

## 自然科學部分雙語課程設計

自然科學部分雙語課程設計			
單元名稱	第三單元—3-1 觀測天氣		
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	6 節/每節 40 分鐘
教材來源	翰林三年級自然科學		
教學目標	<ol style="list-style-type: none"> <li>1. 了解天氣不同時，雲的形狀、雲量、氣溫、雨量都會不同。</li> <li>2. 能分辨晴天、多雲、陰天和雨天的雲量。</li> <li>3. 知道氣溫計的正確使用方法，並實際測量一天的氣溫，發現一天中氣溫的變化。</li> <li>4. 知道雨量的定義且能利用簡單的容器測量雨量。</li> </ol>		
學習內容	<p>INc- II-1 使用工具或自訂參考標準可量度與比較。</p> <p>INc- II-2 生活中常見的測量單位與度量。</p> <p>INd- II-2 物質或自然現象的改變情形，可以運用測量的工具和方法得知。</p> <p>INd- II-7 天氣預報常用雨量、溫度、風向、風速等資料來表達天氣狀態，這些資料可以使用適當儀器測得。</p>		
學習表現	<p>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。</p> <p>tc- II-1 能簡單分辨或分類所觀察到的自然科學現象。</p> <p>po- II-2 能依據觀察、蒐集資料、閱讀、思考、討論等，提出問題。</p> <p>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。</p> <p>pe- II-2 能正確安全操作適合學習階段的物品、器材儀器、科技設備及資源，並能觀察和記錄。</p> <p>an- II-1 體會科學的探索都是由問題開始。</p>		
核心素養	<p>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。</p> <p>自-E-A3 具備透過實地操作探究活動探索科學問題的能力，並能初步根據問題特性、資源的有無等因素，規劃簡單步驟，操作適合學習階段的器材儀器、科技設備及資源，進行自然科學實驗。</p> <p>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。</p>		
議題融入	<p>環境教育</p> <p>E8 認識天氣的溫度、雨量要素與覺察氣候的趨勢及極端氣候的現象。</p>		
學科英語	<p>天氣 weather、晴天 sunny、多雲 partly cloudy、陰天 cloudy、雨天 rainy、氣溫 air temperature、氣溫計 air thermometer、攝氏 Celsius、華式 Fahrenheit、雨量 rainfall、雨量器 rain gauge、大雨 heavy rain、豪雨 extremely heavy rain、大豪雨 torrential rain、超大豪雨 extremely torrential rain</p>		
教學活動		教學資源	評量方式
活動一：認識不同天氣(一節課)			

<p>引起動機：(3' )</p> <p>今天天氣如何?</p> <p>T: What' s the weather like today? / How' s the weather?</p> <p>Ss: Today is sunny/ rainy/ cloudy day.</p> <p>發展活動：(32' )</p> <p>1. 認識不同天氣，能說出各天氣的差異，並分享自己對於這些天氣的感受。</p> <p>T: Look out the windows and we could know what' s the weather like today.</p> <p>T: What are other ways to know the weather today?</p> <p>Ss: 看氣象預報/看新聞/ Free response.</p> <p>T: From the news, we could know that different places might have different weather. It could be sunny day in 新竹, but rainy day in 宜蘭.</p> <p>T: What other weather do we have for last month?</p> <p>Ss: Sunny/ rainy/ cloudy/ 打雷/閃電/ Free response.</p> <p>T: Can you tell me the differences between sunny and cloudy?</p> <p>Ss: (sunny)晴天太陽很大，沒什麼雲；(cloudy)陰天有很多黑黑的雲，看不到太陽，。</p> <p>T: Can you tell me the differences between rainy and lightning?</p> <p>(How about the differences between rainy and lightning?)</p> <p>Ss: (rainy)下雨天時天空灰灰暗暗的，雲很多又灰灰黑黑的，會下雨；(lightning)雲很多，天空黑黑的，然後有閃電。</p> <p>T: Can you tell me the differences between sunny and partly cloudy?</p> <p>(How about the differences between sunny and partly cloudy?)</p> <p>Ss: (sunny)晴天太陽很大，沒什麼雲；(partly cloudy)多雲時有太陽，但雲比晴天時多，雲是白色的，沒有完全遮住陽光。</p> <p>T: Except for the weather we had been experienced last month, what other weather do you know?</p> <p>Ss: 颱風天/梅雨季/下雪/ Free response.</p> <p>T: How do you feel about this weather (sunny/ cloudy/ rainy/ typhoon/ snowing/ plum rain / etc...)?</p> <p>Ss: (學生根據他們的感受回答)</p> <p>T: Thanks for sharing.</p> <p>T: We know that when weather is different, the amounts of</p>	<p><a href="#">氣象局網頁</a></p> <p>課本 天氣圖片</p>	<p>口頭評量 -能夠回答今天的天氣</p> <p>口頭評量 -能夠回答是如何知道今天的天氣</p> <p>口頭評量 -能夠回答過去一個月有哪些天氣</p> <p>口頭評量 -能夠說出不同天氣的差異</p> <p>口頭評量 -能夠說出自己對於不同天氣的感受</p>
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<p>clouds, the amounts of rain, temperature, wind direction, or wind force could be all different.</p> <p>綜合活動：(5' )</p> <p>1. 統整:晴天、多雲、陰天、雨天的不同。</p> <p>T: When it' s sunny day, how does the sky look like?</p> <p>Ss: 天空藍藍的，沒什麼雲，陽光強烈。</p> <p>T: When it' s partly cloudy day, how does the sky look like?</p> <p>Ss: 天空藍藍的，雲比晴天時多，雲是白色的，依然有陽光。</p> <p>T: When it' s cloudy, how does the sky look like?</p> <p>Ss: 天空灰灰的，雲也灰灰的，整個天空幾乎都是雲，沒什麼陽光。</p> <p>T: When its rainy, how does the sky look like?</p> <p>Ss: 下雨天，天空灰灰黑黑的，雲也灰灰黑黑的。</p> <p>T: We can tell the difference between sunny, partly cloudy, cloudy, and rainy by the amounts of clouds.</p> <p>2. 完成習作 p. 32。</p> <p>Finish the workbook.</p>	<p>課本</p> <p>習作 p. 32</p>	<p>口頭評量</p> <p>-能夠說出晴天、多雲、陰天和雨天的差異</p>
<p>活動二:測量氣溫(兩節課)</p> <p>引起動機：(5' )</p> <p>我覺得今天涼涼的，你呢?</p> <p>T: I feel cool today. How about you?</p> <p>Ss:老師，我覺得超熱，一點都不涼/ It' s hot today!/我覺得還好，不熱也不涼，氣溫剛剛好/Free response.</p> <p>T: Everyone feels different, but is the temperature different inside the classroom?</p> <p>Ss:教室內的氣溫是一樣的/教室內的氣溫不同，所以我們的感受才不同/ Free response.</p> <p>T: We use same standard to describe weather, so we could tell the difference between sunny, partly cloudy, and cloudy. How do we use same standard to describe air temperature?</p> <p>Ss: 用溫度計。</p> <p>發展活動：(70' )</p> <p>1. 如何測量氣溫。</p> <p>T: How do you know whether the temperature is the same</p>	<p>課本</p> <p>氣溫計</p>	<p>口頭評量</p> <p>-依照自己得感受回答</p> <p>實作評量</p> <p>-能使用氣溫</p>

<p>inside the classroom?</p> <p>Ss: 我們可以用溫度計測量/Free response.</p> <p>T: Thermometer is the tool that we use to measure the temperature of water. So, we are going to use air thermometer to measure the air temperature.</p> <p>T: What is air temperature?</p> <p>Ss: 氣溫。</p> <p>T: Yes, the air temperature is the temperature of the air. So, how can we measure air temperature?</p> <p>Ss: 手拿氣溫計上方，放到眼前讀取溫度/ Free response.</p> <p>T: What are the differences between thermometer and air thermometer?</p> <p>Ss: 氣溫計上面有兩種不同數字，一個寫 °C、一個寫 °F/ Free response.</p> <p>T: You could see the numbers are different. It is different unit used for temperature. The Celsius is the most common form of temperature measurement in Eastern countries. The Fahrenheit is the most common form of temperature measurement in Western countries.</p> <p>T: Will the air temperature be different under the sun or in the shade?</p> <p>Ss: Yes, .../ No, ....</p> <p>T: Will the air temperature be different on the floor or on the top of white board?</p> <p>Ss: Yes, .../ No, ....</p> <p>T: Let' s measure the air temperature at different places.</p> <p>T: Please use air thermometer to find out what' s the temperature now in Celsius.</p> <p>T: What' s the temperature now in Celsius?</p> <p>Ss: (根據現在的氣溫回答)</p> <p>T: What' s the temperature now in Fahrenheit?</p> <p>Ss: (根據現在的氣溫回答)</p> <p>T: Does air temperature the same under the sun or in the shade? Why?</p> <p>Ss: No, ....</p> <p>T: Does air temperature the same on the floor or on the top of white board? Why?</p>		<p>計量測溫度 -能以不同單位(攝氏、華氏)判讀溫度</p>
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Ss: No, ...

T: Which do you think is the right place to measure the air temperature? Why?

Ss: (學生根據他們的想法回答)

T: Now we know that there are 3 rules we need to follow when we measure the air temperature. What are they?

Ss & T:(1) Place the air thermometer in the shade.

(2) Place the air thermometer at the place with good air flow.

(3) Place the air thermometer at the height of 125cm to 200 cm.

2. 一天之中氣溫是否會改變。

T: Does air temperature stay the same throughout the day?

Ss: No.

T: What time is the highest air temperature of a day?

Ss: 中午。

T: What time is the lowest air temperature of a day?

Ss: 清晨/ 晚上/ Free response.

T: Some of you think the air temperature will be the lowest at night, some of you think that will be in early morning. How can we find out the answer?

Ss: Use air thermometer to measure the air temperature.

T: Wonderful. When are you going to measure the air temperature?

Ss: In the morning, at noon, and in the afternoon.

T: Let' s observe at school, so the results won' t be different. Where should we put the thermometer?

Ss: 教室外走廊/樹蔭下/ Free response.

T: Let' s vote!

T: We decided to put the air thermometer in hallway, just outside of your classroom.

T: What' s the best time to measure the air temperature in the morning?

Ss: 早自修/ 8:00/ Free response.

T: What' s the best time to measure the air temperature at noon?

Ss: 正中午/ 12:00/ 13:00/ Free response.

T: What' s the best time to measure the air temperature in the afternoon?

氣溫計  
習作 p. 34

實作評量  
-使用氣溫計  
量測不同時間  
點的氣溫，發  
現一天之中氣  
溫有所改變

<p>Ss: 放學後/ 打掃時間/ Free response.</p> <p>T: Let' s make a conclusion, all of you are going to measure the air temperature before 8:40 in the morning, from 12:00 to 12:30 at noon, from 15:00 to 15:20 in the afternoon.</p> <p>T: Let' s observe air temperature throughout the day and keep track in your workbook.</p> <p>綜合活動: (10' )</p> <p>1. 討論:一天之中氣溫的變化。</p> <p>T: After observing the air temperature throughout the day, what do you find?</p> <p>Ss: 中午氣溫最高, 早上和下午氣溫差不多/ 早上最冷, 中午最熱, 下午氣溫最舒適/ 早上到中午漸漸變熱, 中午到下午漸漸變涼/ 天氣從晴天變雨天, 下雨之後溫度降低了!/Free response.</p> <p>T: What time is the highest air temperature of a day?</p> <p>Ss: (學生依據實際觀察結果回答)</p> <p>T: What time is the lowest air temperature of a day?</p> <p>Ss: (學生依據實際觀察結果回答)</p> <p>T: Is the result as what you thought?</p> <p>Ss: Yes, .../ No, ....</p> <p>T: Why is different as what you thought?</p> <p>Ss: (學生依據實際觀察結果回答)</p> <p>T: When weather changes, the air temperature will change, too.</p>		<p>口頭評量</p> <p>-能說出一天之中氣溫的變化情況</p>
<p>活動三:測量雨量(三節課)</p> <p>引起動機: (5' )</p> <p>下了一天的毛毛雨和連續下了一天大雨, 結果有什麼不同? 怎麼表示下了多少雨量呢?</p> <p>T: How do you tell the difference between drizzling whole day and have heavy rain whole day?</p> <p>Ss: 雨量不同/ 大雨比毛毛雨多/ Free response.</p> <p>發展活動: (97' )</p> <p>1. 什麼是雨量?</p> <p>T: What' s rainfall?</p> <p>Ss: 雨下下來的量/雨滴大小/ Free response.</p> <p>T: How do you measure rainfall?</p> <p>Ss: 用雨量器/ 拿容器裝/ 看裝了多少雨水, 有多少毫升/ 看容</p>	<p>課本 雨量器</p>	<p>口頭評量</p> <p>-說出他認為毛毛雨和大雨的不同處</p> <p>口頭評量</p> <p>-能說出什麼是雨量及雨量的單位</p>

<p>器內雨水的高度/ Free response.</p> <p>T: This is rain gauge, which scientist use to measure the rainfall.</p> <p>T: What do scientist measure about the rainfall? Is about its height or the volume?</p> <p>Ss: 雨水的高度，因為刻度是 1, 2, 3, 4, 5...，而不是 10, 20, 30...mL/ Free response.</p> <p>T: What' s the best unit for measuring the rainfall?</p> <p>Ss: 公分/ 毫米。</p> <p>T: Should we use centimeters or millimeters? Why?</p> <p>Ss: 應該用毫米，因為這樣可以測量的比較準確/ Free response.</p> <p>T: That' s right! We use millimeters as the measuring unit for rainfall. (10 millimeters=1 center meter.)</p> <p>T: How long should we collect rainfall?</p> <p>Ss: 一分鐘/ 一小時/ Free response.</p> <p>T: Can we measure the rainfall by hours or days or years?</p> <p>Ss: Yes, .../ No, ....</p> <p>T: As long as we measure it at same time period, it would be fine.</p> <p>T: So, can we measure rainfall for one hour?</p> <p>Ss: Yes, we can.</p> <p>T: Can we only measure rainfall in one day?</p> <p>Ss: Yes, we can.</p> <p>T: When we collect rainfall, can we do it in different place?</p> <p>Ss: No.</p> <p>T: Make conclusions, when we talk about rainfall, it means we collect the rain in a certain period of time (usually means in an hour or a day), at the same place, and we measure the height of the water in the rain gauge (mm).</p> <p>2. 探究-什麼形狀的容器適合測量雨量。</p> <p>T: Now we know what rainfall and the unit of rainfall is. Rain gauge is a complicated and expensive device. Can we make our own rain gauge instead?</p> <p>Ss: Yes, .../ No, ....</p> <p>T: What kinds of container can be used as a rain gauge?</p> <p>Ss: bucket / mearing cup/ bottles/ Free response.</p>	<p>雨量器 不同形狀容器</p>	<p>實作評量 -能使用不同 形狀的容器測 量雨量</p>
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<p>T: Can we use different containers to get rainfall?  Ss: Yes, .../ No, ....</p> <p>T: Let' s try all of the containers you had mentioned to see which can be used as a rain gauge.  T: Where should we put the rain gauge?  Ss: 空曠的地方/ 草地中央/ 操場上/ Free response.  T: Will that be a safe place to put a rain gauge?  (People might kick it away/ might be blown away by the wind)  Ss: Yes, .../ No, ....</p> <p>T: What' s the best place to put a rain gauge?  Ss: 空曠周遭沒有遮蔽物、平坦、安全的地方。</p> <p>T: Can we put the rain gauge in different places?  Ss: No, 我們要收集相同地方的雨水才準/ Free response.  T: Can you collect rainfall at different time?  Ss: No, 要收集相同時間的雨水才準/ Free response.  T: We are going to collect the rainfall at the same time period and put the rain gauge at the same place. Let' s do it!</p> <p>(After collecting rainfall)</p> <p>T: Take a look about all those containers. What do you find?  Ss: 有的容器內的雨水比較高；有的比較矮；有的一樣高。  T: What kind of containers have same height of rainfall?  Ss: 從頭到尾形狀都一樣的/ Free response.  T: What kind of containers have higher height of rainfall?  Ss: 容器開口比較大的/ Free response.  T: What kind of containers have lower height of rainfall?  Ss: 容器底部比較大的/ Free response.  T: Which kind of containers do you think is the correct one?  Ss: 我覺得收集到的雨水高度相同的才是正確的，因為其他都不一樣/ Free response.  T: That' s right. We should use the container has same size from bottom to top to measure the rainfall. (平底直筒，從頭到尾面積都相同的)  T: What kind of containers will get more rainfall?</p>	<p>習作 p. 35</p>	<p>實作評量  -發現平底直筒的容器才能準確測量雨量，可作為簡易雨量器</p>
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<p>Ss: 容器開口比較大的/ Free response.  T: What kind of containers will get less rainfall?  Ss: 容器開口比較小的/ Free response.  T: Please write down the height of each container, and finish p.35 in your workbook.</p> <p>綜合活動：(18' )</p> <p>1. 雨量分級。</p> <p>T: We can use numbers to tell the differences between heavy rain and extremely heavy rain that the reporter mentioned.</p> <p>T: Let' s take a look on p.83. What' s heavy rain?  Ss: 24 小時累積雨量達 80 毫米以上，或時雨量達 40 毫米以上之降雨現象。</p> <p>T: What' s extremely heavy rain?  Ss: 24 小時累積雨量達 200 毫米以上，或 3 小時累積雨量達 100 毫米以上之降雨現象</p> <p>T: It also mentions about torrential rain and extremely torrential rain. What' s torrential rain?  Ss: 24 小時累積雨量達 350 毫米以上，或 3 小時累積雨量達 200 毫米以上之降雨現象。</p> <p>T: What' s extremely torrential rain?  Ss: 超大豪雨：24 小時累積雨量達 500 毫米以上之降雨現象</p> <p>2. 統整-平底直筒的容器適合當雨量器。</p> <p>T: What' s the best shape for a container that is used as a rain gauge? Why?  Ss: 底部要平，整個容器一樣寬，收集的雨量才是正確的。</p> <p>T: What happened if you use the container with wide-opened top?  Ss: 會得到比較多的雨量。</p> <p>T: What happened if you use the container with narrow-opened top?  Ss: 會得到比較少的雨量。</p> <p>T: That' s why we use containers as rain gauge with same size from bottom to top. We can get actual rainfall, not too much or too less.</p>	<p>課本</p>	<p>口頭評量  -能看懂課本圖表說出大雨、豪雨、大豪雨、超大豪雨的定義</p> <p>口頭評量  -能說出平底直筒的容器才能準確測量雨量；開口大的容器會收集要多雨量；開口小的容器會收器較少雨量</p>
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## 自然科學部分雙語課程設計

第三單元—3-2 氣象預報			
單元名稱	第三單元—3-2 氣象預報		
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	3 節/每節 40 分鐘
教材來源	翰林三年級自然科學		
教學目標	<ol style="list-style-type: none"> <li>1. 了解每天氣象局的氣象報導，觀察雨量、溫度、風向、風速等資料所代表的意義，並依據氣象報導資訊規畫生活作息的準備，並預防天氣造成的災害。</li> <li>2. 藉由氣象局提供的資訊，知道人類的生活型態影響天氣並對環境造成影響。</li> <li>3. 蒐集空氣汙染新聞事件，察覺空氣汙染對生物的影響</li> </ol>		
學習內容	<p>INd- II-6 一年四季氣溫會有所變化，天氣也會有所不同。氣象報告可以讓我們知道天氣的可能變化。</p> <p>INd- II-7 天氣預報常用雨量、溫度、風向、風速等資料來表達天氣狀態，這些資料可以使用適當儀器測得。</p> <p>INf- II-1 日常生活中常見的科技產品。</p> <p>INf- II-7 水與空氣汙染會對生物產生影響</p>		
學習表現	<p>po- II-2 能依據觀察、蒐集資料、閱讀、思考、討論等，提出問題。</p> <p>pa- II-2 能從得到的資訊或數據，形成解釋、得到解答、解決問題。並能將自己的探究結果和他人的結果（例如：來自老師）相比較，檢查是否相近。</p>		
核心素養	<p>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。</p> <p>自-E-A2 能運用好奇心及想像能力，從觀察、閱讀、思考所得的資訊或數據中，提出適合科學探究的問題或解釋資料，並能依據已知的科學知識、科學概念及探索科學的方法去想像可能發生的事情，以及理解科學事實會有不同的論點、證據或解釋方式。</p> <p>自-E-B2 能了解科技及媒體的運用方式，並從學習活動、日常經驗及科技運用、自然環境、書刊及網路媒體等，察覺問題或獲得有助於探究的資訊。</p>		
議題融入	<p>環境教育</p> <p>E4 覺知經濟發展與工業發展對環境的衝擊。</p> <p>E8 認識天氣的溫度、雨量要素與覺察氣候的趨勢及極端氣候的現象。</p> <p>E11 認識台灣曾經發生的重大災害。</p> <p>資訊教育</p> <p>E6 認識與使用資訊科技以表達想法。</p> <p>閱讀素養</p> <p>E10 中、高年級：能從報章雜誌及其他閱讀媒材中汲取與學科相關的知識</p>		
學科英語	氣象預報 weather forecast、空氣品質指標 AQI(Air Quality Index)、空氣汙染 air pollution		
教學活動		教學資源	評量方式
<p>活動一：天氣、天氣預報與生活(兩節課)</p> <p>引起動機：(3' )</p> <p>天氣會影響我們的日常生活嗎？</p>			口頭評量

<p>T: We have learned about different weather, air temperature, and rainfall. Will the weather affect our daily life?</p> <p>Ss: (學生分享他們的想法)</p> <p>發展活動: (72' )</p> <p>1. 天氣如何影響我們的生活。</p> <p>T: How does weather affect our daily life?</p> <p>Ss: 氣溫高低決定我們穿的衣服/ 要不要帶傘/ Free response.</p> <p>T: Will different weather affect us to do different things?</p> <p>Ss: Yes.</p> <p>T: Can you give me some examples and explain why?</p> <p>Ss: 晴天的時候我們可以出去玩，雨天就只能待在室內，不然淋濕會感冒/ 陰天出門沒那麼熱，感覺比較舒服/ 早上出門發現天氣陰陰的，爸爸媽媽都會要求我帶傘，免得下雨/ 晴天上體育課要擦防曬、戴帽子，不然容易曬傷/ Free response.</p> <p>T: Weather affects our daily life. How do you decide what clothes you wear before you go out?</p> <p>Ss: 可以看窗外的天氣如何再決定要穿什麼/ 看天氣預報/ Free response.</p> <p>T: Do you ever have this experience? That you were told it would be cold and put on your jacket. However, it' s actually hot on that day.</p> <p>Ss: Yes, ....</p> <p>T: Have you been fooled by the sun? It' s a sunny day, you thought you don' t need a jacket. But when you go out, you found it' s cold!</p> <p>Ss: Yes, ....</p> <p>T: What' s the best weather to dry up the clothes?</p> <p>Ss: Sunny day.</p> <p>T: On what weather should you bring an extra cloth in case?</p> <p>Ss: Cloudy day/ 多雲的/ Free response.</p> <p>T: We could check the weather forecast to decide what should we wear and bring out with us.</p> <p>2. 哪些方式可以讓我們獲得天氣預報的資訊。</p> <p>T: A weather forecast can help us to decide what we should wear or what things we should bring with us.</p>	<p>課本</p> <p><a href="#">中央氣象局</a> 報紙 廣播</p>	<p>-說出天氣對於日常生活的影響</p> <p>口頭評量 -說出不同天氣狀況會做的事情及須注意的事情</p> <p>口頭評量 -說出可以找報天氣預報資</p>
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<p>T: How can we find this information?  Ss: 手錶裡的天氣 app/ 看電視/ 聽廣播/ 用電腦查/看報紙/  Free response.  T: Can we make a phone call to get the information of weather forecast?  Ss: Yes, .../ No, ....  T: Actually, we can dial 166 or 167 to know the weather forecast. 166 is Chinese service, and 167 is English/ Taiwanese/ Hakka service.</p> <p>3. 查詢天氣預報。</p> <p>T: This is the page of weather forecast, what information can you find?  Ss: 台灣地圖、天氣圖、氣溫、降雨機率、空氣品質……。  Ss: 什麼是體感溫度? / 什麼是相對溼度?/太陽裡面有數字的是什麼意思?/ (學生針對不懂的部分發問)  T: Apparent temperature is the temperature that you feel about, which combine effects of air temperature, relative humidity and wind speed. / (根據學生的提問解釋)  T: Any other questions?  Ss: No.  T: Let' s use the iPad to find the information about weather and finish the worksheet. You can only use it to search the weather forecast page. If you use the iPad to do anything else, I' ll take it away and you can only watch your classmates using it.  T: Please line up to get the iPad. You have 15 minutes to find the information you need.</p> <p>T: If you have any questions, please raise your hand and I' ll be there to help you.</p> <p>T: Time' s up. Have you found all the information you need?  Ss: Yes. I' ve finished.</p> <p>4. 天氣預報可以告訴我們的事。</p> <p>T: What is the information shown in the weather forecast?  Ss: air temperature/ 下雨機率/ 不同縣市的天氣狀況/ Free response</p>	<p><a href="#">中央氣象局</a>  iPad  學習單</p> <p><a href="#">中央氣象局</a></p>	<p>訊的管道</p> <p>口頭評量  -知道天氣預報包含哪些資料，及各圖示代表的意義</p> <p>實作評量  -使用 iPad 查詢天氣預報，完成學習單</p> <p>口頭評量  -說出天氣預報內的資訊  -根據天氣預</p>
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<p>T: This is the picture of weather forecast, what information can you find?</p> <p>Ss: 台灣地圖、天氣圖、氣溫、降雨機率、空氣品質……。</p> <p>T: According to the weather forecast, what's the weather like tomorrow?</p> <p>Ss: (學生根據氣象預報回答)</p> <p>T: What should you wear or bring tomorrow?</p> <p>Ss: (學生根據氣象預報回答)</p> <p>綜合活動: (5' )</p> <p>統整-氣象預報可以告訴我們的事。</p> <p>T: What information could we get from weather forecast?</p> <p>Ss: 天氣狀況/ 溫度/最高溫/ 最低溫/ 降雨機率/ 紫外線/風向/ Free response.</p> <p>T: We can also check the weather all around the world.</p> <p>活動二:天氣與環境(一節課)</p> <p>引起動機: (3' )</p> <p>最近起霧了, 你有感覺到空氣跟平常不太一樣嗎?</p> <p>T: Its foggy these days, have you felt different?</p> <p>Ss: 我覺得起霧的時候空氣不太好!/ Free response.</p> <p>發展活動: (25' )</p> <p>1. 空氣品質會受到天氣影響。</p> <p>T: At the weather forecast website, we could see the information of AQI(Air Quality Index). Why does AQI(Air Quality Index) shown on the weather forecast pages?</p> <p>Ss: 讓我們注意天氣的時候順便注意空氣品質/ 空氣品質也會影響我們的生活/ Free response.</p> <p>T: What kinds of weather might affect the AQI(Air Quality Index)? Why?</p> <p>Ss: 下過雨後空氣會比較乾淨/ 風大的時候空氣比較好/Free response.</p> <p>T: What other factors might affect the AQI(Air Quality Index)?</p> <p>Ss: 火山爆發的時候/ 沙塵暴/ 火災發生的時候/ Free response.</p> <p>T: Will we get a day off because that air quality is way too bad?</p> <p>Ss: 不可能這樣就放假/ 會, 因為空氣品質太差會影響我們的健</p>	<p><a href="#">中央氣象局</a> <a href="#">空氣品質</a> <a href="#">監測網</a> 課本</p>	<p>報所做的準備</p> <p>口頭評量 -說出天氣預報可以查詢到的資料</p> <p>口頭評量 -能說出空氣品質會受天氣影響</p>
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<p>康/ Free response.</p> <p>T:There' s a scale for AQI(Air Quality Index)and it also tells how air condition would affects our health. When AQI is higher than 400, then school will be closed.</p> <p>2. 空氣汙染會影響空氣品質，也會影響動植物生存。</p> <p>T: We know that weather can affect AQI (Air Quality Index). Is there any other situation that can affect AQI (Air Quality Index)?</p> <p>Ss: 空氣汙染。</p> <p>T: Let' s watch the news of air pollution.</p> <p>T: Air pollution do affect AQI (Air Quality Index). What else would be affected by air pollution?</p> <p>Ss: 人類會被影響，影片裡的學生就放假了!/人類因為空氣汙染而影響健康/ Free response.</p> <p>T: Is human the only living things affected by air pollution?</p> <p>Ss: No, 動物和植物也會被影響/ Free response.</p> <p>T: Air pollution affects all the living things.</p> <p>綜合活動:(12' )</p> <p>小組發表-還有哪些空氣汙染影響動植物及環境的事件呢?</p> <p>T: What are other air pollutions cases would affect us? Please use an iPad to search for the information. You have 10 minutes to do the research. Each group will come up to share what you find and learn from these cases.</p> <p>Ss: (各組上台發表)</p>	<p><a href="#">空汙新聞</a> <a href="#">空汙影響健康新聞</a></p> <p>iPad</p>	<p>口頭評量</p> <p>-能說出空氣汙染會影響空氣品質，也會影響動植物的生存</p> <p>實作評量</p> <p>-利用 iPad 查詢空氣汙染相關資訊</p> <p>口頭評量</p> <p>-小組報告空氣汙染如何影響動植物及環境</p>
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自然科學部分雙語課程設計			
單元名稱	第三單元—3-3 季節與生活		
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
教材來源	翰林三年級自然科學、校園植物網頁		
教學目標	<ol style="list-style-type: none"> <li>1. 天氣與季節影響環境、生物及人類的生活。</li> <li>2. 藉由氣象局的資料了解臺灣四季溫度變化，對生活與環境的影響。</li> <li>3. 認識臺灣的四季之美。</li> </ol>		

學習內容	INd-Ⅱ-6 一年四季氣溫會有所變化，天氣也會有所不同。氣象報告可以讓我們知道天氣的可能變化。 INf-Ⅱ-3 自然的規律與變化對人類生活應用與美感的啟發。 INf-Ⅱ-4 季節的變化與人類生活的關係。
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。 tm-Ⅱ-1 能經由觀察自然界現象之間的關係，理解簡單的概念模型，進而與其生活經驗連結。 po-Ⅱ-1 能從日常經驗、學習活動、自然環境，進行觀察，進而能察覺問題。
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-B3 透過五官知覺觀察周遭環境的動植物與自然現象，知道如何欣賞美的事物。
議題融入	環境教育 E8 認識天氣的溫度、雨量要素與覺察氣候的趨勢及極端氣候的現象。
學科英語	四季 season / four seasons、春 spring、夏 summer、秋 fall/autumn、冬 winter、日間 daytime、夜間 nighttime

教學活動	教學資源	評量方式
<p><b>活動一：季節的氣溫變化</b></p> <p>引起動機：(5' )</p> <p>哪一個月份你覺得最熱？哪一個月份你覺得最冷？</p> <p>T: Which month make you feel hottest? Which month make you feel coldest?</p> <p>Ss: 我覺得七月最熱/ 我覺得八月最熱/ 我覺得一月最冷/ 我覺得十二月最冷/ Free response.</p> <p>T: Some of you think July is the hottest month, but some of you think August is the hottest month.</p> <p>T: Some of you think December is the coldest month, but some of you think January is the coldest month.</p> <p>發展活動：(35' )</p> <p>1. 一年之中氣溫如何變化。</p> <p>T: Everyone feels different. Let' s find out the answer.</p> <p>T: As we see on this page, which month has the highest air temperature?</p> <p>Ss: July.</p> <p>T: Which month has the lowest air temperature?</p> <p>Ss: January.</p> <p>T: How does the air temperature change?</p> <p>Ss: 一月到七月氣溫逐漸上升，七月到十二月氣溫逐漸下降/</p>	<p><a href="#">中央氣象局</a></p>	<p>口頭評量</p> <p>-回答他們覺得最高溫或最低溫的月份</p> <p>口頭評量</p> <p>-依據圖表回答最高溫及最低溫月份</p> <p>-說出氣溫從一月到七月逐漸上升，七月到十二月逐漸下降</p>



<p>T: We already see how plants look like in spring. We have a web site about our campus plants. We can see how the plants look like in different seasons.</p> <p>T: What does ___ look like in spring / summer / fall / winter?</p> <p>Ss: (學生根據不同植物於不同季節的樣貌回答)</p> <p>綜合活動: (5' )</p> <p>完成習作。</p> <p>T: Finish the workbook.</p>	<p>習作 p. 39</p>	
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