

自然科學部分雙語課程設計

第一單元—植物的根、植物的花與果實			
單元名稱			
領域類別	自然科學	教案設計	郭婉容
教學對象	三年級	教學節次	2 節/每節 40 分鐘
教學目標	1. 以五感觀察植物，能使用多種觀察來認識植物並且分享。 2. 依照根的形態，區分軸根和鬚根。 3. 知道根可以深入土壤固定植物，具有吸收水分和養分的功能。 4. 觀察花的構造，包含花萼、花瓣、雄蕊和雌蕊。 5. 了解花朵可以發育成果實，果實裡面有種子。		
學習內容	INb- II-4 生物體的構造與功能是互相配合的。 INb- II-6 常見植物的外部形態主要由根、莖、葉、花、果實及種子所組成。		
學習表現	ti-II-1 能在指導下觀察日常生活現象的規律性，並運用想像力與好奇心，了解及描述自然環境的現象。 tc- II-1 能簡單分辨或分類所觀察到的自然科學現象。 pa- II-1 能運用簡單分類、製作圖表等方法，整理已有的資訊或數據。 pc- II-2 能利用簡單形式的口語、文字或圖畫等，表達探究之過程、發現。 ah- II-2 透過有系統的分類與表達方式，與他人溝通自己的想法與發現。		
核心素養	自-E-A1 能運用五官，敏銳的觀察周遭環境，保持好奇心、想像力持續探索自然。 自-E-B1 能分析比較、製作圖表、運用簡單數學等方法，整理已有的自然科學資訊或數據，並利用較簡單形式的口語、文字、影像、繪圖或實物、科學名詞、數學公式、模型等，表達探究之過程、發現或成果。		
議題融入	戶外教育 E1 善用五官感知環境，分別培養眼、耳、鼻、舌、觸覺及心靈的感受能力。 E3 善用教室外、戶外及校外教學，認識生活環境（自然或人為）。		
學科英語	軸根 taproot、鬚根 fibrous root、花瓣 petal、雄蕊 stamen、雌蕊 pistil、花萼 sepal		
教學活動		時間	教學資源
第一節開始			
一、引起動機 植物藏在土裡的構造是什麼？ T: We had learned 6 plant body parts. What are those? Ss: 根、莖、葉、花、果實、種子/root, stem, leaf, flower, fruit, seed T: Great! Which part is buried in soil? Ss: Roots!		3'	口頭評量
二、發展活動 1. 觀察植物的根並畫在學習單上。 T: Each group will have 2 different plants. Please observe them and draw the roots on your worksheet. Don' t forget to write your class, name, seat number, and today' s date.		7'	植物學習單
			實作評量

<p>Ss: No problem.</p> <p>T: You have 6 minutes to finish drawing. Please take a closer look before you draw. Time starts now.</p> <p><<學生觀察並畫下根的型態時，老師進行課間巡堂，並適時提問協助學生完成學習單。>></p> <p>* What do you see?</p> <p>* How does it look like?</p> <p>* 他們都一樣粗/細嗎?</p> <p>* 他們都一樣長/短嗎?</p> <p>2. 分辨根的型態，並了解根的功能。</p> <p>T: Time' s up. You have observed 2 different plants. What do the plant roots look like?</p> <p>Ss: 向鬍子一樣/亂七八糟/都細細的/ 自由作答</p> <p>T: Great! This kind of roots we called it fibrous root(鬚根). This one looks like beard. The size and length are all similar. How about another one? How does that root look like?</p> <p>Ss:粗粗的/有一個粗粗的，旁邊細細的/自由作答</p> <p>T: Nice observations. This kind of roots has a main root and some other small roots on side, we called it taproot(軸根).</p> <p>T: Make a guess, what' s the function of roots?</p> <p>Ss: 抓住土壤/吸收水分、養分。</p> <p>T: Correct! Roots can help plants to grab soil to stand, absorb water and nutrients, and also bring water and nutrients to other plant body parts.</p>	18'	課本	口頭評量
<p>3. 校本課程-校園植物的可見根(樟樹、榕樹、鳳凰木、水黃皮)</p> <p>T: We had learned these trees and how its stem and leaves look like. We can also see its roots. The pictures show the roots of 樟樹、榕樹、鳳凰木、水黃皮 in our campus.</p> <p>Ss: Wow!</p>	7'	PPT	
<p>三、綜合活動</p> <p>完成習作。</p> <p>T: Open your workbook page 8 and 9. You have 5 minutes to finish these 2 pages.</p> <p>T: Any other questions? Class dismissed.</p> <p style="text-align: center;">第一節結束</p> <p>-----</p>	5'	習作	實作評量

第二節開始

一、引起動機

請看看這兩種不同的花有什麼共同的地方？

T: Take a look at these 2 flowers, what' s in common?

Ss: 都有花瓣/裡面有一根一根的/花的下面有綠綠的東西

T: What' s the differences?

Ss: Color/size/味道/自由作答

二、發展活動

1. 認識花的構造—花萼、花瓣、雄蕊、雌蕊。

T: Each one of you will get three flowers. You have 2 minute to observe it. Please be nice and gentle to it.

Don' t break it, its fragile.

T: Most flowers have 4 structures. The biggest part of flower is petal(花瓣). Please points out for me.

Ss: (指著花瓣)

T: Wonderful! It could be colorful. Why are the petals colorful? Why do flowers smell good?

Ss: 吸引昆蟲/ 長得漂亮/自由作答

T: That' s right. Petals are colorful to attracts animals. It smells good to attracts insects, too. Look at the middle of flower. Are the parts inside the petal look the same?

Ss: No. 裡面有一根一根的東西/有的矮、有的高/有的胖、有的瘦/有的大、有的小/自由作答

T: The one in the center is pistil(雌蕊). It is usually bigger and longer. It' s the part that turns into fruit. The one around the pistil is stamen(雄蕊). The number are usually more than pistil and can product pollen. We talked about petal, pistil, and stamen. There' s one structure left. What is it?

Ss: 花瓣下面綠綠的/包住花瓣的/自由作答

T: That' s sepal(花萼). It protects the petal, pistil,

5'

花朵

口頭評量

18'

花朵
PPT

實作評量

<p>and stamen.</p> <p>2. 了解開花後可以結成果實，果實內有種子。</p> <p>T: After flowers withered away. Which part of plants will you see?</p> <p>Ss: Fruit.</p> <p>T: Great! What' s inside the fruit?</p> <p>Ss: Seeds/ 果肉/ Free response</p> <p>T: We can find seeds inside the fruit. Let' s take a look about plant' s flower, fruit, and seed. You could see how 水黃皮、白千層' s flowers, fruits, and seeds</p>	10'	PPT 果實 種子	實作評量
<p>三、綜合活動</p> <p>校本課程－觀察校園植物的花、果實、種子。(水黃皮、白千層)</p> <p>T: Let' s go observe 水黃皮、白千層' s flowers, fruits, and seeds. Look up, have you see the flowers/ fruits/ seeds?</p> <p>Ss: Yes.</p> <p>T: You can pick up the flowers/ fruits/ seeds. 水黃皮' s seeds are inside the fruit. You might need to crack it out. Let' s go find 白千層' s flowers, fruits, and seeds. You can see its flowers. The green fruits/seeds are not mature yet. When it' s mature, it will turn into brown. Any questions? Goodbye everyone.</p> <p style="text-align: center;">第二節結束</p> <p>-----</p>	7'	PPT	實作評量