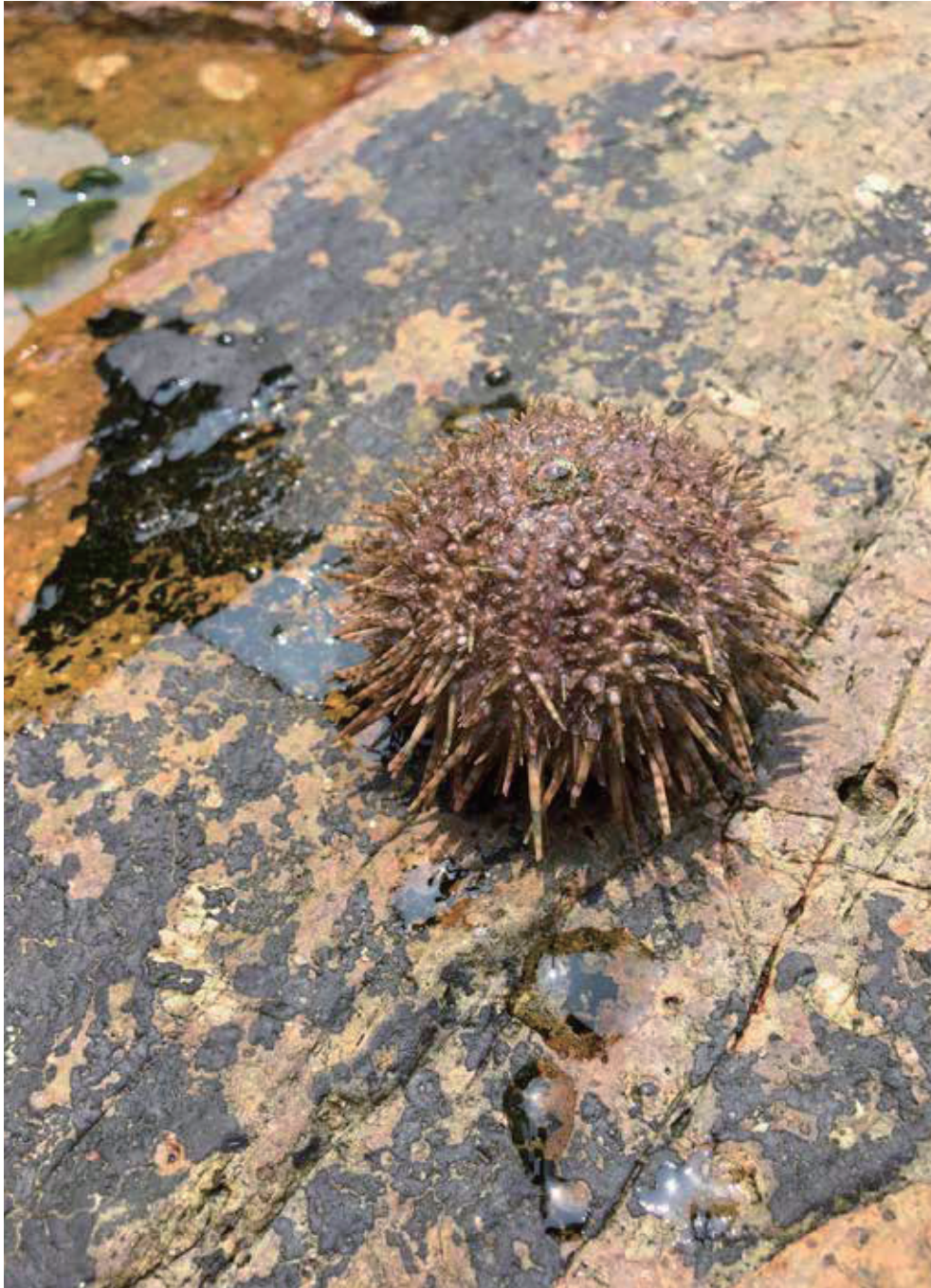




Habitat Study



_____/_____/_____ School name		_____/_____/_____ Student name		_____/_____/_____ Group no.	
_____ Study location	_____/ DD-MM-YYYY Study date	_____/_____/_____ Study time	_____/_____/_____ Weather	_____/_____/_____ High tide	_____/_____/_____ Low tide

BACKGROUND

Though Hong Kong is just a small place, it has many types of habitats which provide different environments for various organisms. The sizes of habitats in Hong Kong are generally small. Different habitats can be found in a small area. For example, different habitats such as woodland, scrubland, grassland, farmland, urban area, rocky shore, sandy shore and stream can be found in our study area.

Many symbiotic relationships can be found in various habitats. Habitats provide various microhabitats for animals and plants. At the same time, the species also survive under competition for different resources.

AIMS AND OBJECTIVES

- To appreciate the wonders of the living world.
- To observe the ecology among different habitats.
- To familiarize various organisms.

EQUIPMENT

☐ Clip board 記錄板	×1	☐ Identification chart 野外辨認圖 (WL 樹林, GL 草地, RS 岩岸)	×3
☐ Compass 指南針	×1	☐ Digital thermo-hygrometer 數字溫濕度計	×1
☐ Cotton gloves 工業手套	×1	☐ Plastic bags 膠袋	×2
☐ Soil Thermometer 土壤溫度計	×1	☐ Light meter 光度計	×1
☐ Anemometer 風速計	×1	☐ Plastic vials 膠樽	×1
☐ Aquarium net 魚網	×1	☐ Brush 畫筆掃	×1
☐ Quadrat 樣方框	×1	☐ Measuring tape (20m) 20米拉尺	×1

REMARKS

- No smoking is allowed at the site.
- Put on long-sleeved shirts, jeans and hats with wide brim.
- Never stand on steep slopes or unstable slopes.
- Never step beyond the tide.
- Do not reach into holes.
- Dead specimen of vertebrates should not be collected or closely examined.
- Be careful upon handling those spiny plants and the animals which may bite.
- Never ingest any fruits, seeds or leaves of wild plants.
- Never pollute/damage the environment in all sense. Minimize trampling.

1

The route includes the studies of woodland, grassland, and rocky shore habitats. Observe the environments and different organisms living in the habitats. Fill the table 1&2.

2

Woodland and grassland study:

Compare animal species and habitat environment between woodland and grassland. Students would experience the collection of abiotic and biotic factors. You may observe the organisms with hand lens or insect magnifying box.

- Randomly place a quadrat on the floor of woodland
- Collect ALL litter sample bound within the quadrat
- Measure light intensity, soil / surface temperature, humidity and wind speed of the woodland
- In laboratory, measure the mass of litter
- Using a brush, identify and record the abundances of different animals

3

Exploration of Rocky shore

With respect to local environment factors such as tides, waves and types of substratum, the seashore communities have developed a special zonation pattern. Students can observe and compare the ecology of exposed and sheltered shore.

- Set up a 10 metres transect belt, with quadrat placed every 2 metres
- Measure light, temperature and humidity every 2 metres along the transect
- Identify and record the abundances of limpets, common top shells and periwinkles

Discussions and Conclusions

WOODLAND AND GRASSLAND

1. Compare the difference of abiotic factors between woodland and grassland, how do they change in a day and between different seasons?
2. Suggest how do the abiotic factors affect the species found in the habitat?
3. Briefly illustrate the adaptive features of the animals and plants living in woodland.
4. Compare and contrast the environment inside and outside woodland. Comment on the effects of any human activities on the ecosystem (succession).
5. Based on the organisms collected or observed, try to construct food chains/web to show the trophic levels of these organisms.

ROCKY SHORE

6. Compare and contrast the abiotic factors of the exposed and sheltered rocky shores. Which factor(s) do you think is/are limiting to the community? Why?
7. Describe a rock pool community against its physical environment and describe the differences between communities on rocky surface and rock crevices.
8. Which sampling method should be adopted for the three habitats?

Habitat Study Data Sheet

Table 1. Abiotic factors and animals abundance in Terrestrial habitat

Habitat	Abiotic Factors					Mass of Litter g 0.25m ⁻²
	Surface Temperature °C	Soil Temperature °C	Relative Humidity %	Light Intensity lux	Wind Speed (Direction 風向) ms ⁻¹	
Woodland					()	
					()	
Grassland					()	
					()	
Animal Abundance (Woodland)	Woodlouse 土蠃 () Thrips 薊馬 () Springtail 跳蟲 () Millipedes 千足 () Mite 蟎 ()					
	Ants 蟻 () Termites 白蟻 () ____ () ____ () ____ () ____ ()					
Animal Abundance (Grassland)	Grasshopper 草蜢 () Bugs 紅蟻 () Mantis 螳螂 () Crickets 蟋蟀 () Ants 蟻 ()					
	Ladybirds 瓢蟲 () Toad 蟾蜍 () ____ () ____ () ____ () ____ ()					

Table 2. Abiotic factors and animals abundance in Terrestrial habitat

Distance from the Sea		0	1	2	3	4	5	6
Light Intensity								
Temperature								
Relative Humidity								
Animal abundance	Limpets 帽貝							
	Common Top Shell 單齒螺							
	Periwinkles 濱螺							

Table 3. Threats and adaptation of animal species living on Rocky shores and Terrestrial Habitat

After investigation, point out the (1) survival threats that the animals may encounter, and (2) Their related adaptation (structural/ behavioral)

Survival Threats	Adaptations