UV-Visible Spectroscopy

Chemistry

Measuring concentration by absorbance, and the law behind it.

Beer-Lambert law: absorbance equals molar absorptivity times path length times concentration.

$$A = \varepsilon c l$$

Double the concentration Within the linear range.	**Double the absorbance**
Calibration curve Read the unknown off it.	**Plot A against known c**
Above ~1.0 absorbance Dilute the sample.	**Linearity breaks down**

THE COMMON MISTAKE

× **Extrapolating beyond the calibration range**

✓ **Diluting into range**

The relationship is only linear at low absorbance; beyond that, stray light and interactions distort it.

Always zero the instrument with a blank containing everything except the analyte.