

3.5 What effect does acid have on teeth?

<p>Basic information and collecting ideas</p> 	<p>Tooth enamel is the hardest material in our body, but very sensitive to acids. Acids are ingested with sour drinks or food or formed from sugar by bacteria in our mouth.</p> <p>Eggshells are made of a similar material as the teeth. In a model experiment with eggshells we are able to demonstrate how acid acts on teeth.</p> <p>Eggshell consists of calcium carbonate which reacts with acids to form mostly carbon dioxide (forms bubbles) and soluble calcium acetate. After a few hours the shell has “disappeared”.</p>
<p>Setting up and conducting experiments</p> 	<p>You should prepare one egg the day before so that you have a sample for demonstration the next day. Please wash the eggs with some detergent so that the surface is grease-free.</p> <p>Students immediately see that carbon dioxide bubbles form on the untreated half. There is no reaction on the surface protected with toothpaste.</p> 
<p>Observing and documenting</p> 	<ul style="list-style-type: none"> ▪ Acids destroy eggshells and teeth. ▪ Be careful with acidic foods! ▪ Brushing your teeth protects your teeth.
<p>Analysing and reflecting</p> 	Empty space for student reflection
<p>Doing further research</p> 	<p>Small children are often given acidic tea to calm them down. What does that mean for their teeth?</p> <p><i>> If children are given tea with acid their teeth will be destroyed very soon.</i></p> <p>This experiment is also suitable for demonstrating osmosis processes in plant cells and animal cells. Peel three hard-boiled eggs.</p> <p>Put one egg (1) in distilled water and another egg (2) in a concentrated saline solution: The volume of egg (1) increases as the salt in the egg draws the water through the membrane into the egg.</p>

