

HYDROLOGY & FLUVIAL GEOMORPHOLOGY

Age range: KS4

Duration: Full day (10.30 – 16.00).

Locations available: Edale, Upper Burbage Bridge, Crowden.

Please note that access to Edale by coach is only possible from the western end of the valley over Mam Nick.

Access to the field sites is by special permission of the landowners.

Curriculum Links

The Hydrology and Fluvial Geomorphology module is covered in most of the GCSE Geography teaching requirements of all the Examination boards. The fieldwork is pertinent to all the synoptic papers on field work, being a great example of practical methodology.

Activities

Measuring the stream characteristics and physical parameters at 3 stream sites in the given location, using impellers, measuring tapes, clinometers, rulers and stopwatches

Discussion of the catchment features, and of results obtained.

Lunch

Lunch will be taken at a suitable location during the day. See site information sheets for more details about amenities at each site. Bring hand sanitizer and a mask if you want to use the public toilets.

Aims & learning objectives	Learning Outcomes
<p><u>Aim</u> To study an upland river system in detail and to relate changes in the river velocity, discharge and channel bed to the different features in the valley, while engaging with the special qualities of the Peak District National Park.</p> <p><u>Learning Objectives</u></p> <ul style="list-style-type: none"> • Understand physical processes of Hydrology • Use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information. • Ask and answer geographical questions. <p>Other skills</p> <ul style="list-style-type: none"> • Listening to and following instructions • Looking carefully/observational skills • Using equipment accurately • Working independently and as part of a group. 	<p><u>Learning Outcomes</u></p> <p>An experience of:</p> <ul style="list-style-type: none"> • A variety of hydrological techniques, such as using an Impellor to measure velocity. Constructing a river profile and analysing bed load shape. • Collecting primary data for (statistical) analysis in the classroom. • Working with other people in a group situation. <p>An understanding that:</p> <ul style="list-style-type: none"> • There are a number of channel variables, which change with increasing distance from the source. (Bradshaw model). • Channel variables are related to catchment area and head of water • That the geomorphology changes with increasing distance from source • That channel variables are interrelated. • That upland catchment conservation is an integral part of flood management

Other important information: All participants *must* have sturdy footwear and warm clothing. Students will be working in small subgroups; at least one student (ideally all) in each group must have wellingtons or old trainers, to enable them to go in the river. You will be emailed worksheets to and more details about the catchment upon booking.

Assessment for Learning

Learning will be continually assessed throughout this programme through questioning, observation, and discussion to check and compare results.

Ideas for Extending Learning Before/After the Visit

Before:

It is helpful if the students are familiar with the concepts of the Bradshaw model of river flow but not essential. Some knowledge of Hydrological terminology and the Peak District National Park is also helpful.

After:

You may also want to look at our secondary education resources page, and in particular the “State of the Park” report which offers a “mine” of useful facts and figures about the Park and for more follow up ideas and information.