



Writing an experimental procedure

Describe an experiment precisely enough for someone else to repeat it.



1 Definition



An experimental procedure describes precisely the steps to follow to carry out an experiment. It is written before the practical, and someone else must be able to follow it.

2 Writing it in 3 parts

1 Equipment and chemicals

List the glassware, the equipment, the chemicals and the safety gear needed.



2 Steps of the method

A list, in chronological order. Start each step with an imperative verb: pour, measure, place, stir, wait...



3 Expected result

What you should observe, and what you will conclude from it:
If ... [observation], then ... [conclusion].



Safety: think about the risks before you start — lab coat, safety goggles, gloves if needed, and careful handling of the chemicals and the glassware.

3 Example 1 — The freshness of an egg

Equipment and chemicals

500 mL beaker, water, egg, spoon.

Steps of the method

1. Pour about 250 mL of water into the beaker.
2. Gently lower the egg into the water with the spoon.
3. Observe whether the egg stays at the bottom or floats.

Expected result

If the egg floats, then it is probably old.

Limit This test gives a clue, not a proof: it is not enough to decide whether the egg is safe to eat.

4 Example 2 — Identifying iron(III) ions

Equipment and chemicals

Test tube, test-tube rack, Pasteur pipette, the solution to be tested, sodium hydroxide solution, lab coat and goggles.

Steps of the method

1. Put on the lab coat and the goggles.
2. Pour a few millilitres of the solution to be tested into the tube.
3. Add a few drops of sodium hydroxide solution.
4. Observe the appearance of the mixture.

Expected result

If a rust-coloured precipitate forms, then the solution contains iron(III) ions.



Common mistakes

- ✗ Writing "do the experiment" without saying what to do.
- ✗ Mixing observations and conclusions in the steps.
- ✗ Forgetting the quantities or the equipment needed.
- ✗ Forgetting the safety equipment.



Check before handing it in

- ✓ My equipment list is complete
- ✓ Each step begins with an imperative verb
- ✓ The steps are in chronological order
- ✓ I have stated the safety needed
- ✓ The expected result is written as "If ... then ..."
- ✓ Observation and conclusion are not mixed

