Career Pathways in Cybersecurity

Explore the exciting and growing field of cybersecurity. This guide introduces students to various career pathways, the skills required, and the certifications that can support their journey.

Key Career Roles

- **Security Analyst:** Monitors networks for threats and investigates incidents.
- **Network Administrator:** Manages and secures computer networks.
- **Penetration Tester (Ethical Hacker):** Tests systems for vulnerabilities before bad actors can exploit them.
- **Cybersecurity Consultant:** Advises organizations on how to protect their systems and data.
- **Security Operations Center (SOC) Analyst:** Responds to threats and manages incident alerts.

Skills for Success

- Critical Thinking & Problem Solving
- Knowledge of Operating Systems and Networking
- Familiarity with Security Tools (e.g., firewalls, antivirus, SIEM)
- Ethical Responsibility and Communication Skills

Certifications to Explore

- CompTIA A+
- CompTIA Network+
- CompTIA Security+
- Cisco Certified Support Technician (CCST) Cybersecurity
- Cisco Networking Academy: Junior Cybersecurity Analyst Pathway
- PCEP™ – Certified Entry-Level Python Programmer certification

How Parents Can Support

- Encourage curiosity in technology and problem solving.
- Enroll students in camps, competitions (e.g., CyberPatriot), or online learning platforms (e.g., TryHackMe, Code.org).
- Talk about online safety and cybersecurity careers at home.
- Support certification preparation by setting study goals and celebrating milestones.

STEM Careers Snapshot

Quick facts and engaging overviews of popular STEM careers to inspire students and connect classroom learning to real-world opportunities.

Cybersecurity Analyst
Protects computer systems from cyberattacks. Uses critical thinking and problem-solving to prevent and respond to threats.

Software Developer
Designs and builds computer applications. Combines creativity, technical skills, and teamwork to create useful software.

Environmental Engineer
Creates solutions to environmental problems, improving recycling, waste disposal, and water and air pollution control.

Data Scientist
Analyzes large data sets to help businesses and organizations make informed decisions using statistics and machine learning.

Robotics Engineer
Designs, builds, and tests robots. Works in fields like manufacturing, healthcare, and technology.

Aerospace Engineer
Designs and tests aircraft, spacecraft, and missiles. Uses math, physics, and engineering principles.

Biomedical Engineer
Develops medical devices and technology to improve healthcare, such as prosthetics and diagnostic machines.

Civil Engineer
Plans and designs infrastructure like roads, bridges, and buildings to keep communities connected and safe.

Game Developer
Creates video games from initial concept to final production, focusing on gameplay, graphics, and coding.

Classroom & Career Connections

These resources help students understand how their classroom learning connects to real-world careers in cybersecurity and technology.

"Day in the Life" Profiles

Introducing students to real cybersecurity professionals through short, engaging career profiles. These highlight daily responsibilities, skills used, and educational paths.

Examples:

- **Penetration Tester:** Simulates cyberattacks to find system vulnerabilities.
- **SOC Analyst:** Monitors systems and responds to security alerts in real-time.
- **Cybersecurity Educator:** Teaches others about online safety and technical skills.
- **Risk Analyst:** Identifies risks and helps protect company assets.

Cyber Career Spotlight Videos

Use these curated video links to help students visualize what it's like to work in different cybersecurity roles:

- A Day in the Life of a Cybersecurity Professional: Cybersecurity Professional Video
- A Future-Proof Career: Future Proof Career Video
- Life as a Cybersecurity Analyst (YouTube): Cybersecurity Analyst Career Video

Reflection Journal Pages

Encourage students to reflect on their learning and make connections to cybersecurity careers.

Prompts:

1. What new cybersecurity skill did I practice today?
2. Which career path aligns with this skill?
3. How could I apply what I learned in a real-world situation?
4. What do I want to explore next in tech or cybersecurity?

Cyber Career Match Activity

Interactive worksheet to help students match their skills and interests with potential careers in cybersecurity.

Instructions
Review each skill or interest listed below. Check the boxes that best describe you, then review the matched careers to discover exciting cybersecurity roles that align with your strengths.

Select	Skill or Interest	Possible Cyber Careers
	I like solving puzzles and problems.	Security Analyst, Penetration Tester
	I enjoy helping others learn and understand things.	Cybersecurity Educator, Training Specialist
	I'm good at spotting small details.	Digital Forensics Investigator, Threat Analyst
	I enjoy working in teams.	Incident Response Specialist, Cybersecurity Consultant
	I like working with computers and technology.	Network Security Engineer, Systems Administrator
	I enjoy writing and communicating clearly.	Technical Writer, Cybersecurity Communications Specialist
	I prefer working independently on tasks.	Security Researcher, Ethical Hacker
	I'm interested in programming and software development.	Secure Software Developer, Application Security Engineer

Reflection

Which careers sound most interesting to you? Why?

What skills or areas would you like to learn more about to prepare for these careers?