

IX. A chemical reaction

Key Question: Does the temperature change during a chemical reaction?



Student name:

Class:



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Activity 1 – Chemical reaction between vinegar and baking soda

Have you ever mixed vinegar with baking soda?

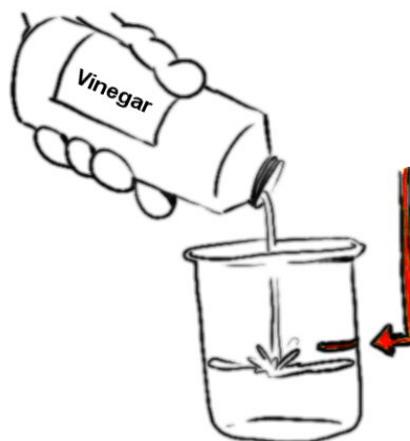
It's fun to watch, but did you know that the reaction between the two is actually a chemical reaction? During this reaction the gas carbon dioxide CO_2 is produced.

This is a gas, which is also inside a soda drink. During this reaction also a change of temperature takes place.

In this experiment you are going to check how the temperature changes. Does it go up or go down?

Remember to wear the goggles!

- Fill the beaker to about 1/3 with vinegar and place it in a large plastic container. The container is used for protection as during the reaction vinegar can flow out of the beaker!
- Place the temperature sensor in the beaker.
- Prepare a spoonful of baking soda.
- Start the measurement. Wait 5 seconds and add the baking soda. Stir the mixture.
- Observe what happens in the beaker.
- Write in the table below the begin temperature of vinegar and end temperature of the mixture of vinegar with baking soda.
- Calculate the temperature difference and write the calculated value in the table.



BEGIN TEMPERATURE (°C)	END TEMPERATURE (°C)	DIFFERENCE IN TEMPERATURE (°C)

1. Describe what happened in the beaker after you added the baking soda into vinegar.

2. What happened to the temperature of the vinegar after you added the baking soda?

3. What do you think will happen if you add more baking soda?

