

Home School with Charnwood Museum

Charnwood Rocks! Part 2

Did you know Charnwood has one of the deepest and largest man-made holes in Europe? It is the granite quarry at Mountsorrel.

In this part of our on-line learning we're going to tell you about Mountsorrel Quarry and how the rock that is taken from there is used in different ways all over Britain. Read the information below and then have a go at the question sheet.

Following the timeline from the first learning sheet, we have learnt that the volcanic activity in Charnwood had ended by around 540 million years ago. At this point the slate beds around Swithland were being laid down. About 450 million years ago there began a phase of earth movements and even mountain building in the area. This pushed down the rocks that we can now see at the surface to kilometres underground. The molten rock (magma), down at those levels, was forced into these older rocks where it slowly cooled and solidified deep beneath the earth. This process formed what we now call the Mountsorrel Granite. The scientific name for this rock is Granodiorite. Since then more earth movements and erosion have brought some of these rock beds much nearer the surface.

Mountsorrel Granite is a very hard and strong rock with a distinctive pink colour. This is due to pink crystals that formed as the rocks cooled. People first used it in the early Iron Age for tools such as stone axes and hammers, as a building stone and for basic millstones. The stones have also been found in some local Roman sites, and are thought to make up some of the Jewry Wall in Leicester. In the 19th century, as road building became organised, broken Mountsorrel granite began to be used as paving setts (blocks) for road surfaces. Nowadays, it is used in construction, often in concrete for buildings and structures and still for road building. 70% of the gravel used by Network Rail as ballast comes from Mountsorrel. Ballast is what you see in between and underneath railway tracks to keep the rails in place as trains pass over them.



Quarrying is the name we give to the process of removing rock, sand, gravel or other minerals from the ground. There have been quarries at various sites in Mountsorrel over the years. The earliest known was at Castle Hill, which gets its name because there was once a Norman castle there. The present quarry is at Buddon Hill and it was officially opened in September 1974.

Photo: www.agg-net.com/mountsorrelgranite

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The basic method of quarrying has not changed greatly for hundreds of years. Explosives are detonated in holes drilled into the rock which breaks it into large pieces. These are then broken down into smaller sizes or crushed into gravel. Originally a lot of this work was done by hand using sledge-hammers but modern technology and machinery has changed how this is now done. Huge dump trucks and excavators and a massive mobile rock-crusher mean that now only about 100 workers are employed whereas in 1920 there were about 900. About 3 million tonnes of stone is produced every year, much of which goes to projects in the South of England, where there is different softer rock.

Mountsorrel stone was used in the building of the M25 London ring road, Wembley Stadium, the Shard, the 2012 Olympic Park and many other projects. It can also be seen in the walls of many local buildings, especially in Mountsorrel itself.

Did you know that Sir David Attenborough was born and grew up in Leicestershire? In a Radio Leicester interview in 2019, he talked of having studied Mountsorrel rock before he went to University. He had donated his 'prized' collection of Mountsorrel granite to the University of Leicester and so no longer had any pieces.

Tarmac, the company that run the quarry were contacted and they carefully selected and polished a large piece of pink granite that they sent to him as a gift. Sir David thanked them by letter, calling the piece 'magnificent' and 'superb' and he told them of his early days fossil-hunting and studying the local rocks.

In the final part of our rock quiz (coming soon!), we will talk more about the amazing geological processes that created the Charnwood rocks.

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Charnwood Rocks! Part I

Now see how you get on with the following questions

1. How long ago were the Mountsorrel rocks created?
2. What is the name given to liquid rock when it's still underground?
3. What do you think happens when liquid rock reaches the surface of the earth?
4. Draw a picture of something early people might have made with or from Mountsorrel rock.



5. What colour is the rock and why?
6. What is the granite used for? Can you think of other ways people use it?
7. There are some abandoned quarries in Charnwood, have you ever visited any?
8. Can you draw a picture of what you think a quarry looks like, or of any of the machines or trucks used in one?



9. Have you seen any of Sir David Attenborough's T.V. programmes? Which did you like best and why?