Key Stage 2 – Investigating local Microclimates

National Curriculum Link: Key Stage 2 geography ("to identify and describe what places are like [for example, in terms of weather]"; "to explain why places are like they are [for example, in terms of weather conditions]"; "During the key stage, pupils should be taught the Knowledge, skills and understanding through the study of two localities including a locality in the United Kingdom"; "pupils should carry out fieldwork investigations outside the classroom"; "pupils should study at a range of scales - local, regional and national"))

Teaching Sequence
There are two lessons. Each lesson is designed to fit within a morning or afternoon.
In the first lesson, the class explores what is meant by 'weather', and then, in small groups, makes measurements of the weather in the school grounds. Students will need clothing suitable to the weather and ground conditions.
This part will give the most satisfying results if it can be done on a day which is either really windy, or else sunny and calm.
In the second lesson, the students create a photo story summarizing what they have found. They will need access to an IT suite or laptops, if possible with microphone. This could also be completed in small groups.

We have provided you with
1 digital thermometer.
1 cup anemometer

Instructions for Use: These instruments are quite delicate and should only be used under close supervision. Detailed information on the use of each instrument is contained in the PowerPoint supplied.

You will also need:

- A school camera
- A map or photo of the school grounds which can be downloaded from GoogleMaps or the Ordnance Survey (if the school has a subscription).
- Microsoft Photo Story, which may be downloaded from:
- http://www.microsoft.com/download/en/details.aspx?id=11132
- To print out the data recording sheets provided below (one per group)
- A clipboard and pencil.

Lesson 1	Activity	Notes
Objectives	To begin to think about what is meant by 'weather', and to conduct fieldwork in small groups to measure the weather around the school.	Risk assessment for the fieldwork will need to have been carried out in advance.
Entry / Settling activity	1. Begin by getting the class to work in pairs and write or develop a one sentence statement describing the current weather. 2. Capture some of the sentences and write up so they can be seen. 3. Ask the class what is missing from their sentences (values/ numbers). 4. How do we measure the weather?	Weather instruments have been used for hundreds of years. Now we have satellites and radar too.
Starter	Talk – using weather instruments	The PowerPoint slides are optional – the teacher may like to present the instruments without them, however the information covered in the 'notes' sections must be covered.
Main	Fieldwork in the school grounds.	It is suggested that this activity is carried out in small groups of about 5 children, with one group going out

		at a time. One student should be responsible for writing down the observations, one for the camera, one for the anemometer and one for the thermometer, although each can take a turn. Each group should explore 2 contrasting locations (e.g. one close to buildings and one far away), as well as the effect of height on their measurements. The type of location that works well will vary with the weather – can you explore sun/ shade, windy/ sheltered, vegetated/ open etc.
Plenary	Ask one person from each group to summarize what they did, and what they found.	

Lesson 2	Activity	Notes
Objectives	To use IT and presentation skills to develop an understanding of factors affecting the school microclimate.	
Starter	Brainstorm the basic elements of the weather. This should include: precipitation (including snow, rain, hail and sleet), temperature, wind speed and direction, cloud cover. Explore different geographical adjectives which can be used for each – e.g heavy, light, showers, hot, cold, freezing, variable, gale force, breeze, strong, cloudy, foggy etc. Depending on the class, this could be done as a 'snowball' activity, with students working alone, then in pairs, then in fours etc. to accumulate as many words as possible.	
Main	Each group should use Microsoft Photo Story to develop a presentation of their fieldwork.	Try to encourage students to compare the locations in terms of their physical characteristics and the weather they observed. How might the two be related? They should think about - which photos to use (can they include the map?) - what headings to give each photo. - the narration - saving the project We do not recommend that background music is included.
Plenary part 1	Show the class the completed Photo Stories.	
Extension	For younger students: http://www.bbc.co.uk/schools/barnabybear/games/weather_report.shtml For older or more able students: First page of http://www.metlink.org/pdf/teenagers/weather-words-quiz.pdf or http://www.bbc.co.uk/schools/whatisweather/aboutweather/index.shtml or show the short film from Teachers.TV http://www.schoolsworld.tv/videos/today-forecast	

Please ensure that all the instruments have been returned to the Royal Meteorological Society by the agreed date.

Data Recording Sheet

Group Name:

Location	Temperature	Wind Speed	Comments