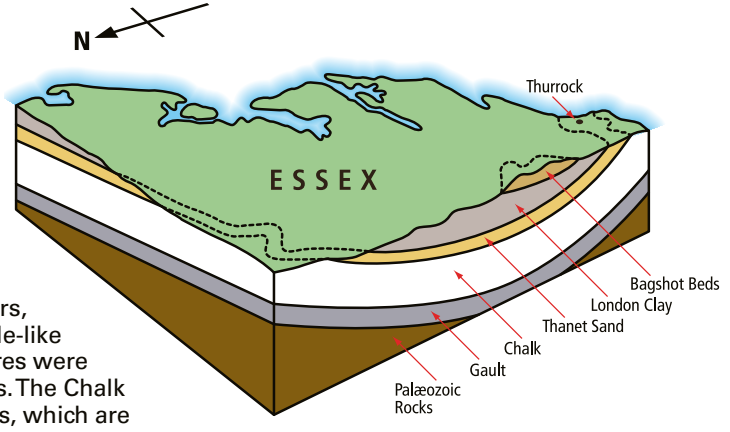
Chafford Geology

The gorges at Chafford Hundred Nature Park are, in fact, disused chalk quarries. They offer a fantastic opportunity to see a cross-section of the geology of this part of Essex. As you look from here you can see vertical chalk cliffs topped by a thick layer of sand and a top layer of gravel – rocks that tell the story of Thurrock's tropical seas and arctic wastes.

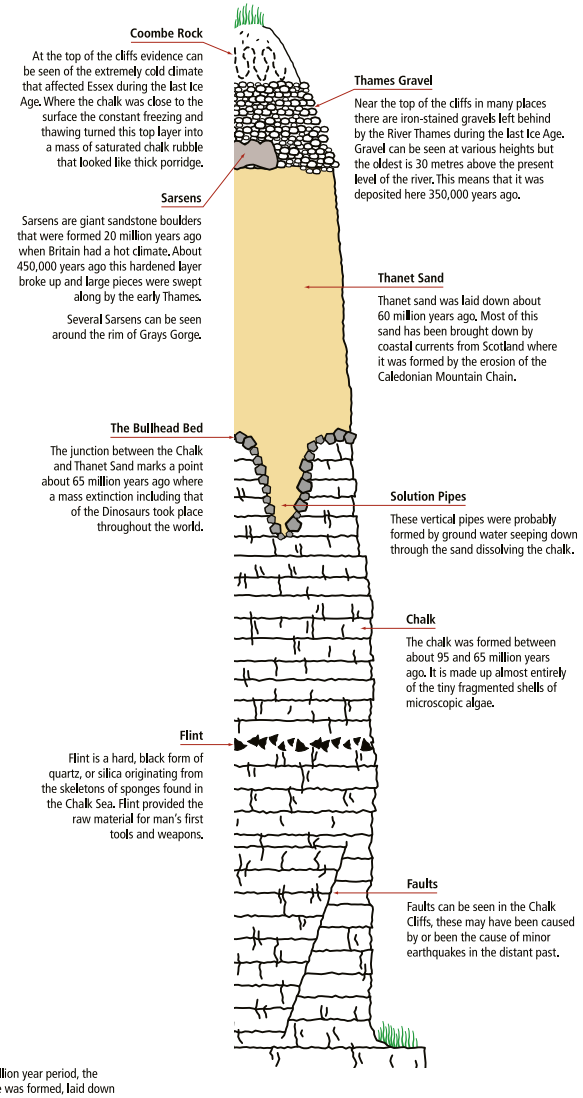
The layers of rocks that make up Essex are folded so that the Chalk, which is present beneath the whole county, comes to the surface at Thurrock.

The Chalk we can see around us was deposited on the floor of a deep tropical sea between 80 and 100 million years ago (during the Cretaceous period). The whiteness of the Chalk means that the sea water must have been crystal clear and the nearest land a considerable distance away; in fact the sea may have covered most of what is now northern Europe.

The Chalk Sea was teeming with marine life such as molluscs, sponges, corals, sea urchins, sharks and fish, and these creatures have been found exquisitely preserved as fossils. At the top of the food chain were mosasaurs, giant marine reptiles up to ten metres long with a long body and tail, paddle-like limbs and heavy jaws armed with sharp, conical teeth. The smallest creatures were microscopic marine algae that accumulated on the sea floor in their billions. The Chalk is almost entirely made up of these tiny fragmented shells, called coccoliths, which are only visible under an electron microscope.



The gorge you can see was formed by the quarrying of Chalk for at least 200 years.



Paleozoic rocks are present beneath Essex

During this 70-million year period, the Chalk you can see was formed, laid down on top of the Gault Clay which was formed earlier in the Lower Cretaceous period

Thanet Sand was left behind during the Paleocene epoch