

CAREERS THROUGH MATHS: LABORATORY TECHNICIAN



Laboratory Technicians use mathematics to solve complex problems and drive innovation. (Image Source: Unsplash)

JOB OVERVIEW

A Laboratory Technician is a highly skilled professional responsible for conducting scientific tests and analyses to support research, development, and quality control across a diverse range of UK industries. Their daily work is methodical and precise, involving the preparation of chemical solutions, operation of sophisticated analytical instrumentation, culturing of microbiological samples, and meticulous recording of data. They work in environments including NHS pathology labs, pharmaceutical research and development (R&D) centres like those at AstraZeneca or GSK, environmental monitoring agencies such as the Environment Agency, and quality assurance labs for food and drink manufacturers.

KEY MATHS APPLICATIONS

Primary Areas:

- **Concentrations and Dilutions:** This is the most frequent mathematical task. Technicians constantly work with molarity, percentage concentrations (w/v, v/v), and parts per million (ppm).
- **Statistics and Data Analysis:** Statistical methods are used to validate methods, interpret results, and ensure quality control. A technician routinely calculates mean, median, mode, standard...
- **Algebra and Formulae:** Algebraic manipulation is essential for deriving results from raw instrument data. For example, in HPLC analysis, the peak area of an unknown sample is...

ESSENTIAL SKILLS & TOOLS

SKILL	APPLICATION
Spectrophotometers (UV-Vis, IR)	Used to quantify analyte concentration by measuring light absorption.
Excel with Data Analysis Toolpak	The ubiquitous tool for organising, calculating, and presenting data.
Python with NumPy/ SciPy libraries	Increasingly used for automating data processing, complex mathematical modelling, and...
Technical Report Writing	The ability to succinctly present complex mathematical data and statistical conclusions...

TYPICAL PATHWAY

The most common entry route is via an apprenticeship, such as a Laboratory Technician Level 3 or Science Manufacturing Technician Level 5 apprenticeship, which combines paid work with study. Alternatively, one can pursue academic qualifications: strong GCSEs (especially in...

INDUSTRY DEMAND

Demand for Laboratory Technicians in the UK remains strong. The UK government's focus on life sciences and its £94 billion life sciences sector creates ongoing opportunities in pharmaceuticals and biotechnology.

REAL-WORLD IMPACT

Laboratory Technicians were on the frontline of the UK's response to the COVID-19 pandemic, processing millions of PCR tests whose results relied on precise logarithmic calculations to determine viral load.

QUICK FACTS

- **Salary:** £94
- **Education:** apprenticeship, such as a Laboratory Technician Level 3 or Science Manufacturing Technician Level 5 appr
- **Growth:** Demand for Laboratory Technicians in the UK remains strong.