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Eine Initiative von Henkel

How much sugar is in your drink?

Henkel

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A mission for the research diver

The research question

Sweet drinks are popular, even if they contain a lot of sugar and are not healthy in large quantities. We can taste the sugar very well, but how much exactly does a drink contain?

How can you measure how much sugar is dissolved in a sweet drink?

What you need for your experiment

- Slim, tall glasses of water
- Sugar cubes
- A thick straw
- Waterproof modelling clay
- Ruler
- Waterproof felt-tip pen
- Non-carbonated drinks

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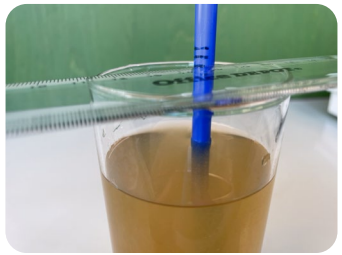
Let’s get started!

Step by step



Research diver

1. Mould a ball of waterproof modelling clay.
2. Insert a straw into the dough ball so that no water gets into the straw.

Prepare water glasses

1. Fill each glass with 200 mL of water.
2. Test the diver: he should swim upright without touching the wall or the floor. Remove some of the modelling clay if necessary.

Prepare sugar solutions

1. Prepare three sugar solutions with five, seven and ten sugar cubes in 200 mL of water each. When all the sugar has dissolved, check the fill level. It is important for the experiment that the water is at the same level in all glasses. You may have to skim off some of the water from some of the glasses.

Mark the immersion depth

1. Dip the diver into the first sugar solution.
2. Place the ruler on the glass and mark the point where the ruler touches the straw with a felt-tip pen.
3. Repeat this with the other two solutions.

Test your drink

1. Now dip the dipper into the drinks you want to test. It is important that the drinks do not contain any carbon dioxide. Up to which mark does it dip? The comparison shows you approximately how many sugar cubes are contained.

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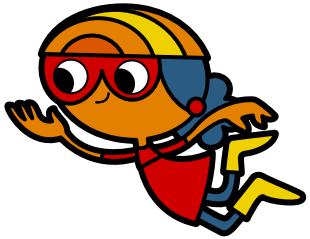
Further information

For parents and teachers



Context

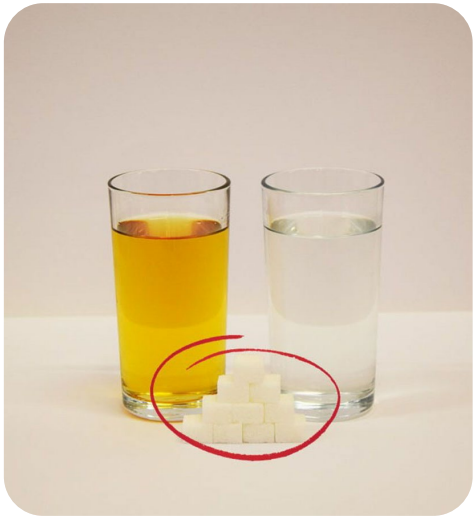
This experiment can be supplemented by a solubility experiment with water and sugar. You can gradually add as many sugar cubes to water until a saturated solution is obtained. It is amazing how much sugar can be dissolved in water.

Utilisation of the density to determine the sugar content

Depending on the sugar content of the liquid, the research diver dives to different depths into a glass. The diver dives deepest into pure water.

Background:

Adding sugar to water increases its density. The higher the density, the greater the buoyancy. The same phenomenon can also be observed with salty liquids.



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