

William Smith, the father of English geology

William Smith is often called the **Father of English Geology**. He observed that the beds of rock (strata) in the coal mines of the in the Somerset coalfield were arranged in a predictable sequence and could be identified by the fossils in the layers. From this, he developed the idea of **stratigraphy**. His theory suggested that all strata across the country would follow the same sequence.

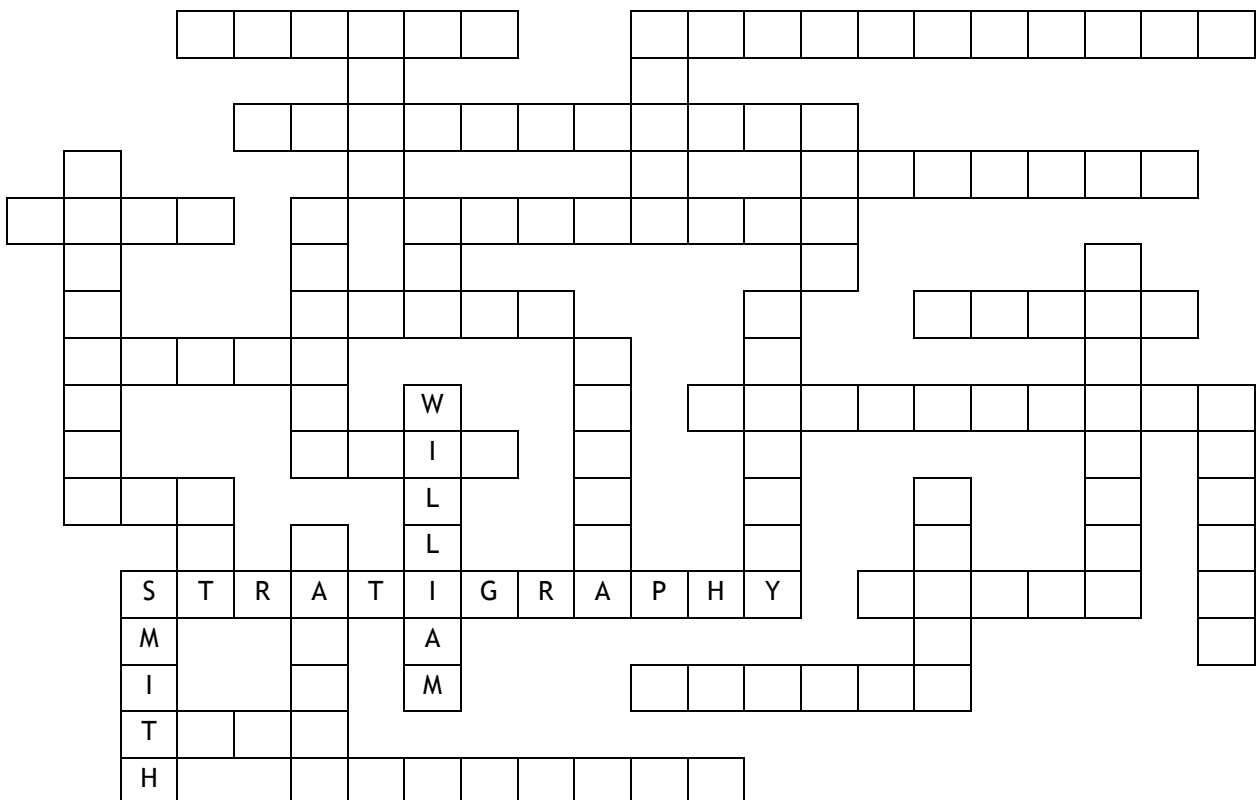
Activities

1. How many layers of rock can you see?
2. Which layer of rock is the oldest?
3. Which layer of rock is the most recent?
4. Why were the rocks been laid down in horizontal layers?
5. Why are there white rocks at the bottom of the cliff?
6. Place the following words in the word square below:



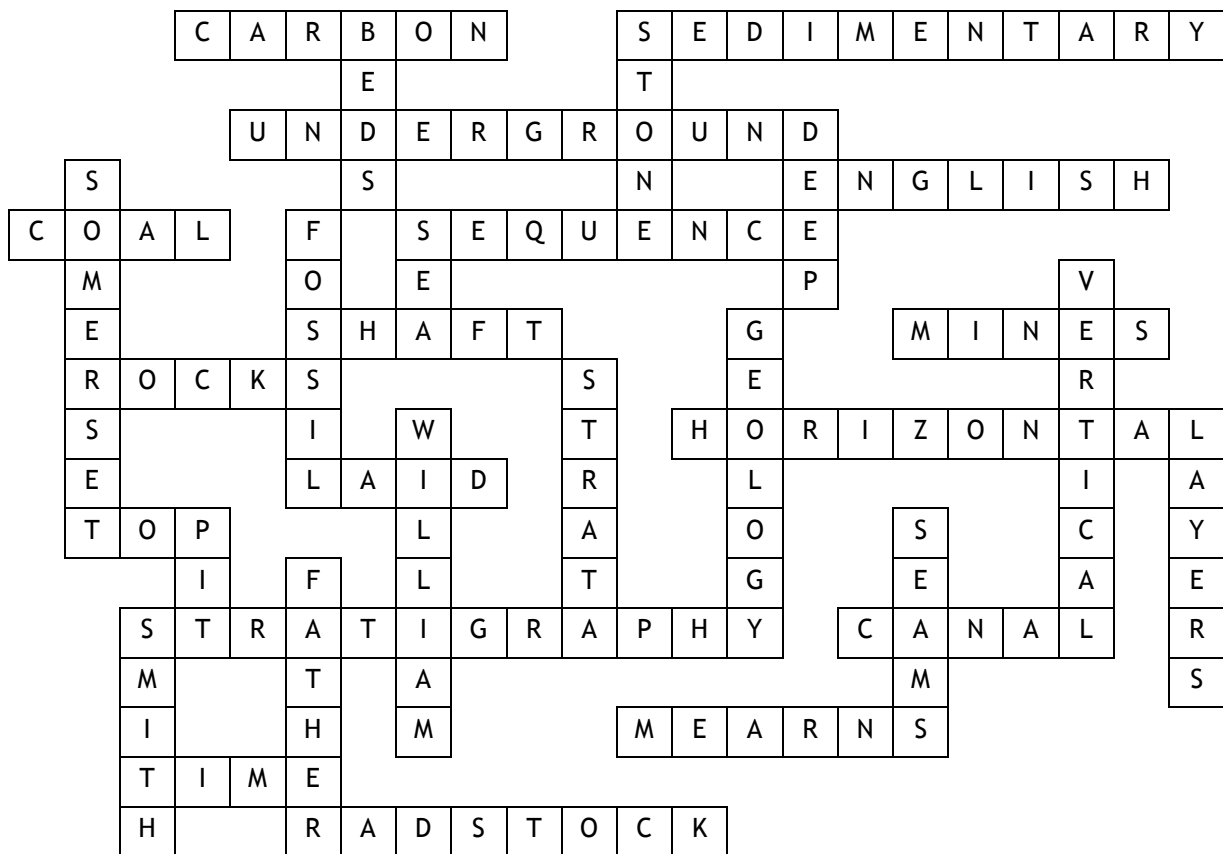
commons.wikimedia.org/wiki/File:The_cliffs_at_Huinstanton_-_geograph.org.uk_-_1730934.jpg used courtesy of Elliott Simpson and licensed for reuse under a Creative Commons Attribution-ShareAlike 2.0 license.

beds	canal	carbon	coal
deep	English	father	fossil
geology	horizontal	laid	layers
Mearns	mines	pit	Radstock
rocks	sea	seams	sedimentary
sequence	shaft	Smith	Somerset
stone	strata	stratigraphy	time
top	underground	vertical	William



Answers

1. The answer to this question will be dependent on the ability of the pupil. There are two obvious layers, using colour to distinguish the strata but a more detailed investigation of the image will show two different red/brown layers and three or four different beds of chalk.
2. The cliffs at Hunstanton, Norfolk in this image comprise a bed of lower reddish limestone that was deposited during the Lower Cretaceous age and a more recent white chalk layer from the Upper Cretaceous age above this.
3. The upper beds of white chalk are the more recently deposited rocks.
4. The limestone and chalk are sedimentary rocks laid down horizontally on the seabed.
5. The white rocks are chalk boulders deposited on the beach as a result of weathering and erosion. Pupils could be asked the difference between these two processes.
6. Placing the words:



Suggested extension activity

Pupils could be asked to write a paragraph using as many of the words from the word square as possible.

This resource is one of a group of resources for KS1, 2 and 3 on the subject of the Somerset Coal Canal and coalfield.

More information from the [Somersetshire Coal Canal Society](http://www.somersetshirecoalcanal.org.uk).

