

CALCH LESSON PLAN			
Subject	Unit	Lesson	Key stage
Science	2	A visit to Herbert's Quarry	KS2/3
<p><b>Learning objectives:</b> By the end of this lesson pupils should learn:</p> <ul style="list-style-type: none"> <li>To select and record from first hand observation of the environment.</li> <li>To understand the effect that industry has had on the landscape.</li> <li>The importance of lime outweighed the dangers of producing the alkaline product.</li> </ul>			
<p><b>Keywords:</b> Limestone, Lime, kiln, quarry, tufa, thermal decomposition, acid and alkali, fossils, Acid, alkali,</p>			
<p><b>Introduction:</b> Prior to leaving on the tour pupils should be given safety information and read risk assessment. Route should be discussed and also pupils should be made aware that the site is a SSSI, no litter to left at site, be careful of wildlife and leave wildflowers alone. Stay away from quarry faces and do not remove fossils etc. from the site.</p>			<p><b>Timings</b>  <b>15 mins</b></p>
<p><b>Main :</b> <b>***Digital photos should be taken for later classroom discussion and pupils should take notebooks to make notes or draw pictures. ***</b></p> <p>Teachers should use the tour guide to direct pupils around the site stopping at various locations to show features. The information regarding the features is also included in this unit. For younger learners the information can be read to the pupils, but for the older pupils the information can be given to the pupils to allow them to spot and learn about them independently. Their learning can then be assessed via a series of questions included in this unit.</p> <p>Pupils will learn about the formation of limestone and the changes it undergoes from thermal decomposition to form calcium oxide and carbon dioxide. Pupils should learn about features including limestone pavement, tufa, fossils as well as flora and fauna. They will find out the difference between different kinds of kilns including flare and draw kilns and the process of burning lime at high temperatures. Thinking about the process of burning limestone at the site pupils are asked to think in terms of acid and alkali and why such an alkaline product would be needed to put on fields in the area considering crops prefer a more neutral soil pH. Pupils should also be invited to think about the view and the amount of farms and fields, with this in mind the production of lime was of great importance to the local community.</p> <p>Please note: The site is not suitable for wheelchair users or the less capable.</p> <p>Dependant on the pace of the tour, the walk around the site should take an average of two hours.</p>			<p><b>Please allow two hours for the site visit.</b></p>
<p><b>Plenary:</b> On completion of the tour pupils should be asked what they have learnt throughout the visit. A series of suggested questions are included in this unit to assess learning.</p>			

**Differentiation:**

Extra help should be available for those with additional learning needs. Some areas of the site can be physically demanding and some pupils can find this difficult.

**Assessment:**

Through questions asked at the end of the tour and also through notes and photos taken during the day.

**Resources:**

**\*\*\*A full risk assessment should be carried out by staff prior to visiting the site. Our site information is for guidance only and should not be used in place of a full risk assessment.\*\*\***

Site information, map of site, tour information photos and information sheets.

Pupils will need to bring sketchbooks, notebooks, pencils, sharpeners and rubbers along. A digital camera will also be needed. In addition a packed lunch may be needed. Appropriate footwear and clothing are also needed for the visit.

**Links to literacy/numeracy:**

Literacy – Communication – through discussion during site tour

History – Examining the history of the site and its geological impact

Geography – The features of the site and how limestone was formed.