

Microclimates: what are heat islands?

Identify heat islands and the effect of plants in mitigation

Aim: A long term project to investigate the impact of vegetation on heat stress, as experienced by users of school grounds (or public spaces)

Resources:

Plan of school grounds, thermometer, anemometer, hygrometer

Activity:

This task will provide valuable information about the microclimate of the school grounds, and its impact on human users.

- Take readings of heat radiation, humidity and wind speed in a variety of open, sheltered, and shaded parts of the grounds.
- Plot these over a term, or ideally, a year, analysing the differences in readings depending on the type of environment.
- Use anemometers, climate monitoring sensors, weather stations; whatever you have access to. Even just thermometers and simple anemometers can be used, although if you can also measure humidity this is useful additional information to show how people feel the heat more on still days with high humidity.
- The investigation could lead to a recommendation to the school leadership team for modifications in planting around the site.



Heat islands
Cool Towns project

More springboards:

- Geography Learning Springboard: local area studies

Key vocabulary:

Heat Island, mitigation, radiation, humidity

Success criteria:

- ✓ I can use scientific instruments to gather data over a period of time
- ✓ I can interpret the data gathered and understand the impact of it
- ✓ I can use the data I have gathered to inform a project

Plant ID markers: irreversible change

Observe chemical changes as concrete sets

Aim: Learn to use cement safely, and follow a recipe in order to create plant markers

Activity:

This activity is messy and involves exploring and gathering the natural materials to decorate individual bricks with imprinted designs or etched plant names.

The full instructions for this activity are on the Play England resource sheet, available to download from the *Pappus* resource library.

Conversations will be wide ranging and might include:

- Leaf shapes, colour, texture, twigs, cones and plant ID.
- Risk, health and looking after each other while using cement powder.
- Why does the mixture heat up whilst setting?

The 'bricks' can be made using any shape of mould – smaller ones make good plant makers, larger ones could be laid to make a decorative border in a suitable garden area.

Key vocabulary:

Cement, concrete, aggregate, exothermic

Success criteria:

- ✓ I know how to use PPE and conduct an experiment safely
- ✓ I understand and can describe the chemical changes taking place.

Resources:

Download the full instructions on the Play England resource sheet – directly from Play England or download it from the *Pappus* resource library.

