



Viewpoint

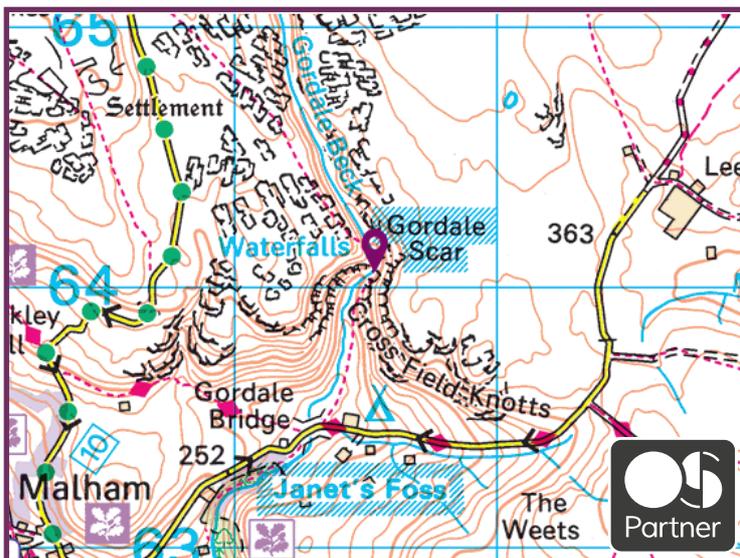
Scar attraction



Time: 15 mins

Region: Yorkshire and the Humber

Landscape: rural



Location: Gordale Scar, near Malham, Yorkshire Dales National Park (nearest postcode BD23 4DL)

Grid reference: SD 91533 64061

Keep an eye out for: The small pink flowers of Herb Robert growing out of the cracks in the rocks around Gordale Scar waterfall

Stretch your legs: Follow Gordale Lane to Malham and the car park of the National Park Visitor Centre. From here you can pick up our Malham trail and walk it in reverse up to Malham Tarn.

The gentle amble along Gordale Beck (stream) surrounded by grazing sheep lulls you into a peaceful reverie and suggests nothing of the drama in store.

As we head into the valley, the walls of a grand rock amphitheatre rise up in front of us. But it is not until we round a large limestone buttress that the jaws of a surprise narrow gorge snap at us like an angry dog.

With its gnarled and bulbous rocks, dark recesses and dripping gloom, it's not hard to imagine a troll or orc lumbering out of a cavern to greet us! Indeed many believe J.R.R. Tolkien had Gordale in mind when he described Helm's Deep, scene of an epic battle between men and orcs in his book *The Lord of the Rings*.

What created the dramatic gorge that inspired Tolkien?



This rousing landscape is a result of the limestone rock found here plus the action of ice and water over thousands of years.

The cliffs towering above us reach up to 150 metres high. Like at Malham Cove, they are partly the result of the Mid Craven Fault, which runs through the landscape here. The fault is a fracture in the earth's crust, formed between 359 and 299 million years ago.

Much more recently, this area was covered with ice during the series of ice ages that lasted from 2.6 million to 10,000 years ago. When the ice melted, massive amounts of water eroded along the fault line developing the 'rock amphitheatre' here.

The narrow gorge, where we are standing, cuts through the walls of the amphitheatre like a vicious scar. It formed towards the end of the last ice age, from around 10,000 years ago. Rising temperatures caused ice to melt and torrents of water cascaded down the valley.

Limestone has a structure with joints and planes occurring naturally within it. The water followed these faults and weaknesses in the cliffs, carving down into them until it could pour into the valley. Over time, the water cut this narrow chasm into the rock, creating the gorge we see today.

It is sometimes said that Gordale Scar is a collapsed cavern. But no single large cavern ever existed here. More likely is that the water carved numerous little pathways through the rock, some of which travelled underground. Over time, the roofs collapsed on some of these underground streams, opening them up, joining some together and making the chasm cut down ever deeper into the limestone.

Gaze up at the waterfall that cascades down the rock face. If you trace the water back it appears to emerge from a cave in the cliff-side. This is actually an arch or rock bridge, formed as recently as 1730 when the stream broke through the narrow rib of rock above. One day in the future the bridge itself may collapse, making the gorge seem even deeper.

A fantasy world

Limestone, ice and water created this dramatic and imposing scenery. Impressive on a sunny day, it's awe-inspiring, even sinister, in wild weather. It is easy to see how it might have inspired Tolkien when he was describing an impenetrable rock fortress in *The Lord of the Rings*.

In the 1920s Tolkien was Professor of English Language at the University of Leeds, so he was familiar with Malham and Gordale. He wrote of the area: 'this is a region of great interest ... the scene of swaying fortunes of English since very early times...'

Tolkien's description of Helm's Deep in the novel certainly sounds like Gordale: "a gorge opened in the hills...Ever steeper and narrower it wound inward...till the crowhaunted cliffs rose like mighty towers on either side, shutting out the light".

And when Tolkien describes the countryside around Helm's Deep - where white mountains have caverns full of stalactites, ventilated by "fissures in the rock far above" - he could easily be describing the limestone landscape of the Yorkshire Dales.