Science at the Roman Baths

Bath & North East Somerset Council

Information for teachers – Renewable Resources

About the activity

This activity examines the potential renewable resources that could be utilised around the Roman Baths. Pupils will be asked to consider what renewable resources could be harnessed. They will then measure light intensity using data loggers, flow rate using a flow meter, and will be required to find out the temperatures of the various baths within the complex using temperature probes. This activity should take pupils around thirty minutes to complete.

Curriculum links

This activity links to Unit 7I in the Key Stage 3 National Curriculum. In particular, it links in with the renewable energy section of this unit and applications of these energy resources. It can also be developed post-visit to encompass advantages and disadvantages of renewable resources.

Pre-visit suggestions

Pupils should have already investigated and gained a knowledge of the different types of renewable energy resources. They may have also examined advantages and disadvantages of these resources, although this is not essential. Experience of using data loggers may be useful.

Supporting pupils

Pupils will need a dater logger to measure light intensities (in lux) during the first part of this activity. They should take care not to drop or otherwise damage these data loggers, but pupils should be able to complete this section with a minimum of adult supervision. Ideally, pupils should make their three measurements in a range of places to provide a good range of contrasting results. The activity can be based in the area around the Great Bath. Pupils can then work independently in the surrounding areas which offer varying light intensities.

In the second activity pupils consider hydroelectric power. Teachers should prompt pupils to consider which parts of the Roman Baths have flowing water that could, in theory, be utilised. A teacher or adult should then supervise the use of a flow meter to measure the flow of water passing into the Great Bath.

In activity three pupils consider geothermal power. Pupils should be directed to use temperature probes to find the temperature of the water in several areas in the Roman Baths complex. They will require teacher assistance to measure the temperature in the Sacred Spring and the Cold Plunge Pool, but can complete a number of temperature readings from the Great Baths. Guideline temperatures are shown below.

The Great Bath 39° C

The Sacred Spring 46° c

Cold plunge pool 16° C

Post-visit suggestions

A post-visit follow up activity is proved, in which pupils mark on a map the points at which they would utilise the various renewable resources. This assesses their ability to recognise suitable sites for these resources and to interpret the data on light intensity gathered during their visit. Pupils could also discuss the advantages and disadvantages of the resources suggested and consider the impact that they could have on the Roman Baths from both an aesthetic and conservation perspective.