

Educator Guide

Cyber FUNdamentals - Unit 2

Single Student

THE INTERCEPTORS

EDUCATION.MINECRAFT.NET

THEME OVERVIEW

Cyber FUNdamentals is part of the K-12 cybersecurity progression in Minecraft Education. These lessons are designed for Lower Secondary | Grades 6-8 | Ages 11-14. Cyber FUNdamentals consists of three units, which each contain multiple lessons covering various cybersecurity concepts.

This unit is The Interceptors. This unit contains 2 lessons:

- Authentication
- Incident Response Team

UNIT OBJECTIVES

By the end of this unit, students will be able to:

- Define the concept of authentication.
- Explain why authentication is important in cybersecurity.
- Describe how multi-level authentication works.
- Provide real examples of multi-level authentication.
- Articulate the concept of authentication.
- Explain why authentication is important in cybersecurity.
- Explain how multi-level authentication works.
- Present real examples of multi-level authentication.

Educational Standards - Computer Science

CSTA Standards

Middle Grades (Level 2)
2-NI-05 Explain how physical and digital security measures protect electronic information.

ISTE Standards

1.2.b Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
1.2.d Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

CYBER.ORG Standards

6-8.SEC.INFO Analyze threats and vulnerabilities to information security for individuals and organizations.
6-8.SEC.AUTH Explain how authentication and authorization methods can protect authorized users.
6-8.SEC.NET Explain how malicious actions threaten network security.

Computing Programmes of Study - Key Stage 3

Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.

Australian F-10 Curriculum: Digital Technologies - Year 7 & 8

Explain how multi-factor authentication protects an account when the password is compromised and identify phishing and other cyber security threats (AC9TDI8P13)

WAYS TO USE THIS LEARNING CONTENT

How can this lesson be used?

Integrated into classrooms	Cyber FUNdamentals is connected to numerous computer science, technology, and cybersecurity standards. You could easily look at your academic standards and use this learning content when you are teaching specific concepts related to digital citizenship, networks, or online safety. This learning content is a great way to introduce and support cybersecurity concepts.
STEAM Labs or Digital Makerspaces	Who wouldn't love to use Minecraft in a fully integrated learning environment where everything from the furniture and technology to curriculum and assessment work together to support hands-on, minds-on learning?! Cyber FUNdamentals content could be used in any of the learning spaces to create safe and responsible digital citizens.
Afterschool learning opportunities	After a full instructional day, students need something fun and engaging to provide motivation for learning. What could possibly be more fun and engaging than Minecraft Education?! Not only will students love playing Minecraft, but they will also learn educational concepts and develop their skills in creativity, communication, collaboration, and critical thinking.
Summer camps	Are you planning or hosting a summer camp? Who wouldn't love to explore and learn in Minecraft?! Whether Minecraft is the entire theme of the camp or even simply a portion of the camp, there are numerous opportunities for Minecraft Education to be a part a fun-filled summer experience!
Homeschool groups and other youth organizations	You don't have to be exclusively at a school or part of a school district to utilize Minecraft Education. Homeschools, families, and other organizations can purchase and manage Minecraft Education through our commercial offer. You can find more information here.

THE INTERCEPTORS — LESSON ACTIVITIES

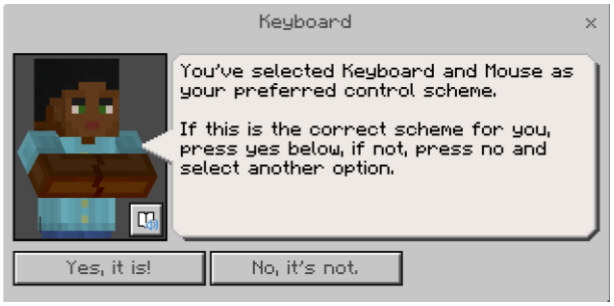
Overview of the Lessons

Beginning the Map

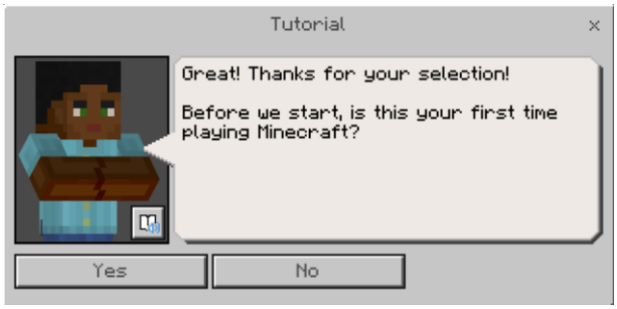
When the world launches, players will immediately be prompted to select their control scheme: keyboard or touch controls.



The player will receive another message, which will ask the player to verify their control scheme. Based on their selection, they will need to confirm by selecting “Yes, it is!” or they will need to select “No, it’s not.” if they selected the wrong scheme.



Next, players will be prompted with the question of, “Is this your first time playing Minecraft?”



If players select “Yes”, they will proceed to a tutorial of game play mechanics. If they select “No”, they will proceed to the start of the game.

Tutorial Sequence

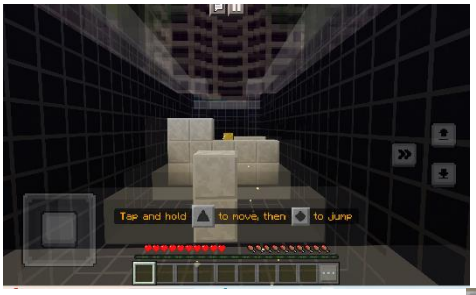
<table>
<tr><th>KEYBOARD</th><th>TOUCH CONTROLS</th></tr>
<tr><td colspan="2">Task 1: Look at the golden orbs</td></tr>
<tr><td>

Players will need to use their mouse and place the “+” (crosshairs) on the golden orbs. The player should look at the golden orb until it disappears. They will look at 9 golden orbs before moving on to the next task.</td><td>

Players will tap and drag the screen to the center of the orb. They will hold until the orb turns white and then disappears. They will look at 9 golden orbs before moving on to the next task.</td></tr>
<tr><td colspan="2">Task 2: Practice moving</td></tr>
<tr><td>

Players will practice moving in the game using the WASD keys.
Press “W” to move forward.
Press “A” to move right.
Press “D” to move left.
(NOTE: Pressing “S” will move the player backwards.)</td><td>

Players will practice moving using the touch controls. The icon of the touch control (on the bottom left-hand side of the screen) will indicate what direction they can move. This will act as a joystick for movement.</td></tr>
</table>

Task 3: Navigate past the wall	
 Players need to move past the wall by either moving left or right.	 Players need to move past the wall by either moving left or right.
Task 4: Practice jumping	
 Players should press “W” to move forward and then press “space” to jump. Players should move towards the gold block.	 Players need to tap and hold the  (forward command) and then press the  to jump.
Task 5: Press the button	
 Players will need to press the button on the top of the gold block. They can press the block by right-clicking on the button.	 Players need to press the button.

Welcome to Cyber FUNdamentals 2! Let’s get started...



Upon arrival, a dialog box will automatically pop up into the game.

The dialog boxes often provide important information. Players should be encouraged to read all of the information. If you have younger players or readers who need additional support, consider demonstrating and encouraging the use of the Immersive Reader feature.

Immersive Reader is an integrated feature of Minecraft Education. It supports learners in reading or translating in-game text, including the character dialog. When a dialog box is opened, you will see an icon in the bottom right-hand corner of the NPC picture in the dialog box.



After players have read through the initial dialog boxes, they will see the teacher and the students at a new location. Players will meet the Cybersecurity Specialist, who will be escorting them through Operations Center!



Lesson 1: Authentication

In this activity, players will learn about the three different types of authentication and how multi-level authentication should be used to strengthen their defense against any kind of cyber attack.

TYPES OF AUTHENTICATION

Something you know	Something you are	Something you have
Example: Passwords 	Example: Face (Scanner) 	Example: Keycard 
This is one of the most common types of authentication. This is information that you should know.	“Something you are” authentication is easier for the person using it as they cannot “lose” it!	A keycard is a physical item that grants you access to something.

AMAL'S ACTIVITY

Players will need to retrieve the digital security key from the CS Specialist's desk.

Get Into the Room	Use the Keycard on the Computer	Enter Password on the Keypad	Swipe the keycard.
			

TAYLOR'S ACTIVITY

Players will need to search the desks to find an extra keycard.

Search the desks to find an extra keycard.	Gather the mirrors around the room.	Place and turn the mirrors to scan the reflection of the CS Specialist.	Enter the passcode and swipe the keycard.
		 	 
Upon completion of these steps, both the teacher and the Cybersecurity Specialist will be released.			

MALIK'S ACTIVITY



Players will need to perform a different form of authentication at each of the consoles to stall the intruder. If the intruder escapes to a new network segment, players will have to restart the process again. If the intruder gets all of the data, they will lose!

Enter the Passcode	Swipe the Keycard	Verify Using Biometrics
		

IMPORTANT VOCABULARY:

Authentication – verifying a person who is actually who they say they are

Biometrics – something that you are (e.g., fingerprints and eyes are scanned to verify the identity of a person)

Passwords – A common example of authentication through something you know (i.e., something that others don't know)

Keycard – something you have (e.g., physical item that grants access to something)

Multi-level Authentication – utilizing more than one authentication method

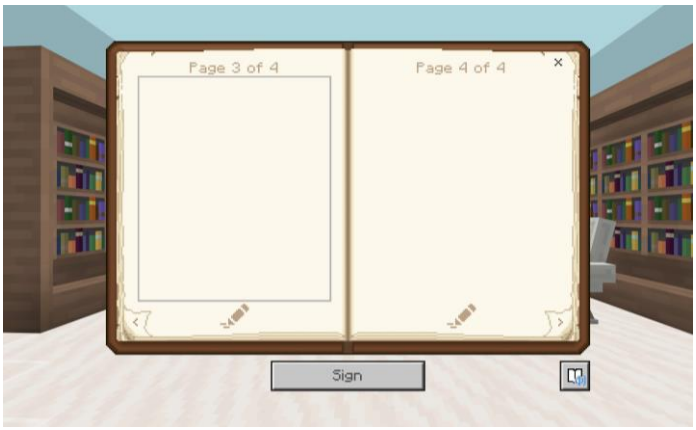
FORMATIVE ASSESSMENT

WELCOME TO THE FOCUS ROOM!

Players will have the opportunity to reflect and think about what they just learned in Lesson 1. They will receive a book & quill in their hotbar. Upon opening the book, they will find the following prompts:

- What is multi-factor authentication?
- What are some examples of multi-factor authentication?
- Where in your life could multi-factor authentication make things safer?

Players should capture their answers by turning to a new page in the book and typing directly into the blank page.



Lesson 2: Incident Response Team

In this lesson, players will learn what an incident response team is, the members of an incident response team, and their roles/responsibilities.

MEET THE INCIDENT RESPONSE TEAM

Although players stopped the attack, they will need to assemble the Incident Response team.

MARK	LAUREN	YANNI	BARDEN	NAN
 Analyst	 Forensics	 Engineer	 Communications Specialist	 Cybersecurity Legal Expert
My role is to monitor the network for incidents and respond to security alerts.	My role is to analyze the system logs to investigate the damage. I work with the analyst to determine the source of the cyber attack.	My role is to deploy security changes to the network and help contain or eliminate Interceptors like the one you saw today.	My role is to make sure that internal teams, other related companies or organizations, and the public are all aware of the ongoing status of security incidents.	My role is to ensure our team is in compliance with relevant laws and regulations while performing network security.

ACTIVITY: INTERACT WITH THE WORKSTATIONS



Players will visit each of the workstations located in the Security Operations Center (SOC). As they interact with the workstations, they will learn about the location, tools, and specific types of work that happens at the workstation.

ACTIVITY: ASSIGN SPECIALISTS TO THEIR WORKSTATIONS



Players will then need to interact with each of the specialists. They will need to assign them to their necessary workstations, based on their job role.

ACTIVITY: INVESTIGATE THE INCIDENT

Players will need to complete the incident report. They will work in sequential order to see how this task is officially accomplished.



Step 1: Talk to the Analyst
Step 2: Talk to Forensics
Step 3: Talk to the Engineer
Step 4: Talk to the Communications Specialist
Step 5: Talk to the Cybersecurity Legal Expert

IMPORTANT VOCABULARY:

Incident Response Team – a group of people in a company that responds to security incidents and works together to understand how it happened, how to fix it, and how to communicate that with their customers

Incident Response Lead – member who coordinates the efforts of the Incident Response team and is the point of contact for any questions

Analyst – member who monitors the network for incidents and responds to security alerts

Forensic Analyst – member who analyzes the system logs to investigate the damage of the cybersecurity incident; works with the analyst to determine the source of the cyber attack

Engineer– member who deploys security changes to the network and contains/eliminates Interceptors

Communications Specialist – member who informs the internal teams, other related companies/organizations, and the public about the ongoing status of security incidents

Legal Expert – member who ensures compliance with relevant laws and regulations while performing network security

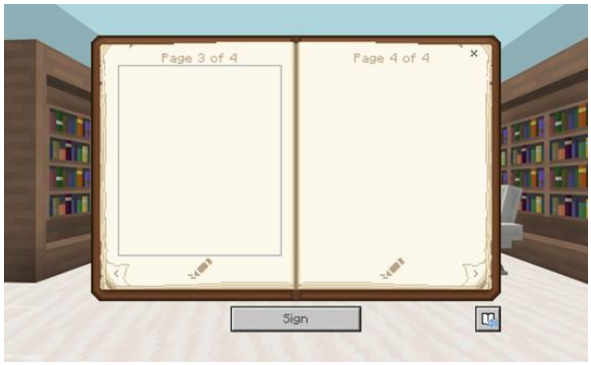
FORMATIVE ASSESSMENT

WELCOME TO THE FOCUS ROOM!

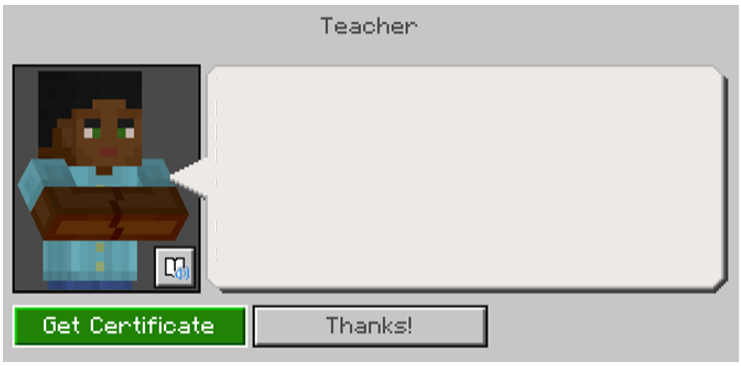
Players will have the opportunity to reflect and think about what they just learned in Lesson 2. They will receive a book & quill in their hotbar. Upon opening the book, they will find the following prompts:

- What is an incident response team?
- What are some of the roles of an incident response team and what do they do?
- In your own words, describe what happens when a cybersecurity incident is detected.

Players should capture their answers by turning to a new page in the book and typing directly into the blank page.



Upon completion of this world, players will receive their CyberFUNdamentals Certificate!



HOW TO GET STARTED - MINECRAFT EDUCATION

Minecraft Education offers a unique learning platform where students can engage in creative builds and various game elements.

If you are licensed to use Minecraft Education through your O365 EDU account, download directly at aka.ms/download or reach out to your IT department for assistance. More information on deployment and license assignment can be found at aka.ms/meedeployguide.

Here's how to get setup:
1. First, check here to see if your school account is eligible.
2. If you do not have a valid O365 EDU account, you can still download and try a free demo on Windows, Mac or iPad.
3. Download Minecraft Education for Windows, Mac or iPad.

Once you are set-up with Minecraft Education, you should:

- Learn about Cyber FUNdamentals with this video: aka.ms/cyberfundamentalstrailer
- Use this Educator Guide and the corresponding classroom presentation!
- Play through Cyber FUNdamentals: The Interceptors to get a better understanding of the lesson and how to navigate through the Minecraft world.