

## It's a green world! (Part 4)

### On the trail of Joseph Priestley

(Germany)

#### You will need

- ✓ one or two large pots (at least 5 litres) with glass lid,
- ✓ two tea lights,
- ✓ 1 stick lighter,
- ✓ stop watch/mobile phone,
- ✓ 1 geranium or another green pot plant.

#### Follow these steps:

1. First a tea light is placed in a pot. This is closed with the glass lid and placed in the sun for two hours.
2. Then the tea light is lit, the lid closed and the time stopped until the flame goes out.
3. The experiment is repeated with the pot plant or carried out in parallel.

#### So what happened?

The bigger the pot, the longer the tea-light will burn in the pot with the plants, than in the pot without. Since the plant also takes up a certain volume in the pot, this should be determined (e.g. by measuring the litres).

The easiest way to calculate the oxygen production is based on the fact that within the European Union the tea lights are standardized in relation to the oxygen consumption, i.e. a normal tea light consumes 1.4 ml of oxygen per second.

#### Summary of the four photosynthesis experiments

At the end of the experimental series it is worth spending time going through the results and conclusions of the investigations again.

**Experiment 1** (leaves and lime-water in a bottle) shows that plants need carbon dioxide, which they absorb from the air.

**Experiment 2** (floating ivy discs) shows that plants produce a gas under the influence of light and in the presence of chlorophyll.

**Experiment 3** (testing leaves for starch) shows that the leaves contain starch and glucose.

**Experiment 4** (tea-light in a pot) shows that the gas is oxygen.

