

Isotherms – Temperature Contour drawing exercise for an Urban Heat Island

Resources needed:

- Weather station measurements from around Birmingham
- Solution for teachers
- Satellite image for the same area
- Coloured pencils

These may be downloaded from <http://www.metlink.org/other-weather/urban-heat-islands/urban-heat-island-background/>

Background information about UHIs

<http://www.metlink.org/other-weather/urban-heat-islands/urban-heat-island-background/>

Drawing Isotherms

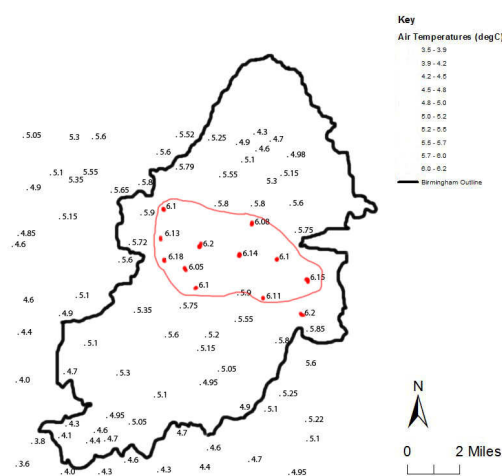
In this exercise, students are presented with a temperature map of Birmingham with measurements based on the night of the 19th February 2014. [These measurements are based on the real heat island pattern, but have been simplified to make the contour drawing activity easier]

The task is for the students to draw contours at 3.9, 4.2, 4.5, 4.8, 5.0, 5.2, 5.5, 5.7 and 6.0°C. If this is too many, just pick a few.

Students should be reminded that;

- Temperature contours never touch or cross
- Contours can't stop in the middle of the image but must continue to the edge of the data or page
- There is more data in some places and less in others – in some places, you have to guess a bit exactly where the contour should go. There might be more than one correct answer.
- The temperature values always refer to the dot to the left of the numbers.

Starting with the 6.0°C contour, students should colour the dots for the places where the temperature is higher than 6.0°C.



It should then be obvious where to draw the contour that completely divides this area off from where the temperature is colder than 6.0°C.

Students can they use a different colour to find the places with temperatures between 5.7 and 6.0°C and then draw the 5.7°C contour, etc.

Last of all, students can use the satellite image to compare the temperature map with land use. For example, the urban park in the NE corresponds to particularly low temperatures.

