Featured Curriculum: From pull-out enrichment to whole school approach

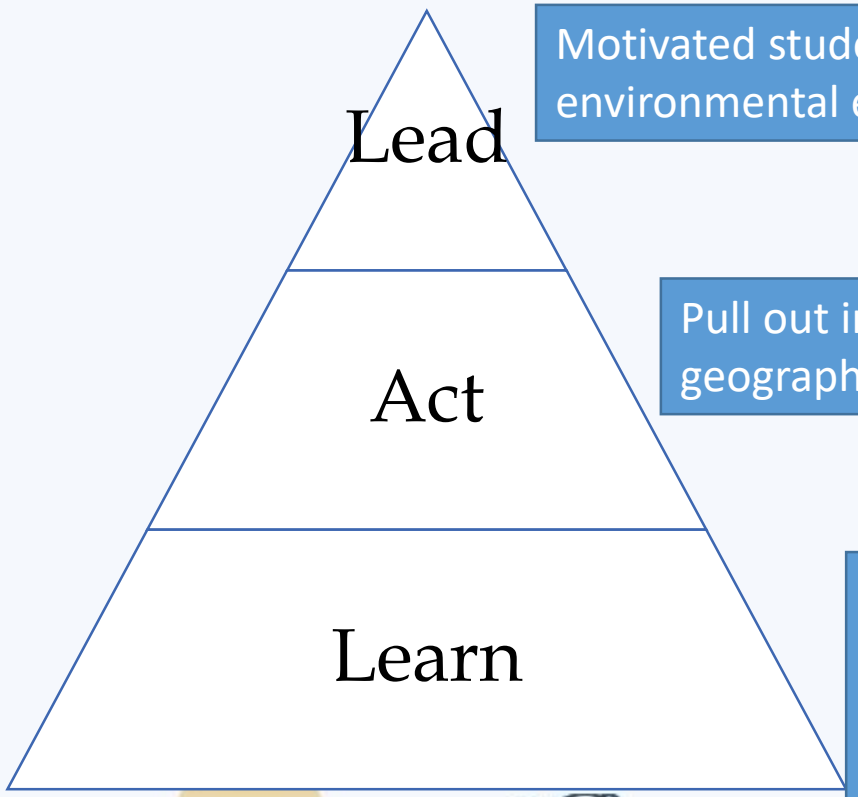
Mr Leung Shong Tung, Kowloon True Light School

Values Education (Education for Sustainable Development) Series: L&T Strategies in Promoting Biodiversity Conservation

Agenda

- Introduction: School context
- Conceptual framework of designing school-based curriculum
  - Curriculum planning:
    - Teaching content: From Ridge to Reef
    - Pedagogy: Whole-school approach, formal and informal curriculum
  - Curriculum implementation:
    - Lead-Act-Learn
    - Feasibility
  - Curriculum evaluation
    - Effectiveness & way forward

Model of implementing environmental education at school



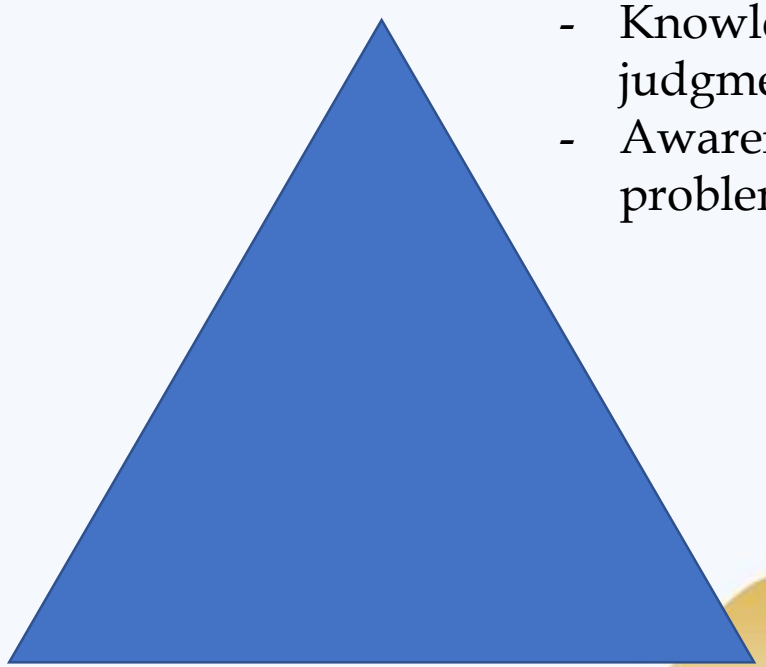
Motivated students to develop campaigns to promote environmental education at school

Pull out interested students to participate in related geographical activities and ask for reflective learning

Incorporating elements of environmental education in the daily teaching and learning
Mark bearing tasks to promote extended learning out of class

Values Education in Geography/ Environmental Studies

Cognitive level:
- Knowledge and judgment
- Awareness of the problem



Affective level:
- Willingness to help/ care for the environment

Behavioural level:
- Make changes on their behaviors in daily life

Development of the idea of a featured curriculum (Existing resources)

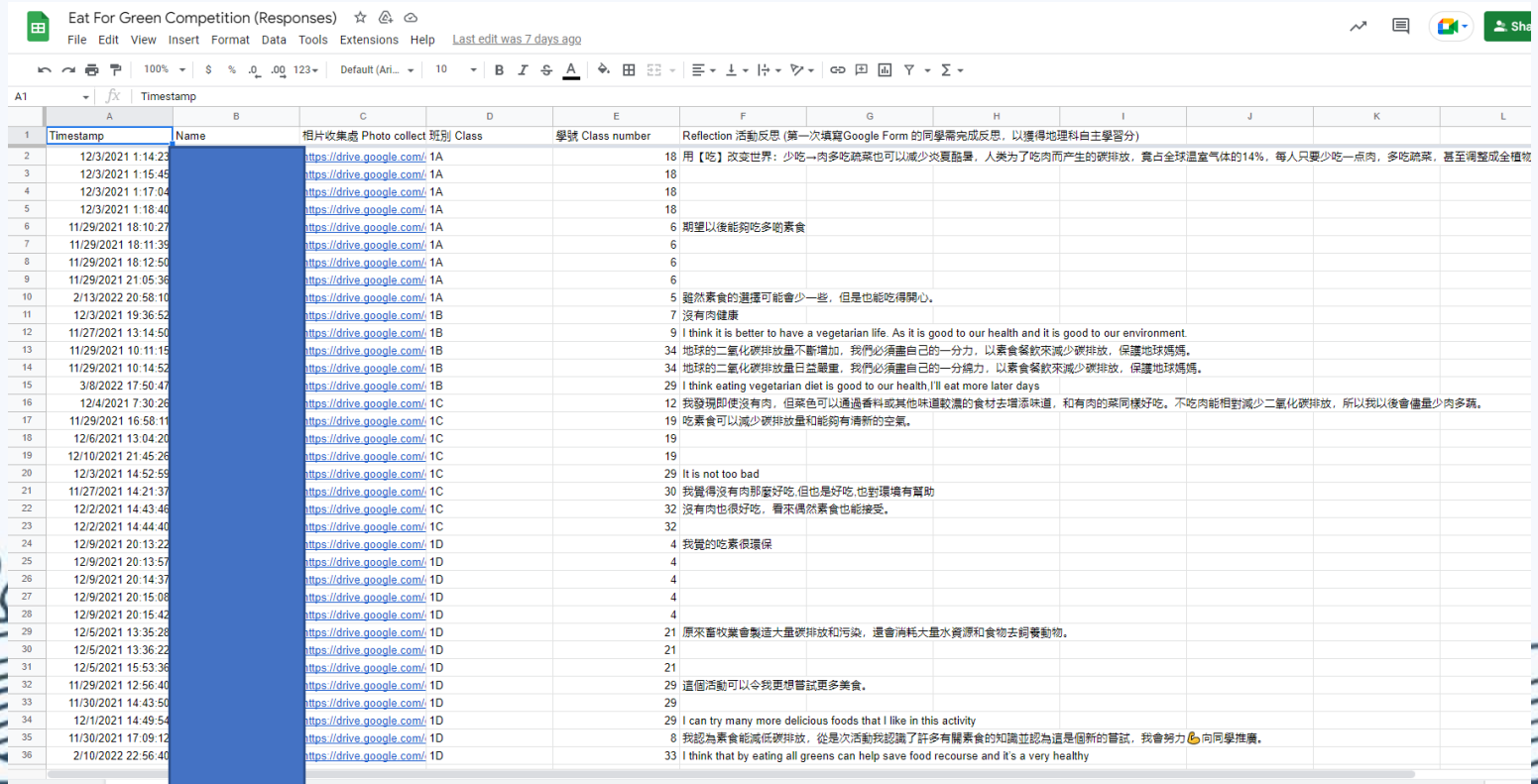
- Field trip linkage and resources
- Anniversary carnival
- Geography teachers
- Learning materials
- Teaching curriculum
- Senior form passionate Geography students

Development of the idea of a featured curriculum

- Inspired by: Young Environmental Ambassador (2021-22)
  - A year long campaign for school to nominate a few students to join a series of activities and visit
  - Decide a campaign/ community project to promote an environmental issue

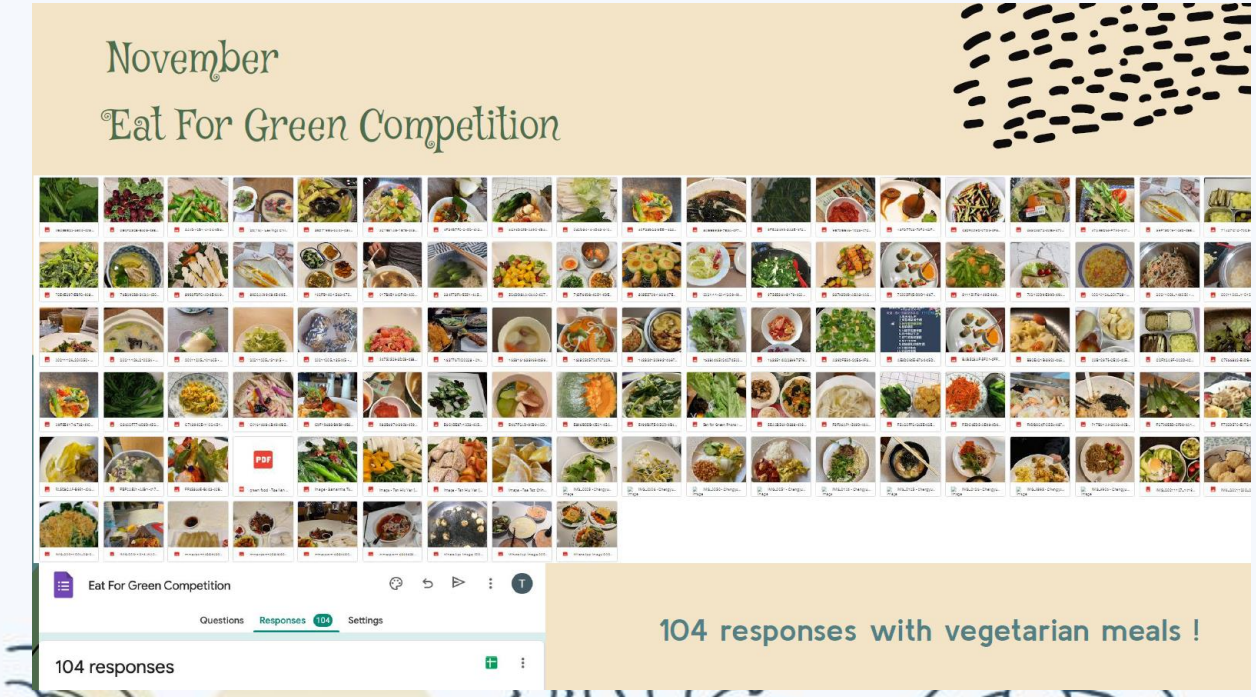
Development of the idea of a featured curriculum

- Inspired by: Young Environmental Ambassador (2021-22)
  - Develop a community-based project to promote Green diet
  - Obtained the number of entries



Development of the idea of a featured curriculum

- Inspired by: Young Environmental Ambassador (2021-22)
  - Project presentation



Cognitive level: Environmental education at curriculum level (S1)

- Features of the Ridge to Reef Programme
  - free online nature education curriculum that will be available to all Hong Kong teachers
  - materials available on this new “learning hub” will include animations, lesson plans, virtual field trips and classroom activities for teachers to use in expanding their students’ environmental awareness
  - Relevant modules: Oceans in trouble & trouble with water

https://www.tnc.org.hk/en-hk/what-we-do/hong-kong-projects/ridge-to-reef/

Subject learning

Cognitive level: Environmental education at curriculum level (S1)

Lesson 1

Time	Teacher's activities	Student's activities	Remarks/ T&L materials
	Setting		
5min	The teacher recalls students' memories about the functions and benefits of the ocean, as well as their experience with oysters through questioning. Q. What are the functions and benefits of the ocean? Q. Have you tried oysters before? Do you like oyster **The teacher introduces the lesson theme: An important ocean resource in Hong Kong – Oyster**	Students are invited to identify the functions and benefits of the ocean and respond to the teacher's questions. Students are invited to share their previous experience of oysters.	• PPT
	Development		
15min	**1.1 Oyster Reef** The teacher introduces some basic knowledge of oyster reefs, including their characteristics, formation process and living habitat. Q. What is an oyster? Q. What is an oyster reef? Q. Where are oyster reefs found? Q. How do oyster reefs form?	Students refer to the PPT, learning materials and teacher's explanation to complete the worksheet p.	• PPT • Video about formation of oyster reef • Worksheet p.
15min	**1.2 Living Habitat of Oyster Reef** The teacher introduces the characteristics of the living habitat of oyster reefs (the mudflat) and explains the favorable factors of the mudflat for the growth of oyster reefs. Q. What are some commonly found living organisms in mudflat? Q. How do they form the ecosystem in mudflat? Q. Why is mudflat a suitable place for nurturing oyster reefs?	Students refer to the PPT and learning materials to respond to the teacher's questions. Students refer to the PPT, learning materials and teacher's explanation to complete the worksheet p	• PPT • Worksheet p. •
	Conclusion		
5min	The teacher summarizes the characteristics, formation process and living habitat of oyster reefs. The teacher asks students to complete a short quiz to ensure their understanding of lesson contents.	Students complete the short quiz to conclude what they have learnt in the lesson	• PPT • Short quiz*

(* https://docs.google.com/forms/d/1WPgj8_b0OmTbveQ8j2pR-vukm7MuKmKvprUE924wqrA/edit)

Lesson 1 - Understanding Oyster Reef and Its Living Habitat

Q. What is an oyster reef? What is the living habitat of oyster reef?

Lesson objectives:

To understand the features of oyster reef
To acknowledge and understand the mudflat as the living habitat of oyster
To understand the ecosystem in mudflat
To understand the process and favorable conditions of oyster reef formation

Key concept:

Characteristics of oyster reefs; Formation of oyster reefs; Mudflat ecosystem and characteristics

1.1 Oyster Reef

Oyster reef is an important species to the ecosystem. Photo 1 shows an oyster reef. Answer question 1-3.

Photo 1

Q1. What is an oyster?

- Oyster is a bivalves mollusks (雙殼類軟體動物).
- Oyster shell (opens / closes) during high tide to filter out plankton (浮游生物) and would (open / close) during low tide to minimize water evaporate from its body.

Q2. Photo 1 shows an oyster reef. Refer to Photo 1, describe the characteristics of an oyster reef.
There is a large number of oysters aggregated together in an oyster reef. These oysters are usually grown on stones or debris as shown in Photo 1. Also, they usually appear in a large oyster community.

Q3. Describe the formation process of an oyster reef.
An oyster reef refers to a cluster of oysters. The oysters cluster on hard, submerged surfaces, and fuse together when they grow. Oysters grows on their older generations and form oyster reefs.

Q.4 Where do oyster reefs grow?

- Oyster reefs grow in brackish (鹹淡水交界)habitats. Mudflat is the habitat where oyster reefs grow.

Pre-Lesson Task

- **Reading Across Curriculum Worksheet**

S1 Geography RAC Worksheet Set 2

Kowloon True Light School (2022-23)
S1 Geography
RAC Worksheet 2:
What is the concept of ridge to reef?

Name: _____

Class: _____ ( )

Grade

Introduction

- This is a Reading Across Curriculum (RAC) worksheet, which serves an extension of Unit E6 Oceans in Trouble.
- It is developed based on the extended part.
- In order to build students' self-directed learning skills and to extend reading material in line with the Geography curriculum, at least TWO theme-based articles related to the topic(s) students are learning will be assigned in this academic year.
- Your performance will contribute 10% to 20% to your daily mark.

Learning objectives

Guiding questions	Relevant knowledge and skills	Values and attitudes
1. How do human make use of the oceans? 2. What are the problems affecting our oceans?	• Major types of ocean resources • Human use of oceans • Sources of marine pollution • Definition of overfishing	• Appreciate the natural beauty of oceans and seas

*** *** *** *** ***

1. What is an oyster reef?

Oyster reefs are dense aggregations of oysters that form large colonial communities. They live in salty or brackish coastal waters, clustering on old shells, rocks, piers, or any rocky, submerged surface. They amalgamate together as they grow, forming rock-like reefs.

2. Why are oyster reefs important? How do oysters benefit the environment and human beings?

Regarding the marine ecosystem, oyster reefs act as significant habitats and nursery grounds for native species. Organisms like mussels, barnacles, and sea anemones would settle on them, creating abundant food sources for commercially valuable fish. Marine ecosystems are dependent on oyster reefs as an integral part of global ocean health. Oyster reefs also act as natural filter feeders that improve local water quality and stabilize shorelines. It was found that a single oyster filters 200 liters of water a day. This is done by cleaning up the murky waters of the sea to create healthy environments for sea grass, small fish, and other species to thrive in.

Human benefits include oyster reefs contributing to social, economic, and environmental sustainability. Environmental aspects have already been discussed above. Socially, in places prone to tectonic hazards oyster reefs can serve as barriers or buffer zones from storms and tides. By doing so, the waters are prevented from entering the country, thereby reducing the number of fatalities and causing less damage to infrastructure. Economically speaking, by preventing tectonic hazards' aftermaths, the government wouldn't need to allocate funds and capital for remedial measures. Furthermore, as oyster reefs are rich in marine resources, this can stimulate job opportunities for people and contribute billions of dollars to the economy.

Pre-Lesson Task

- **Reading Across Curriculum Worksheet**

- Straight-forward questions
- Reading comprehension as an introductory study
- Vocabulary building
- MOI strategy

B. Post- reading tasks (9 marks)

1. What is an oyster reef? How does it form?

_____

_____

_____

2. What are the benefits of oyster reef? List two of them.

_____

_____

_____

3. Explain how the human activities have caused a decline of oyster reef population. (2 marks)

_____

_____

_____

4. Write down three new vocabulary you have learnt from the article above, including part of speech and their definitions. (3 marks)

Vocabulary	Part of speech	Definition
a.		
b.		
c.		

Lesson 1: Background of oyster reef

Kowloon True Light School (2022-23)
S1 Geography

Name: _____
Class: _____ ( )
Score/ Grade:

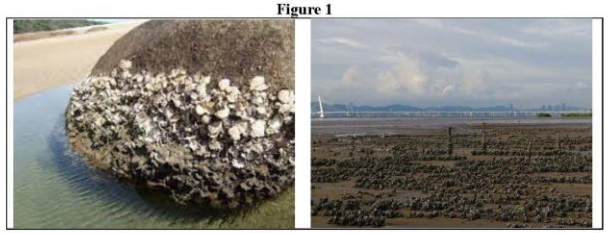
E6 Oceans and Sustainable Development

I What is an oyster reef? What is the living habitat of oyster reef?

1.1 Oyster Reef

1. Oyster reef is an important species to the ecosystem. Figure 1 shows an oyster reef.

Figure 1



(a) What is an oyster?
- Oyster is a bivalves mollusks (雙殼類軟體動物).
- Oyster shell (opens / closes) during high tide to filter out plankton (浮游生物) and would (open/ close) during low tide to minimize water evaporate from its body.

(b) Refer to Figure 1, describe the characteristics of an oyster reef.
- There is a large number of oysters aggregated together in an oyster reef.
- These oysters are usually grown _____.
- Also, they usually appear in a large oyster _____.

(c) Where do oyster reefs grow?
- Oyster reefs grow in _____ (鹹淡水交界) habitats. Mudflat is the habitat where oyster reefs grow.

(a) What is an oyster?
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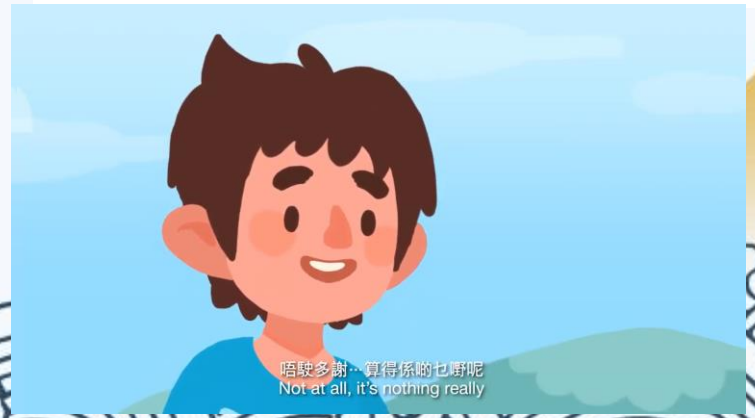
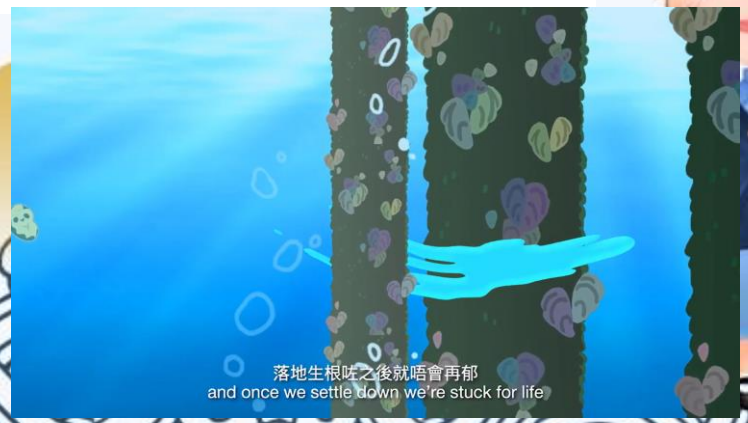
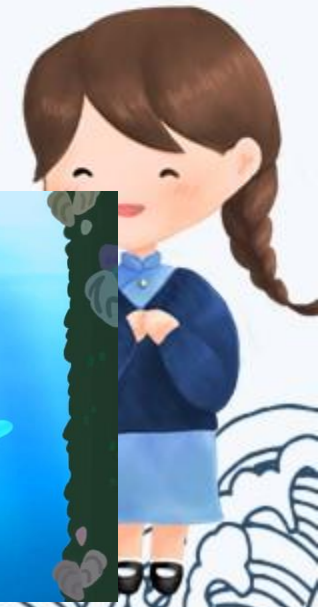




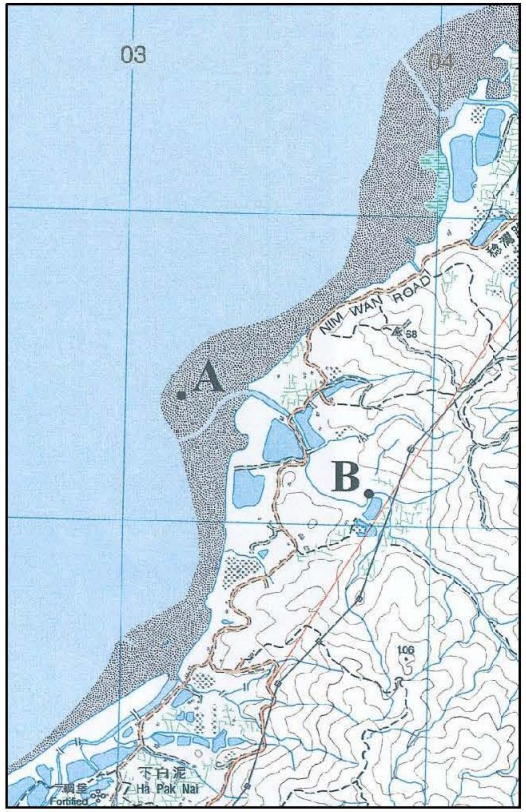


Lesson 1: Background of oyster reef

1.2 Living habitat of oyster reef

2. Mudflat provides a unique habitat for the wildlife. Figure 2 shows the mudflat in Hong Kong.

Figure 2



A view of mudflat

(a) Which location, A or B, as shown on the map of Figure 2 is mudflat? _____

(b) What is a mudflat?

- A mudflat is a coastal wetland found at _____ (潮間帶).
- It is a deposition feature where sediments are deposited by _____ or _____.
- It is intermittently (間歇地) being flooded by _____
  - the time that mudflat is being flooded is called high tide
  - the time that mudflat emerges is called low tide

- Map reading skills
- Understanding of the habitat of mudflat/ intertidal zone

Lesson 1: Background of oyster reef

(c) What are the species found in mudflat? Match the name of the species with their photos.

Hermit crab (寄居蟹)	Mangrove (紅樹 /「水筆仔」)	Horseshoe crab (馬蹄蟹)
Oyster (蠔)	Fiddler crab (招潮蟹)	Sea snail (灘棲螺)

Species in the mudflat		
		
		

(d) How would you describe the biodiversity in a mudflat? Why?

_____

_____

_____

- Species identification
- Analysis of the biodiversity through questioning

Lesson 2: Importance of oyster reefs & threats faced by oyster reef habitat

II Why are oyster reefs important? How do oysters benefit the environment and human beings?

2.1 What are the functions of oyster reefs?

3. Figure 3 shows some photos related oyster reefs.

Describe the functions of oyster reefs from the economic, social and environmental aspects.

Environmental	•
Social	•
Economic	•

III Why are oyster reefs declining?

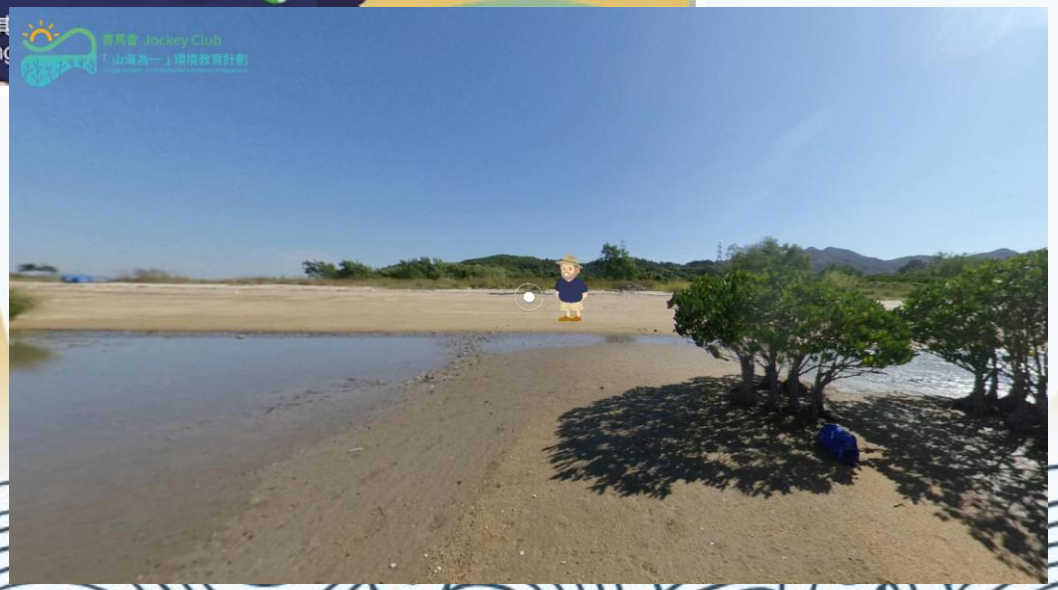
3.1 What are the major threats faced by oyster reefs?

4. Figure 4a and Figure 4b show some major threats to oyster reefs.

Figure 4a

Figure 4b

Cognitive level: Environmental education at curriculum level (S1)



https://storage.net-fs.com/hosting/7105061/5/

- Free resources to promote effective learning of the environmental problem
  - Virtual field trip
  - Videos
- Situated and authentic learning

Ridge to Reef Environmental Education Programme

- Lesson study in Nov 2020

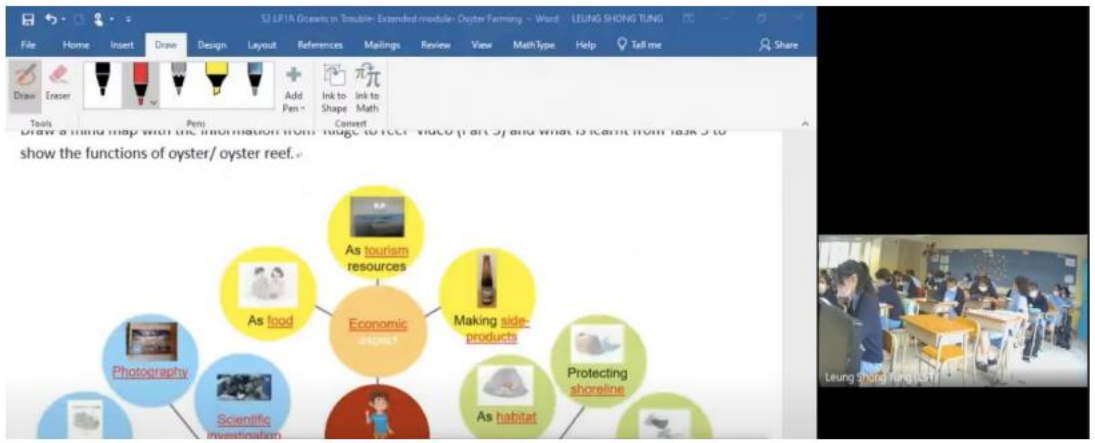


Figure 1.2. Students engaged in a mind map learning activity in a Geography tryout lesson in the Program.

Figure 1.3. Students engaged in a video-watching activity in a Geography tryout lesson in the Program.

Ridge to Reef Environmental Education Programme

Care for others, Empathy

- Major T&L strategies:
  - Discussion on the importance of oyster reef on human activities
  - People-environment relationship

(d) How would you describe the biodiversity in a mudflat? Why?

_____

_____

_____

(b) How may human activities upstream cause declining population of oyster reefs.

_____

_____

_____

Describe the functions of oyster reefs from the economic, social and environmental aspects.

Environmental	•
Social	•
Economic	•

Ridge to Reef Environmental Education Programme

- From cognitive level to affective level
  - Realizing the significance of the natural environment on the human societies
  - Appropriate judgment on environmental issues
  - Further investigation in senior forms

九龍真光中學

為了編製初中教案，TNC曾向不同學校收集意見，九龍真光中學便是其中一所。該校地理科主任梁桑童老師（Michael）除了向TNC分享校情，前線老師的教學需要外，亦為教材套提供意見。因他認為初中地理課程欠缺了有關香港的課題，而TNC這個計劃正好將課程內容與香港生態環境議題結合。除主題以外，多元教材的設計——如影片、VR及動畫等——可讓同學更投入這個課題。梁老師發現，試教令不少同學都喜歡地理科，學懂欣賞大自然，甚至令不少學生在升讀中四時亦選修了地理科。

參加試教計劃的于昭玥同學和譚曉欣同學也表示，參加這項試教計劃之後，更認識香港地理環境，如學到蠔礁的生態功能，也了解到上游污染對下游有一定影響等。同時，因透過此計劃，使他們認識到原來香港擁有如此特別的地理環境，因此令兩人於中四時決定選讀地理科。

Ridge to Reef Environmental Education Programme

Table 3.1. Comparison of students' environmental attitudes in Survey One (pre-test) and Survey Two (post-test).

	Pre-test (N=32)		Post-test (N=18)		
	M	S.D.	M	S.D.	± (%)
Overall environmental attitudes *(N of items = 13)* (Pre-test *Cronbach's alpha = .893)* (Post-test *Cronbach's alpha = .845)*	3.75	0.81	4.13	.57	**↑10.13**
Attitudes towards oyster reef ecology *(N of items = 8)* (Pre-test *Cronbach's alpha = .769)* (Post-test *Cronbach's alpha = .679)*	3.60	0.74	3.85	.54	**↑6.94**
5.1 I am aware of the ecosystem of mudflat.	3.28	0.92	3.78	.65	↑15.24
5.2 I am interested in oyster restoration work in Hong Kong.	3.25	1.08	3.50	.71	↑7.69
5.3 I am eager to know more about the ecosystem of mudflat.	3.94	1.11	4.17	.62	↑5.84
5.4 I think oyster restoration is effective in protecting the ecosystem of mudflat.	3.84	0.95	4.39	.92	↑14.32
5.5 Field trip or Virtual Reality can raise my curiosity in knowing more about the mudflat.	4.09	1.42	3.78	1.73	↓7.58
5.6 Oysters are closely related to human beings.	3.87	1.12	4.33	.69	↑11.89
5.7 In the long run, the decline in oyster reef does not affect human beings.	3.13	1.21	3.00	1.08	↓4.15
5.9 I am interested in knowing more about "Ridge to Reef (R2R)" conservation in Hong Kong.	3.50	1.24	3.83	.86	↑9.43
Attitudes towards sustainable development *(N of items = 5)* (Pre-test *Cronbach's alpha = .894)* (Post-test *Cronbach's alpha = .916)*	3.90	1.00	4.42	.75	**↑13.33**
5.8 Sustainable development is crucial in human life.	3.66	1.07	4.22	.81	↑15.30
5.10 I am aware of sustainable management and efficient use of natural resources.	3.59	1.24	4.17	.86	↑16.16
5.11 I have the relevant information about sustainable development and lifestyles in harmony with nature.	3.94	1.39	4.39	.85	↑11.42
5.12 I am aware of the importance of monitoring sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.	3.97	1.03	4.56	.78	↑14.86
5.13 I am aware of sustainable development and lifestyles in harmony with nature.	4.34	1.18	4.78	1.00	↑10.14

Remarks. The survey is based on 6-point Likert scale, whereas not true at all (1), not true (2), not so true (3), fairly true (4), true (5), very true (6).

Survey in 2020

- Cognitive level
  - Ecological environment of mudflat
  - Ways of ecological restoration in HK
- Affective level
  - Awareness on sustainability and ecological environment
- Behavioral level
  - Lifestyles

Affective level: Activities in relation to environmental education

- Field trip to Ha Pak Nai
  - Objective:
    - Explorations in the stream and mudflat; Variation of river characteristics downstream
    - “Ridge to Reef” Concept

Act: Activities in relation to environmental education

Care for others, Empathy

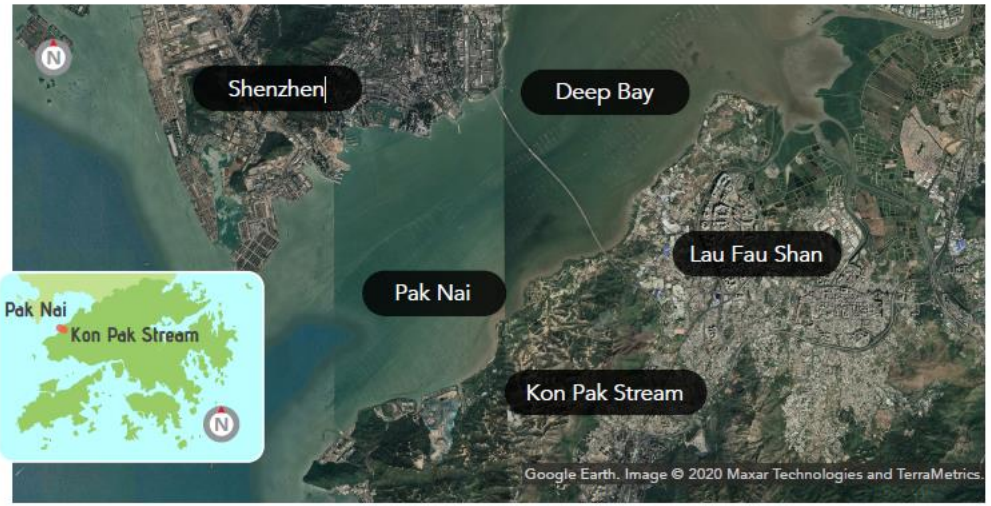
Life-wide learning

- Target participants: S3-5 students
- Scope of study: River environment and mudflat ecology
- Teaching and learning activities:
  - Water quality measurement and analysis along the stream
  - Species identification

Act: Activities in relation to environmental education

- Worksheets provided by the TNC

Before the field trip



1. Geographical information of Pak Nai "Kon Pak Stream"

Kon Pak Stream, also known as Ap Tsai Hang, is located _____ of Hong Kong. The river source originates from Kon Shan inside the Castle Peak Hinterland. The water of the main stream flows from _____ to _____, and eventually, the stream water discharges to Deep Bay via Pak Nai. The Kon Pak Stream forms a _____ drainage pattern on the map.

1. Features of the rivers

Through experiment and observation during the field trip, complete the table and questions below:

Date: _____ Time: _____

Location: _____ Weather: _____

	Checkpoint (1) Estuary	Checkpoint (3) Lower Course	Change from (1) to (3)	Remarks/ other observations
Altitude				
Channel gradient				
Volume of flow				
Channel roughness				
River overall energy				

Act: Activities in relation to environmental education

- Worksheets provided by the TNC

- Questioning in the field
- Based on observation by the students in the field to reflect on the concept of biodiversity conservation

2. "Ridge to Reef"

"Ridge to reef" means through rivers and streams, everything that happens on land will have an impact downstream, including intertidal habitats, coasts and eventually, the sea. According to what you have observed during the field trip, the land on the side of the Koi Pak Stream has been used for farming and fishponds. How would this change in land use affect the wildlife in the Pak Nai mudflat and the water quality of Deep Bay? What suggestions can you propose to maintain the biodiversity of the mudflat and improve the water quality?

Lead: Greenovators Beyond the subject

- In collaboration with The Nature Conservancy, Geography Department of La Salle College
- Aim of the activity:
  - Promote the concept of ‘Ridge to Reef’ and special species found in mudflat habitat
  - Encourage more people to protect the environment

Whole-school learning atmosphere

Service

Lead: Greenovators

- Concept:

	The Nature Conservancy	Teachers and students from La Salle College	Teachers and students from Kowloon True Light School
Strength	• Experienced in leading field trips • Knowledgeable in ecology and biodiversity conservation	• Spacious school campus • Students with different talents	• Experiences in organizing environmental education campaign • Motivated students in joining activities
Division of labour	• Pre-trip briefing on environmental education programme • Lecture on ecology and 'ridge to reef' concept • Leading field trip in Ha Pak Nai	• Provide venue for discussion and activity • Exchange of ideas with students in KTL	• Collaboration of logistics • Ideas of environmental education campaigns to be exchanged with the students in LSC

Lead: Greenovators
Project Introduction

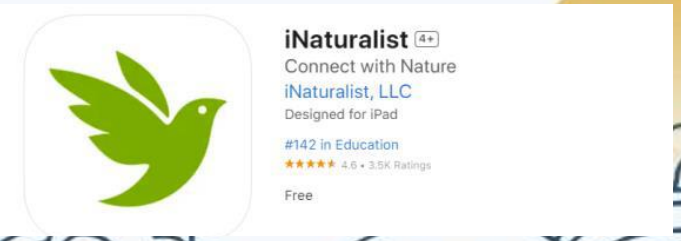
Session	Date	Event	Remarks
1	10 Mar 2023 4:00 pm – 5:30 pm	Project briefing Concept of environmental education campaign **i-Nature hunt** Project preliminary discussion	Lecture, case study and discussion
2	24 Mar 2023 2:00 pm – 6:00 pm	Visit to Ha Pak Nai - Field investigation on biodiversity - Mudflat cleaning campaign - Collection of information for the project showcase	Half day fieldwork
3	31 Mar 2023 4:00 pm – 5:30 pm	Concept of 'Ridge to Reef' Inter-tidal ecosystem Sharing of the information collected at Ha Pak Nai	Sharing of preliminary findings in Ha Pak Nai Submission of plan for project showcase
4	5 May 2023 (1:00 pm – 4:00 pm)	Project showcase in True Light Fun Fair Bazaar	Venue: Kowloon True Light School
5	19 May 2023 4:00 pm – 5:30 pm	Project evaluation: Sharing and presentation of each group	Certification

1st meeting: Project introduction

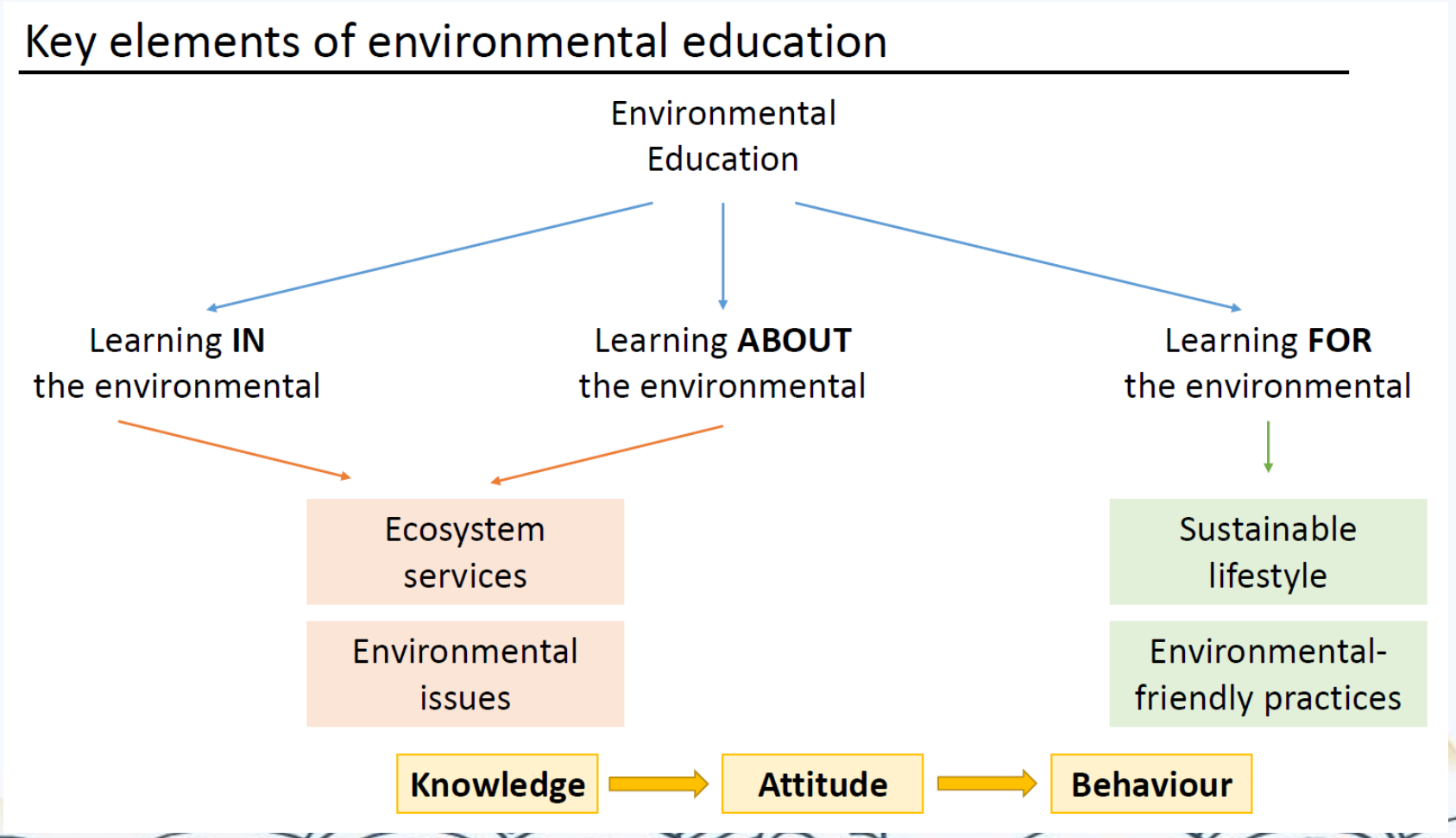
- Aim of the meeting:
  - Project requirement
  - **Cognitive level:**
    - Concept of ecosystem services
    - Key elements of environmental education and examples
    - Skill: Species identification

BioBlitz activity

- A bioblitz is a communal citizen-science effort to record as many species within a designated location and time period as possible.



1st meeting: Project introduction



2nd meeting: Field trip in Ha Pak Nai

- Aim of the meeting:
  - Species identification
  - Concept of Ridge to Reef
  - Collection of materials for environmental education campaign
  - Ecological restoration work

2nd meeting: Field trip in Ha Pak Nai

Collection of materials for environmental education campaign

Commitment

Care for Others

2nd meeting: Field trip in Ha Pak Nai

Ecological restoration:

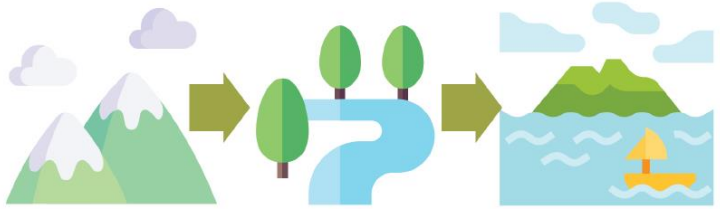
- Removal of spartina

Diligence

3rd meeting: Lecture on R2R

Ridge to Reef「山海為一」

"Ridge to Reef" concept



From Ridge — To Reef

- Through rivers and streams, everything that happens on land (e.g., sewage and litter) will have an impact downstream, including intertidal habitats and eventually, the sea.
- The ocean and intertidal wetlands are ecosystems with rich biodiversity, so healthy and clean rivers and streams are crucial to maintaining healthy estuaries, coastal areas, wetlands, coral reefs and oyster reefs.
- Therefore, IUCN^ has proposed the "Ridge to Reef" (R2R) conservation initiative to link the river basins from land to coast, to better manage water resources and ecosystems.

(^IUCN = the International Union for Conservation of Nature)

- Aim of the meeting:
  - Concept of Ridge to Reef
  - Ecosystem services
  - Discussion on the project (finalized item to be delivered in school)

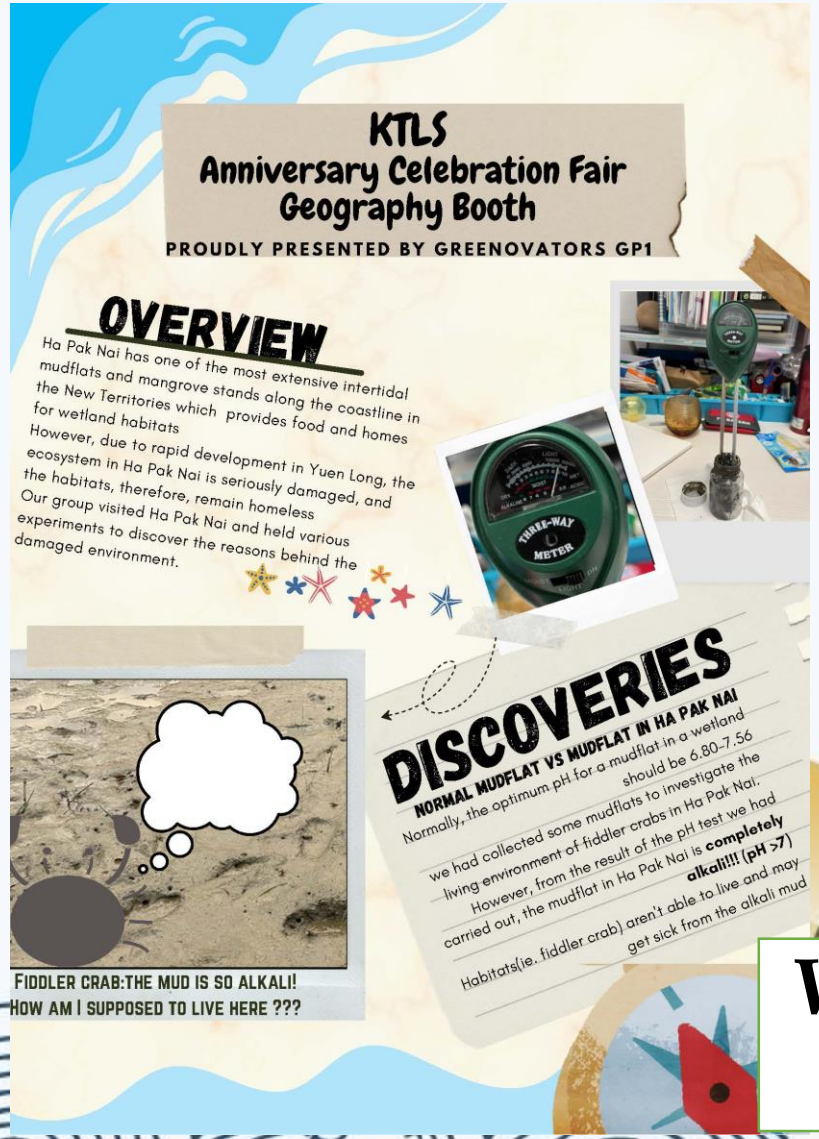
4th meeting: Product showcase

Aim of the meeting:

- Presentation of learning outcomes
- Game booths, poster presentation, souvenir

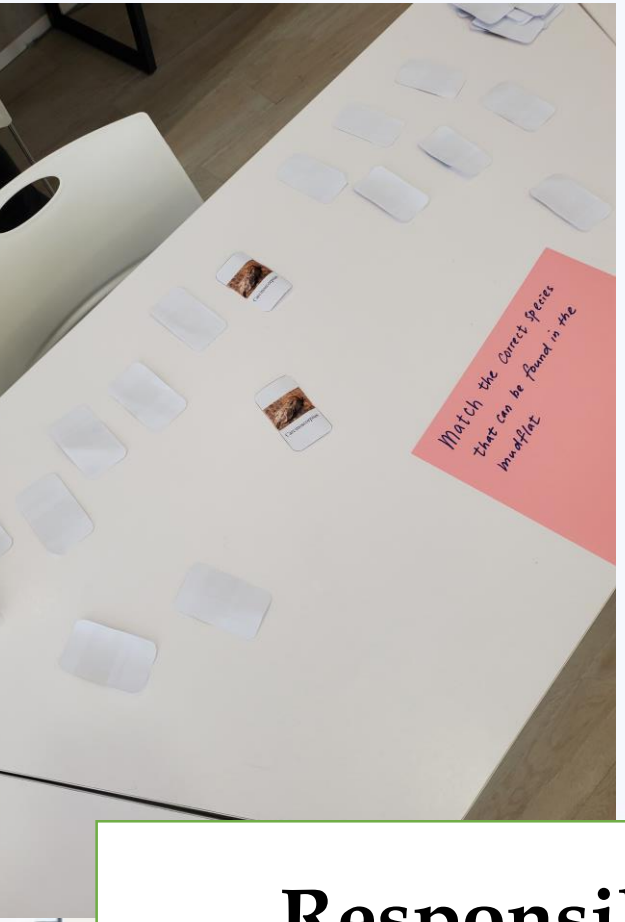
Whole-school learning atmosphere

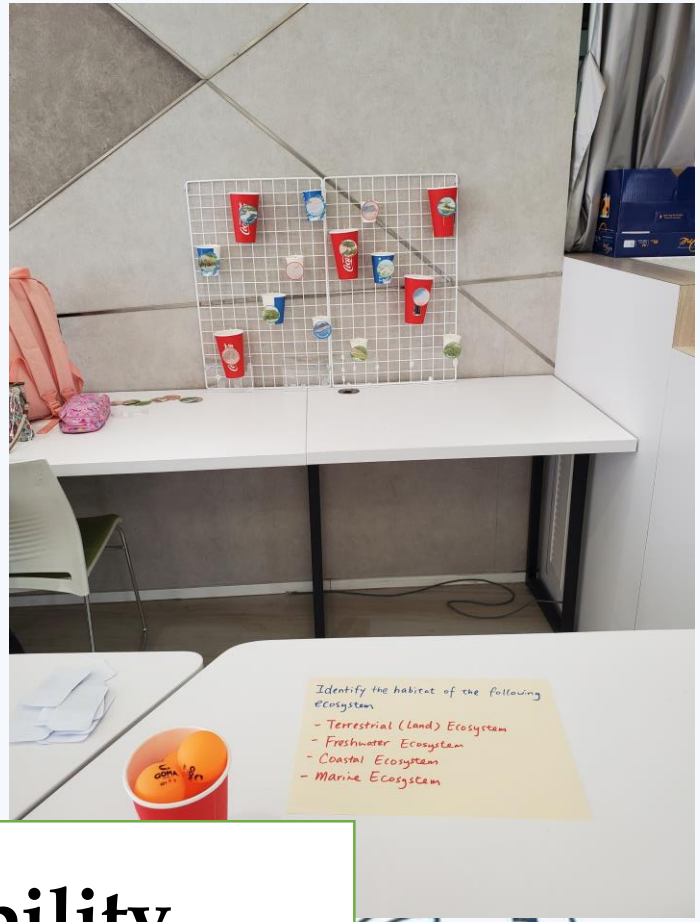
4th meeting: Product showcase



Whole-school learning atmosphere

4th meeting: Product showcase





Responsibility

5th meeting: Project evaluation

Aim of the meeting:

- Report and evaluation on the project campaign
- Reflection on the learning progress

Responsibility

5th meeting: Project evaluation

Group 3

Ridge to Reef – Greenovators

Project Evaluation

1. Summarize what your group have done in this programme.

Objectives	To observe more in the nature about the ecology & raise awareness about conservation
Format/ means	Video
Content	Ecology about Pak Nai
Coverage/ (target audience)	F1-3 students

2. Evaluate your work according to the following criteria:
   - Relevance: does your work relevant to the objectives/ topic?
   - Depth of knowledge: how much do the target audience learn?
   - Effectiveness: does your work achieve the objectives?
   - Impact: what influence/difference is brought to the target audience?
   - Sustainability: will the impacts/benefits last?
   - Efficiency: how well are resources used?

Relevance	Yes, students understand more about the ecology such as the biodiversity in Pak Nai (Fiddlers Crab, mangrove)
Depth of knowledge	deep to the river bed
Effectiveness	F1-3 students: A brief understanding of the ecology Our group: Teamwork, video editing skills
Impact	~~the audiences don't care about our project.~~
Sustainability	High sustainability – video: high education value
Efficiency	our video in being ignored

Responsibility

5th meeting: Project evaluation

3. Think about the limitations of your work and suggest measures to improve them.

Limitation	How to improve?
Low exposure for lower form students	Let them watch the video during morning assembly ↳ improve exposure rate
The video is not interesting enough	Try to add humor in our video
We do not have enough videos clips for our video	Plan out what we are going to film and what we are going to do during our fieldtrip.

4. Share your thoughts and lesson learnt from this programme.

Favourite part	• The opportunity to go to Hai pak Nai • The chance to collaborate with La Salle
Most challenging part	• Communication between two schools • Taking photos and videos in Hai Pak Nai • Planning & organizing
Lesson learnt	• Learn that as a young adolscent, we can make a difference in the world and help the environment • Learn about the importance of teamwork & communicatio

Observation on students

- Cognitive level:
  - Can be observed by assessment tools through assignments and tests
  - Able to reproduce facts
- Affective level:
  - Showing a willingness to participate in various environmental education activities
  - Continuous support to the Ridge to Reef programme beyond field trips
- Behavioural level:
  - Development of conservation behaviours