River Studies in Clapham: A guide for group leaders

Background

Running through the village is Clapham Beck, fed from Fell Beck which starts on the slopes of Ingleborough. Fell Beck sinks into Gaping Gill, England's highest waterfall, where it drops 110 metres vertically into a pothole, and exits via Ingleborough Cave into Clapham Beck. The beck feeds into the River Lune via the River Wenning.

Above the village is a man-made lake built and expanded in the 19th century. This provided pressure for the water turbines and the drinking water supply, while the outflow fed an artificial waterfall at the top of the village.

Clapham Beck has three suitable sites for river studies, where students can access the water and gather data on width, cross-sectional depth and velocity.

- Groups should always access the upstream site first and work downstream, considering biosecurity.
- After heavy rain, the water levels may be too deep to access the stream, but velocity measurements could still be taken.

Practicalities

Groups can park in Clapham Village at the National Park Car Park (parking for coaches is free and toilets available) and walk through the Ingleborough Estate Nature Trail route to Ingleborough Cave. https://ingleboroughestatenaturetrail.co.uk/

There is a charge for the Nature Trail - £1 per child (aged 3-15), £2.50 per adult, but reduced prices for groups. info@ingleboroughcave.co.uk 01524251242.

You will also need to let them know that you will be visiting to do river studies (just so they can ensure there will not be lots of groups on the same day).

The session

Walk from Clapham through the Ingleborough Estate Nature Trail to Ingleborough Cave. (2.5km).

The resurgence of Clapham Beck can be seen from the bridge outside of Ingleborough Cave. This is a good starting point for students.

Suggested sites:

Site 1: Outside of Ingleborough Cave

What3words:///ourselves.broccoli.tennis

Grid reference: SD 752710





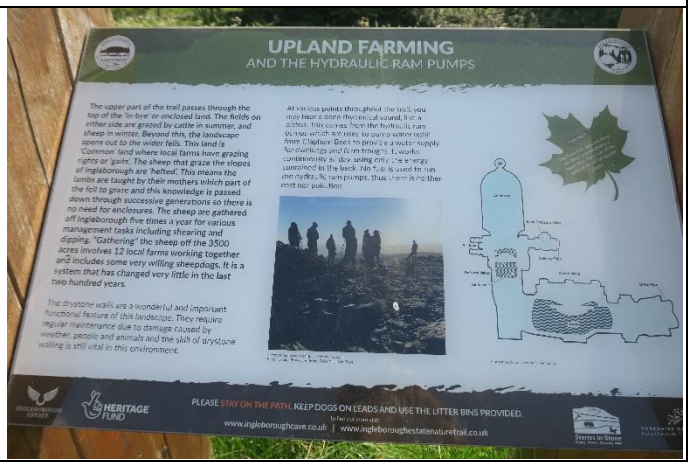



Note: There is a pumping station between sites 1 and 2, which pumps water on to the common, proving a water supply for the sheep. The interpretation board explains the process. Students can consider how this man-made feature might impact their data.









Site 2:

What 3 words ///material.plod.removal

Grid reference: SD753707

Cross over the footbridge to the far side of the stream. Good access on the right (downstream).









Note: Between sites 2 and 3, the stream run through the Ingleton Estate, where an artificial lake has been created. Students can again consider the impact of this on their data.





Site 3: In the centre of Clapham Village

What3words ///tweezers.friday.incurs

Grid reference: SD745692

From the Ingleton Estate Nature Trail, follow the road down through the village with the stream on your left. Cross over the stone footbridge and take the footpath on the right on the far side of the stream that leads downstream. This is an accessible spot with a grassy river bank to sit on.

Please be considerate of residents and visitors.






Suggested activities at each site:

1: How does the discharge of the stream change downstream?

River discharge is a volumetric measure of water flowing through the channel of a river past a point in unit time. It is generally expressed in units of meters cubed per second (m^3/sec).

Measure:

- width of stream
- depth at different points across the stream to calculate the cross sectional area
- velocity of the water

2: How does the size and shape of bed load change downstream?

Select a representative sample of pebbles. Measure the long axis of each pebble and use ‘Powers Index of roundness’ to identify shape.