

CAREERS THROUGH MATHS: DATA ANALYST



JOB OVERVIEW

A Data Analyst in the UK transforms raw, unstructured data into actionable intelligence that drives strategic business decisions. On a typical day, you might be cleaning a dataset of 2 million customer transactions for a FTSE 100 retailer like Tesco, identifying a 15% drop in sales for a specific product line, or building a predictive model to forecast energy demand for National Grid. The work is a blend of rigorous mathematical interrogation, programming, and business communication. You will spend substantial time writing SQL queries to extract data from relational databases, using Python or R to perform statistical analysis, and then translating your findings into a clear, visual narrative for non-technical stakeholders, such as marketing directors or operations managers.

KEY MATHS APPLICATIONS

Primary Areas:

- Statistical Inference and Hypothesis Testing:** ** This is the bedrock of making decisions from data. A Data Analyst at a pharmaceutical company like AstraZeneca might use a two-sample t-test to determine if...
- Regression Analysis and Predictive Modelling:** ** Predictive analytics is a high-demand skill. Using linear and logistic regression, you can forecast future trends.
- Time Series Analysis and Forecasting:** ** Many UK businesses need to predict future values based on historical trends. This involves techniques like moving averages, exponential smoothing, and ARIMA...

ESSENTIAL SKILLS & TOOLS

SKILL	APPLICATION
SQL (Structured Query Language)	The fundamental language for extracting data from relational databases like PostgreSQL or...
Python (with Pandas, NumPy, SciPy)	The primary programming language for data analysis. Pandas is used for data cleaning and...
R (with tidyverse, ggplot2)	A statistical programming language heavily used in academic research, healthcare, and...
Power BI / Tableau	These are the leading data visualisation and business intelligence (BI) tools in the UK.

TYPICAL PATHWAY

The standard route begins with strong GCSEs in Mathematics (grade 6 or above) and English, followed by A-levels in Mathematics and, ideally, Further Mathematics, Statistics, or Computer Science. A bachelor's degree in a quantitative subject like Mathematics, Statistics,...

INDUSTRY DEMAND

The demand for Data Analysts in the UK is exceptionally high and growing. According to the Office for National Statistics (ONS) and tech industry body Tech Nation, there is a significant skills shortage, with thousands of data roles...

REAL-WORLD IMPACT

Data Analysts are integral to the UK's economy and public services. Their work helps the NHS predict patient demand and allocate resources more efficiently, enabling better patient care.

QUICK FACTS

- Salary:** £1,000,000 pa
- Education:** GCSEs in Mathematics (grade 6 or above) and English, followed by A-levels in Mathematics and, i
- Growth:** ** The demand for Data Analysts in the UK is exceptionally high and growing.