

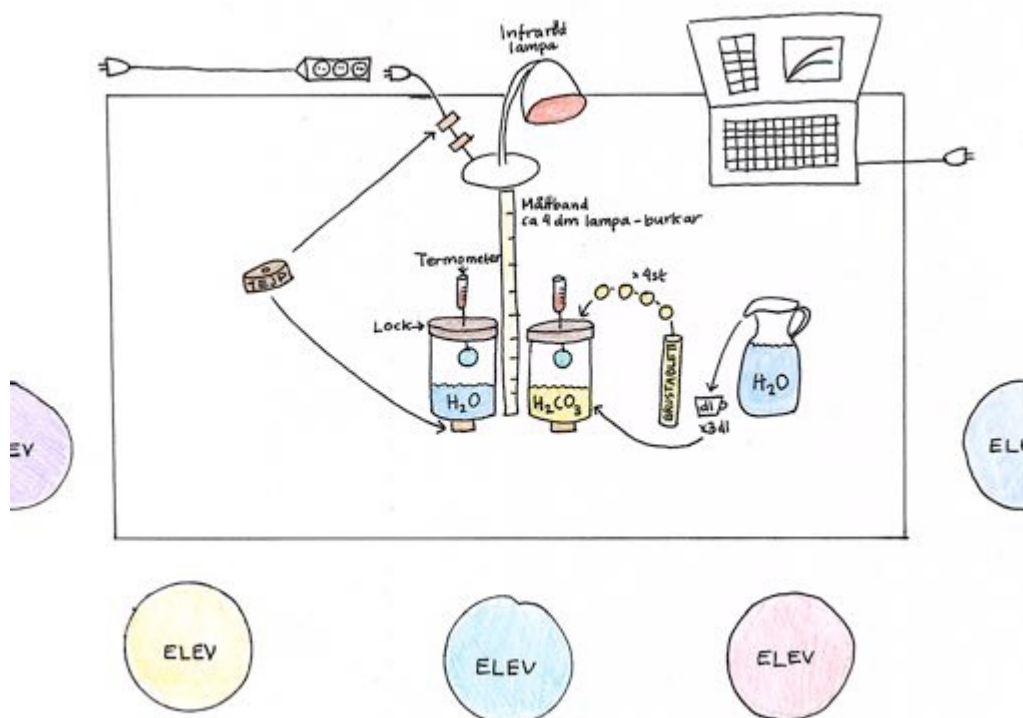
## Impact of carbon dioxide on the climate

### Objectives

To understand climate change and conduct a scientific study. STEAM subject/subjects that it focuses on: biology, physics, mathematics, science. High School.

### Materials

- 2 glass jars with caps
- 1 infrared lamp
- 2 globes
- 2 thermometers
- 4 effervescent tablets (eg C-vitamin)
- Room temperature water (approx. 6 dl per test round)
- Measuring cup
- Ruler
- Tape
- Timer
- Table for measured values (eg in Excell)



### *Before the experiment*

1. What impact does carbon dioxide have on the climate? Discuss this before the experiment begins.
2. The teacher puts an effervescent tablet in a glass of water: reflect about the effect of the tablets. What are the bubbles?
3. Formulate a hypothesis

### *Procedure*

1. Measure the same distance between the glass jars and the lamp (approx. 4 - 5 dm) and the distance between the jars (approx. 1 - 5 cm).
2. If necessary, fix the objects and the lamp. Can be done with tape.
3. It is important that the cans are exposed to exactly the same amount of light.
4. Fill the jars with the same amount of water in the two jars (approx. 2 - 3 dl).
5. Put 4 effervescent tablets in one jar. Let these dissolve. Air is lighter than carbon dioxide, but the cap should be put on anyway so that as much carbon dioxide as possible stays in the jar. Remember that the hole in the cap is not blocked while the tablets dissolve, so the air can escape.
6. Insert the thermometers into the holes on the caps, their ends in each globe and place the caps on the jars.
7. Wait until the temperatures in the jars have stabilized, it may take a few minutes.
8. Now the experiment can begin:
9. Note the starting temperatures
10. Turn on the "sun", i.e. turn on the light
11. Read the temperature every 30 seconds for 10 minutes
12. Someone keeps track of the timer
13. Someone reads the thermometers every 30 seconds
14. Someone enters the result in the tables on the computer to get the curves in the diagram (3.2), (4.2) log of data.xlsx

### *Presentation*

The results should be reported in the form of a laboratory report. Attach diagram.