







3.4 The different pH values of our body (Experimento | 10+: C4 + C6.2)

Basic information and collecting ideas 	<p>By conducting the following experiments the students should recognize that our body has different pH ranges and a change in the respective pH value can influence our health: overacidification of the stomach (heartburn), lack of acid mantle of the skin, etc.</p> <p>Household detergents with different pH values should not be mixed as toxic substances can form (for example toxic chlorine).</p> <p>Acids and bases can destroy metals and other technical materials.</p> <p>On the other hand, acids are good preservatives for foods and drinks: pickles, citric acid for preserving fruit juices, phosphoric acid in Coca Cola, lactic acid in sauerkraut, etc. They are also useful as aids in engineering.</p>
Setting up and conducting experiments 	<p>We can use the indicator strips to determine pH levels only in the mouth and on various areas of the skin (forehead, armpits). However, we can translate the results from these examples to pH levels in other parts of the body.</p> <p>What happens to food in the mouth, stomach and intestines?</p> <p>The digestive enzymes can function optimally only at a certain pH [mouth (pH 6.5), stomach (pH 1 – 3) and intestine (pH 8)].</p> <p>Blood has a pH value of 7.38 – 7.42. The body must keep this narrow pH range constant in order to avoid diseases (acidosis or alkalosis).</p>
	
Observing and documenting 	<ul style="list-style-type: none"> ▪ pH values of the skin and the saliva ▪ Different pH values of the body and everyday products
Analysing and reflecting 	<ul style="list-style-type: none"> ▪ Why do foods have an acidic or alkaline pH? > <i>Acids and bases act as a preservative or are natural ingredients.</i> ▪ Why are the pH values in different parts of our digestion system (mouth, stomach, colon) different? > <i>Every digestive enzyme needs a certain pH to work optimally.</i>
Doing further research 	<ul style="list-style-type: none"> ▪ Why do foods have an acidic or alkaline pH? ▪ Why are the pH values in different parts of our digestion system (mouth, stomach, colon) different? ▪ Search: pH values in the body at the Siemens Stiftung Media Portal

Technical and vocational application

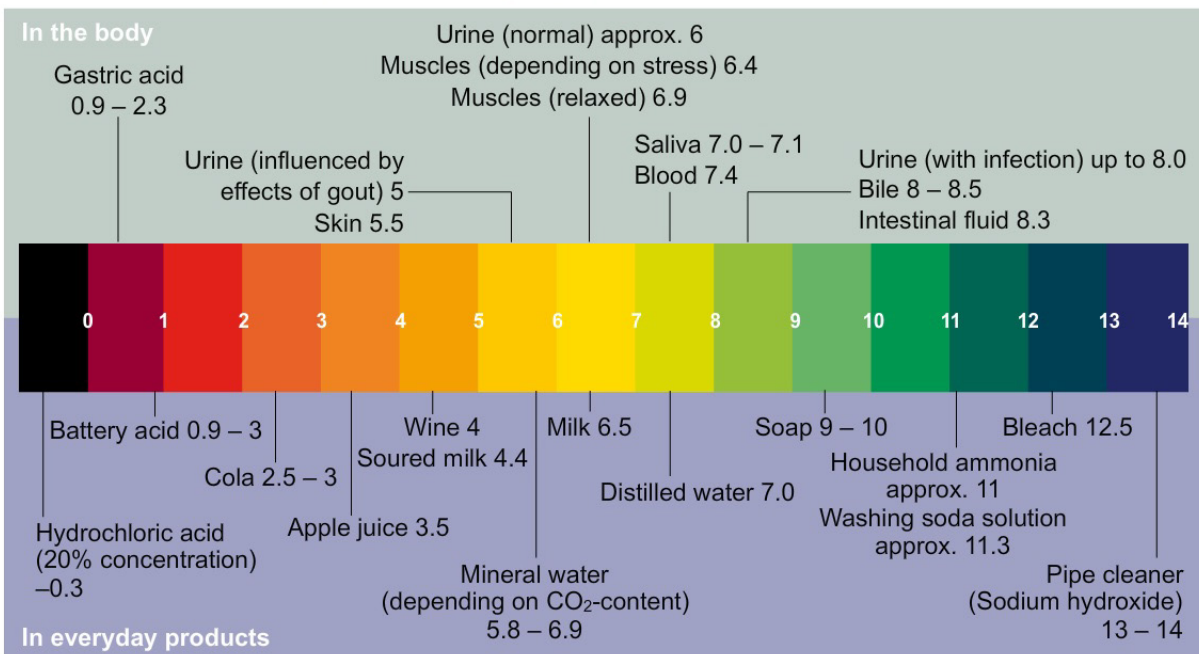
Knowledge of the different pH values of the body generally supports the health of humans.

This knowledge is particularly important for:

Medical professions, Cosmetology, Catering



pH-values in the body and in everyday products



All

Individual

☒ Labeling