

The Chiltern Hills Area of Outstanding Natural Beauty is a unique place of great beauty and wildlife interest. It incorporates a wide range of landscapes shaped by its geology and history. The Chilterns geological story began c. 100 million years ago when sea levels rose more than 300m due to global warming. The chalky muds deposited on the sea floor eventually became today's Chalk. The rounded hills and deeply dissected dry valleys of the Chilterns are actually very recent, sculpted by melting glaciers about 450,000 years ago.

Stone Age hunters and gatherers lived in the Chilterns. Neolithic settlers cleared trees to grow crops, leaving behind their burial mounds and starting the process that created flower-rich chalk grassland. The Anglo-Saxons knew this area as *Ciltrensetaen*, a 'god-forsaken place that no-one in their right minds would want to settle'. But settle they did, leaving Anglo-Saxon names such as Goring, Bledlow, Wycombe, Chesham and Luton to remind us of the many groups of people who have lived, farmed, traded and died in the Chilterns.



*Refreshments*

There are a number of good pubs and restaurants in Great Missenden and at Mobwell Pond. Alternatively bring a picnic to eat along the way.

*About the Great Missenden walk*

This is a walk through the hidden delights of the Misbourne valley. Learn about the wildlife and geology of a classic Chilterns landscape, then use new knowledge to unravel some of the geological, archaeological and historical mysteries of this area. The route begins in Great Missenden, not far from the railway station (on the Chiltern Line), but you could begin at any point or walk in reverse: it's your choice. If you arrive by car, leave the A413 at the Great Missenden roundabout. The car park (and start of the walk) is on your right, about 200m down Link Road. The public toilets and an information panel with information about the Misbourne are in the other car park. Some paths are steep and may be muddy in wet weather, and there are stiles along the route.

This is one of a series of 'Chiltern Trails' walks under development by Chiltern Archaeology. Each route highlights the interesting geology that makes the landscape, as well as the wildlife, the history, local stories and folklore which give insight into what makes the Chilterns an interesting and beautiful area.

A book, *The Chiltern Trails*, will provide more information about the Chilterns, with intriguing stories and many more interesting places to visit. Chiltern Archaeology, 13 Pusey Way, Lane End, Bucks, HP14 3LG [www.chilternarchaeology.com](http://www.chilternarchaeology.com) email: [chilternarchaeology@btopenworld.com](mailto:chilternarchaeology@btopenworld.com)

We gratefully acknowledge The Chilterns Conservation Board funding that made it possible to develop these trails. [www.chilternsaonb.org](http://www.chilternsaonb.org)



# Chiltern Trails Great Missenden a 3 mile/ 5km circular walk



1. Sarsen stone
2. the dry Misbourne
3. Mobwell Pond
4. The Misbourne valley
5. Angling Spring Wood
6. The George
7. Warren Water and Missenden Abbey
8. St Peter and St Paul

**Key**

- Railway Station
- Public footpath
- Public bridleway
- Route of walk



Route summary

Leaving the rear of the Car Park, stop to examine the Sarsen stone near the first stile (1). Walk north on the footpath across the grassland paralleling the bed of the Misbourne, which once flowed here (2). The footpath takes you to Aylesbury Road near the Black Horse pub; cross the road with care to take the footpath past what was once Mobwell Pond (3). Go through the gate and over the railway bridge, taking the left-hand path to see the view (4). Cross Rignall Road and keep to the marked public footpath to cross Martins End Lane and into Angling Spring Wood (5). Take the woodland path round to the left, back towards Missenden, past the George (6) and right onto the London Road. Walking past the Abbey grounds take the footpath on the left crossing the lovely little bridge across Warren Water (7) and on to the church (8) via the footpath and steps on your right. Once you have looked at the church return on the minor roadway downhill to Frith Hill and the car park.

**1. SARSEN STONES:** as you walk along the footpath from the back of the car park note the grey Sarsen stone at the first stile. Feel its rough texture of quartz grains. Many of these mysterious rocks are found in Buckinghamshire. **Sarsen** is a corruption of *saracen* meaning ‘stranger in a field’, because that’s what they are: isolated stones in fields and woods. Geologists spent many years trying to work out what they are. It is now believed that they are fragments of river beds that existed across southern England perhaps as long as 40 million years ago. The climate was then hot and semi-arid, suitable for producing the quartz sandstones with a tough quartz cement that you see here. The river beds were broken and scattered as blocks in many different locations by freezing and thawing in the Ice Age: freeze-thaw breaks rocks up and the blocks then slid down wet, muddy slopes before vegetation began to hold the soils together.



Sarsen stones at Warren Water, later in the walk

**2. MISBOURNE STREAM BED:** the Misbourne has been dry for some time now. Streams dry up when the level of the *water table* (the water flowing through the ground) is lower than the ground surface. Many streams have dried in recent years as the water table fell because of *over-abstraction* (water pumped out to supply our needs) as well as low rain-fall. Note the cut the river has made in the past. The sands and clays you walk over on the valley floor are the *flood-plain deposits* laid down when much more water was available.



The Misbourne is dry as far as Misbourne Abbey

**3. MOBWELL POND:** opposite the Black Horse pub, a spring of clear, fresh water once rose from the Chalk here to feed the Misbourne. The thriving Alders show water may not be far beneath the surface as these trees are common close to water, even growing within marshy areas.



Alder



Mobwell Pond today

**4. DRY VALLEY AND ROLLING HILLS:** after crossing the railway look back at the typical Chilterns landscape of grassy hills and beech woodland. The Misbourne valley bottom here lies at 120 to 125m OD (*Ordnance Datum*, which is mean sea level) and the Chalk hills rise to 190m OD on either side. These hills are formed by a rock known as the ‘New Pit Chalk Formation’ which breaks down to create a thin chalky soil which is poor in nutrients. Fields on the valley floor are much more productive because they lie on rich *alluvium* deposited when the Misbourne flooded in the past.

CHALK & CHERT

The entire length of the Chilterns is underlain by chalk. This very pure, white limestone gives this area its distinct character and has a fascinating history.

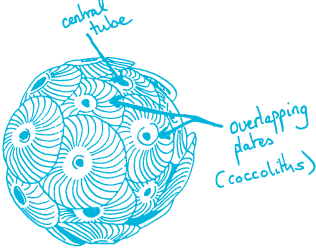
Chalk is a form of limestone produced in a warm, open sea which is a very long distance from the nearest shoreline. These hills prove that the Chilterns area was once

under a tropical sea. Chalk is made of the tiny skeletons of marine algae called *coccoliths*.

These are so tiny that many thousands of them would fit on a pin-head! In fact, they are so small that they still float in the water column after the algae die – these microscopic plates would not normally settle on the sea floor. So why are they here? Each one comes from an alga that was eaten by a shrimp or another algae-eater. The tiny plates of the algal skeleton pass through the gut to fall on the sea floor. So you *could* think of Chalk as shrimp poo.

When did this happen? During the Cretaceous period, about 110 million years ago, global warming melted both ice caps and sea-level rose to an all-time high (at least 300 m above the present level). This is when the Chalk was laid down. The remains of other animals that lived in the sea survive as fossils in the Chalk.

At the end of the Cretaceous (65 million years ago) the sea retreated, global temperatures fell, and the Chilterns became a flat expanse of chalky mud. The beautiful, rounded hills which are so characteristic of the Chilterns landscape were sculpted during a global cooling or ‘ice age’ 63 million years later.



**5. ANGLING SPRING WOOD:** is an ancient woodland of many tree varieties, but particularly rich in beech. Look at the woodland floor – is it littered with beech ‘mast’ – the fruits from the tree? This happens every seven years and it is a fantastic survival strategy. Lots of animals eat beech mast and if the tree produced it each year, nearly all would be eaten. No animal has a seven year reproductive cycle, so if the beech tree produces a massive amount of the mast every seven years this ensures that it is not all eaten and some germinate to form new beech trees.

This was Roald Dahl’s local wood and the ‘Witches Tree’ inspired the story of Fantastic Mr Fox. The tree is now on the ground, having been blown down in a gale during 2003. The wood is home to a vast range of plants and animals, not just foxes, including rare slugs and fungi. You can sense when you get near the spring – the air feels cool and damp even when there is no surface water.

**6. THE GEORGE INN:** built in the 15th century, this is the oldest inn in the village. London Road was once (as its name suggests) the main route to and from London, so there were numerous coaching inns on this road. The George was particularly important because it was also the site of the Court House.

**7. WARREN WATER:** this was part of the garden landscaping by the Oldham family who owned Misbourne Abbey at the end of the 18th century. Look into the dry river bed from the bridge to see a large collection of local sarsen stones used as part of the ‘water feature’. The lake once filled during the wettest times of the year, but is dry now that the Misbourne no longer flows into it. Looking north from the bridge the Abbey stands above its lawns. This is an elegant re-build following a major fire in 1985. Missenden Abbey was founded in 1133 for Augustinian canons. It is recorded that in the early 1200s there were a fair number of suicides amongst the novices; the reasons were never disclosed. The Abbey was dissolved in 1538 by Henry VIII, and the building began a long history as a country residence for wealthy families starting with Richard Drury of Chalfont St Peter.

**8. THE CHURCH OF ST PETER AND ST PAUL:** this medieval church includes many local rocks. Look for local cream-white ‘Clunch’ (Chalk Rock); blackish and mottled flints, local cement, and even Roman roof tiles! The beige blocks of Portland Limestone (from Dorset) are newer repairs from about the Victorian period, because local rock is no longer available.



THE BIG FREEZE

Like all Chiltern valleys, the Misbourne valley is relatively young. These valleys were sculpted by the extremes of the ice age climate starting about 2.6 million years ago, although most are less than half a million years old. Three major ice ages affected the Chilterns, but in only one – the Anglian – did the ice sheet actually reach this area. Normally water flows into the pores of Chalk, but Ice Age *permafrost* (soil frozen all year) shaped the valleys by forcing meltwater to flow over across the frozen surface, cutting deeply into the chalk. These cuts are the *dry valleys* of the Chilterns. Some, like the Misbourne, have streams flowing in them today as the valley eventually cut down to the post-Ice Age watertable allowing springs to flow onto the surface.

Cover images clockwise from top left: St Peter and St Paul, Great Missenden; the Misbourne valley; Ammonite (inset); the dry Misbourne.