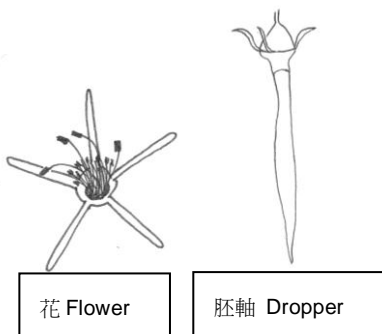
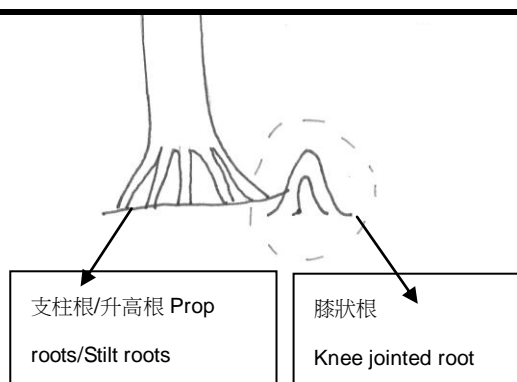
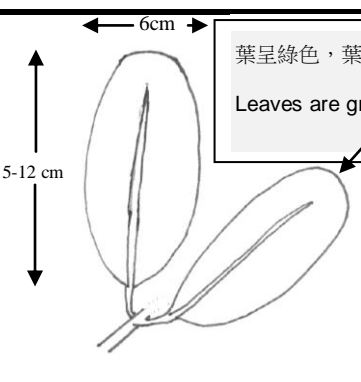
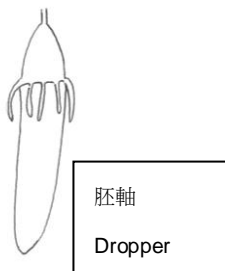
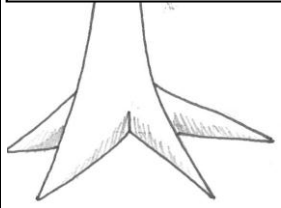
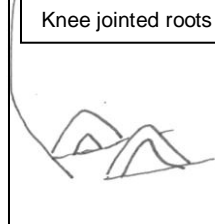
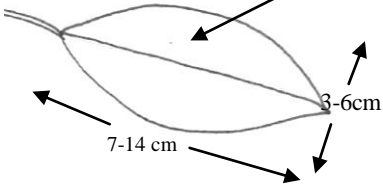


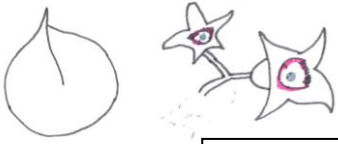

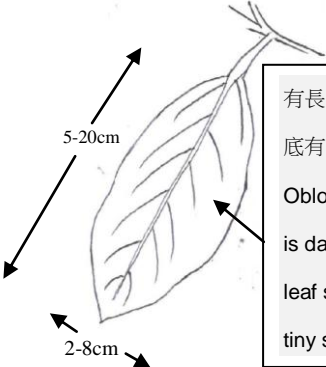
**A. 紅樹在其居住環境面對什麼困難？ What difficulties are mangroves facing in their habitat?**

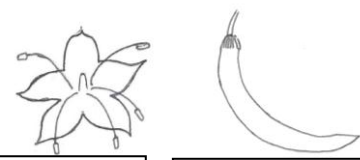

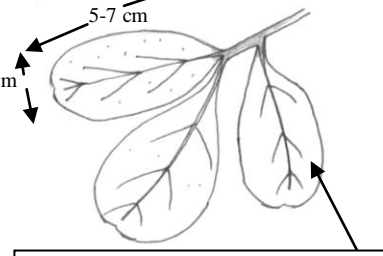
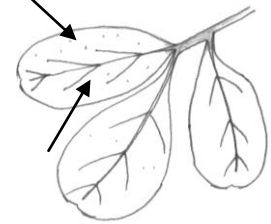
- a. 缺乏氧氣 Anaerobic condition                      b. 不穩定的基質 Unstable substratum                      c. 高濃度鹽分的環境 High salinity  
 d. 乾旱 Desiccation                      e. 繁殖困難 Reproduction problems

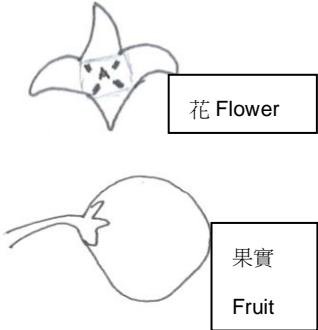

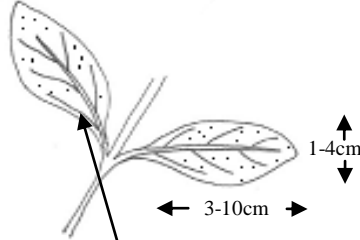
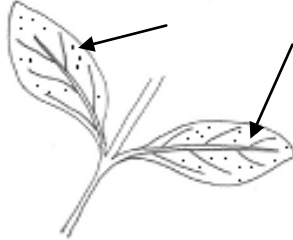
**B. 試觀察米埔的紅樹有什麼特徵有助適應其居住環境，並將它們的形態繪畫在以下表格內並加以描述。  
 Observe the mangroves in Mai Po and illustrate their morphology in the space provided**

| 植物名稱<br>Name of plant         | 平均高度<br>(米)<br>Average height (m)           | 種子 / 果實 / 花<br>Seed / fruit / flower  | 根部<br>Root   | 葉<br>Leaf   | 其他 (請註明)<br>Others (Please specify)   |
|-------------------------------|---|---|--|---|---|
| 秋茄樹<br><i>Kandelia candel</i> | 按當日學生觀察而定<br>Based on students' observation |  <p>花 Flower                      胚軸 Dropper</p>  |  <p>支柱根/升高根 Prop roots/Stilt roots                      膝狀根 Knee jointed root</p>   |  <p>← 6cm →<br/>5-12 cm</p> <p>葉呈綠色，葉形為橢圓形，葉尖圓，葉脈不明顯。<br/>Leaves are green and elliptic, rounded apex, unclear veins.</p> | NA  |
| 所解決的困難<br>Difficulties solved |   | <p><b>E</b><br/>(秋茄樹的胚軸成熟後會脫落，插在泥土中生長，成為另一棵秋茄樹。<br/>The droppers of <i>Kandelia candel</i> detach from the parent plants once become mature. The droppers will develop into new individuals after anchoring to the soil.)</p> | <p><b>B</b><br/>(秋茄樹有支柱根，它可以提供額外的支撐。<br/>Prop roots provide extra support against the unstable substratum.)</p> <p><b>A</b><br/>(秋茄樹有膝狀根，它可以促進氣體交換。<br/>Knee Jointed roots facilitate gaseous exchange.)</p> | <p><b>D</b><br/>(秋茄樹的樹葉有厚角質層以減少水份流失，樹葉亦有用來儲存水份的組織。<br/>The thick waxy cuticle and water storage tissues of the leaves help reduce water loss.)</p>  | <p><b>C</b><br/>秋茄樹是鹽分排斥者，它的根部結構可以防止鹽分進入植物內，亦可以把多餘的鹽分從根部排出。<br/>(<i>Kandelia candel</i> has the ability to prevent the entry of salts from the surroundings into the plant or to get rid of excess salts through roots by its mechanism and structure.)</p> |

| 植物名稱<br>Name of plant              | 平均高度<br>(米)<br>Average height (m)           | 種子 / 果實 / 花<br>Seed / fruit / flower  | 根部<br>Root   | 葉<br>Leaf  | 其他 (請註明)<br>Others (Please specify)   |
|------------------------------------|---|---|--|--|---|
| 木欖<br><i>Bruguiera gymnorrhiza</i> | 按當日學生觀察而定<br>Based on students' observation |    |                                     | <p>葉呈綠色，葉形為橢圓形，葉的頂端尖，葉脈不明顯。<br/>Leaves are green and elliptic with pointed apex and unclear veins.</p>  | NA  |
| 所解決的困難<br>Difficulties solved      |   | <p><b>E</b><br/>(木欖的胚軸成熟後會脫落，插在泥土中生長，成為另一棵木欖。<br/>The droppers of <i>Bruguiera gymnorrhiza</i> detach from the parent plants once become mature. The droppers will develop into new individuals after anchoring to the soil.)</p> | <p><b>B</b><br/>(木欖有板根作為額外的支撐<br/>Buttress roots provide extra support against the unstable substratum.)</p> <p><b>A</b><br/>(木欖有膝狀根，它可以促進氣體交換。<br/>Knee Jointed roots facilitate gaseous exchange.)</p> | <p><b>D</b><br/>(木欖的樹葉有厚角質層以減少水份流失，樹葉亦有用來儲存水份的組織。<br/>The thick waxy cuticle and water storage tissues of the leaves help reduce water loss.)</p>  | <p><b>C</b><br/>(木欖會將過多的鹽分儲存在老葉中，老葉脫落的時候鹽分會被帶走。<br/>Excess salts will be stored in old leaves. The stored salts can be removed when the old leaves shed.)</p> |

| 植物名稱<br>Name of plant                                      | 平均高度(米)<br>Average height (m)               | 種子 / 果實 / 花<br>Seed / fruit / flower   | 根部<br>Root   | 葉<br>Leaf   | 其他 ( 請註明 )<br>Others (Please specify) |
|--|---|--|--|---|---------------------------------------|
| 銀葉樹<br><i>Heritiera littoralis</i><br>(Looking-glass Tree) | 按當日學生觀察而定<br>Based on students' observation |  <p>果實 Fruit</p> <p>花 Flower</p>  |  <p>板根 Buttress roots</p>  |  <p>有長圓形的葉形，葉面呈深綠色，葉底有銀色鱗片所以呈銀白色。<br/>Oblong leaves. Upper leaf surface is dark green in colour, the lower leaf surface is silvery as there are tiny scales.</p> | NA                                    |
| 所解決的困難<br>Difficulties solved                              |   | <p><b>E</b><br/>(銀葉樹有木質的果實，因此可以輕易漂浮在水面，幫助散播種子。<br/>The fruit of Looking-glass Tree is woody and it is easy to float for effective dispersion of seeds)</p> | <p><b>B</b><br/>(銀葉樹有板根作為額外的支撐<br/>Buttress roots provide extra support against the unstable substratum)</p> | <p><b>D</b><br/>(銀葉樹的樹葉葉底呈銀色，可以反射陽光以減低水份蒸發的情況。它的樹葉亦有厚角角質層以減少水份流失。<br/>The underside of the leaves is silvery so that light can be reflected to reduce water loss by evaporation. The thick cuticle of the leaves help reduce water loss.)</p>       | NA                                    |

| 植物名稱<br>Name of plant                | 平均高度(米)<br>Average height (m)               | 種子 / 果實 / 花<br>Seed / fruit / flower  | 根部<br>Root   | 葉<br>Leaf   | 其他 ( 請註明 )<br>Others (Please specify)  |
|--------------------------------------|---|---|--|---|--|
| 桐花樹<br><i>Aegiceras corniculatum</i> | 按當日學生觀察而定<br>Based on students' observation |  <p>花 Flower      胚軸 Dropper</p>   |  <p>支柱根/升高根<br/>Prop roots/Stilt roots</p> <p>膝狀根<br/>Knee jointed root</p>  |  <p>葉呈綠色，有倒卵形的葉形，葉尖微凹，葉柄呈粉紅色。<br/>Leaves are green and obovate with notched apex. Petioles are pink in colour.</p> |   |
| 所解決的困難<br>Difficulties solved        |   | <p><b>E</b><br/>(桐花樹的胚軸成熟後會脫落，插在泥土中生長，成為另一棵桐花樹。)</p> <p>The droppers of <i>Aegiceras corniculatum</i> detach from the parent plants once become mature. The droppers will develop into new individuals after anchoring to the soil. )</p> | <p><b>B</b><br/>(桐花樹有支柱根，它可以提供額外的支撐。)</p> <p>Prop roots provide extra support against the unstable substratum.)</p> <p><b>A</b><br/>(桐花樹有膝狀根，它可以促進氣體交換。)</p> <p>Knee Jointed roots facilitate gaseous exchange.)</p> | <p><b>D</b><br/>(桐花樹的樹葉有厚角質層以減少水份流失，樹葉亦有用來儲存水份的組織。)</p> <p>The thick waxy cuticle and water storage tissues of the leaves help reduce water loss. )</p>   | <p><b>C</b><br/>(桐花樹利用葉面上的鹽腺把鹽分排走或利用機制阻止鹽分經根部進入植物內。)</p> <p>The salt glands on the leaf surface excrete salts from the plants. The plants can also prevent salts entering the root system from the external environment.</p> |

| 植物名稱<br>Name of plant                              | 平均高度(米)<br>Average height (m)               | 種子 / 果實 / 花<br>Seed / fruit / flower   | 根部<br>Root   | 葉<br>Leaf  | 其他 (請註明)<br>Others (Please specify)  |
|--|---|--|--|--|--|
| 白骨壤<br><i>Avicennia marina</i><br>(Black mangrove) | 按當日學生觀察而定<br>Based on students' observation |   |   |   |                             |
| 所解決的困難<br>Difficulties solved                      |   | <p><b>E</b><br/>(白骨壤的果實當脫落到泥土時會快速生長出樹苗，出水通氣根亦能阻止果實隨水流而漂走。<br/>The fruit of black mangrove can grow rapidly once it is fallen to the soil. The pneumatophores prevent the fruit from drifting away by water current.)</p> | <p><b>A</b><br/>(即使白骨壤的根部浸在水中，直立的出水通氣根亦能幫助紅樹在水上呼吸。<br/>Pneumatophores carry out gaseous exchange above the water level even though roots of Black Mangrove are submerged in the water.)</p> <p><b>B</b><br/>(泥土下的纜狀根可以提供額外的支撐。<br/>Cable roots provide extra stability to the black mangrove.)</p> | <p><b>D</b><br/>(白骨壤的樹葉有厚角質層以減少水份流失，亦有用來儲存水份的組織。<br/>The thick waxy cuticle and water storage tissues of the leaves help reduce water loss.)</p> | <p><b>C</b><br/>(白骨壤利用葉面上的鹽腺把鹽分排走。<br/>The salt glands on the leaf surface excrete salts from the plants.)</p> |