



Activity: Weathering Climate Confusion

Purpose: Clarifying the difference between climate and weather while alerting students to levels of public confusion about the two terms

Age level: 9-13

Time needed: 45-60 minutes (and 60 minutes for the extension activity)

Resources:

- ✓ A sheet of paper
- ✓ A sheet of chart paper
- ✓ Three markers each of a different color
- ✓ A paste stick
- ✓ A copy of the *Climate and Weather* handout
- ✓ A cut-up set of *Weather or Climate?* cards for each group of four students
- ✓ Masking tape

Procedure

Stage 1

Students form groups of four. Without any explanation from the teacher, they are asked to discuss the difference between 'weather' and 'climate', ending their discussion by writing one-sentence definitions of each term on their sheet of paper (and noting down the nature of disagreements if members of the group cannot agree). Each group reports back, the teacher facilitating a whole class discussion of differences of opinion and of issues raised. At an appropriate moment, the handout is distributed and discussed, the teacher explaining that while the difference between weather and climate is not so difficult to understand, there seems to be frequent and widespread confusion among the general public often making for muddled and misleading debate on climate change.

Stage 2

Groups consider each of the *Weather or Climate?* cards. They arrange them on the sheet of newsprint, pasting them down. They write 'weather' (using a marker of one color)



against a statement that they think is describing weather, and 'climate' (using a marker of a second color) against a statement they think is describing climate. They use a marker of a third color to explain any misperceptions, misunderstandings or ambiguities they discern in the statements. Completed charts are hung on the classroom wall and groups visit each other's chart, noting down queries or objections they want to raise in the ensuing classroom discussion.

Variation

The class begins with the *Weather or Climate?* exercise followed by a plenary discussion during which the handout is introduced and discussed. Groups then return to their *Weather or Climate?* charts and make any amendments they feel to be necessary before further class sharing and discussion.

Extension

Students are set the task of each asking four adult members of the public to write their definitions of climate and weather on separate sheets of paper, putting their chosen pseudonym for each adult against each definition. Back in classroom, the sheets are arranged on a pin board and used to analyze levels of misperception and misunderstanding in the sample, the teacher asking what implications the results might have for informed public debate on climate change.

Potential/Facilitation Guidance

This activity seeks to illuminate and clarify a fundamental misunderstanding that often clouds and distorts public responses to climate change warnings and subsequent debate, so fuelling climate change denial. As such, it aims to provide a sound springboard for exploring climate change issues while alerting students to oft-expressed (sometimes seemingly deliberate) misunderstandings in the media and everyday conversation and enhancing their level of critical discernment about what they see, read and hear.

CLIMATE AND WEATHER

Weather

Weather is what we see when we get out of bed in the morning and say ‘what a lovely sunny day!’ or ‘It’s very icy; the school bus won’t run this morning’. It’s a brief moment in a long movie about the air conditions that surround us and that affect our lives. That moment can’t be relied upon to give you a sense of the whole movie. When you listen to a ‘weather forecast’ on the television, the presenter will say what conditions people in different provinces, regions and local areas can expect based on satellite and other information collected by ‘meteorologists’ (weather scientists who study what is happening to the ‘atmosphere’, the air surrounding the earth). The forecast will say what temperature a place can expect; whether there will be rain, snow, freezing rain or hail (what is called ‘precipitation’ - that which falls to the ground from the skies); whether it will be cloudy or sunny; how windy it will be and from what direction (north, south, east, west or in between the compass points); how far you will be able to see (what is called ‘visibility’); likely levels of air pollution; and how much moisture there will be in the air (what is called ‘humidity’). So, weather is the mix of conditions and events that we experience over a short period of time: a day, a week or up to a few months. It is not the same everywhere. It might be hot, dry and sunny where you live, but fifty kilometers away wet and cold. Weather change happens quickly.

Climate

Climate is about weather patterns over a long period of time, usually 30 years. Meteorologists keep all the weather information - for example, daily temperature, rainfall and snowfall measurements, wind speeds and directions - they have collected for each day of each year in the 30-year period and work out, on averaged past evidence, what weather is most likely in any period of time in any place. So, climate is about long periods of time. It is about weather averages. Knowing the climate of a place leads us to expect a certain kind of weather in a certain place at a certain time of year, for example snow and sub-zero temperatures in Ontario, Canada in February. But remember we are talking averages – there are sometimes comfortably warm periods in Ontario in February! Scientists also use the information they collect to see if the climate is changing. For example, they may look at the thirty years of information for, say, 1970-2000 and then at the thirty years of information for 1980-2010 to find out if there is a change in the average climate picture. Doing such exercises warned them that a rise in temperature was happening around the planet and especially so in certain regions. This is what we call ‘global warming’ or ‘climate change’ that, unlike weather, cannot be so easily experienced on a day-to-day basis, making some people question whether it is happening.



WEATHER OR CLIMATE?

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| Everybody agreed that the day was just right for a picnic and swim. What a bright, sunny morning! | Antarctica has been freezing cold, even in summer time, for tens of thousands of years. |
| There is a cold front coming in from the west! | This 'global warming' idea is nonsense; it's been a wet, cold summer. |
| 'Every winter there was so much more snow than there is now,' said the old man. 'It was piled up to our waists, when I was a young boy.' | 'In the past few years the swallows have started returning earlier,' said the farmer. |
| 'We are calling for a hot, hot week in Beijing, and there will be smog over the city,' said the newscaster. | The sun was beating down on the desert landscape. |
| A Snow Advisory was issued for southern Quebec, Canada | The sweltering midsummer heat wave went on and on and on. 'Wow,' she said, 'this is really global warming!' |
| England has cooler summers and wetter, warmer winters. Spring starts much earlier than in most of Russia. | It was much cooler than usual that June in Nairobi. |