A close-up, black and white portrait of Nelson Mandela, showing his face from the nose up. He has a slight smile and is looking slightly to the right. The lighting is soft, highlighting the texture of his skin and the lines on his forehead.

**“EDUCATION
IS THE MOST
POWERFUL
WEAPON
WHICH YOU
CAN USE TO
CHANGE THE
WORLD.”**

NELSON MANDELA

Science Education

Conservation Education

Animal Welfare Education

圓仔 Yuan Zai ♀

2013/07/06



ENVIRONMENTAL EDUCATION (EE) AT TAIPEI ZOO

3



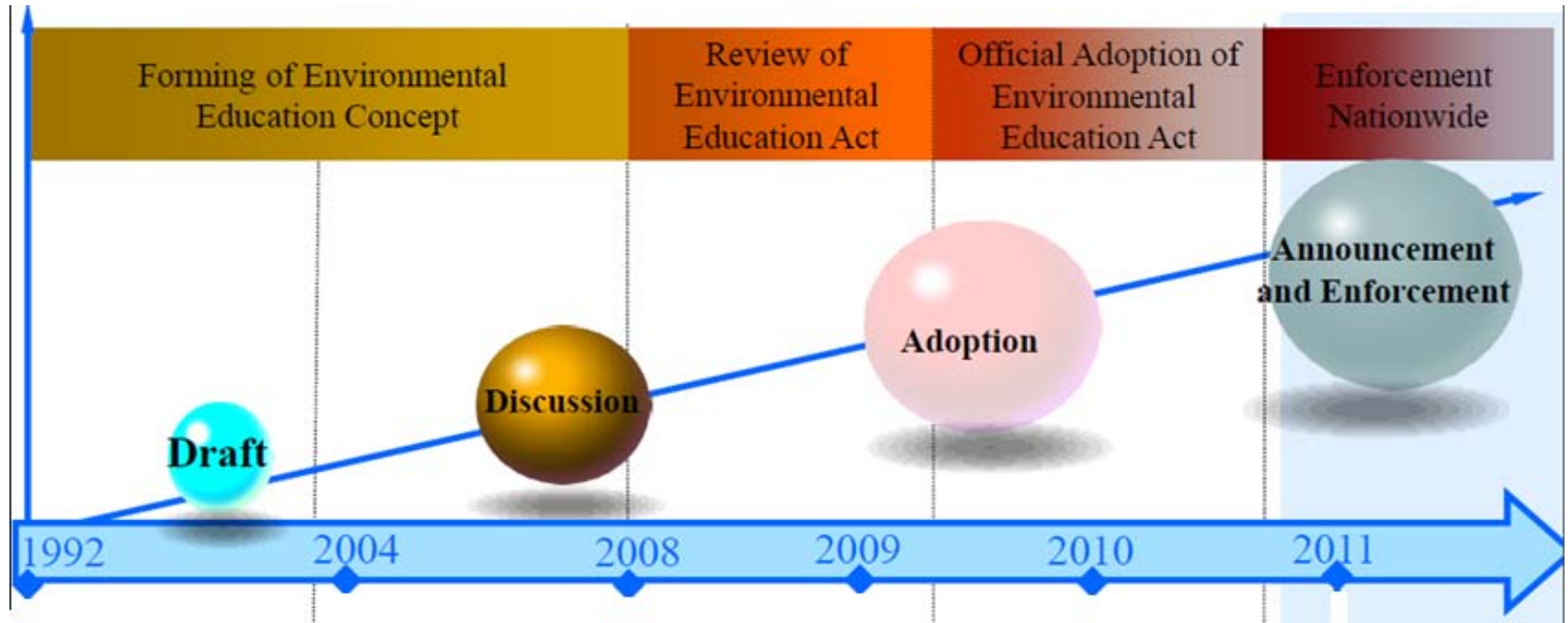
Emma Hou



Taipei Zoo

Legislation of EE Act in Taiwan

4



- The act was announced on June 5, 2010 and came into force on June 5, 2011

Legislation of EE Act in Taiwan

5

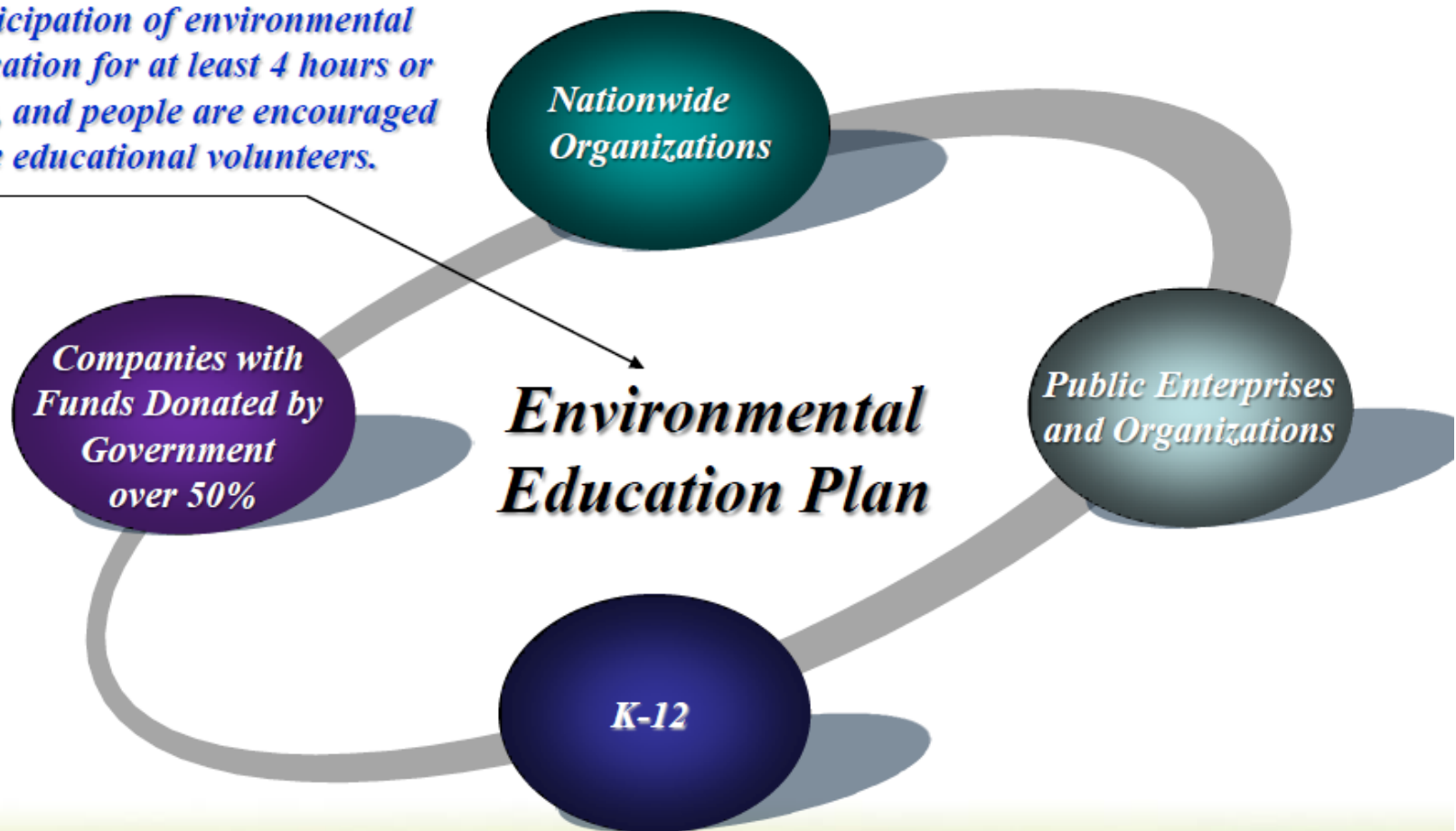
- Taiwan is the sixth country in the world that has passed the Environmental Education Act, following the United States, Brazil, Japan, South Korea and the Philippines.
- **Objective:**
Help citizens in Taiwan develop the concept of **environmental ethics** and the consensus of public participation in **environmental protection** to call for public environmental protection action.

Legislation of EE Act in Taiwan

6

■ Public Participation of Environmental Education

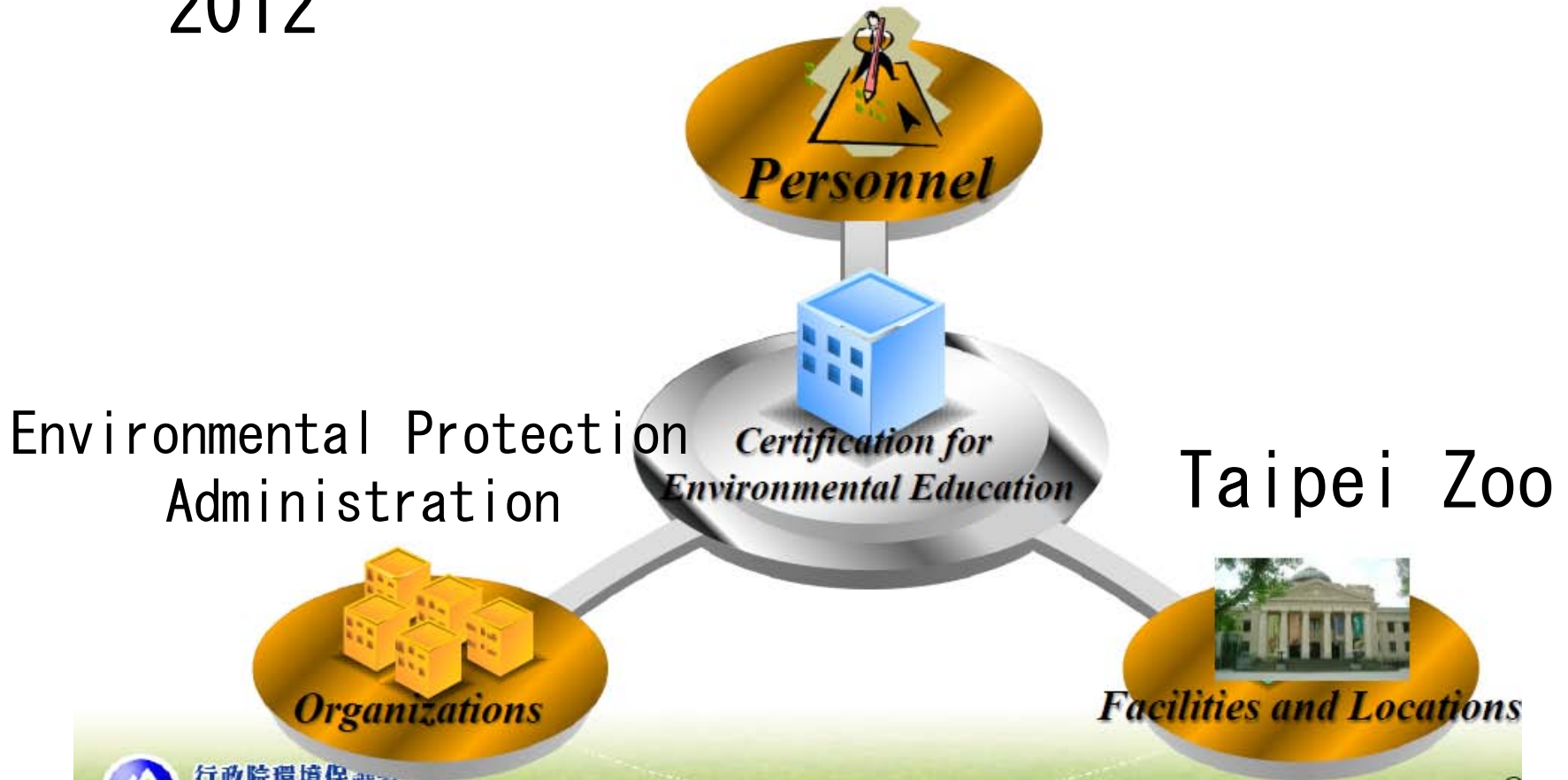
Participation of environmental education for at least 4 hours or over, and people are encouraged to be educational volunteers.



Legislation of EE Act in Taiwan

7

- Taipei Zoo was the 7th EE facility certificated in Taiwan on April 2, 2012



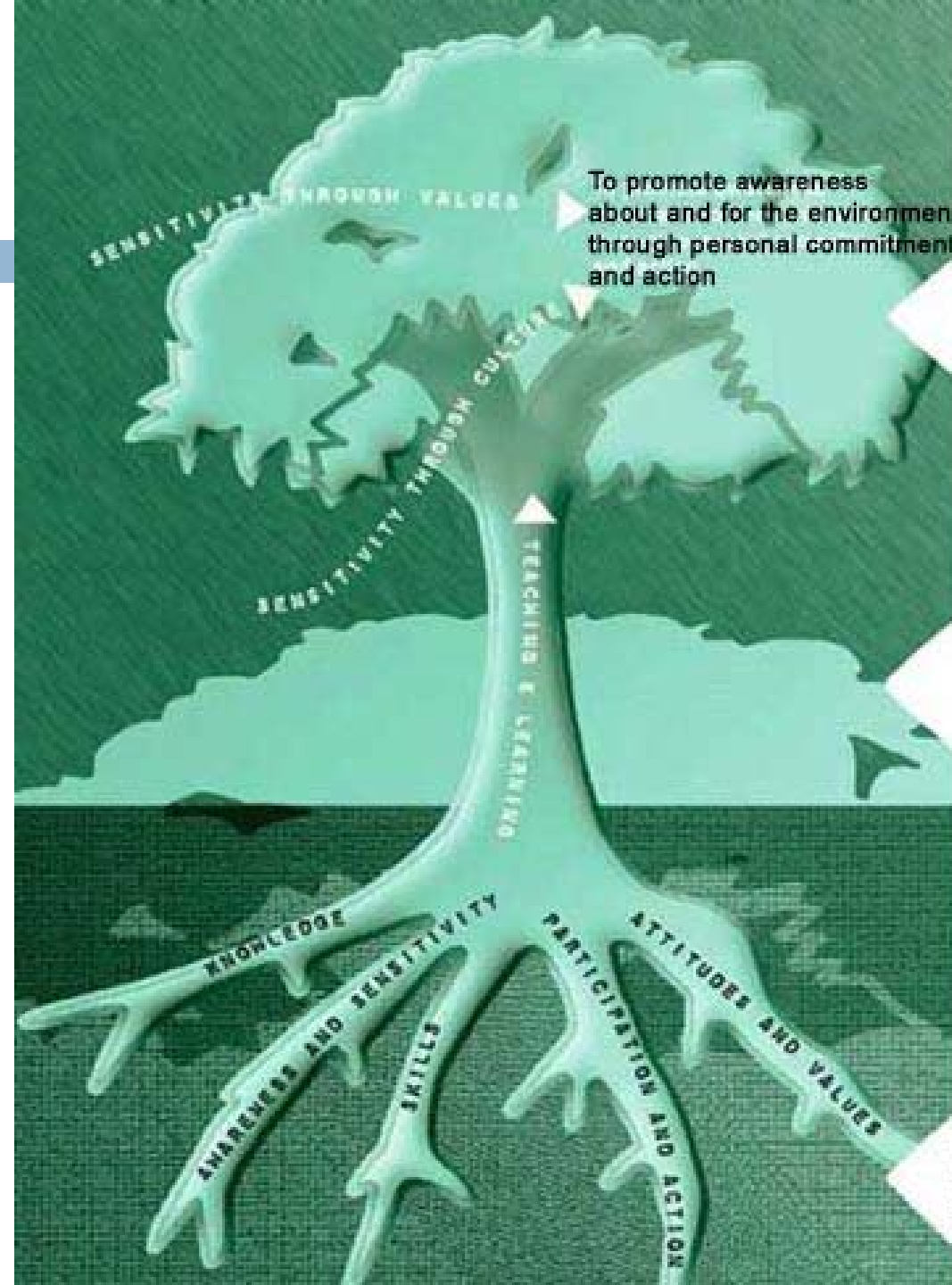
Insects Habitats Human



What is EE ?

9

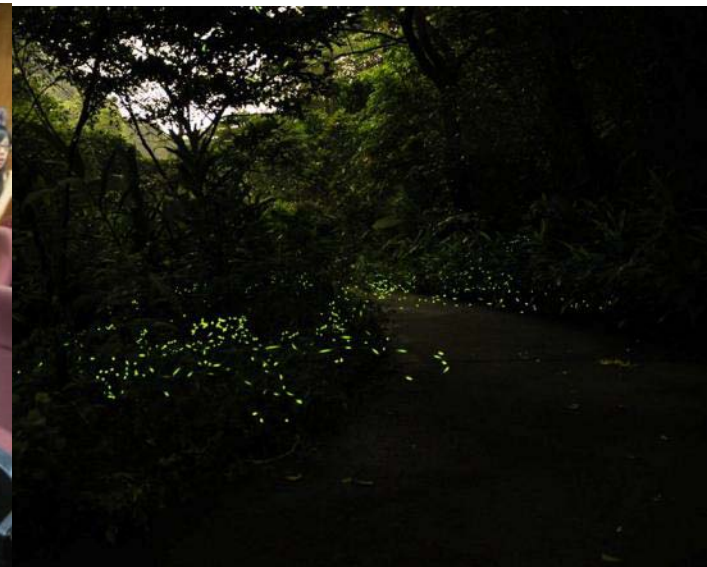
- Awareness and sensitivity
- Knowledge and Understanding
- Attitudes
- Skills
- Participation



EE at Insectarium

10

- 30 min Narrator Tour
- 30 min Insect Classroom (Insect Museum)
- 4hr Insect Camp (Firefly, Butterfly and Insect Invisible village)



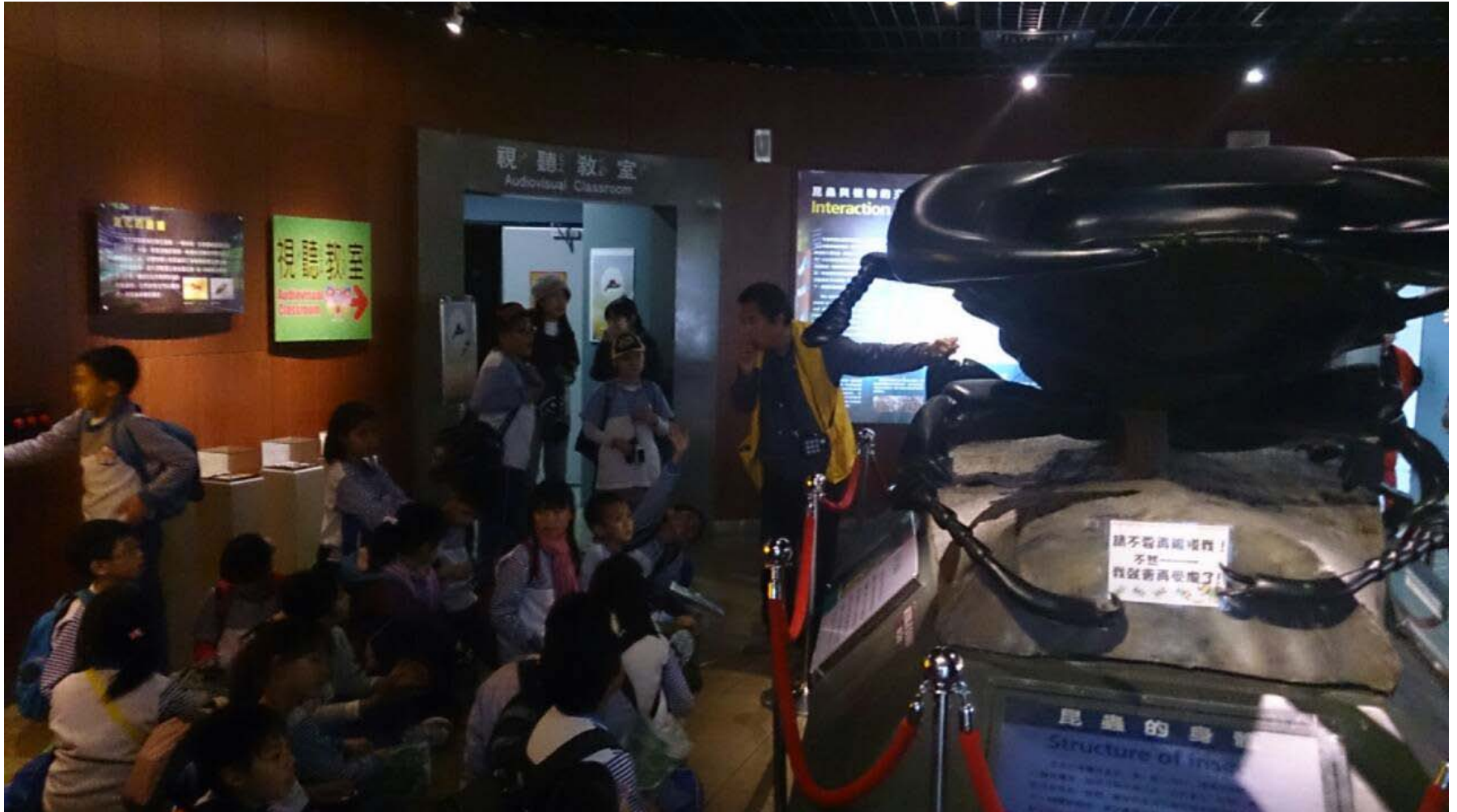
Narrator Tour

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Narrator Tour

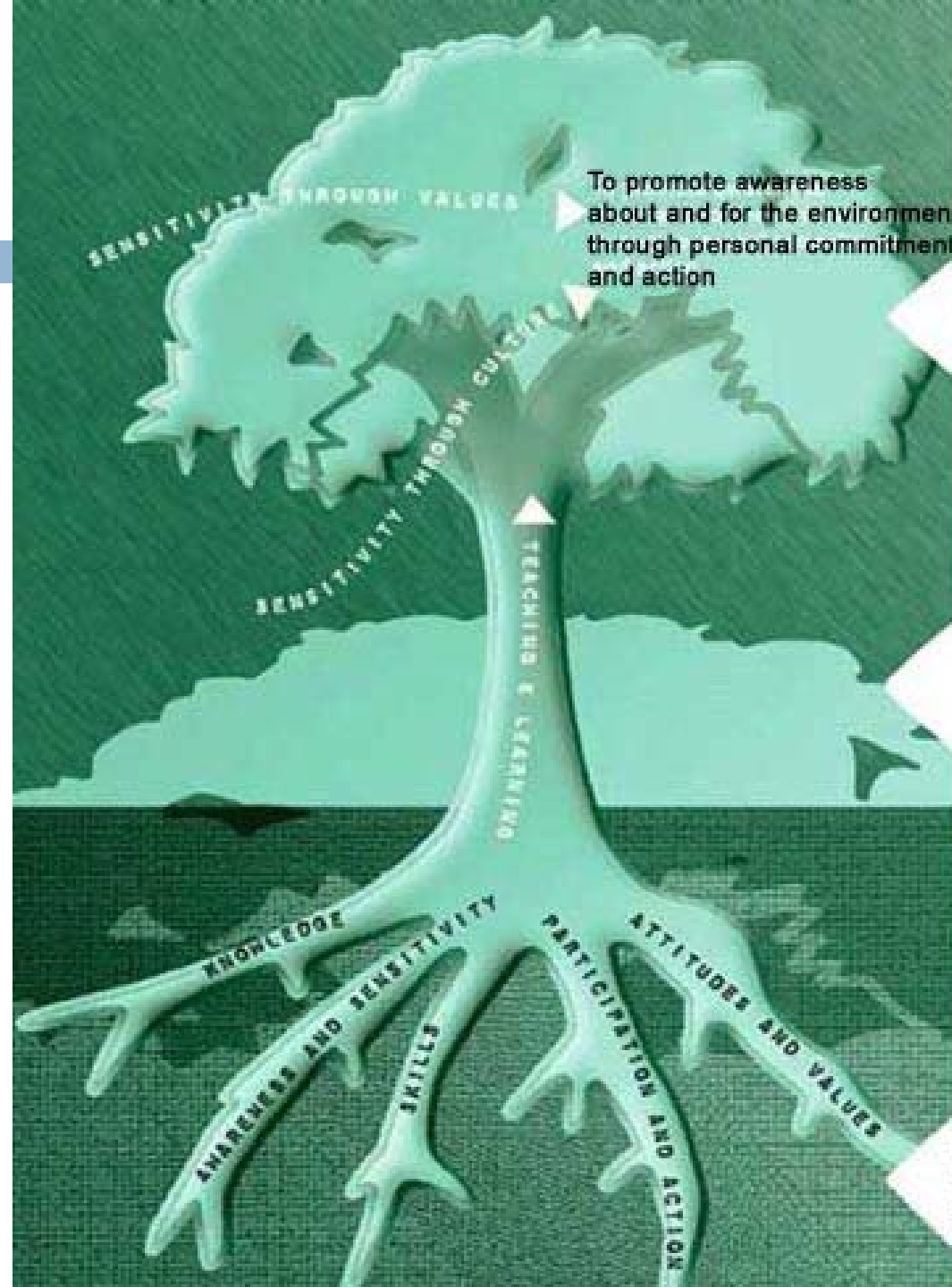
12



What is EE ?

13

- Awareness and sensitivity
- Knowledge and Understanding
- Attitudes
- Skills
- Participation



Insect Classroom (Insect Museum)

14



Insect Classroom (Insect Museum)

15







大鼓甲



大鼓甲體水、輪、雙三葉型的複眼，並有能從側面在水面游動，讓牠們可以同時觀察到水面上與水面下動靜的厲害複眼！大鼓甲還有堅硬的背殼，會保護的在水面游泳和集滿到點，還會潛入水裡呢。

水龜



牠是上陸動物中唯一能在水裡游泳的動物，牠們可以在水面上游動，也可以潛入水底。牠們的身體可以浮在水面上，也可以潛入水底。牠們的身體可以浮在水面上，也可以潛入水底。

水黾



牠們的身體可以浮在水面上，也可以潛入水底。牠們的身體可以浮在水面上，也可以潛入水底。

水蚤



牠們的身體可以浮在水面上，也可以潛入水底。牠們的身體可以浮在水面上，也可以潛入水底。

水螅



牠們的身體可以浮在水面上，也可以潛入水底。牠們的身體可以浮在水面上，也可以潛入水底。



嘿！這艘潛艇可以帶你
去甲比爾蘭的沉船，不
一樣的水上學堂呢！

嘿！這艘潛艇可以帶你
去甲比爾蘭的沉船，不
一樣的水上學堂呢！

超級潛水夫-龍虱

The Super Diver - Diving Beetle

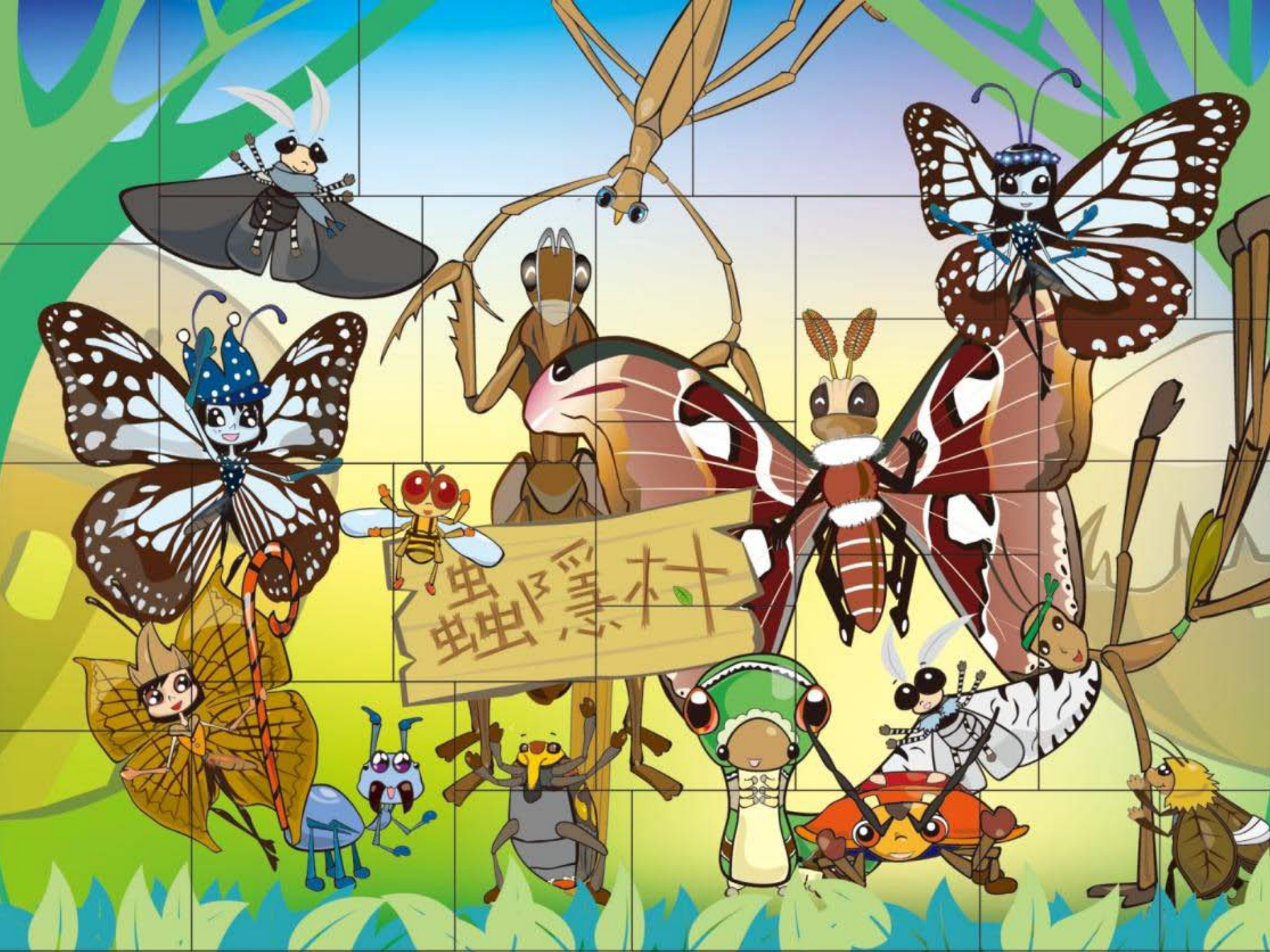


龍虱是水生昆蟲中生活在水中的小甲蟲。
龍虱的身體十分完美，頭、胸部比較小，身體卻成塊狀，
龍虱扁平寬大，兩側還有成排的細毛，在水中可以發揮控制浮力的功能。
龍虱不同於其他水生昆蟲，並不具有鰓的構造，因此需要不斷的浮到
水面上進行呼吸，當它浮到水面吸入氣，當它在水面和空氣之間的
交界，龍虱成九個呼吸管到龍虱呼吸的可愛氣泡呢！
除了水中活動外，龍虱也具有離開水面在空中飛行的能力。





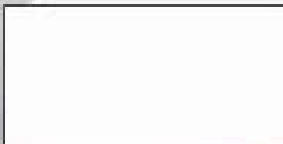
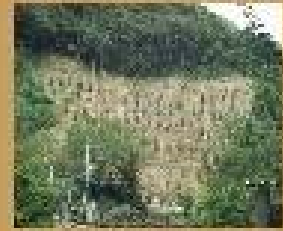
國立自然科學博物館
淡水魚類標本館



昆虫世界



全部拆掉！



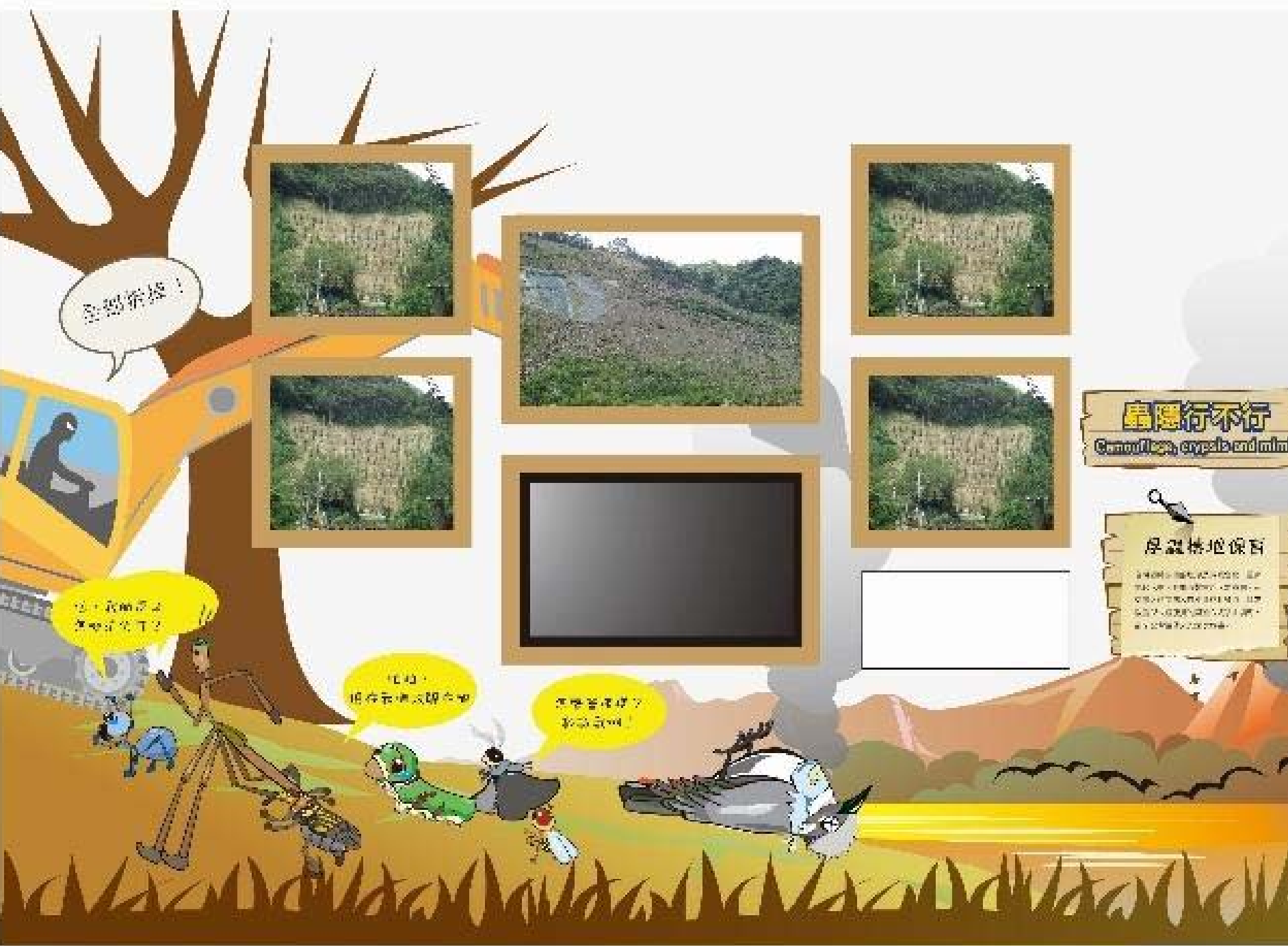
崩遷行不行 Cannibalism, eggs and infants

保護林地保育
A field of tall grasses and trees in the background. The text is partially obscured by a yellow speech bubble.

這，我願以生命為代價！

哇，這是在這兒嗎？

怎麼會這樣？



蟲蟲危機總動員



水龍頭有沒有關好？



浪費水資源
水螳螂無家可歸



珍惜水資源
水螳螂的生活無處！



蟲蟲危機總動員



有沒有節約用紙呢？



大量砍樹造紙，
蟲隱村居民流離失所



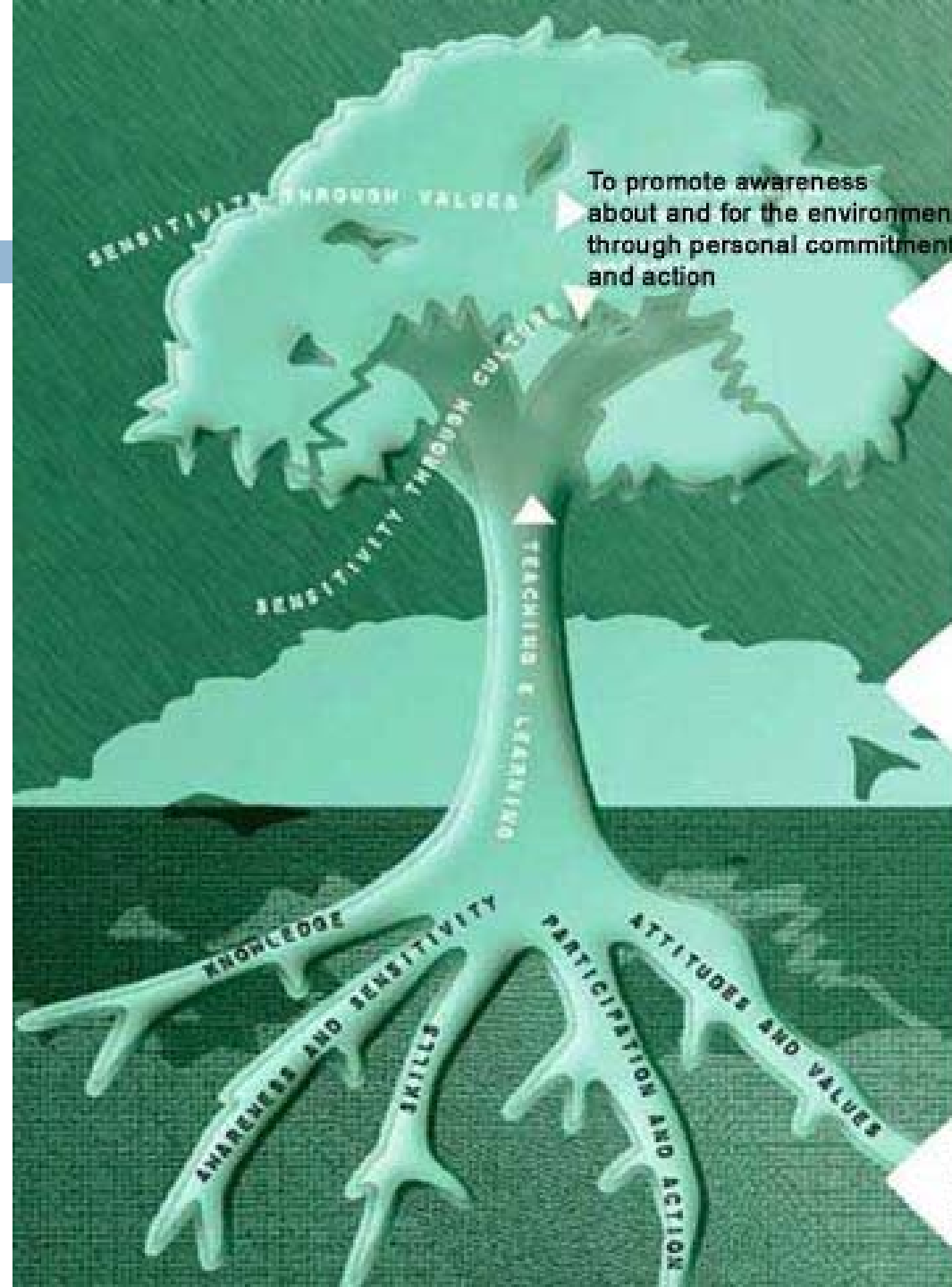
落實節約用紙，
青山綠水永長存，
蟲隱村和樂融融。



What is EE ?

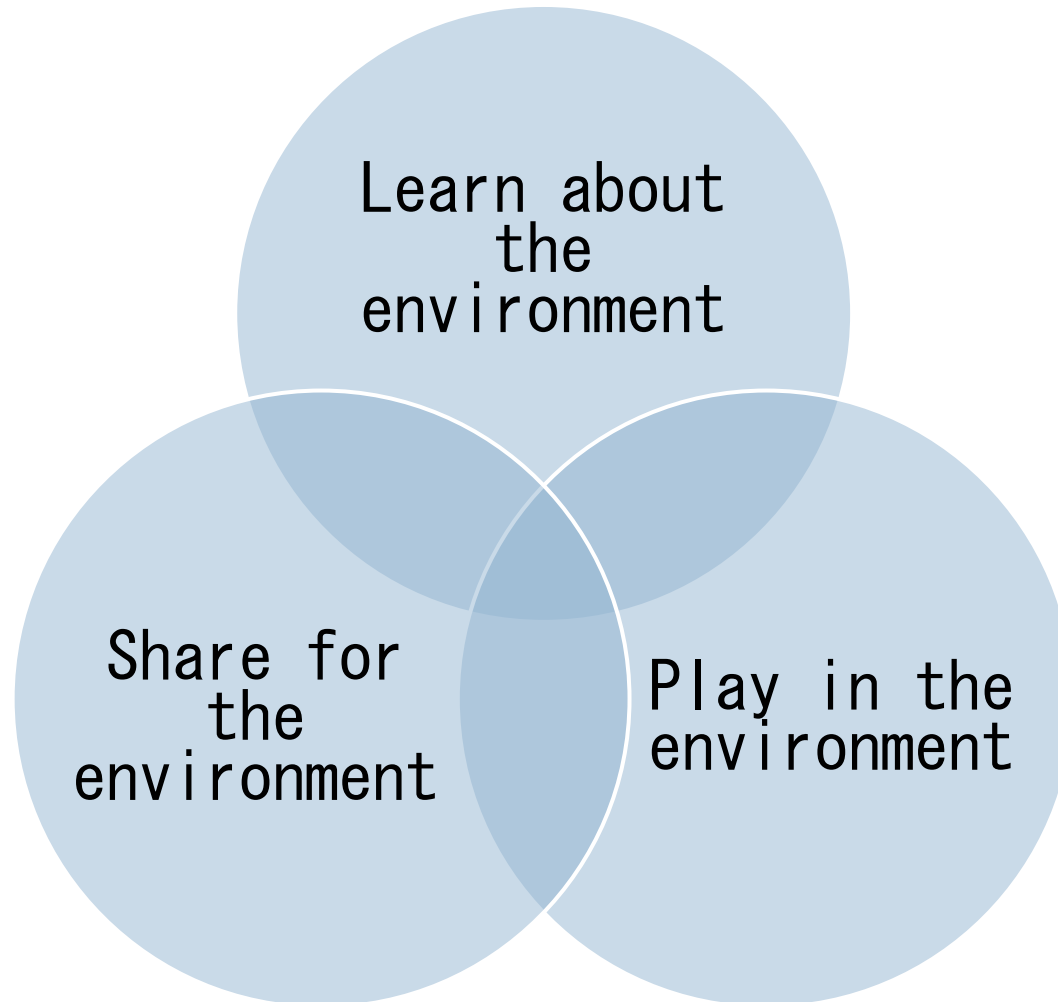
24

- Awareness and sensitivity
- Knowledge and Understanding
- Attitudes
- Skills
- Participation



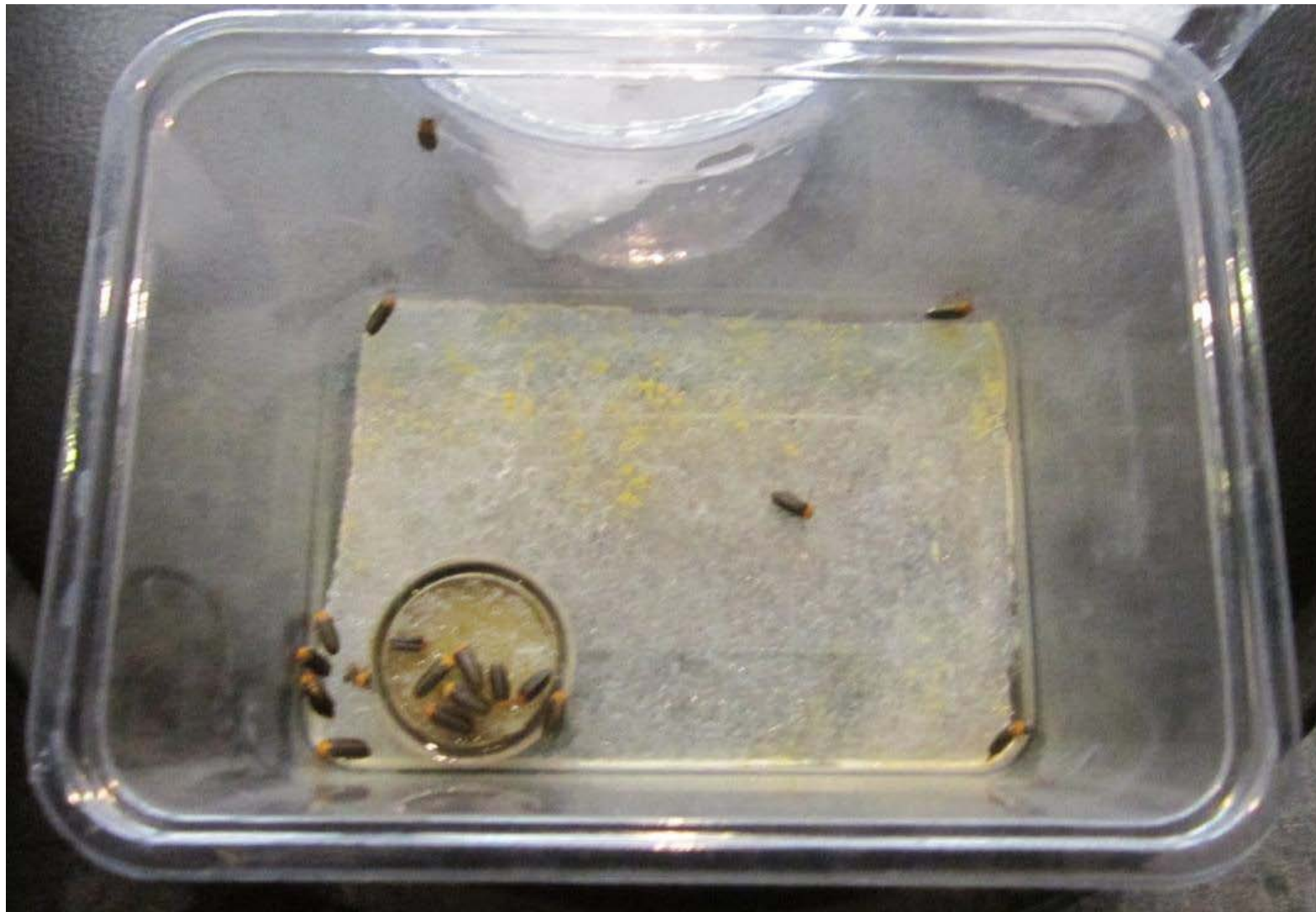
Insect Camp

25



Firefly Camp

26





如何保護水環境?

Water environment protection is a key to sustainable development. We should take effective measures to protect our water resources, such as reducing water consumption, preventing water pollution, and protecting water ecosystems.

水環境可以當作環境污染的指標

Water environment can be used as an indicator of environmental pollution. The biological indicators in the water can reflect the quality of the water and the health of the ecosystem.



The best biological indicators in watershed

The best biological indicators in a watershed are those that are sensitive to changes in water quality and can be easily monitored. These indicators include the presence of certain species, the diversity of the community, and the health of the ecosystem.

心得筆記



水中精靈學習單

Exhibit of aquatic insects

1. 請問你觀察到幾種水棲昆蟲？
你最喜歡哪一種？

2. 你覺得這些水棲昆蟲有什麼一樣和不一樣的地方嗎？

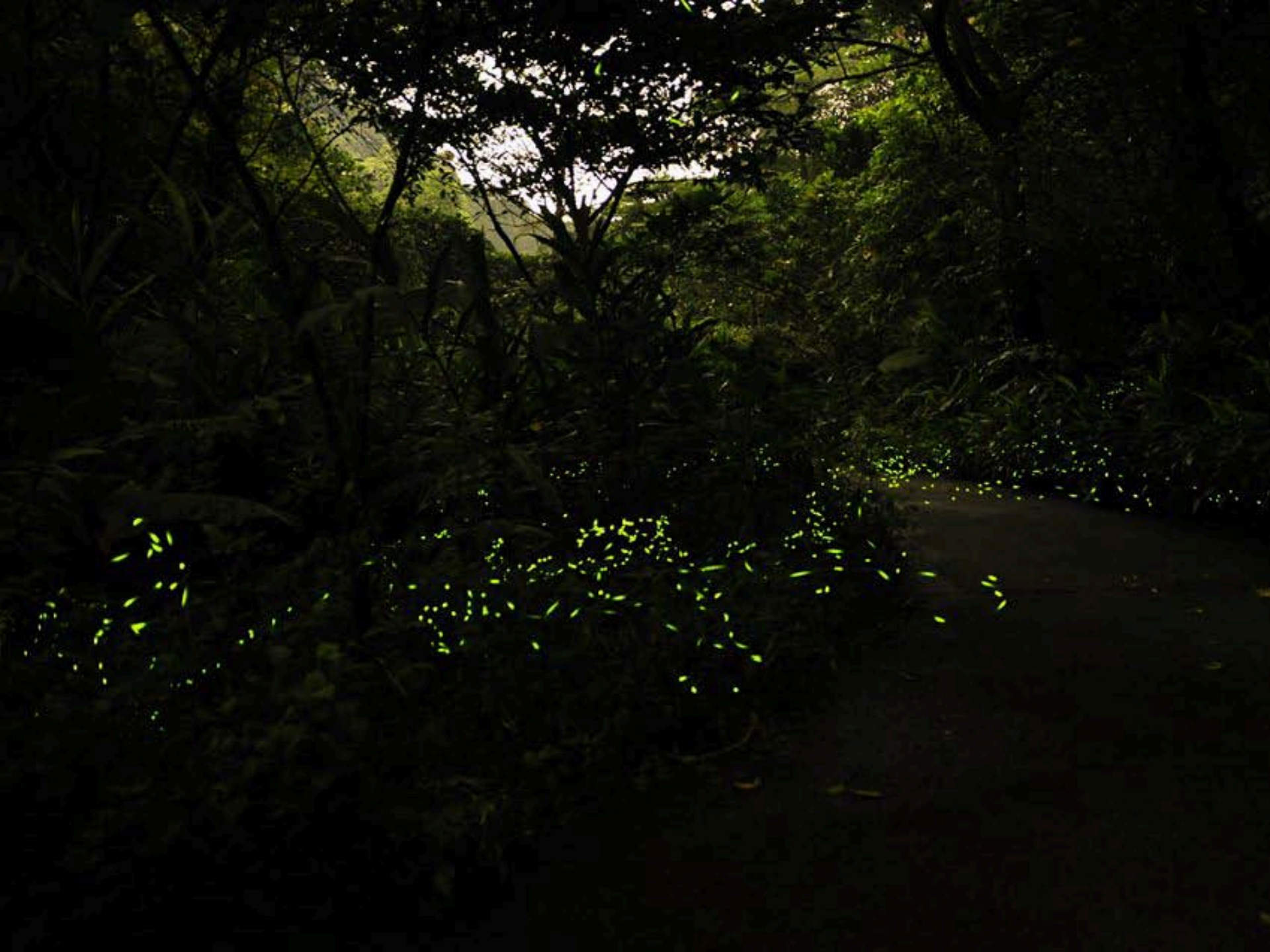
3. 你覺得水棲昆蟲生活在水裡要怎麼呼吸呢？

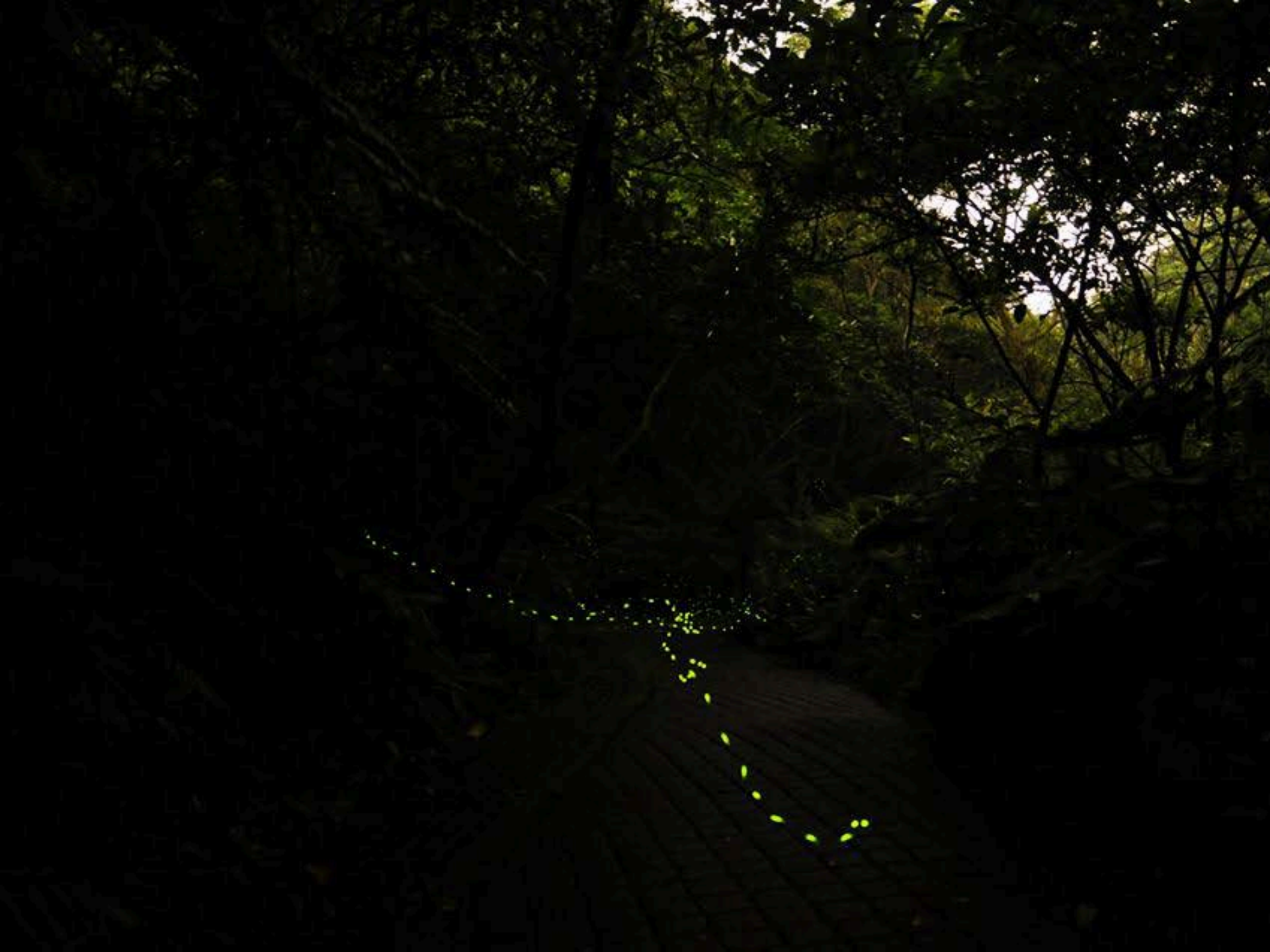
4. 水棲昆蟲都住在哪些地方？

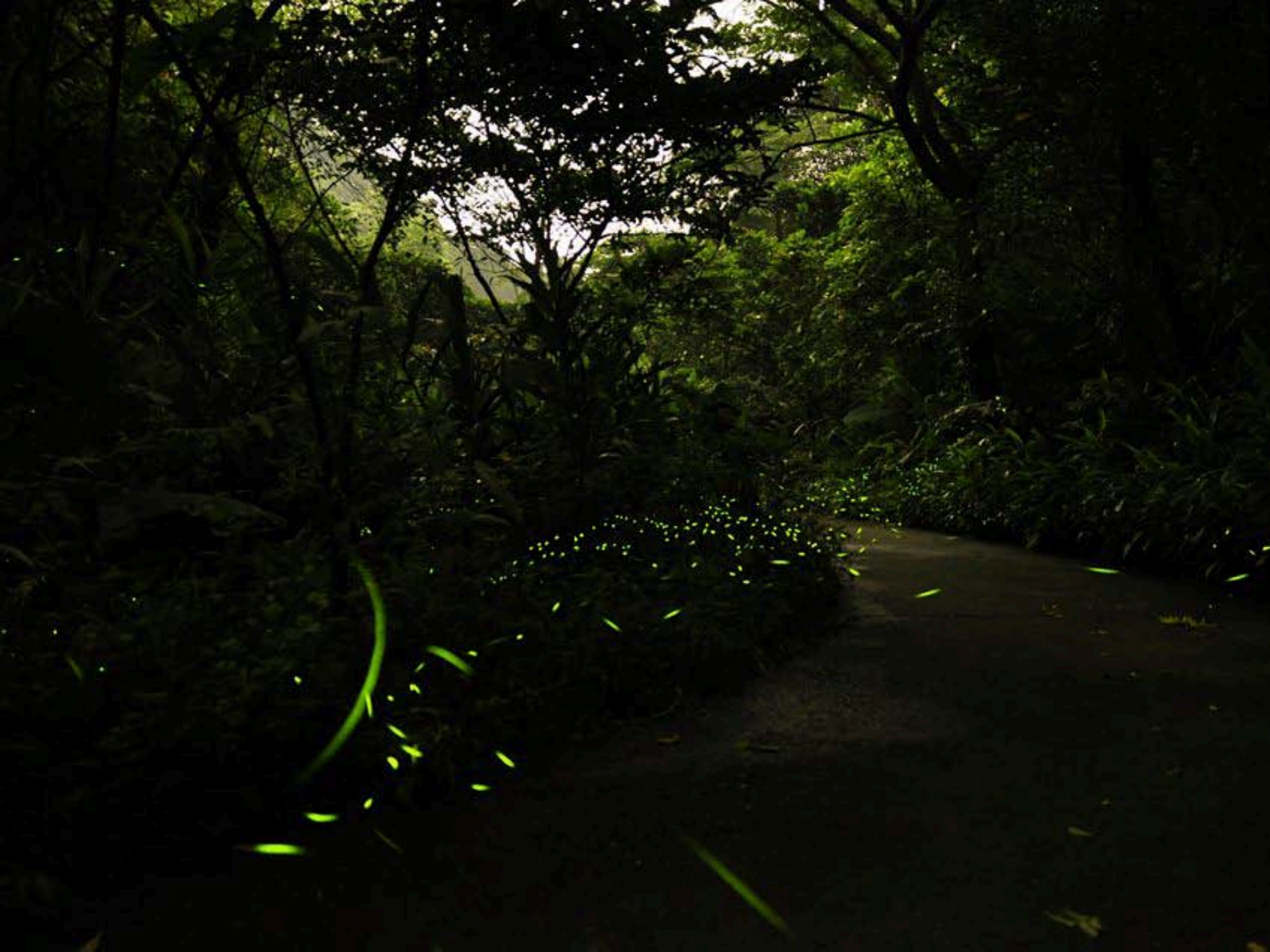
5. 你覺得水棲昆蟲對我們的環境重不重要？











心得筆記



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1. 請問你觀察到幾種水棲昆蟲？
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4. 水棲昆蟲都住在哪些地方？

5. 你覺得水棲昆蟲對我們的環境重不重要？





Butterfly Camp

35



Insect Vally

36









Play in the environment

40



Share for the environment

41



Insect Invisible Village Camp

42



有蛇!!
~嗚嚶~



第六式：
自古誰無



有蛇!!
~嗚嚶~













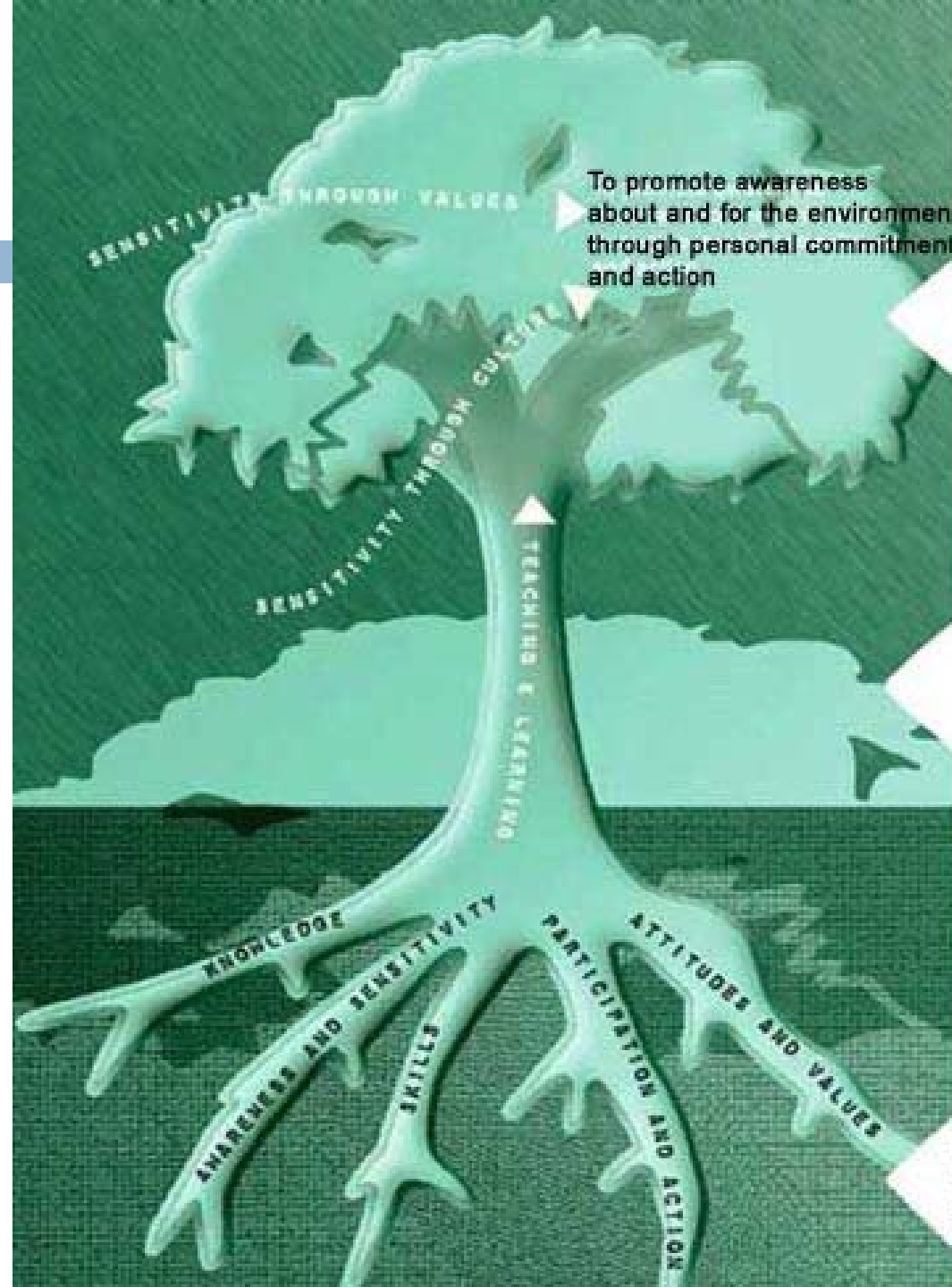


蝶云士

What is EE ?

50

- Awareness and sensitivity
- Knowledge and Understanding
- Attitudes
- Skills
- Participation



How to make a fascinating activity?

51

- Makes it as fun as possible
- Telling the **Big idea**
- Do not satisfied

LIVE LONG



AND PROSPER