



A section of Smith's map, with Yorkshire outlined in black

Links to the Yorkshire Museum

The Yorkshire Museum is run by York Museums Trust. It was built in 1830 by the Yorkshire Philosophical Society (YPS), founded in 1822 by a group of gentlemen interested in science, especially geology. They understood the importance of Smith's map, commissioned a series of lectures, and made Smith an honorary member. They also gave the post of first Keeper of the Museum to his nephew and apprentice, the young John Phillips.

The museum owns an original copy of the 1815 map, which was purchased by the YPS around the time of the Smith lectures. Full size (6ftx8ft), it is on display in the library on the top floor of the Museum, amongst early books on science and antiquities.

Fossils were used by Smith for positive identification of each stratum, and **the museum holds one of the best fossil collections in the country**, including many 'Type Specimens', which define particular species. The Museum holds around 120,000 fossils, and so most of these are kept in storage, for researchers to use by appointment. However, the 'Extinct' Gallery on the Ground Floor shows many superb fossils from Yorkshire, including ichthyosaurs and dinosaur footprints, as well as many smaller items.

Recognising that his map was not wholly accurate Smith continued to improve it. This work was continued by John Phillips, and many later geologists. To find more about the modern interpretation, the following may help:-

Further Reading

A superb introduction for children and non-technical adults:

Bell, Richard: *Yorkshire rock: a journey through time*. Nottingham: British Geological Survey, 1996

Equally accessible:

Osborne, Roger: *Rocks and landscape of the North York Moors*. Helmsley: North York Moors National Park Authority, 2010

Slightly more serious, but in an easily readable narrative style is Ensom, Paul: *Yorkshire geology*. Wimborne Minster: Dovecot Press, 2009

The best website for easily accessible detailed information is www.bgs.ac.uk. Of particular interest is the BGS 'Geology of Britain Viewer' <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> which also allows you to change base map and flip between the WS 1815 map and a modern geological map.

Liam Herringshaw's website fossilhub.org contains a wealth of eclectic information, mostly based on lectures he has given. Look for [York_Rocky_History_SML](#)

Also try the YPS website www.ypsyork.org for background to the walk-on Geological Map Project, supporting technical material and short biographies of William Smith and John Phillips



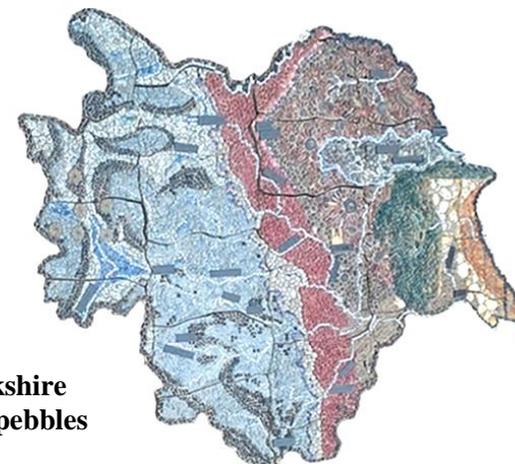
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The Walk-on Geological Map

The story of the map and an indication of features to look for



Yorkshire in pebbles

The walk-on mosaic map in Museum Gardens was commissioned jointly by the Yorkshire Philosophical Society and York Museums Trust in 2015. Designed and built by artist Janette Ireland, it represents the Yorkshire part of William Smith's famous geological map of 1815, the first of a complete country. An original copy of this map can be seen in the Yorkshire Museum.

This map was an incredible achievement, surveyed by Smith alone, travelling on foot and horseback. It shows the rock groupings nearest to the surface, and illustrates Smith's discovery that rock strata are continuous across hundreds of miles, but generally inclined upwards from East to West, exposing the lower and older strata in the Western part of the country.

The pebbles in the mosaic reflect the colours Smith used in his map, but genuine Yorkshire rocks will be displayed in the flower beds on either side of the mosaic, illustrating the strata in order of deposition – a further leaflet will give modern names for these, as well as those used by Smith, and information on where our samples were obtained

Features to look for

York is represented by an icon made from stone discarded in the renovation of the Minster

The **scales** show distances in miles and kilometres. The full length of each is given – 30 miles & 50 Km.

Rivers are represented by lines of small grey stones

Names of rivers and towns have 1815 spellings. Thus the River Ure is spelled Yore

Semi-precious stones indicate **lead and alum mines**

Small round **millstones** indicate where Millstone Grit was quarried.

The small black squares show where there were **coal mines**.

The **names William Smith gave to the rocks** are shown by labels set in a ring going round the map – with examples of the pebbles used to represent them.

The **shape of Yorkshire** is shown as it was in 1815. There have been many boundary changes since

The counties round it are shown in brown because this map shows only Yorkshire rocks. Each type of Yorkshire rock has its own pebbles.



This is a **cross-section** of Yorkshire, from point A to point B, indicating the way in which the strata are inclined. The vertical scale is exaggerated, and the blue line shows sea-level.

Note the **pointer**. The map is lined up so this points North on the map and on the ground as well.

The line that the pointer takes across the map is the **Greenwich Meridian**.

Knowing that William Smith used **fossils** to identify the different strata, artist Janette Ireland made extensive use of fossils, some real, others made of pebbles, in the mosaic. She went to great trouble to establish the correct fossils for each stratum.

There are also **fossil patterns** in each of the four corners – fossil ferns, ammonites, crinoids and sea urchins.

Large samples of real Yorkshire rocks have been collected to be set in the flower borders. These will be placed near strips of pebbles, indicating how they are represented in the mosaic. The rock samples will be put in place when the borders are replanted in the autumn. In the meantime, you may find some on display near the pavilion