

### 3.3 Neutralisation of acids and bases/alkalis



How would you change a strong acidic or basic solution so that it can no longer cause damage?



Our body has to balance different acidic and basic substances every day. Acidic foods and beverages, muscle soreness (lactic acid), soap (basic) on the skin, soap in the eyes.

With the following experiments we will demonstrate how our body manages to “neutralise” these attacks of acids and bases.



#### Set up:

- cups 200 ml
- laminated template
- straws
- teaspoon
- red cabbage indicator
- washing soda
- vinegar
- 3 pipettes 3 ml
- tap water



- Ask the teacher for 50 ml of red cabbage indicator in a 200 ml cup
  - Pour 10 ml of indicator each into three cups and mark the cups 1, 2 and 3. Put the cups on the white side of the laminated template.
1. Add crystals of washing soda one by one to cup 3 until you see the colour change. Stir the solution after adding each crystal.
  2. Add one drop of vinegar to cup 1.
  3. Note the colour of the indicator for acidic (1), neutral (2) and basic/alkaline (3)
  4. Blow through a straw into solution 3 until you see the colour change. Explain what happens.



#### Observing and documenting:

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In stressful situations, some people tend to hyperventilate. They breathe out too much carbon dioxide and can become unconscious. How can you explain this? How can you help in such situations?



Test other dyes of blue-red fruits, flowers, etc. to see whether they change colour when acids or bases are added.



Technical application and vocational orientation:

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### Space for your sketches