

CAREERS THROUGH MATHS: CYBERSECURITY ANALYST



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

JOB OVERVIEW

As a Cybersecurity Analyst, you are the digital guardian of an organisation’s most valuable assets—its data, systems, and networks. Your primary mission is to protect these assets from an ever-evolving landscape of cyber threats, ranging from phishing scams targeting employees to sophisticated ransomware attacks on national infrastructure. On a typical day, you might monitor network traffic for anomalies, investigate a security breach, or develop new protocols to fortify defences. The work is dynamic and reactive, but it is underpinned by a deeply analytical and proactive mindset, where you are constantly asking "what if?" and "how could this fail?".

KEY MATHS APPLICATIONS

Primary Areas:

- **Cryptography and Number Theory:** ** Cryptography is the art of secure communication, and it is fundamentally built on number theory. As an analyst, you will need to understand how encryption...

ESSENTIAL SKILLS & TOOLS

SKILL	APPLICATION
Network Analysis Tools (e.g., Wireshark)	Wireshark is the industry-standard tool for capturing and analysing network traffic.
Vulnerability Scanners (e.g., Nessus, Qualys)	These tools are used to scan systems for known vulnerabilities. They assign a numerical...
SIEM Platforms (e.g., Splunk, Microsoft Sentinel)	Security Information and Event Management (SIEM) tools aggregate data from across an...

TYPICAL PATHWAY

The journey typically begins with strong GCSEs, particularly in Mathematics (grade 6 or above) and English, followed by A-levels in Mathematics and subjects like Computer Science, Physics, or Further Mathematics.

INDUSTRY DEMAND

The demand for Cybersecurity Analysts in the UK is exceptionally high and is projected to continue growing. According to the UK government’s 2023 Cyber Security Skills in the UK Labour Market report, there are approximately 56,000 job...

REAL-WORLD IMPACT

As a Cybersecurity Analyst, your work directly protects the UK’s critical national infrastructure, including the energy grid, transport networks, and the NHS. By defending these systems against attackers, you help ensure that...

QUICK FACTS

- **Education:** GCSEs, particularly in Mathematics (grade 6 or above) and English, followed by A-levels in Math
- **Growth:** ** The demand for Cybersecurity Analysts in the UK is exceptionally high and is projected to continue growing.