The formation of rocks

What do rocks look like below the surface of the ground and beyond? For the answer to this question, the surrounding area also needs to be looked at. Brading Down is part of a much bigger structure. This can be shown by the diagrams on the right.

The enormous pressure needed to make the anticline came from the same source that produced the Alps in Austria and Switzerland. Think of a pebble being dropped into some water and the ripples getting smaller the further away from the centre they are.

Chalk and flint testing

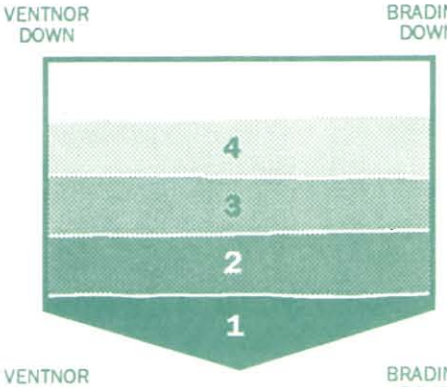
(only under a teacher's supervision)

You must wear goggles when you conduct these experiments. Flint shatters easily and has sharp edges.

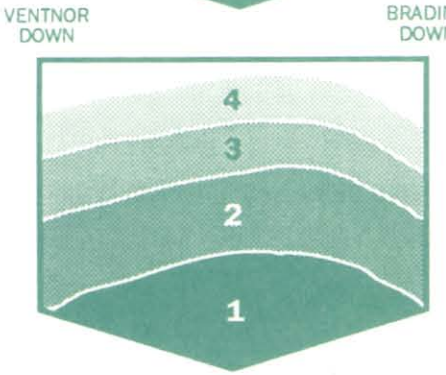
Place the pieces of chalk and flint into a container, having scratched a new surface. Then add a few drops of diluted hydrochloric acid or vinegar. What happens? Do both or either react? Can you hear anything?

Which specimen is hardest? Test this by trying to scratch the surface with a copper coin. Will either scratch glass? Remember to leave the window panes alone!

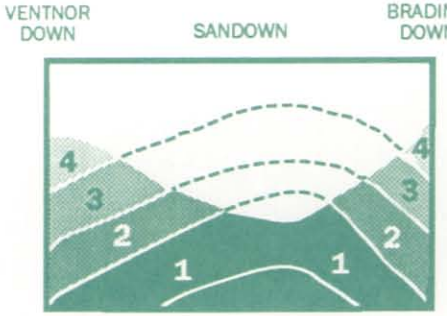
Rock formation



The rocks were laid down flat



The rocks were folded/buckled by enormous pressure to form a dome called an *anticline*



The rocks were later eroded which made the valley - this is called a *denuded anticline*

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BRADING TOWN COUNCIL

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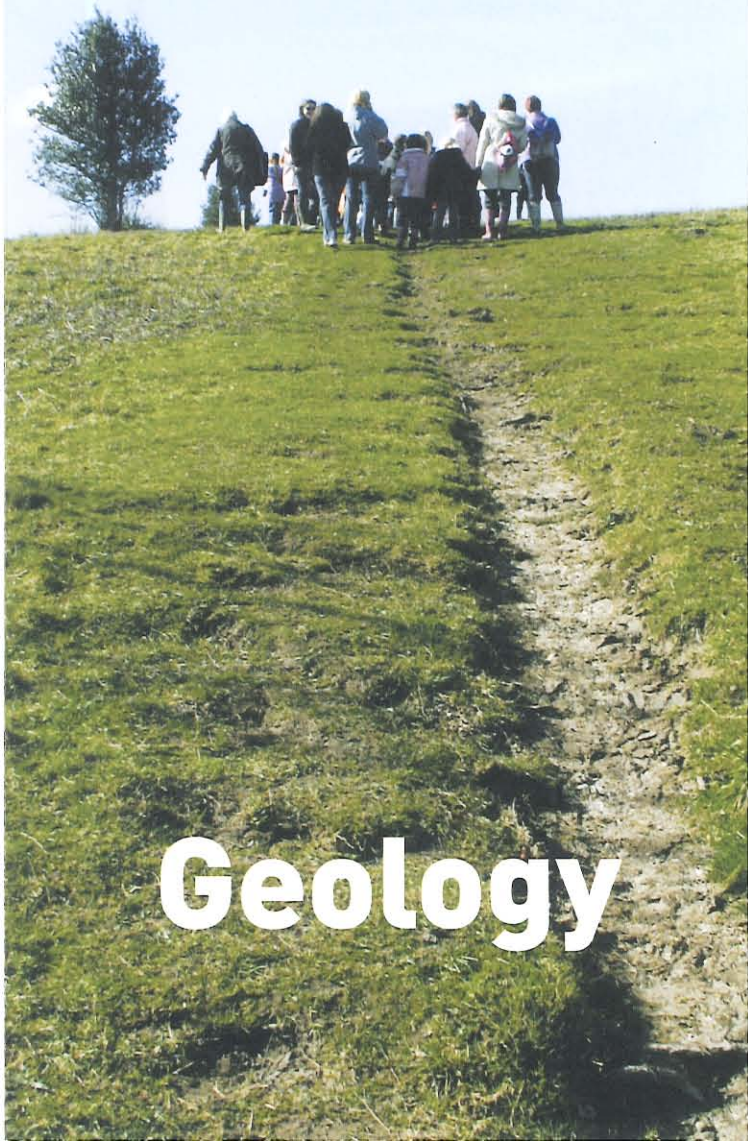
Isle of Wight area of outstanding natural beauty

Designed and printed by Crossprint

Brading Down



Geology

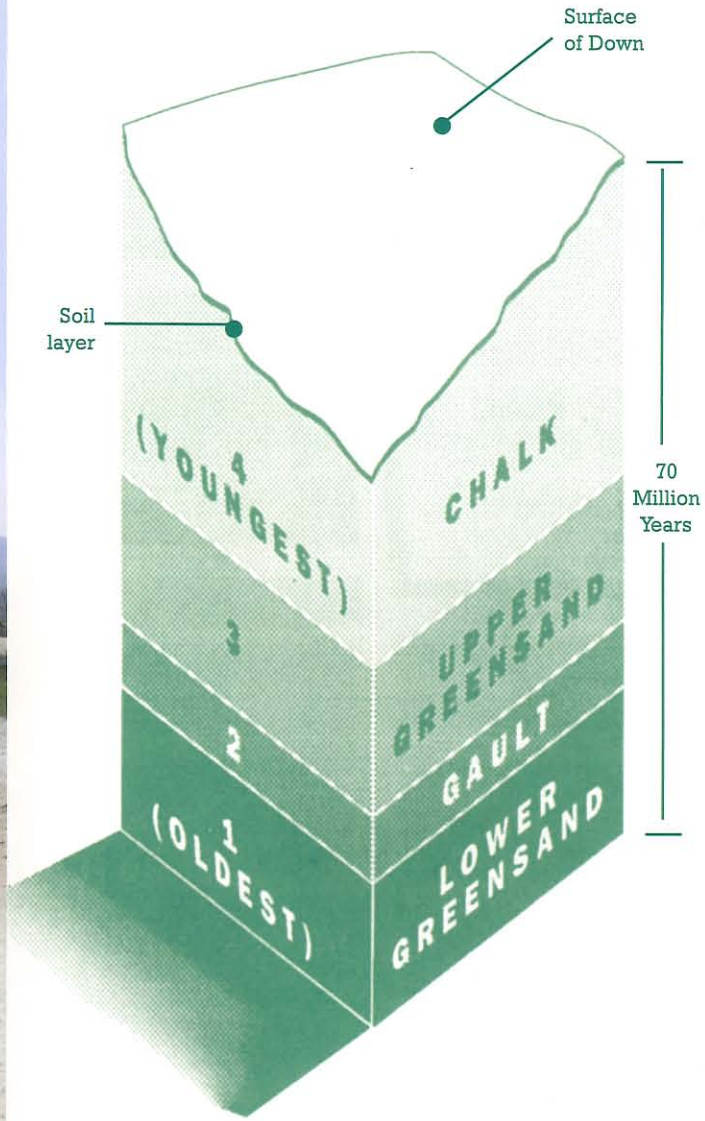
What is Geology?

Geology is the study of the earth's history and life, as seen through the rocks. Geologists – people who study this subject – can help us understand how and why a place like Brading Down looks as it does today and how it looked in the past. The earth has been calculated to be about 4,500 million years old (that's 4,500,000,000)! So, geologists are detectives of time, using rocks and land formations as clues.

Types of rocks on Brading Down

There are four different types of rock on the Down. They all come from the same geological period, the Cretaceous, which lasted between 64 million and 136 million years ago – a sum total of 70 million years. Look at the diagram on the right. The numbered layers show the order in which the rocks were laid down. So you can see the Lower Greensand was laid first, which was the longest time ago and it is at the bottom of the rocks. Up on the Down, the main rock type that can be observed closely is the chalk, which also contains flint.

Types of rocks on Brading Down

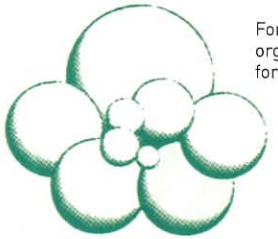


The Cretaceous Period 64-136 million years ago

Composition of chalk and flint

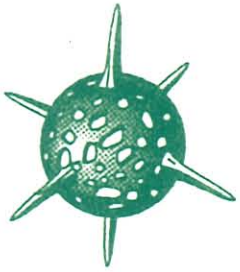
Chalk and flint will be found underfoot around the car park on Brading Down. If you are on a school visit and are going to do follow-up work in the classroom, ask your teacher to pick up one small piece of each.

At one time, the Isle of Wight was covered by sea in which many animals lived. *Coccoliths* and *foraminifera* are microscopic organisms that form chalk. How? When the animals die, the shells sink to the bottom of the sea where they gather and are pressed together. Slowly, they form the rock. In some places in England, the chalk beds are up to 1,000 feet thick. This is amazing, considering that 1 foot takes 30,000 years to be produced! How long did it take to produce 1,000 feet?



Foraminifera – organisms that form chalk

Flint is also made from shells of dead organisms but the organisms are different from those of chalk. Sponges can sometimes be found in the centre of flint nodules (lumps).



Radiolarian – the organism that forms flint