

**CALCH LESSON PLAN**

<b>Subject</b>	<b>Unit</b>	<b>Lesson</b>	<b>Key stage</b>
<b>Science</b>	<b>4</b>	<b>The chicken or the egg</b>	<b>KS2/3</b>
<p><b>Learning objectives:</b> By the end of this lesson pupils should learn:</p> <ul style="list-style-type: none"> <li>• Some pupils will make detailed observations of chemical reactions and be able to provide a theory for the reaction.</li> <li>• Most pupils will understand there are reactions when calcium carbonate is combined with different liquids.</li> <li>• All pupils will understand the difference between acids and alkalis and that limestone is an alkali.</li> </ul>			
<p><b>Keywords:</b> Limestone, calcium carbonate, acid, alkali, neutralisation, pH Scale</p>			
<p><b>Introduction:</b>  <b>**Please note this is lesson is a continuation from unit three and uses the chicken and the egg experiment which should have been left to soak in vinegar for a minimum of a week – Longer if possible**</b>                      This lesson should begin with a recap from last lesson and a recap on what pupils believe will happen to the boiled egg and chicken bones that have been left to soak in vinegar. Pupils should be encouraged to share their opinions.</p>			<p><b>Timings</b> (Based on 60 min)</p> <p><b>5-10 mins</b></p>
<p><b>Main :</b>  <b><u>Activity one</u></b>                      Examining the egg and chicken bones, pupils should find that the egg shell has dissolved and the egg has a rubbery consistency, in addition the chicken bones should now be flexible. Pupils may now add these observations to their sheet following the last lesson. Pupils may now further examine the reaction if you add baking soda and water to the dissolved calcium, the carbon from the baking soda will combine with the calcium carbonate again and pupils should see white particles develop in the liquid. Once again pupils may add to their observation sheet.</p> <p><b><u>Activity two</u></b>                      Pupils should develop a flow chart (alternatively they could develop another kind of diagram to show the process) to explain the reactions of the chicken bones and eggs when soaked in vinegar; they can also add the reaction of baking soda to the chart. (A differentiated worksheet is available here for the less able)                      As an extension of the project leave this egg exposed to the air for a day. The calcium in the egg absorbs carbon from the carbon dioxide in the air and hardens again. Put the egg back into the fresh vinegar for a day. What happens? The egg becomes rubbery. Drop it from about a foot above the floor. The egg will bounce back.</p> <p><b><u>Activity three</u></b>                      As a conclusion for this unit and following the PowerPoint pupils should answer the questions. Following this the answers should be discussed in class.</p> <p>As an extension pupils could discuss acid rain and how it is formed and the effect it has on the environment.</p>			<p><b>15-20 mins</b></p> <p><b>10 mins</b></p> <p><b>10-15 mins</b></p>
<p><b>Plenary:</b>                      As an assessment of pupils learning each pupil should name a different fact that they have discovered during the science units.</p>			<p><b>5 mins</b></p>

**Differentiation:** Pupils with additional learning needs should be given assistance with the observation sheets. There is a worksheet available for activity two. The more able and talented should also make note of the chemical formulas for the reactions.

**Assessment:** Through classroom discussion and marking of workbooks/observation sheets

**Resources:** PowerPoint presentation, observation sheet, baking soda, more vinegar. Question sheet, ALN worksheet.

**Links to literacy/numeracy:**

Literacy - This lesson can link to literacy in the following ways:

- *Gather and organise information from various sources.*
- *Identify how a text is organised e.g. logically or thematically to make the content clear and informative.*
- *Collate and summarise relevant information e.g. pull together and sum up facts and ideas about an issue, from different texts.*
- *Use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly.*

**Cross curricular links to geography and geology.**