# Biogas plant instructions (pupil)

## Safety note

A biogas plant is a factory where waste organic matter (feedstock) is broken down by bacteria to generate biogas, which can be used as a fuel source. Follow the instructions to build your own biogas plant, and test how food waste can be used to generate fuel.

## Equipment

* 1 jug
* Measuring jug or measuring cups
* 240ml of feedstock paste (ask your teacher for help)
* 1 clean plastic bottle (500ml)
* 1 balloon
* Duct tape
* 1 marker pen

## Method

1. Using the measuring jug, measure 240ml of feedstock paste into your plastic bottle.
2. With one person holding the bottle upright to prevent spills, stretch the balloon over the neck of the plastic bottle, until the balloon is attached to the top of the bottle.
3. Keep the bottle upright so that feedstock does not pour into the balloon. Use duct tape to create a seal between the balloon and the bottle neck, so that air cannot escape.
4. Use the marker to write ‘control’ on the bottle along with the name of at least one person in your group. This is your control biogas plant.
5. Keep the biogas plant in a lit area, away from direct sunlight at room temperature, and allow the bacteria in your feedstock to ‘work’ for a week.
6. Come back at the same time every day for the next week to measure the circumference of the balloon. Record this in your biogas production table.

Record a flat balloon as 0cm.

## What is happening?

The feedstock (for example, onions), contains bacteria called gasifying bacteria. These bacteria ‘breathe’ by converting the feedstock into methane gas and water. The methane that they produce is then collected in the balloon.

