

Evaluating an Experiment

Chemistry

How to write an evaluation that earns marks.

A structured evaluation.

1

Calculate percentage uncertainties

For every measurement. The largest is where to focus.

2

Identify systematic errors

Heat loss, incomplete reaction, impure reagents.

3

Distinguish from random errors

Repeats reduce random scatter and not systematic bias.

4

Propose specific improvements

Not 'be more careful' — name the apparatus or method change.

5

Compare with the literature value

And explain the direction of the difference.

SPECIFIC IMPROVEMENTS

Use a burette rather than a measuring cylinder

Insulate the calorimeter and use a lid

Extrapolate a cooling curve

Repeat and take concordant results

'Human error' earns nothing. Name the measurement, quantify its uncertainty, and say what would reduce it.