

# Weather and Climate

## Background Information:

Climate is the average weather over a long time period (30 years) for a particular region or place. The climate affects a number of environmental factors within the region including the type and growth of vegetation and wildlife. The climate is determined by large scale factors such as the Earth's orbit around the Sun, the position of the continents and the composition of the atmosphere.

Weather describes the short-term state of our atmosphere. This may include information about the air temperature, precipitation, air pressure and cloud cover. Our local weather changes daily due to the movement of air in our atmosphere.

## Experiences and Outcomes:

I can investigate the relationship between climate and weather.

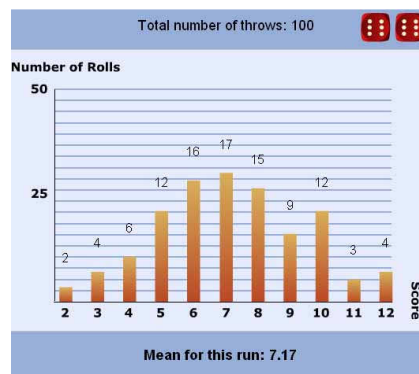
### Suggested activities:

If you have a class set of dice:

#### Difference between weather and climate

You will need: 2 dice  
Tally chart for numbers 2-12  
Graph paper

Method: In pairs, throw the two dice about 100 times and record the combined score shown each time. Draw a bar graph of the results.



Results: The results should show a smoothish distribution, with a score of 7 being most frequent. Ask each group to predict what their score will be if they throw the dice one more time - they can't. However, with one more throw, the mean of all the scores will stay about the same (about 7). In the same way, the weather may be very different from day to day but the climate, the weather we 'expect', stays about the same.

If you don't have access to dice, you can do this activity online at <http://www.open.edu/openlearn/nature-environment/the-environment/environmental-studies/the-basics-climate-prediction>

### Extension:

Can the students design a concept cartoon to illustrate the difference between weather and climate?

See [https://www.stem.org.uk/system/files/elibrary-resources/legacy\\_files\\_migrated/1292-WEATHER.PDF](https://www.stem.org.uk/system/files/elibrary-resources/legacy_files_migrated/1292-WEATHER.PDF) and <http://www.millgatehouse.co.uk/concept-cartoons-research/>

### References/Resources:

A youtube video showing an owner and his dog, as an analogy for weather and climate <https://www.youtube.com/embed/ePL-uOg9hSU>