

Additional resources:

Could a great flood happen in Sheffield again?

Enquiry Question Exploration

Below are some concepts which may arise from discussion and activities. You can use the questions to facilitate dialogue.

Nature: How are manmade materials different to natural materials? Is it better to use natural materials or manmade materials? Which are safer? Who for?

Environment: What are the positive and negative effects of dams? Is flooding becoming more frequent? How does global warming cause floods? What ways can we reduce our global footprint?

Blame: Is it right to blame others? What causes blame? What could be the problems with blame? What's the difference between fault/blame/guilt? Is it human nature to find blame/fault? Does there always have to be a reason why when something goes wrong?



The Night of The Great Sheffield Flood, 1864

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As midnight approached, on the 11th of March 1864, winds were blowing down the Loxley valley to the north west of Sheffield, with extraordinary violence. Wind-driven waves were lashing against the embankment of an enormous reservoir, Dale Dyke. It had recently been constructed near Bradfield by the Sheffield Water Company to cope with the increasing demands for water in the rapidly expanding town.

When workmen noticed a crack had appeared in the embankment, Mr John Gunson, the resident engineer was summoned and as he and others tried to decide what should be done, a huge explosion was heard and the centre of the embankment sank. Travelling through a gaping hole over 100 yards wide and 70 feet deep, the force of the gushing water was tremendous, almost inconceivable. 114 million cubic feet of water rolled down the valley, travelling at 18 miles an hour, with a noise like thunder, and swept before it people, buildings, trees - anything that impeded its march of destruction and death. The water roared through Malin Bridge to Hillsborough and continued south to Attercliffe. The areas around Owlerton and Neepsend were most badly affected, with over 600 buildings destroyed or damaged and 15 bridges swept away.

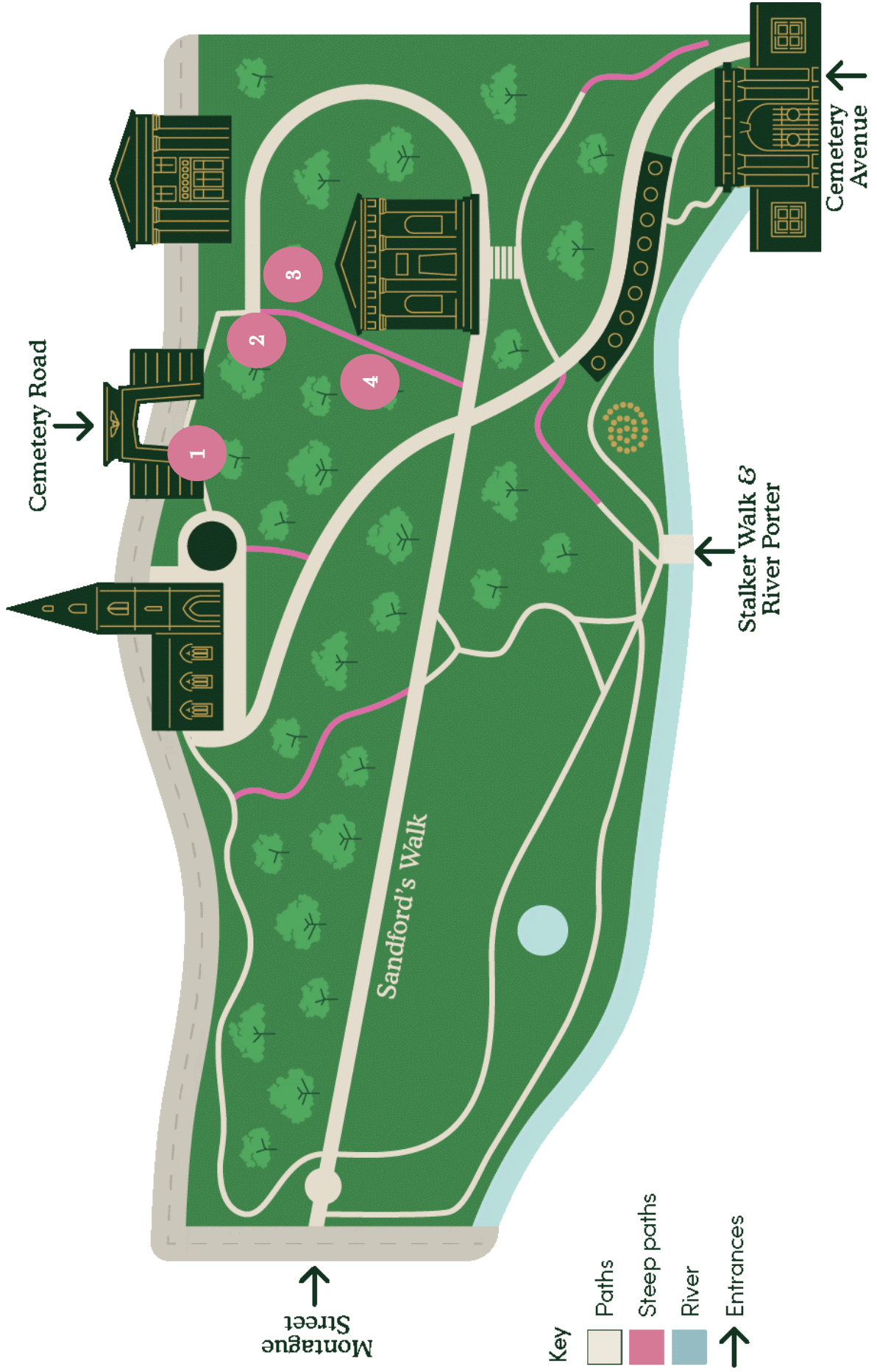
Over 240 people lost their lives in the Great Sheffield Flood, with many bodies never identified due to the horrendous injuries they suffered. For many others, the loss of family, friends, their homes and work places affected them for the rest of their lives.

More information on The Great Sheffield Flood can be found here:

Sheffield Flood Claims Archive -

<https://sheffieldfloodclaimsarchive.shu.ac.uk/aboutFlood.cfm>

Map of Sheffield General Cemetery



Sheffield General Cemetery and The Great Sheffield Flood

2

There are 66 flood victims in Sheffield General Cemetery. 59 flood victims were buried in public graves, including 27 unidentified and 39 named. (A public grave is a plot which belonged to the owners of the Cemetery rather than a private individual and were used to bury the bodies of unrelated individuals). The burials took place in different graves to avoid there being a mass burial, but none of the graves were marked. Seven victims were buried in private graves.

Stop 1 on the map - Samuel Harrison.

Samuel Harrison, was a newspaper reporter for The Sheffield Times and after developing the technology, he was able to ensure news of the Great Sheffield Flood came out quickly and a lengthy report of the disaster was read at breakfast tables the next day.

Harrison gathered all the reporters' stories of distress, incidents, discoveries and compensation claims then checked, corrected, expanded and completed them to form a book "**History of the Sheffield Flood**". It is still used by researchers today and cherished by families involved in the events of that fateful night.

Samuel Harrison died, at the early age of forty-four, on 21st February 1871. He is buried in the Anglican area of the Cemetery in plot H 50.



Stop 2 on the map - William Pickering and his family.

William Pickering kept the Free Masons' Arms public house near Hill Bridge and in the house at the time of the Flood were William, his wife, his sister, a lodger and his niece, eight years of age. As the torrent of flood water hit the building, it was almost destroyed, the inside was exposed, and the furniture swept away. All the adults in the house were drowned but when neighbours went to the house on the morning after the flood, they found to their astonishment, the little girl fast asleep in her bed. It was in a corner of a bedroom on the top storey, the rest having been washed away.

William Pickering's body was never identified. The bodies of his wife, Charlotte, and sister, Elizabeth, were identified and buried in the Nonconformist area of the Cemetery in plot G 120. This was a plot previously bought by a family member and has a stone on which William, Charlotte and Elizabeth are memorialised.

Stop 3 - John Gunson.

John Gunson worked for the Sheffield Water Works Company for 55 years, and from comparatively humble beginnings, through diligence and ability, became the company's resident engineer. Gunson was a valued employee and highly respected by his employers. He was a quiet, retiring man who led a peaceful, uneventful life which was to be changed dramatically on the night of the Sheffield flood. During the evening of 11th March 1864, when a crack was observed in the wall of the Dale Dyke dam, a message was sent to Gunson at his home in Sheffield to return to the site and inspect the damage.

In driving rain and gale force winds, he rode as fast as he could up the Loxley valley to the embankment. After first checking the height of the water, and finding it still some inches below the weir, he ordered the stonework to be blown up to release some of the pressure on the dam wall. The gunpowder, possibly being damp, failed to explode. Gunson hurried to the valve house hoping to release more water. Whilst there, the embankment opened causing him to flee for his life. At the same time, the gunpowder finally exploded, a loud noise was heard and the embankment gave way.

At the Inquest held into the disaster, no definite conclusion was reached as to the cause of the collapse. Sheffield Water Company continued to employ John Gunson although he was haunted by his very narrow escape and the terrible results of the catastrophe for the rest of his life.

John Gunson died, aged 76, on 10th October 1886.
John is buried in the Nonconformist area of the Cemetery in plot H 146



Stop 3 on the map - Lawrence Peacock.



Lawrence Peacock was a Sheffield photographer who took pictures of the aftermath of the Great Sheffield Flood the morning after it happened. He took his dark room on a cart pulled by a donkey. The destruction the flood caused made Lawrence's journey difficult and reports say that the donkey refused to travel across the water on more than one occasion!

Peacock is buried in the Nonconformist area of the Cemetery in plot S 183. It a public grave so there is no headstone.

What caused the Great Sheffield Flood?

3

The weather	The weather was stormy, with strong winds sending spray over the dam wall.
The crack	A crack was noticed by a workman along the embankment which was not necessarily a worrying width but was lengthy.
Too little Too late	The engineer John Gunson and another contractor inspected the crack and decided to lower the water level and also advised gunpowder to be used to create more drainage channels. There was not enough time to act on these decisions.
Bad design and bad workmanship	A report by inspectors Robert Rawlinson and Nathaniel Beardmore who were dispatched to Sheffield to investigate concluded that the dam was of bad design.
A suspected fracture	A suspected fracture to the outlet pipe was highlighted as a possible cause of instability, however because the dam had collapsed, this was impossible to confirm.
Landslip	John Gunson and the consulting engineer strongly denied any claim of incompetence and in their opinion the cause was new movement in that area that had previously suffered from a landslip.

More information on the significance of Beavers can be found here:

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Beavers without borders: A short documentary by Nina Constable - [YOUTUBE](#)

Living with Beavers by Cornwall Wildlife Trust - [YOUTUBE](#)

River Otter Beaver Trial - www.devonwildlifetrust.org

Create a 'leaky dam'

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What you need:

- Box/container (large enough for a wet side and a dry side with the leaky dam in the middle) - plastic would work best but you could use thick cardboard box
- Bottles of water
- Paper/pen for design
- Natural materials such as: sticks, leaves, dirt (top tip: press this up against the sticks), rocks, moss... think like a beaver!

Create your design:

You want an area that is dry inside the plastic box/container and the other side to hold the water.

Draw out how you are going to assemble your natural materials. Think about the layers you might create, and how you might use the dirt.

Build your dam!

Test out your dam by pouring water on one side and see if your natural materials hold back the water.

If water escapes through take a closer look, where are the gaps? What could you do differently? How might you adapt your design? Have another go...

More information on flood plans and defences for Sheffield can be found here:

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Sheffield City Council are working in partnership with the Environment Agency to provide improved protection from flooding for the city. They are planning to do this by building defences, storing floodwater in open spaces and by using natural flood management measures in the higher ground above the city.

The flood protection schemes are part of our citywide commitment to making Sheffield a greener city that adapts to climate change and manages flood risks more sustainably.

Find out more here - <https://www.sheffield.gov.uk/public-health/flood-protection-schemes>

Catchment Plan for the Don and Rother Catchment 2021 – 2026 (pages 16-18) - <https://dondearnerother.org/wp-content/uploads/2020/12/Catchment-Plan-2020-FINAL.pdf>