table cloths
Children's Developmental Characteristics 5-6 years old	<ul style="list-style-type: none"> • Enjoy construction and cooperative play • Able to complete tasks with peers • Able to make simple predictions and engage in discussion
Proposed Learning Objectives	<p>[Knowledge] Children are able to understand different ways of protecting plants</p> <p>[Skill] Children are able to select appropriate materials to build protection nets with peers based on their prediction</p> <p>[Attitude] Children are able to care for the environment</p>
Focus of Activity	Enable children to design, build and secure the netting frame for protection nets and solve problems with peers, and to know there are natural ways to expel pests.
Proposed Activity Plan (Procedures)	<p>Introduction</p> <p>Teacher invites children to observe different crops. Children may be able to describe the functions of nets. Teacher can further ask them to think about why nets are needed to protect plants and if other materials can be used.</p>



Process

- Teacher invites children to cooperate with one another to build a protection net.
- Teacher shows different construction tools (such as various lengths of bamboo rods and supporting stands). Teacher guides them to have a group discussion on free design of the netting frame for the protection net, then they secure the frame. Teacher should not restrict their ways of construction.
- Then teacher shows different materials (such as net, reusable plastic table cloths, etc.) and invites them to observe the characteristics of those materials. Teacher asks them to predict the results of using those materials to cover the frame.
- Teacher can let children select different materials to cover the frame, and guide them to think, make predictions and carry out experiments. For example, plastic table cloths may hinder watering and block the plants from sunshine and air.
- Teacher can show them the crops not covered by protection nets. Children may see the labels of the crops (such as Spearmint) and work out that smells can expel pests.
- Teacher can let them get close to smell the Spearmint, and find that we can use natural ways to expel pests, so as to reduce the use of pesticides or chemical insecticides.

Conclusion (Discussion and Sharing)

Teacher can invite children to share about their prediction results and bring forth the message that we need to care for the nature. For example, we should use natural ways to expel pests on crops instead of using chemical pesticides, which in turn help us avoid consuming food contaminated with toxic pesticide residues. Meanwhile, we should treasure insects as they play an important role in pollination and maintaining ecological balance.

Possible Adjustments

Children may encounter different opinions in the process of group work. Teacher can guide them to negotiate in order to reach a consensus.



Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

According to children's prior knowledge and skills on the activity, teacher guides them in thinking and questioning gradually and progressively.

Before the Activity

- Why are nets used to protect plants? Can other materials or methods be used?

During the Activity

- How can we build and secure the netting frame?
- What kind of materials should be used to cover plants? Why?
- What would happen if we used plastic table cloths to cover plants?
- For those plants not covered by nets, what do they have in common?
- Some children realise there are more than one crop in the field, why do farmers do that?

After the Activity

- Can you guess if there are other natural ways to protect plants?

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

While sharing on how to protect plants, children may mention scarecrows can keep birds away from crops. Science activities for children can also integrate with different learning domains (such as art activity) to consolidate learning. Teachers can make little scarecrow puppets with children to decorate the small pot plants at school.

Activity 2

Teachers can make mosquito-repellent sachets with children by putting lemongrass, dried orange peel or lemon peel into small cloth bags. Children can decorate the small bags with drawing.



Supplementary Information for Teachers

AFCD Lions Nature Education Centre will plant seasonal crops with different varieties from time to time. Children may enquire further why there are different crops planted in the fields, how this diversified planting strategy can control the impact of pests and what the other benefits are, teachers may refer to the following information, but not required for teaching.

Seasonal Planting

Strategically adjust crop planting schedules to avoid the likelihood of a serious infestation. For example, larva likes to eat the brassica plants. In summer, avoid planting brassica plants such as choy sum, but planting melons instead.

Besides seasonal planting, there are rotation planting and alternate planting.

Besides, children learn not only how to protect crops, but also the roles of insects in the nature, for example:

- *Larva or caterpillar eats vegetable leaves, but the adult butterfly and moth help pollinate crops.*
 - *Aphid sucks juice from crops; ladybug is farmers' good helper as it preys on aphid.*
 - *Dragonfly is also farmers' good helper as it preys on insects which can control the pests on crops.*
 - *With the help of these beneficial insects, the natural enemies of pests, use of chemical pesticides can be avoided, thus these farmers' good helpers can be conserved.*
-





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

Activity Area: **B. Arboretum Area**

Activity 3 : Little Explorers

Activity 4 : I Love the Nature



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

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: <ul style="list-style-type: none"> • 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	<p>[Knowledge] Children are able to know tree has different parts</p> <p>[Skill] Children are able to differentiate the characteristics of leaves and barks</p> <p>[Attitude] Children are able to care for trees</p>
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)	<p>Introduction Teacher asks children: What do you see here? Let children share their feelings about trees.</p> <p>Process</p> <ul style="list-style-type: none"> • 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, leaf 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	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • A magnifying glass per group • A4-sized clipboards • Cross section of tree trunks (for extended activity) <p>Prepared by teachers:</p> <ul style="list-style-type: none"> • A colour shade card per group (Appendix 2) • White paper / pencils / lead-free crayons / pencil sharpeners
Children's Developmental Characteristics 4-5 years old	<ul style="list-style-type: none"> • 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	<p>[Knowledge] Children are able to know there are veins on leaves and patterns on barks</p> <p>[Skill] Children are able to observe leaf veins and make leaf rubbing</p> <p>[Attitude] Children are able to appreciate the beauty of trees</p>
Focus of Activity	Enable children to use senses to observe, explore, compare and contrast, and describe the characteristics of trees.
Proposed Activity Plan (Procedures)	<p>Introduction</p> <p>Teacher asks children to form a circle, then share their observation and feelings about trees and woodland.</p> <p>Process</p> <ul style="list-style-type: none"> • 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	<p>Free loan from AFCD Lions Nature Education Centre through advance registration:</p> <ul style="list-style-type: none"> • A magnifying glass per group • A4-sized clipboards • Cross section of tree trunks (for extended activity) <p>Prepared by teachers:</p> <ul style="list-style-type: none"> • A colour shade card per group (Appendix 2) • White paper / pencils / lead-free crayons / pencil sharpeners
Children's Developmental Characteristics 5-6 years old	<ul style="list-style-type: none"> • Able to use drawings and words to make simple records • Able to draw simple objects
Proposed Learning Objectives	<p>[Knowledge] Children are able to know the different shapes, colours and textures of trees and leaves</p> <p>[Skill] Children are able to draw shapes of trees and leaves</p> <p>[Attitude] Children are able to appreciate the beauty of nature</p>
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)	<p>Introduction</p> <p>Teacher asks children: What do you see here? Let children share their feelings about trees and woodland.</p> <p>Process</p> <ul style="list-style-type: none"> • 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.

Activity 4: I Love the Nature



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	Collect from the activity area: <ul style="list-style-type: none"> • Natural materials 	
Children's Developmental Characteristics 3-4 years old	Able to make simple comparison of size and classification as they have basic spatial concept	
Proposed Learning Objectives	[Knowledge]	Children are able to know the interesting things and places related to the nature
	[Skill]	Children are able to use their senses to explore the natural environment
	[Attitude]	Children are able to enjoy the fun of group games in the nature
Focus of Activity	Enable children to use natural materials collected from the nature to conduct activities, so as to nurture their care for the nature.	
Proposed Activity Plan (Procedures)	<u>Introduction</u>	Teacher explores with children and asks them: What do you see on the ground?
	<u>Process</u>	<ul style="list-style-type: none"> • Teacher invites children to observe and examine the rocks and fallen leaves on the ground. • Teacher invites them to collect different leaves and stones.



- Teacher guides them to classify, compare and contrast the leaves and stones.
- Teacher invites them to play the game “Blowing Strong Wind”. Children may set up their own game rules under teacher’s guidance.
- Teacher asks 6 children to choose a tree together and surround it by holding one another’s hands.
- Teacher invites them to close their eyes and hear the nature quietly.
- Teacher invites them to take a deep breath to smell the air of the surroundings.
- Teacher invites them to open their eyes to look up the tree, and asks them: What do you see?
- Teacher invites them to share one interesting discovery.

Conclusion (Sharing)

Teacher invites children to share their feelings to bring out the beauty of the nature.

Possible Adjustments

Teacher must note that children may not be familiar with or have no idea how to use their senses to explore the nature. It would be appropriate for teacher to slow down the pace and let children relax after the group game, then guide them to use hearing, smell and sight to explore the nature.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

Teacher mainly guides children to feel the nature and think about how to make use of the natural materials for creative work and play, so as to appreciate the beauty of the nature and the functions of trees and woodland.

Before the Activity

- What can you find or collect from the ground?

During the Activity

- How can you make use of the natural materials collected to play games?
- How do you feel when you close your eyes?
- What can you hear?
- What can you smell?

After the Activity

- Can you share about the most special or favourite thing in this area?



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

At school, teachers can continue to discuss with children on the function of trees. Teachers invite them to find out various wooden objects in campus or at home, so children will gain deeper understanding of the importance of trees in human life. Therefore, we should treasure and care for trees and woodland, for example, we should reduce paper consumption or avoid using disposable paper cups or wooden chopsticks, etc., to instill the concept of reducing waste source and recycling for environmental protection.

Activity 2

Teachers can invite children to draw their favourite scenery of the AFCD Lions Nature Education Centre in the Children Activity Booklet, and encourage them to show their drawings to parents and friends to share the message of protecting trees and woodland.



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	Collect from the activity area: <ul style="list-style-type: none"> • Natural materials Prepared by teachers: <ul style="list-style-type: none"> • Rainbow parachutes • Beach balls • Tennis balls • Cameras
Children's Developmental Characteristics 4-5 years old	Start to have cooperative play with peers
Proposed Learning Objectives	<p>[Knowledge] Children are able to know that the nature provides us with beautiful environment</p> <p>[Skill] Children are able to work with peers in the activities</p> <p>[Attitude] Children are able to enjoy the fun of playing group games in the nature</p>
Focus of Activity	Enable children to use natural materials for creative work and conduct play activities in the woodland, so to experience the beauty of and fun in the nature.
Proposed Activity Plan (Procedures)	<p>Introduction Teacher explores with children and asks them: What do you see on the ground?</p> <p>Process</p> <ul style="list-style-type: none"> • Teacher invites children to use the leaves and stones collected from the ground to arrange in different patterns. • After children finish their creative work, teacher can use camera to take pictures of their work.



- Teacher invites children to compare and contrast the patterns and share their views.
- Teacher asks children to form in groups of 6-8, then hold hands to form a circle.
- Teacher distributes a “rainbow parachute” to each group, children can cooperate and shake it together.
- Teacher guides children to compare their experience of playing “rainbow parachute” in the spacious outdoor area and at school. What are the differences? (teacher may mention the functions of wind force)
- Teacher distributes a beach / tennis ball to each group, children can place the ball on the parachute to roll around.
- Teacher changes the ball for children and asks them to compare and contrast which ball weighs heavier. What are the differences when using different balls? (teacher may mention the rolling speed of an object on the “rainbow parachute” is related to the weight of the object).

Conclusion (Discussion and Sharing)

Teacher invites children to share their feelings to bring out the beauty of the nature and multiple functions of trees, so as to appreciate the nature and care for trees and woodland.

Possible Adjustments

When playing with a “rainbow parachute”, children may discover different phenomena. Teachers can discuss with children according to their interests and ability.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

Teacher mainly guides children to feel the nature and think about how to make use of the natural materials for creative work and play, so as to appreciate the beauty of the nature and the functions of trees and woodland.

Before the Activity

- What can you find and collect from the ground?

During the Activity

- What can we do with the natural materials collected earlier?
- How can you make use of the collected materials to create a beautiful picture?

After the Activity

- What are the differences between playing games here and at school?
- What would happen if there were no trees in this place?



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

At school, teachers can continue to discuss with children on the function of trees. Teachers invite them to find out various wooden objects in campus or at home, so children will gain deeper understanding of the importance of trees in human life. Therefore, we should treasure and care for trees and woodland, for example, we should reduce paper consumption or avoid using disposable paper cups or wooden chopsticks, etc., to instill the concept of reducing waste source and recycling for environmental protection.

Activity 2

Teachers can invite children to draw their favourite scenery of the AFCD Lions Nature Education Centre in the Children Activity Booklet, and encourage them to show their drawings to parents and friends to share the message of protecting trees and woodland.



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	Collect from the activity area: <ul style="list-style-type: none"> • Natural materials Prepared by teachers: <ul style="list-style-type: none"> • Cameras
Children's Developmental Characteristics 5-6 years old	Able to understand the principle of fairness and try to design their own games and game rules
Proposed Learning Objectives	<p>[Knowledge] Children are able to know that the nature provides us with a beautiful environment</p> <p>[Skill] Children are able to create large-scale collage work and conduct group games with peers</p> <p>[Attitude] Children are able to treasure the nature</p>
Focus of Activity	Enable children to use natural materials for creative work and conduct group games in the woodland, so as to understand the close relationship between human beings and the nature.
Proposed Activity Plan (Procedures)	<p>Introduction</p> <ul style="list-style-type: none"> • Teacher explores with children and asks them: What do you see on the ground? <p>Process</p> <ul style="list-style-type: none"> • Teacher invites children to form in groups of 6-8, each of them has to collect different leaves, stones, twigs and branches. • Then teacher asks each group of children to find a space to create a large-scale collage work together on the ground using the materials just collected. • When they finish, teacher can use camera to take pictures of their work.



- Teacher can invite children to create group games, making good use of space in the nature to conduct different kinds of running and jumping, or gross motor activities.
- During the activity, teachers should pay attention to children's safety. Teachers may use a whistle or bell to serve as a reminder or terminate the activity if needed.

Conclusion (Discussion and Sharing)

Teacher invites children to share their feelings to bring out the beauty of the nature and multiple functions of trees, so as to appreciate the nature and care for trees and woodland, as well as to understand that trees provide shelters for many animals.

Possible Adjustments

- Though children are able to conduct cooperative play, they may still encounter conflicts. Teacher can intervene and guide them to complete the group collage work and game in a timely manner.
- When engaging in group games, children can apply some early mathematics concepts, such as counting and space. Teacher can observe them and provide guidance if needed.

Reference Questions for Teachers

(Select questions according to circumstances and in line with the proposed learning objectives)

Teacher mainly guides children to feel the nature and think about how to make use of the natural materials for creative work and play, so as to appreciate the beauty of the nature and the functions of trees and woodland.

Before the Activity

- What can you find and collect from the ground?

During the Activity

- What can we do with the natural materials collected earlier?
- How can you make use of the collected materials to create a beautiful picture?
- What are the differences between playing games here and at school?

After the Activity

- What are the functions of trees?
- If there were no trees on the earth, what would happen?
- What are the methods to protect our trees, and our woodland?



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

At school, teachers can continue to discuss with children on the functions of trees. Teachers invite them to find out various wooden objects in campus or at home, so children will gain deeper understanding of the importance of trees in human life. Therefore, we should treasure and care for trees and woodland, for example, we should reduce paper consumption or avoid using disposable paper cups or wooden chopsticks, etc., to instill the concept of reducing waste source and recycling for environmental protection.

Activity 2

Teachers can invite children to draw their favourite scenery of the AFCD Lions Nature Education Centre in the Children Activity Booklet, and encourage them to show their drawings to parents and friends to share the message of protecting trees and woodland.



VIII Conclusion



The proposed activities of the Learning Activity Resource Package “*Countryside Adventure*” are for teachers’ reference only. Teachers are welcome to make optimal use of the natural resources and environment of the AFCD Lions Nature Education Centre to create more diversified activities to enable children to understand the importance of care for the nature through free exploration and play, as well as to build good habits of environmental protection and conservation of resources.

Appendix 1

Plant Information at Field Crops of AFCD Lions Nature Education Centre

Common Perilla

Features : Leaves stained with purple,
pubescent, with scent of
Common Perilla
Flowering & : Flowering: Oct-Dec;
fruiting : fruiting: Nov-Feb
Uses : Additive (flavouring),
medicinal (folklore)



Mint

Features : Leaves opposite, with scent
of Mint
Flowering & : Flowering: Aug-Sep;
fruiting : fruiting: Oct
Uses : Material (essential oils),
spice, medicinal (folklore)



Long Pepper, Bell Pepper

Features : Mature fruit usually red
Flowering & : Summer to autumn
fruiting
Uses : Food (vegetable),
additive (flavouring)



Lemon-grass, Citronella Grass

Features : Perennial herb, with scent of
Citronella Grass
Flowering & : Nov-Apr of the following
year
Uses : Material (essential oil),
additive (flavouring)



Some information and pictures are provided by AFCD.

Appendix 2

Colour Shade Card



