

ABC

Active, Beautiful, Clean
Waters for all

PRE-SCHOOL



Learning Trail

@Sengkang Floating Wetland

TRAINER'S GUIDE

CONTENTS

Objectives of the Active, Beautiful, Clean Waters (ABC Waters) Learning Trail @ Sengkang Floating Wetland for Pre -School students	2
Details of the Pre-school ABC Waters Learning Trail	2
Educational Approaches	2
Before the Learning Trail	3
On the Day of the Learning Trail	3
Summary of Pre- School ABC Waters Learning Trail @ Sengkang Floating Wetland	4
Lesson Plan for Pre-School ABC Waters Learning Trail @ Sengkang Floating Wetland	6
Introduction (10 min)	6
Station 1: Active Station (20 min)	8
Station 2: Beautiful Station Part 1 (15 min)	11
Station 3: Beautiful Station Part 2 (15 min)	12
Station 4: Clean Station (30 min)	13
Debrief and Reflections (15 min)	15
Annexes	
Annex 1 Preparation Brief for ABC Waters Learning Trail	18
Annex 2 Suggested packing list of resources for trainers	19
Annex 3 Suggested Information for Risk Assessment Management Form	20
Notes	24

Objectives of the Active, Beautiful, Clean Waters (ABC Waters) Learning Trail @ Sengkang Floating Wetland for Pre School

This place-based inquiry experience aims to help students:

1. Foster a sense of national identity and pride as Singaporeans, as well as emotional rootedness to the nation.
2. Develop a sense of appreciation and ownership of nature, the environment and our waters.
3. Promote a greater sense of appreciation, understanding and importance of the five senses and its uses.
4. Develop leadership skills, instilling core values and the will to prevail to ensure Singapore's continued success.
5. Evoke a sense of wonder towards innovation, as students understand the water treatment processes that give us clean water.
6. Promote stewardship of our water resources and highlight the need for everyone to play a part to keep our waterways and reservoirs active, beautiful and clean.

Details of the Pre –School ABC Waters Learning Trail

Level:	Pre-school students
Programme Duration:	1 hour 45 minutes
Ratio of Facilitator to Students:	1: 10 students
Recommended maximum size group:	30

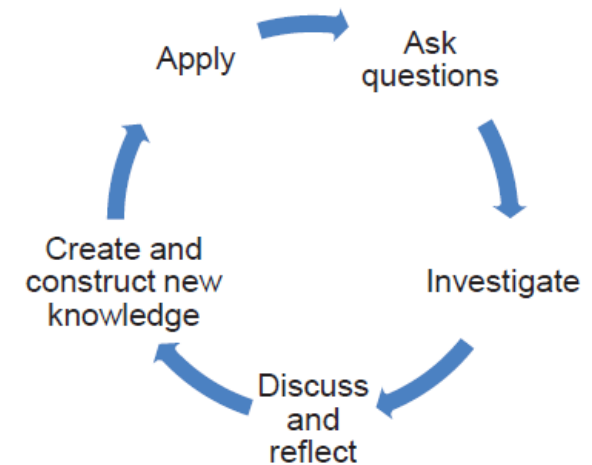
Educational Approaches

This trail uses inquiry-based and experiential learning.

What is Inquiry-Based Learning?

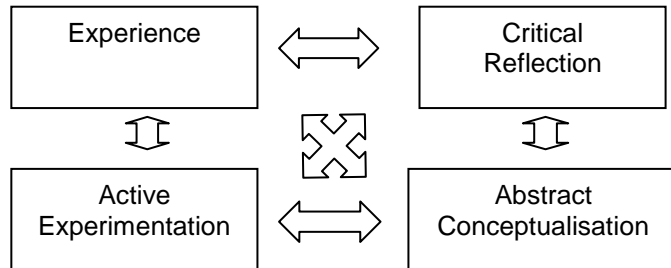
The inquiry-based approach focuses on student constructed learning, as opposed to teacher or guide-transmitted information. This process aims to enhance learning through:

1. Increased student involvement.
2. Multiple ways of knowing.



What is Experiential Learning?

Experiential Learning is the process of creating meaning from direct experience.



Before the Learning Trail

- Brief students on the field trip and what to bring and wear (Annex 1).
- Conduct a reconnaissance of Sengkang Floating Wetland and familiarise yourself with the area and stations.
- Fill in the information required for your Risk Assessment Management (RAM) form. Some information is given in Annex 3.

On the day of the Learning Trail – Wet Weather Procedure

- Check the weather forecast and lightning status 1-2 hours before the Learning Trail begins.
 - Visit the National Environment Agency website www.weather.gov.sg
 - Call the Lightning Advisory number at 62826821.
- Do not start the trail if there is a Lightning Category 1 alert or heavy downpour. Remain at the Anchorvale Community Club.
- If lightning or heavy rain persists, stop the programme. Make arrangements to return to school. If possible, plan for a make-up learning journey.
- Should you encounter bad weather during the Learning Trail, bring the students back to the Anchorvale Community Club as soon as possible. If it is not possible to reach the club in time, head for shelters along the trail and move back to the club as soon as you can.

Summary of Preschool ABC Waters Learning Trail @ Sengkang Floating Wetland

Station	Duration	Location	Learning Points	Activity	Page no.	Materials
-	10 min	Anchorvale Community Club foyer	Introduction <ul style="list-style-type: none"> • Introduction of the ABC Waters Programme • Aims of the ABC Waters Learning Trail @ Sengkang Floating Wetland • Safety Briefing 	-	1 - 4	<ul style="list-style-type: none"> • Student booklets
1	20 min	Viewing Gallery	Active Station <ul style="list-style-type: none"> • The importance of caring for the environment. 	<ul style="list-style-type: none"> • “A Legend of the Wetlands” 	5	<ul style="list-style-type: none"> • 4 mats • “A Legend of the Wetlands” storybook • Book stand • Garbage bags • Metal tongs
2	15 min	By the basketball court	Beautiful Station (Part 1) <ul style="list-style-type: none"> • Using the sense of sight to observe the surroundings. • Using the sense of touch to identify the textural items. • Appreciating nature and the environment and our waters. • Appreciating Sengkang Floating Wetland as a community-friendly environment. 	<ul style="list-style-type: none"> • Spot Me! Plants and Trees • Let’s Explore 	6 – 7	<ul style="list-style-type: none"> • 4 mats • Pencils and erasers • Crayons

Station	Duration	Location	Learning Points	Activity	Page no.	Materials
3	15 min	Sheltered area along the bridge heading towards the Sengkang Floating Wetland	Beautiful Station (Part 2) <ul style="list-style-type: none"> Using the sense of sight to observe the surroundings. Understanding more about the floating wetland and its effect on the environment. Biodiversity. Practicing their observation skills. Recognizing some wetland plants. Observing animals at and around the wetland. 	<ul style="list-style-type: none"> Spot me! Animals and insects Spot me! Wetland Plants 	8 – 9	
4	30 min	The Sengkang Floating Wetland	Clean Station <ul style="list-style-type: none"> Using the senses of sight, smell and hearing to observe the surroundings. Observing, identifying and discerning negative and positive human activities. Inferring how these activities can affect the water quality and biodiversity of Sengkang Floating Wetland and Punggol Reservoir Appreciating nature, the environment and our waters. 	<ul style="list-style-type: none"> Spot the mistake! Can you smell me? Can you hear me? Memory Shot 	10 - 12	<ul style="list-style-type: none"> 4 mats Pencils and erasers Crayons
-	15 min	Anchorvale Community Club	Debrief and Reflections <ul style="list-style-type: none"> Recap the concept of ABC Waters. Go through their reflections. Recap the observations made throughout the trail. Point out their consistent use of their 5 senses and how important they are. Concluding points. 	<ul style="list-style-type: none"> Let's Discuss! 	13	<ul style="list-style-type: none"> Feedback forms
Total duration : 1 hr 45 min						

Lesson Plan for Pre-School ABC Waters Learning Trail @ Sengkang Floating Wetland.

Introduction (10 minutes)

Location: Anchorvale Community Club foyer

Learning Points:

- Introduction of the ABC Waters Programme
- Aims of the ABC Waters Learning Trail @ Sengkang Floating Wetland
- Safety Briefing

Trainer's Notes	Cross-Reference / Materials
1. Welcome students to the Sengkang Floating Wetland at Punggol Reservoir.	Pg 1
2. Distribute the booklet to the students and ask them to write their names and class.	
3. Give a brief introduction of Sengkang Floating Wetland and briefly talk about the meaning of ABC Waters Programme <ul style="list-style-type: none">• The ABC Waters Programme is where waterways and reservoirs have been transformed into beautiful and clean streams, rivers and lakes, creating a vibrant City of Gardens and Water. At the same time, these new community spaces bring people closer to water so they can appreciate and cherish this precious resource.• Active – To involve the community living around Punggol Reservoir in activities in, on and by our waters.• Beautiful – to ensure the reservoir is kept clean and attractive.• Clean – to ensure good quality of the water in the reservoir.	Pg 2
4. Explain the aims of the trail and the themes that will be covered. <ul style="list-style-type: none">• What is a wetland?• What lives on a wetland?• How can you help to keep our reservoirs clean and beautiful?	Pg 3 - 4

<p>5. Go through the instructions with the students and explain that they can refer to the map on page 4 to check on their stations.</p>	
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- Listen to the instructions given by the teacher.
- Complete the activities.
- Do not wander off on their own.
- If they need help, please approach their buddy or the teacher.

Station 1: Active Station (20 minutes)

Location: Viewing Gallery

Learning points:

- The importance of caring for the environment and our waters.

Trainer's Notes	Cross-Reference / Materials
<ol style="list-style-type: none">1. Bring students to the viewing gallery.2. Put the mats on the floor and get the students to sit on the mat.3. Activity: “ A Legend of the Wetlands”<ul style="list-style-type: none">• Read the story of “A Legend of the Wetlands”.• Go through the reflection questions in the booklet and ask the students what they think of the story. Ask the students to circle their choices.<ul style="list-style-type: none">– Did you enjoy the story about Nira? Yes/No– Can you help to keep our reservoirs clean and beautiful? Yes/No– Will you take care of our reservoirs by not littering? Yes/No4. Proceed with a clean-up activity. Students will go around picking up litter with tongs in the surrounding area and disposing it in a plastic bag provided.	<p>4 mats, “A Legend of the Wetlands” story book, storybook holder</p> <p>Pg 5</p> <p>Garbage bag and tongs</p>

Station 2: Beautiful Station Part 1 (15 minutes)

Location: By the basketball court

Learning Points:

- Using the sense of sight to observe the surroundings.
- Using the sense of touch to identify the textural items.
- Appreciating nature, the environment and our waters.
- Appreciating Sengkang Floating Wetland as a community-friendly environment.

Trainer's Guide	Cross-reference / materials
<ol style="list-style-type: none">1. Bring students to the walking path beside the basketball court.2. Activity: Spot me! Plants and Trees<ul style="list-style-type: none">• Ask students to identify and point out the different types of trees and plants that are listed in their booklet on page 6. Tick those that they see.<ul style="list-style-type: none">– Sea Poison– Fish Tail Palm– Golden Torch– Firecracker Plant– Shoebuttan Ardisia– Creeping Daisy– Sea Hibiscus3. Discuss what visitors can do at the park. (Jogging, exercising, enjoying the outdoors, picnic, etc.)4. Lay down 4 mats on the pavement and get the students to sit down on it.5. Remind the students to be careful of oncoming cyclists.	<p>Pg 6</p> <p>4 mats, crayons</p>

6. Activity: Let's Explore!

- Ask the students to look around for an item with an interesting texture such as a leaf, a rock or a fallen tree bark and ask them to rub it on the space in page 7 of the activity book.

Pg 7

Station 3: Beautiful Station Part 2 (15 minutes)

Location: Sheltered area along the bridge heading towards Sengkang Floating Wetland.

Learning Points:

- Using the sense of sight to observe the surroundings.
- Understanding more about the floating wetland and its effect on the environment.
- Biodiversity.
- Practicing their observation skills.
- Recognizing some wetland plants.
- Observing animals at and around the wetland.

Trainer's Notes	Cross-reference / materials
<p>1. Bring students to the floating wetland.</p> <p>2. Explain to the students what a floating wetland is. Briefly explain that the floating wetland helps to clean the water. It is healthy for the environment and is aesthetically pleasing too. It also provides food and shelter for the animals. The plant roots help to absorb nutrients from the water and break down pollutants.</p> <p>3. Activity: Spot Me! Animals and Insects</p> <ul style="list-style-type: none">• The wetland is also home to various animals and insects. Ask the students to look around and try to spot the animals listed on page 8. Tick those they can see. Students should continue to spot and record animals as they continue their route.– Dragonfly– Grasshopper– Apple Snail– Apple Snail Eggs– Golden Orb Spider– Ashy Tailorbird– White Egret	<p>Pg 8</p> <p>Pg 8</p>

<ul style="list-style-type: none"> – White-bellied Fish Eagle – Olive-backed sunbird – Water monitor Lizard – Collared Kingfisher – Red-eared slider <ul style="list-style-type: none"> • Get the students to sit on the deck. Ask the students to refer to the photos on page 9 and try to spot the different wetland plants. Tick those they can see. <ul style="list-style-type: none"> – Narrowleaf Cattail – Canna – Fragrant Pandan – Papyrus – Umbrella Plant <p>4. Explain to them that the animals that are listed are indicators of a healthy habitat. For example, dragonflies are indicators of clean water. Ask them to count the number of animals they can spot.</p>	<p>Pg 9</p>
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Station 4: Clean Station (30 minutes)

Location: The mangosteen shelter at Sengkang Floating Wetland

Learning Points:

- Using the senses of sight, smell and hearing to observe the surroundings.
- Observing, identifying and discerning negative and positive human activities.
- Inferring how these activities can affect the water quality and biodiversity of Sengkang Floating Wetland and Punggol Reservoir.
- Appreciating nature, the environment and our waters.

Trainer's Notes	Cross-reference / materials
<p>1. Bring the students to the floating wetland and get them seated in the mangosteen shelter or on mats.</p> <p>2. Explain that Sengkang Floating Wetland is open to visitors but at the same time, human activities can have a good or positive impact on the wetland. For example, by visiting the wetland on this trail, we are learning more about it and finding out how to appreciate and take care of it. However there are negative actions that must be avoided.</p> <p>3. Activity: Spot the mistake!</p> <ul style="list-style-type: none">• Ask students to take a look at the picture on page 10 and ask them to compare it with their current surrounding. Discuss with them the differences between the picture and the current surroundings.<ul style="list-style-type: none">– The girl littering into the water.– The boy riding a bicycle on the floating platform– The boy swimming in the waters.• Discuss why these activities impact the floating wetland negatively.<ul style="list-style-type: none">– Littering will dirty the water and affect aquatic life.– The boy should dismount and push the bicycle as cycling at the floating wetland can be dangerous for others.– Swimming in the water is dangerous as the waters are deep. <p>4. Activity: Can You Smell Me? Can You Hear Me?</p>	<p>4 mats</p> <p>Pg 10</p>

<ul style="list-style-type: none"> • Ask students to find a quiet spot around the floating wetland to sit down, close their eyes and use their ears and nose to identify different smells and sounds. Walk around to make sure they keep their eyes closed. Do not allow them to wander too far. Remind students to remain quiet. Give them 5 minutes to do this. • After 5 minutes, ask students to gather back to the mat and share with the rest of the group of the various sounds and smells they encountered. Ask them to place a tick on page 11 if the smells and sounds they encountered are listed in the booklet. If there are other smells and sounds that are not listed in the book, ask them to list down in the space provided. <p>5. Activity: Memory Shot</p> <ul style="list-style-type: none"> • Show students how to form a camera with their hand. Ask them to hold their hand up to their eyes and look for scenery that they like, before drawing it out on page 12 of the booklet. 	<p>Pg 11</p> <p>Pg 11</p> <p>crayons Pg 12</p>
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Debrief and Reflection (15 minutes)

Location: Shady area near Anchorvale Community Club

Learning Points:

- Recap the concept of ABC Waters.
- Go through their reflections.
- Recap the observations made throughout the trail.
- Point out the consistent use of their 5 senses and how important they are.
- Concluding points.

Trainer's Notes	Cross-reference / materials
<p>1. Discuss the impact of human activities observed around Sengkang Floating Wetland.</p> <ul style="list-style-type: none">• What types of activities did you observe (e.g. People jogging, cycling, enjoying the outdoors, walking their dogs)• Which activities have a negative impact on the reservoir? Why?<ul style="list-style-type: none">▪ Littering – pollutes the reservoir water (use the story on Nira as reference)▪ Skateboarding on the boardwalk – Loud noises can scare the fauna at the wetland and damage the facilities.▪ Feeding the fishes – leftover food can cause pollution and algae to grow excessively and this will result in poor water quality. The fishes will not know how to look for food on their own.	Pg 5 & 10
<p>2. Recap the animals and plants the students have identified and ask them which one they like best.</p> <ul style="list-style-type: none">• Ask them to name the plants and animals they can remember from the trail and what they like about it.• Discuss the wetland plants and ask them if they remember its purposes.	Pg 6, 8 & 9
<p>3. Discuss the five senses and how they have utilized it on the trail.</p> <ul style="list-style-type: none">• Sight (Eyes)<ul style="list-style-type: none">– Identifying the animals, plants and trees.– Spotting negative behaviours.– Capturing and drawing the scenery.	Throughout the booklet

<ul style="list-style-type: none"> • Smell (Nose) <ul style="list-style-type: none"> – Identifying surrounding scents. • Touch (Hands) <ul style="list-style-type: none"> – Looking for items with texture to rub in the booklet. • Speaking (Mouth) <ul style="list-style-type: none"> – Discussing the learning experiences. • Hearing (Ears) <ul style="list-style-type: none"> – Identifying the surrounding sounds. – Listening to instructions and the learning points. <p>4. Discuss what people can do to keep Sengkang Floating Wetland and the Punggol Reservoir active, beautiful and clean.</p> <ul style="list-style-type: none"> • Active – To involve the community living around Punggol Reservoir in activities in, on and by our waters (for e.g. leisure activities such as cycling and having picnics, concerts at the viewing gallery, nature walks) • Beautiful – to ensure the reservoir is kept clean and attractive (e.g. do not litter, do not vandalize the facilities) • Clean – to ensure that the water quality in the reservoir is good (e.g. do not litter, do not swim in the reservoir, and do not feed the animals.) <p>5. Activity: Let's Discuss!</p> <ul style="list-style-type: none"> • Use the questions listed on page 13 and go through what the students have learnt on this Learning Trail. <ul style="list-style-type: none"> – Name one animal and one plant you spotted at Sengkang Floating Wetland? <ul style="list-style-type: none"> ▪ Any of the plants and/or animals listed on page 8 and 11. – How can you save water at home and in school? <ul style="list-style-type: none"> ▪ Take shorter showers (less than 5 minutes) ▪ Use a mug when brushing your teeth. ▪ Do not let the water run when washing your hands. – How can you help to keep the water in our reservoirs clean? <ul style="list-style-type: none"> ▪ Throw rubbish in the bins. Do not litter. ▪ Do not feed the animals and fishes at the reservoir. 	<p>Pg 5 & 10</p> <p>Pg 13</p>
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6. Concluding points for the Learning Trail.

- The importance of the Active, Beautiful, Clean Waters (ABC Waters) Programme.
- The innovative use of wetland plants at Sengkang Floating Wetland.
- The uses of our five senses.
- We all need to do our part to care for our waterways and reservoirs and keep them clean.

Annex 1

Preparation Brief for ABC Waters Learning Trail

Suggested What-to-bring-list for Students

- A fieldtrip bag (small bag for items below)
- Water bottle
- Insect Repellent
- Sun block
- Raincoat or foldable umbrella (in case of rain)
- A pen, or pencil and eraser

Travel light!

Do not bring:

- Digital hand held gaming devices
- Textbooks
- Sports equipment

Optional

- Digital camera or camera hand phone
- Snacks
- Cap

Suggested Attire for Students

- T-shirt
- Shorts, or track pants (lighter colours preferable)
- Covered Shoes (no slippers)

Annex 2

Suggested Packing List of Resources for Trainers

- First aid kit
- Insect Repellent
- Camera (Optional)
- Four to five pieces of compasses (Optional)
- Ziploc bag for students to store their valuable items if any
- “The Legend of the Wetlands” storybook
- Book stand.
- Garbage bags and tongs for litter picking
- Crayons
- Pencils/pen/erasers
- 15 mats (4 mats per station, 3 extra just in case)

Annex 3

Suggested Information for Risk Assessment and Management Form

Page 1

Activity	ABC Waters Learning Trail	Venue:	Sengkang Floating Wetland, Punggol Reservoir
Date:			
Estimated Time	(Duration 1.5 – 2 hours)		

LOCAL AUTHORITIES CONTACT DETAILS			
Company name & full address:			
Office number:		Mobile no:	
Contact Person			

Page 4 - 32

WHY
State Learning Objectives To better understand: <ul style="list-style-type: none"> • The importance of the Active, Beautiful, Clean Waters (ABC Waters) Programme. • The Sengkang Floating Wetland and its functions. • The need to care for our waterways and reservoirs and keep them clean.
Does the activity meet learning objectives? (Yes/No) Yes

Page 4 - 35

WHEN (TIMING)		
Programme		Risk Control: Strategies to reduce risk to an acceptable level
Duration of activity is appropriate (e.g. start/stop/rest time)	<ul style="list-style-type: none"> • Possible hazard • Lightning category 1 • (see weather) 	Approximately 2 hours.
Timing of activity is appropriate (e.g. 5km run conducted before 10.30am or after 3.30pm)		Timing appropriate. Early morning or late afternoon recommended

Page 4 -35

WHO (PEOPLE)	
Teachers and Adult Supervisors	Risk Control: Strategies to reduce risk to an acceptable level
Teacher(s)/adult supervisor(s) are competent and can supervise activity and manage participants (e.g. teacher/adult supervisor: participant ratio met for specific activity, female adult supervisor present for overnight activity involving female participants).	<ul style="list-style-type: none"> • Instructors are experienced in supervising or managing students in an outdoor setting. • Overall – one or two adults: 10 to maximum 20 students. Adults include instructor(S) and teacher(s) or teacher aide(s) or parent volunteer(s).
Personnel are certified and competent in conducting activity.	Instructors: <ul style="list-style-type: none"> • Are experienced in conducting activities for students in an outdoor setting. • Are trained in safety procedures.
Certified first aider or paramedic is on site.	<ul style="list-style-type: none"> • Are teachers or facilitators First Aid certified?

Personnel is competent in co-ordinating/executing emergency evacuation plan (e.g. search and rescue)	<ul style="list-style-type: none"> • Instructors are competent in co-ordinating or executing emergency evacuation plan. • Suggested Emergency Evacuation Plan: <ul style="list-style-type: none"> ▪ All students and adult supervisors (teachers, instructors, parent volunteers, teaching aide, etc.) to gather for head count. ▪ Students are to move to a safe area (e.g. shelter) ▪ Students are supervised by an adult, while teacher handles the emergency or make a decision to call for evacuation. ▪ If an ambulance has to be called, the teacher will provide the information to be given to ambulance (time, incident, location, meeting point with ambulance, casualty status etc.)
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Participants	Risk Control: Strategies to reduce risk to an acceptable level
Participants understand the objectives of activity.	<ul style="list-style-type: none"> • A Learning Trail briefing, including the aims will be conducted at the start of the programme.
Participants are competent for activity	<ul style="list-style-type: none"> • N.A.
Participants are aware and adhere to safety requirements of activity.	<ul style="list-style-type: none"> • A safety briefing will be conducted before the ABC Waters Learning Trail commences.

Page 4 - 39

WHERE	
Venue	Risk Control: Strategies to reduce risk to an acceptable level
Area map is available for use during activity	<ul style="list-style-type: none"> • Map of Sengkang Floating Wetland is included in the student booklet, to be carried by all students and teachers.
Reconnaissance of area is conducted	<ul style="list-style-type: none"> • Guides or teachers have conducted a reconnaissance of the trail route.
In-country activities and facilities (e.g. police, national park rangers, and hospital) are accessible and/or contactable for assistance and support in the event of an emergency	<ul style="list-style-type: none"> • PUB aware of the programme.

WEATHER	
Inclement Weather	Risk Control: Strategies to reduce risk to an acceptable level
Weather forecast and warning (e.g. lightning, flash flood, hot or cold spell, haze)	<ul style="list-style-type: none"> • The weather forecast and lightning status should be checked 1 – 2 hours before the ABC Waters Learning Trail begins. • Teachers or facilitators should not start the ABC Waters Learning Trail if there is a Lightning Category 1 alert or a heavy downpour. If the lightning or heavy downpour continues to persist, the programme should be stopped and a make-up session should be planned. • Should bad weather be encountered during the Learning Trail, students should be brought back to the Community Club as soon as possible. If they are not able to reach the club in time, students should wait at under shelters along the trail and move back to the community club as soon as they can.

Notes

The background is a vibrant illustration of a pond. At the top, there are green, rounded bushes against a yellow sky with a white bird in flight. The pond water is light blue. A dragonfly is on the left, a fish is in the middle left, and a turtle is on the right. Reeds and grass are along the right and bottom edges.

PUB, Singapore's national water agency

PUB is the national water agency that manages Singapore's water supply, water catchment and sewerage in an integrated way. PUB won the 2007 Stockholm Industry Water Award and was named Water Agency of the Year at the Global Water Awards 2006.

About PUB's tagline: Water for All: Conserve, Value, Enjoy

PUB has ensured a diversified and sustainable supply of water for Singapore with the Four National Taps (local catchment water, imported water, NEWater, desalinated water).

To provide water for all, PUB calls on all Singaporeans to play our part to conserve water, keep our water catchments and waterways clean and build a relationship with water so we can enjoy our water resources. We can then have enough water for all uses – for industry, for living, for life.



Water for All: Conserve Value Enjoy
www.pub.gov.sg