



Educator Toolkit

CYBER SKILLS CURRICULUM STANDARDS GUIDE

Introduction

In today's digital age, cybersecurity is becoming increasingly important, not just for schools, businesses and governments but for individuals as well. With cyber threats becoming more sophisticated, there's an urgent need to educate our young learners about the significance of cyber safety and how to navigate the digital world securely.

Minecraft Education recognizes this need and has incorporated a robust curriculum of cyber education within its K-12 Computer Science Progression. This ensures that as students journey through the world of computer science, they are also equipped with the knowledge and skills to protect themselves and their digital assets in the cyber realm.

The Cyber Skills Curriculum not only introduces students digital citizenship and cyber ethics through critical thinking learning experiences but also to crucial topics in cybersecurity such as digital footprints, phishing, password protection, and understanding encryption, malware and ransomware. These topics are seamlessly integrated into the Minecraft environment, making it a fun and immersive experience for students.

By integrating cyber education within the computer science curriculum, we hope to prepare students for a future where digital literacy goes hand in hand with cyber awareness. After all, understanding computer science is incomplete without acknowledging the importance of cybersecurity in our interconnected digital world.

Educators, this is your opportunity to mold digitally responsible citizens. The challenges and opportunities of the cyber world await your students, and with the K-12 Cyber Education in Minecraft Education, you'll have the tools to guide them through it. Dive in, explore, and let's create a safer digital future together!

Getting Started

Students

There are no required prerequisites around computer science, coding, or tech skills for students. Students should have had some instruction and/or guidance around device usage and navigation (i.e., appropriate use of hardware, device login procedure/information, digital safety, etc.). There is a recommended grade level/age range for students as it relates to the developmentally-appropriateness and reading comprehension levels of the computer science units. Please refer to the Computer Science Progression on page 4.

Teachers

Teachers do not need to have any prior cyber or computer science experience; however, they should familiarize themselves with a basic understanding of Minecraft Education. Support for building out teacher knowledge can be found here:

[Teach cybersecurity concepts with Minecraft Education - Training | Microsoft Learn](#)
[Minecraft Education Cyber Teacher Academy](#)

K-12 CYBER SKILLS CURRICULUM

The Minecraft Cyber Skills collection is specially designed cyber content to address relevant academic standards in a logical, sequential progression. Students will learn, practice, and apply relevant cyber skills and concepts in both unplugged and digital experiences. The lessons are designed to follow the gradual release methodology (refer to the Lesson Design section of this guide found below). Students should have multiple opportunities to practice and demonstrate mastery in any given skill/concept.

K-12 CYBER STANDARDS

This next section will provide you with an overview of the full Cyber Skills curriculum and its corresponding academic standards. The curriculum sequence is presented in chronological order—we suggest working in order within the grade level bands, as the content will build upon skills presented in the previous unit. However, educators should feel empowered to modify and adapt the content and/or sequence to best meet the needs of their students.

Grade Level	Curriculum Unit Name	Number of Lessons	Hours	Standards Addressed
K-5	CyberSafe: Home Sweet	1 lesson	1.5 hours	CSTA 1A-IC-18 1B-NI-05 1A-IC-17 2-NI-05
K-5	CyberSafe: Privacy Prodigy	1 lesson	1.5 hours	CSTA 1A-IC-18 1B-NI-05 1A-IC-17 2-NI-05
K-5	CyberSafe: Cloudcraft	1 lesson	1.5 hours	CSTA 3A-IC-27 1B-NI-05 2-NI-05 3A-NI-05 3A-NI-06
6-8	Cyber Fundamentals (Part 1): Network Heroes	3 lessons	2 hours	CSTA Middle Grades 2-NI-04 2-NI-06 ISTE 1.2.b 1.2.d

				CYBER.ORG 6-8.CS.COMP 6-8.CS.COMM.1 6-8.SEC.CRYP 6-8.SEC.COMP 6-8.SEC.CIA
6-8	Cyber Fundamentals (Part 2): The Interceptors	2 lessons	1.5 hours	CSTA Middle Grades (Level 2) 2-NI-05 ISTE 1.2.b 1.2.d CYBER.ORG 6-8.SEC.INFO 6-8.SEC.AUTH 6-8.SEC.NET
6-8	Cyber Fundamentals (Part 3): Cloud Champions	2 lessons	1.5 hours	CSTA Standards Middle Grades (Level 2) 2-NI-05 2-IC-23 ISTE 1.2.b 1.2.d CYBER.ORG 6-8.DC.ETH 6-8.SEC.NET 6-8.DC.FOOT.1 6-8.DC.FOOT.2 6-8.CS.IOT 6-8.CS.LOSS

9-12	Cyber Expert (Part 1): Cryptic Ciphers	3 lessons	1.5 hours	CSTA High School 3A-NI-05 3B-NI-04 CYBER.ORG 9-12.SEC.CRYP 9-12.SEC.PHYS
9-12	Cyber Expert (Part 2): Daring Defense	3 lessons	1.5 hours	CSTA High School 3A-NI-06 3B-NI-08 CYBER.ORG 9-12.CS.HARD 9-12.SEC.COMP 9-12.SEC.CTRL 9-12.SEC.ACC
9-12	Cyber Expert (Part 3): Malware Mayhem	3 lessons	1.5 hours	CSTA High School 3A-NI-06 3B-NI-08 CYBER.ORG 9-12.CS.HARD 9-12.SEC.COMP 9-12.SEC.CTRL 9-12.SEC.ACC

10 - 12	Cyber Defense	4 lessons	1-2 hours	<p>Exam SC-900: Microsoft Security, Compliance, and Identity Fundamentals</p> <p>CSTA 3A-NI-06 3A-NI-08</p> <p>ISTE 1.2.b 1.2.d</p> <p>Cyber.org 9-12.SEC.INFO 9-12.SEC.COMP 9-12.SEC.NET 9-12.SEC.CTRL</p>
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Cyber and Computer Science Concepts

This next section will provide you with an overview of the full computer science curriculum and the CS concepts covered within the unit.

Grade Level	Curriculum Unit Name	Number of Lessons	Hours	CS Concepts Addressed
K-5	CyberSafe: Home Sweet	1 lesson	1.5 hours	Physical and digital security measures Logging on privately Logging off appropriately Data privacy Passwords Phishing Credible Website Online Scams Digital citizenship Applying safe online practices Safe online communication Reporting concerns
K-5	CyberSafe: Privacy Prodigy	1 lesson	1.5 hours	Physical and digital security measures Data privacy Digital Footprint Digital citizenship Applying safe online practices Safe online communication Reporting concerns
K-5	CyberSafe: Cloudcraft	1 lesson	1.5 hours	Collaboration tools Personal data Physical and digital security measures Malware Sustainable information systems Social Media and Safety Sharing data online Understanding the internet

				New ways to protect online privacy and identity Reporting safety concerns
6-8	Cyber Fundamentals (Part 1): Network Heroes	3 lessons	2 hours	CIA Triad Network Defense Strategies Network Components and Topology Local-area network (LAN) Wide-area network (WAN) Data Packets Encryption Secure Data Transmissions Confidentiality Password protection Layered security practices Malware Collaboration Cyber Ethics Persona data protection Digital Footprint
6-8	Cyber Fundamentals (Part 2): The Interceptors	2 lessons	1.5 hours	Physical and digital security measures Cyber Ethics Digital Citizenship Digital Footprint Personal Data Protection Analyze threats and vulnerabilities Authentication methods Authorization methods Malware Network security layers Multi-factor authentication Strong passwords Phishing DOS/DDOS

6-8	Cyber Fundamentals (Part 3): Cloud Champions	2 lessons	1.5 hours	Physical and digital security measures Digital Citizenship Ethical and malicious hacking Digital Footprint Personal Data Protection Analyze threats and vulnerabilities Internet of Things Data Backups and Data Loss
9-12	Cyber Expert (Part 1): Cryptic Ciphers	3 lessons	1.5 hours	Encryption and Decryption Caesar Ciphers and Vigenère Ciphers Message integrity Social engineering
9-12	Cyber Expert (Part 2): Daring Defense	3 lessons	1.5 hours	Firewalls DoS DDoS Attacks Access Control Systems Firewalls Allow/Deny Rules Access control systems
9-12	Cyber Expert (Part 3): Malware Mayhem	3 lessons	1.5 hours	Malware, Virus, Trojan, Worm Cyber defense strategies Malware attacks DOS/DDOS attacks Backup software
10 - 12	Cyber Defender	4 lessons	1-2 hours	Defense-in-depth Network Security Physical Access Controls Malware attacks Phishing attacks Denial-of-service (DoS) and Distributed denial of service (DDoS) attacks Cyber ethics Data Privacy