CYBERSAFE AI: DIG DEEPER

EDUCATOR GUIDE

CONTENTS

TARGET

Grades 3-9 (7-14yrs)

LEARNING INTENTIONS

Players will engage with critical concepts surrounding the responsible use of AI through a series of experiences in the classroom, and at home.

Students will reflect on their choices and actions in this role play and how they apply to real life.

Students will understand that AI is a tool that requires human input to use effectively, and the risks and considerations of this technology.

SUCCESS CRITERIA

I can explain how biases can affect the responses that AI provides, and why it's important to seek a variety of perspectives.

I can discuss why it's important to verify AI outputs and can list different sources I can check to help gather accurate information.

I understand the risks of using personal information, whether my own, or someone else's, when using technologies, like AI.

PURPOSE

CyberSafe: Dig Deeper is designed to foster a skillset that promotes responsible AI use that will remain relevant, regardless of the ever-changing growth of AI.

The world facilitates a series of scenarios intended to mirror students' daily lives, in the classroom and at home. These scenarios aim to encourage students' critical thinking of how they apply AI for work and personal use.

The extension activities found in the supporting resources, allow students to more closely examine and reflect on how the in-game scenarios match real-world application.

STUDENT ACTIVITIES

SUGGESTED PRE-LESSON ACTIVITIES (WHOLE CLASS):

Have a classroom discussion to introduce ideas and topics related to how students currently engage with AI in their daily lives.

Discussion Prompt: What are some ways you can think of where AI is used in your daily life?

You can prompt a discussion by providing some examples of AI models (i.e. voice assistants available through phones and smart home devices, self-driving cars, language translation, chatbots, such as customer service bots, etc.)

Discussion Prompt: Based on previously discussed examples, how do you feel AI can be helpful and/or unhelpful?

To help prompt discussion, you can provide some examples:

Possible Helpful Points:

- Convenience and efficiency (AI can automate repetitive tasks)
- Education (AI-powered tools can help create personalized learning experiences)

Possible Unhelpful Points:

- AI can only help based on how it's trained, so something like a customer service chatbot is sometimes limited, compared to what a human customer service worker can help with.
- AI can sometimes provide inaccurate responses, misleading those who are trying to gather information.

PRIOR KNOWLEDGE REQUIRED BY STUDENTS:

Students should already know how to:

- Effectively move within Minecraft
- Interact with NPC's (non-player characters)
- Take photos with the in-game camera
- Caption and export these images using the portfolio

CYBERSAFE AI: DIG DEEPER IMPORTANT VOCABULARY

3D Model: A virtual or digital shape that looks like a real object with height, width, and depth.

3D Printing: Making physical objects by adding material layer by layer, based on digital designs.

AI: Short for Artificial Intelligence, AI is technology that enables computers to perform tasks such as understanding language, recognizing patterns, solving problems, generating images, and making decisions.

AI Assistant: A computer program that helps you with tasks by answering questions and providing information.

Design: A plan or drawing that shows how something will look or work before it is made.

Esports: Competitive video gaming where players and teams compete in games, much like traditional sports.

Generate: To create or produce something.

Identity: Who or what someone or something is; the unique qualities that make a person or thing special.

Input: Information or data that you put into a computer or machine.

Likeness: A picture or image that looks like a person or thing.

Misinformation: Incorrect or false information that is shared, even if it wasn't meant to mislead.

Misconception: A wrong or incorrect idea about something.

Output: Information or results that come out of a computer or machine.

Prompt: A set of words or instructions given to a computer to start something, like asking it a question.

Resources: Materials or supplies that help you do something, like books, websites, or tools.

Software: Programs or instructions that tell a computer what to do.

Template: A pre-made pattern or format that you can use to make something else, like a form or design.

UNESCO AI COMPETENCIES FRAMEWORK FOR STUDENTS

UNESCO's AI competency framework for students is designed to guide policy-makers, educators and curriculum developers in equipping students with the necessary skills, knowledge and values to engage with AI effectively. It focuses on four core competencies:

- **A human-centred mindset**: Encouraging students to understand and assert their agency in relation to AI.
- **Ethics of AI**: Teaching responsible use, ethics-by-design and safe practices.
- **AI techniques and applications**: Providing foundational AI knowledge and skills.
- **AI system design**: Fostering problem-solving, creativity and design thinking.

The framework encourages integrating AI-related topics into core subjects across the curriculum, emphasizing interdisciplinary learning in both STEM and the social studies (UNESCO, 2024).

The following curricular goals are facilitated throughout the CyberSafe AI: Dig Deeper Minecraft Map and its associated learning resources:

	STUDENT COMPETENCY	CURRICULAR GOALS (AI curricula or programmes of study should…)
Human-centred mindset	**4.1.1 Human agency**	• CG4.1.1.1 Foster an understanding that AI is human-led • CG4.1.1.2 Facilitate an understanding on the necessity of exercising sufficient human control over AI • CG4.1.1.3Nurture critical thinking on the dynamic relationship between human agency and machine agency
Ethics of AI	**4.1.2 Embodied ethics**	• CG4.1.2.1 Illustrate dilemmas around AI and identify the main reasons behind ethical conflicts: • CG4.1.2.2 Facilitate scenario-based understandings of ethical principles on AI and their personal implications • CG4.1.2.3 Guide the embodied reflection and internalization of ethical principles on AI
AI techniques and applications	**4.1.3 AI foundations**	• CG4.1.3.2 Develop conceptual knowledge on how AI is trained based on data and algorithms • CG4.1.3.4 Concretize human-centred considerations in the design and use of AI
AI system design	**4.1.4 Problem scoping**	• CG4.1.4.1 Scaffold critical thinking skills on when AI should not be used

For more information on the UNESCO AI competency framework for students, please visit this site, to view the publication:

AI Competency Framework For Students

INTRODUCTION

CyberSafe: Dig Deeper is crafted as an engaging and enlightening one-hour session tailored for students ages 7-14. It's designed to be experienced by students in single player on their own devices, with minimal teacher intervention.

This adventure aims to enhance digital literacy, foster digital citizenship, and teach students the critical thinking skills necessary for navigating an AI-driven world. Students will learn about the importance of verifying information, understanding bias, and responsibly using AI technologies.

Throughout this experience, students will encounter various interactive scenarios that highlight the ethical use of AI, the necessity of multiple information sources, and the impact of misinformation. This Educator Guide provides all the necessary materials to facilitate meaningful discussions and activities around AI, ensuring students develop a comprehensive understanding of their digital responsibilities. Let's embark on this journey to equip the next generation with the skills they need to thrive in an AI-enhanced society.

FOUNDATIONS OF CYBERSAFE

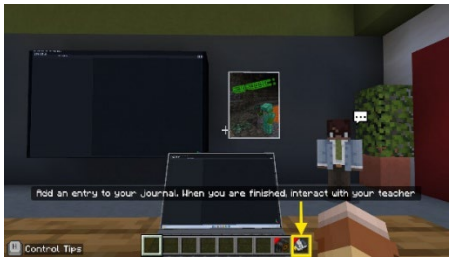
The CyberSafe series is part of an expanding catalog of cybersecurity-focused worlds that help students learn key skills to navigate digital environments in their everyday lives. Dig Deeper focuses on AI and prompts students to consider important questions, such as: Why is it crucial to verify information? How can biases affect AI outcomes? What role does critical thinking play in using AI responsibly? To answer these questions, Dig Deeper provides students with the opportunity to learn and practice five key skills:

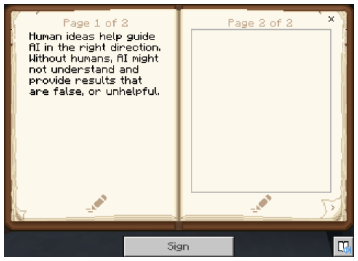
Key Skill	Intended Behavior
Critical thinking about AI interactions	• View AI as a tool, that requires human input to work effectively • Understand that AI can make mistakes or provide misinformation • Verify AI-provided information with trusted human sources
Healthy Boundaries	• Ensure that AI enhances rather than replaces human interaction in learning • Establish and maintain clear guidelines for AI-assisted learning • Know when to seek human help instead of AI assistance
Safe and ethical usage	• Only use AI tools with educator/parental permission and supervision • Develop your own skills and knowledge by engaging with assignments and assessments authentically • Report any concerning AI interactions to trusted adults
Personal information protection	• Never share personal details, photos, or location with AI systems • Understand that conversations with AI may be recorded or stored • Keep school, family, and private information confidential
Understanding AI capabilities and limitations	• Recognize when it's most efficient to use AI • Understand potential AI biases and mistakes • Understand AI systems don't have real feelings or emotions

TOOLS FOR DOCUMENTATION AND ASSESSMENT

BOOK & QUILL

The book & quill is a unique game feature, exclusive to Minecraft Education. The player can access it at any point by interacting with it in their hotbar. Immersive Reader is available when using the Book & Quill. To write inside the book & quill, click inside (mouse) the page or tap (touch device) on the page. When a player is finished adding their entry, they should select the "X" in the top right-hand corner. DO NOT click the "Sign" button until the book is complete at the end of the game.

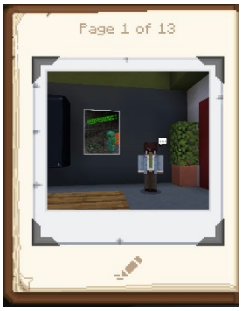




CAMERA

The player also has access to a camera throughout this experience, which they can use by interacting with it in their hotbar. They can use the camera to capture their surroundings and document important moments.

To use the camera, hover the highlight box over the camera in slot 8. You can either use it for a quick snapshot, or hold the interact button to prepare the frame (notice the black bars above and below the screen). The player can view and add photos they've taken by using the Book & Quill. By clicking on the pencil writing icon at the bottom of the page, a series of icons will appear. Select the icon of the image with a "+", which will open all pictures you've taken with the camera.



WORLD STARTUP

PLAYER SELECTION AND OPENING CUTSCENE

When the world launches, players will immediately be prompted to select their avatar (this will be the unique skin they have during this Minecraft map).

Players will watch the opening cinematic scene of the students waiting for the school bus, getting onto the school bus, and then arriving at their school.

Once the NPCs exit the bus, a dialog box will automatically pop up into the game. The dialog boxes often provide important information. Players should be encouraged to read all the information. If you have younger players or readers who need additional support, consider demonstrating and encouraging the use of the Immersive Reader feature.

Game Tip

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.

DAY 1: INTRODUCING AI

The opening scene that sets the context for the entire world. The player and their friends are asked to help create ideas for a fundraiser. Meanwhile in STEM class, they are learning about a 3D design software, where the teacher introduces an AI assistant.

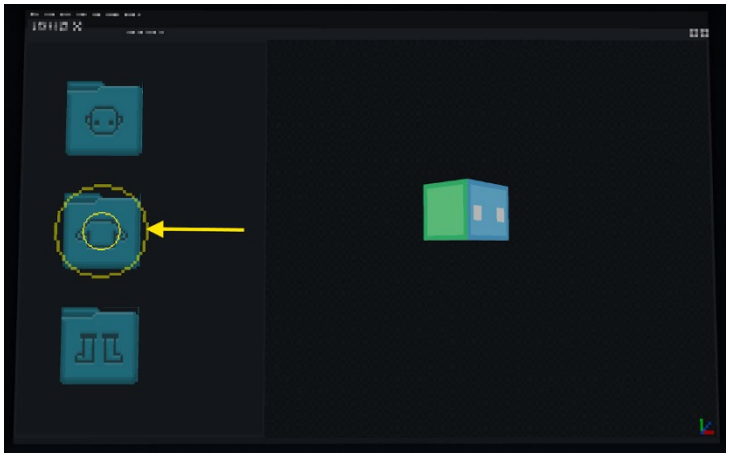
ACTIVITY 1 – LEARNING TO NAVIGATE THE 3D DESIGN SOFTWARE

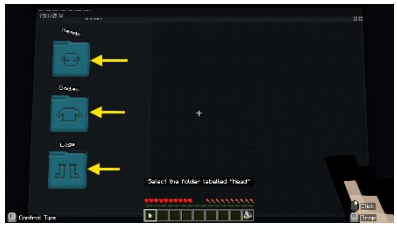
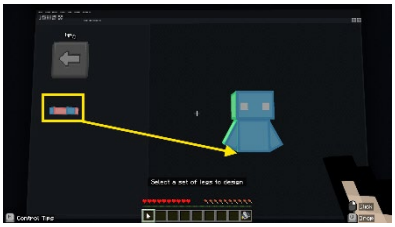
ACTIVITY SUMMARY: In this scene, the player learns how to use a 3D design software; a tool that will be used to design and create 3D models throughout the course of the world. The teacher also introduces an AI assistant, which is available in the 3D design software, to help generate designs.

After players have spoken with the esports team captain in the front entrance, they must go to class and take their seat. The teacher reviews their previous day's work, explaining that they had created a template model in a 3D design software. The following sequence guides players through how to navigate the 3D design software, an important skillset as it is a recurring game mechanic throughout the world.

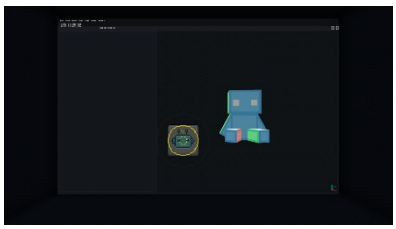
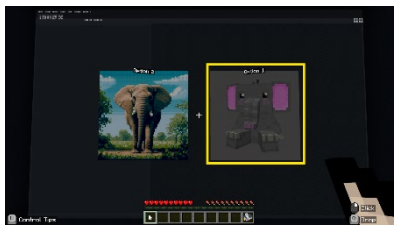
GAME TIP

When navigating the computer interface, a pulsing circular particle will highlight the required selection.



Interact with your computer.	Use the cursor to open the 3 folders.	Add the head, body, and legs to your design with the cursor.
		

After players have successfully added the head, body, and legs from their template, the teacher introduces an AI tool to support students with creating new designs.

Use the cursor to select the AI Chatbot.	Select the prompt that matches your design template (highlighted).	Selecting the correct design unlocks it for future use. In this case, the teacher ensures the player makes the correct choice.
		

Following this activity, players are tasked with creating a new design for homework. Before leaving, the player's friend has an idea - to sell the figures they print in class for the esports event fundraiser.

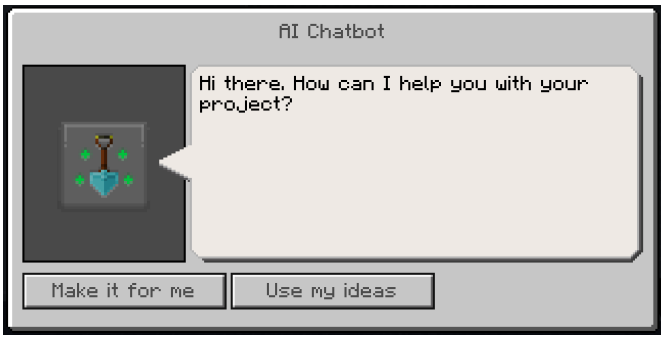
ACTIVITY 2 – DOING YOUR HOMEWORK

ACTIVITY SUMMARY: Players must decide - do they follow their friends' lead and have AI complete their homework without any guidance? Or do they put in the effort to ensure the AI's responses meet the needs of the assignment. This connects with responsible AI use, the importance of human guidance, and time management.

Upon signing on to the computer, players are prompted to open a message from a friend. Cristina is inviting the player to join for a game of "Dig it!" (a game where the player must see how many blocks they can dig through by using the required tools). When the player mentions homework, Cristina says that the group of friends all had AI do it for them.

DECISION

The player must open the 3D Design Software and use the AI Chat. A choice is presented between having AI create the design for you, or to use your own idea.



If the player chooses "Make it for me":

The AI will say it will create a design and save it to their project folder, at which point the player can close the software and message their friends to let them know they're done and can play Dig It!

For this decision, the player gets to play 3 rounds of Dig It! because they finish their homework early. They experience the consequence of this decision, the following day…They also have the option to skip the games by selecting "Not Now", which will progress the story to the next day.

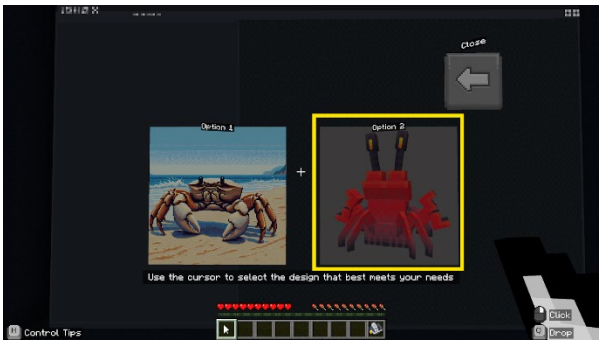
If the player chooses "Use my ideas":

Choosing to add your ideas takes the players down the path where the AI Assistant generates a crab design to use in future situations.

Players must select the design that works best for the design template (shown earlier in class) to unlock the crab design.

GAME TIP

The position of the correct design can change.



After this decision, the player messages their friends and finds out that they're playing one more round before dinner. The player can choose to play a round of Dig It!, or skip it by selecting "Not Now", which will progress the story to the next day.

DAY 2: THE IMPORTANCE OF HUMAN INPUT

Players return to the classroom to learn the majority of the class has chosen to ignore the teacher's lesson, and use AI without proper guidance. They then learn about the risks of biases present in data sets, and how to combat these biases when using AI for themselves.

ACTIVITY 2 CONTINUED – ACTIONS HAVE CONSEQUENCES

ACTIVITY SUMMARY: A continuation of the previous evening, players witness firsthand the consequences of letting AI do the work for you. Most of the class, if not all, has chosen to avoid the effort of guiding AI, in favor of quickly finishing their homework to do other things. The result is a failed design that can't be printed by the classroom's 3D printers.

As the player starts their new day in STEM class, the teacher has them 3D print the designs they were assigned for homework. Depending on the player's choice, they will either have a finished crab design, or an unfinished design. As a small acknowledgement of the player's choice, the teacher will make a different comment depending on whether the player completed the assignment or not.

If the player chose "Make it for me"	If the player chose "Use my ideas"
	

This scene wraps up with a reflection provided by the teacher, which players can write in their Book & Quill.

Reflection 1

- Question
    - Why is it important to use human ideas when using AI?

- Example Answer
    - Human ideas help guide AI in the right direction. Without them, AI might not understand what's important, and it could create results that are wrong or not helpful.

Once the player has finished their reflection, or if they need a reminder of the question and example answer, they can speak to the teacher.

ACTIVITY 2 EXTENSION – OVERVIEW, LEARNING CONCEPTS, KNOWLEDGE CHECKS, AND EXTENSION ACTIVITIES

The Importance of Guiding AI

In this scenario, the player faces a choice between completing their homework with the help of an AI assistant or playing a game with friends. The main concepts covered include:

- Use of AI for Schoolwork: The player learns about the role of AI in assisting with school projects. They can choose to either take a quick, minimal-effort approach or invest more time and effort to guide the AI for a detailed outcome.
- Critical Thinking and Decision Making: The player must decide whether to prioritize their homework or gaming. This choice highlights the importance of managing time and making responsible decisions.
- Impact of Detailed Information on AI Output: The player's choice impacts the quality of the AI-generated design. Providing detailed information leads to better, more accurate results, while a quick, minimal input results in a design that the player cannot 3D print.
- Importance of Verification and Guidance: The teacher's final dialog emphasizes that AI cannot read minds and needs proper guidance and verification. This lesson reinforces the need for students to actively engage with AI tools and verify their outputs to ensure AI produces results that the user is trying to generate.
- Learning from Mistakes: Students are encouraged to learn from the outcome of their choices, understanding that effort and attention to detail are crucial when working with AI.

Knowledge Check

In this section, you will find a set of questions that you can use to assess learners' understanding of the concepts covered up until this point. They can also be used as discussion points to facilitate a conversation as a class, or in groups.

1. Use of AI for Schoolwork:
    - Question: If you have the option to use AI to complete schoolwork, how can you use it responsibly?
    - Possible Answer: It is important to use AI as a tool, and to work with it; not have it do the work for you. You should make sure to add your own ideas and information to make the final result better

2. Impact of Detailed Information on AI Output:
    - Question: What happens when you give more details to AI?
    - Possible Answer: When you give more details, AI can share better results for what you are trying to create. Without enough details, AI might not have enough information to create what you want.

3. Checking and Guiding AI:

- Question: Why is it important to check the answers that AI shares with you?
- Possible Answer: It's important to check AI to make sure that the answer it shares with you is what you were expecting. Even if you use a lot of details when creating a prompt, AI may still not fully understand what you are asking, so you need to have to guide it with more details until it shares what you are looking for.

Opportunities to Extend

The teacher's final dialog in this scene touches on the critical points of guiding AI and reviewing its responses. Here are some learning extensions that educators can use to dive deeper into these topics, connecting them to personal experiences and reflections:

- Class Discussion:
  - Have students discuss instances where they relied on technology or AI, and the outcomes. Did they need to guide the AI? What happened when/if they didn't?
  - Encourage students to share their experiences with using AI tools for school projects or personal use. Discuss what went well and what challenges they faced.

- AI Simulation (while both of these are optional, it is recommended to complete both to demonstrate the difference in responses between humans and AI):
  - Unplugged - Create a role-playing scenario where students act as both the AI assistant and the user. The "user" must provide instructions for the "AI" to follow. To debrief, reflect on the instructions that all "users" provided their "AIs" and compare how the level of detail affected how effectively the AI accomplished the goal. A couple of possible scenarios include:
    - Drawing a scene/image - User's Task: Instruct the AI (student) to draw an image that depicts a scene. It is up to the "user" to share as many details as they feel are important to make the scene as close to their vision as possible.
    - Planning a class field trip - User's Task: Instruct the AI (student) to plan the details of a class field trip to a local museum, covering transportation arrangements, a detailed schedule, exhibits to visit, lunch plans, and necessary permissions.
  - Plugged - If your learners have access to an AI chat, you can have them work individually or in groups to prompt the AI chat with the same tasks (creating an image based on the description of the scene), and/or planning a class field trip. It is recommended to use the same prompts/descriptions for both the unplugged and plugged activities to compare between activities.
  - Possible Reflection Questions
    - How close was the AI (whether student or actual AI) to creating your request after the first try/prompt?
      - If it took multiple tries, how many times did you have to add more details to get the AI's results as close to what you imagined?
      - If it only took one try, how many details did you share and why do you think that led to results that were close to what you imagined?
    - Were there any details that the AI (whether student or actual AI) included in their creation that you didn't ask for? If so, what were they and why do you think they decided to add them?
      - If you completed both the unplugged and plugged activity, are there any differences between the kinds of extra details that the student AI included versus what the computer AI included? (Think about choices in style - for example, did the added details make sense for what you asked them for?

ACTIVITY 3 – DATA SETS AND BIASES

ACTIVITY SUMMARY: After some discussion, the class experiences bias when they all coincidentally choose the same design, realizing the value of expanding their data set. They explore the school, asking peers and various other sources for new model ideas.

During review, the entire class unintentionally asks AI to create the same design – the school mascot (a chameleon). Upon reflecting on the situation, the teacher speaks to the likelihood of bias and how to avoid this situation for future designs. The class needs more ideas and data to share with the AI so that it can create new designs.

After some discussion, the students agree that asking their fellow schoolmates can be a great way to find some different perspectives, while also ensures that they use designs that will be of interest to potential buyers at the school fundraiser. The teacher provides the students with some time to explore the hallway, where they must find unique ideas.

Searching the Hallway for Ideas

The player fades into a busy hallway, where students are rushing from class to class. The player can interact with each student by using the question mark (?) tool in their hotbar. They will have 3 minutes, and 10 chances to ask a student for an idea. Meaning, students must think critically about who they ask.

There are a total of four unique ideas during this activity, 3 of which are from students: the peacock, the red panda, and the flamingo. Players will be able to determine which students have ideas, by their thought bubbles. Students without ideas will have a shrugging emoji, whereas students with ideas will have the face of the animal their idea is about (see red panda face, below).

People of Interests (POI)

The following models show who the player can speak to for ideas:

Once the player has found all unlockable ideas, the timer has run out, or they have run out of questions to ask, they are returned to the classroom. If the player has unlocked at least one idea, they are given the chance to add the idea(s) to the AI's data set for future use. The process of adding new ideas will repeat until the player has added all ideas.

Warning – No More Guidance

The teacher will warn the player that they should know what to look for in a correct design, and will not help them if they make the wrong choice. If players choose the wrong design, they will not unlock it for later use.

As the player completes this process, the teacher debriefs by speaking to the importance of gathering a variety of human ideas for AI data sets to learn from. They then ask the reflection for this section.

Reflection 2

- Question
  - Why is it important to use more than one source of information when using AI?

- Example Answer
  - AI is limited to the information that's been shared with it. Looking at more sources of information helps you get the different points of view and can help avoid biases.

Once the player has finished their reflection, or if they need a reminder of the question and example answer, they can speak to the teacher.

AT HOME APPLICATION – A RECIPE FOR SUCCESS

The scene opens with their Trusted Adult asking for help. They say they want to create a seafood dish using AI. The player is asked how they would do this, and the player can choose between simply asking AI for a seafood recipe or adding some additional information. This is intended to reinforce the concept that human input is necessary for successful AI applications. A cutscene follows with either a delicious looking meal, or a menacing looking one, depending on whether they suggest adding extra details.

ACTIVITY 3 EXTENSION – OVERVIEW, LEARNING CONCEPTS, KNOWLEDGE CHECKS, AND EXTENSION ACTIVITIES

The Value of Human Input and Understanding Data Sets

In this scene, the students revisit the process of using AI to create a design, only to find that they all have the same idea for a new design - the school mascot. They learn about the concerns of group bias and how AI can be trained from data sets with biased opinions. The learner discovers the value of human input when working with AI, which is reinforced when helping their Trusted Adult with an AI-based recipe, at home afterwards. The main concepts covered are:

- Data Sets: A data set is a collection of information or data points that AI systems use to learn and make decisions. In this scenario, the class is representative of a limited data set, because they all present a bias towards their school mascot - the chameleon.

- Importance of Diverse Data: The teacher explains that to create new and unique designs, students need to provide the AI with a variety of ideas and data. This involves collecting input from different sources within the school community.

- Understanding Bias in Data Sets: The scene highlights the risks of biases when using AI. If AI learns from a limited viewpoint or specific perspective, it will replicate those same ideals. This speaks to the importance of incorporating multiple perspectives and sources of information to provide a more holistic and unbiased point of view.

- Understanding Group Bias: Similar to how AI has the ability to show bias based on the data sets it has learned from, humans are also susceptible to bias - the part where everyone chooses to design the chameleon demonstrates that it is important to understand and identify bias in any context.

- The Value of Human Intelligence: Seeking input from other humans provides unique and sometimes non-preexisting information. Human intelligence brings creativity, context, and personal experiences that AI might not possess. This enriches the data set and leads to more innovative and relevant outcomes.

Knowledge Check

In this section, you will find a set of questions that you can use to assess learners' understanding of the concepts covered up until this point. They can also be used as discussion points to facilitate a conversation as a class, or in groups.

1. Data Sets:
    - Question: What is a data set, and how does it help AI learn and make decisions?
    - Possible Answer: A data set is a collection of information that AI systems use to learn and make decisions. It acts like a training manual, helping the AI understand patterns and generate outputs based on the information it has learned.

2. Importance of Diverse Data:
    - Question: Why is it important to provide AI with diverse data?
    - Possible Answer: Providing AI with diverse data is important because it helps create more well-rounded responses that take different perspectives into consideration. By collecting input from different sources, the AI can learn from a variety of viewpoints and generate more balanced and unbiased results.

3. Understanding Bias in Data Sets:
    - Question: What are the risks of biases when using AI, and how can we avoid them?
    - Possible Answer: The risks of biases when using AI is that if an AI has learned from false or misleading information, it may share results based on that information. If the user doesn't fact check the responses they receive from the AI, then they also share that false or misleading information elsewhere.

4. Understanding Group Bias:
    - Question: What are some of the benefits and drawbacks of group bias. For example, think of when the entire class chose the same design (school mascot). How can group biases be helpful and/or harmful?
    - Possible Answer: A positive to group bias is that it can create community. For example, people with the same music or video game bias can form a creative community where people can socialize. A drawback is that it sometimes means that our ideas or thoughts about something are limited, like when the entire class created the same design because they're biased to their school mascot; this led to one new design, versus when you ask around your school for other ideas and get several new ones.

5. The Value of Human Intelligence:
    - Question: What is the importance of human intelligence and input when working with AI?
    - Possible Answer: Humans understand complex emotions that AI might not be able to understand. This lets us think about things more deeply and apply different ideas and perspectives. This is why it is important to guide AI to better understand when using it as a tool. Also, in the world, the AI is limited in the ideas it can share based on the information we provide it, which is why it was helpful to speak to other people at our school who can provide different ideas based on their background.

Opportunities to Extend

As you and your class discuss and review the main concepts above, here are some learning extensions that you can use to dive deeper into these topics:

Class Discussion

- Have students reflect on a time when they learned something new by talking to someone with a different perspective. How did this conversation change their perspective?

AI Simulation (while both are optional, it is recommended to complete both to demonstrate the difference in responses between humans and AI)

- Unplugged - In this role-playing scenario, students must act as the "AI" and provide their best response to a given prompt. The purpose of this activity is to demonstrate how individually, students will likely present a bias towards their own experiences and thoughts regarding the given prompt,

and can reflect on how combining everyone's input contributes to a more holistic response.

  - Example prompts to give students roleplaying as AI
    - What are some exciting places to visit with family and/or friends?
    - What are some ways someone can help the environment?
    - What are some interesting hobbies to try?

  - Example reflection questions
    - How did your own experiences and background influence the answer you provided as the "AI"?
    - Who is someone you could speak to that could provide good information for these prompts? Why do you think their input would be valuable?
    - What are some ways you could reduce bias when providing responses to these prompts?

- Plugged - A similar experience to the unplugged activity, students must use an AI chatbot of choice to ask the same questions. Students are encouraged to use the same prompts to start (provided again, below), to see how AI responds. After initially prompting the AI, students may ask further questions or provide additional information to contribute to the reflection that follows.

  - Example prompts to provide the AI
    - What are some exciting places to visit with family and/or friends?
    - What are some ways someone can help the environment?
    - What are some interesting hobbies to try?

  - Possible Reflection questions
    - How did the AI's initial responses compare to what you expected? Was there anything that surprised you?
    - Did the AI provide a diverse range of answers, or were you able to see any signs of bias in the AI's response?
    - What are some ways to recognize and address biases in AI-generated results? (For this, focus on the importance of seeking multiple perspectives, including human input and a variety of information sources.
    - [If you also completed the "unplugged" activity] How did the AI's responses vary from our responses as a class? What do you think were some of the strengths and weaknesses of our human responses, and the strengths and weaknesses of the AI's responses?

DAY 3: OUTPUT ACCURACY AND VERIFYING SOURCES

Today's focus centers around reviewing AI's responses to ensure it provides results that match your desired output. This includes checking for external sources for accuracy and avoiding misinformation.

ACTIVITY 4 – COMBATING MISCONCEPTIONS

ACTIVITY SUMMARY: Today's class will focus on output accuracy, and how it's important to verify the responses that AI provides you with. The class discovers that just because you know what you're asking for, the AI might not be capable of providing an accurate response, whether because of its data set, or because it has learned from misleading sources. The player practices responsible verification practices by visiting the library to search for accurate facts to share with the AI.

After starting the day, the teacher has the player log in to their computer to create a bat design. The player prompts the AI by asking for a bat, however, it seems that the designs it has created are based on non-fictional references.

Some students express confusion as to why the AI is outputting inaccurate images of bats. The teacher prompts them to **"Dig Deeper"**; emphasizing the importance of checking AI's outputs because sometimes AI learns from false or misleading information, or simply did not understand your prompt.

Finding reliable sources is important to avoid confusion and misconceptions, so the teacher recommends visiting the library, where the player can search for accurate information that they can share with the AI. Once the player has found all correct sources of information, or time has run out, they return to the classroom.

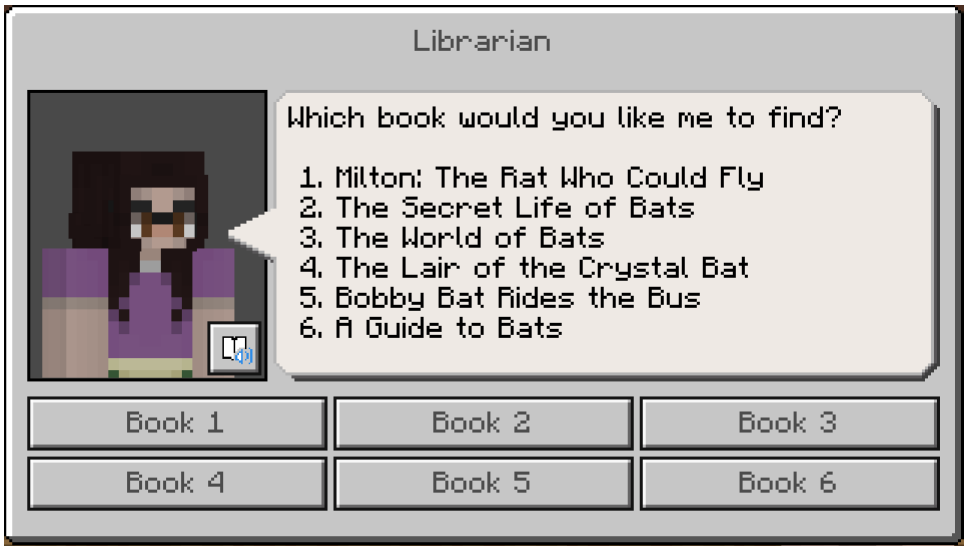
Warning – Possible to Miss the Bat Design

Players will only have the opportunity to add the bat to their list of usable designs if they find all correct sources of information AND select the correct design when the AI provides the two design options.

Exploring the Library for Factual Information

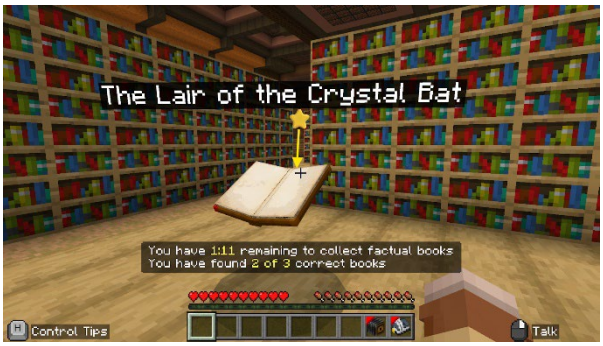
The player is tasked with exploring the library for additional sources of information. The librarian will ask them to select a book. Upon finding the necessary sources of information, the player experiences how validating/verifying information is an important part of using AI as a tool.

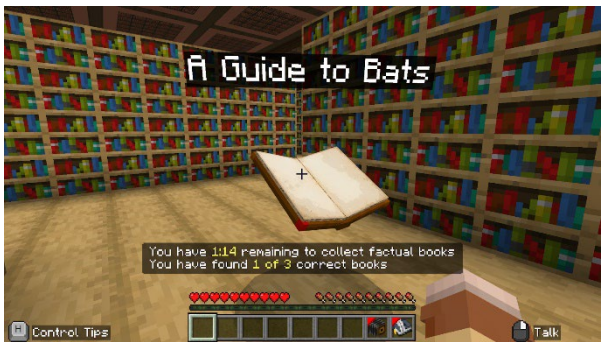
The librarian provides a list of books related to bats and it's up to the player to decide which sources they would like to explore.



List of Books and Correct Choices (Star Represents Where the Player Spawns in the Library)

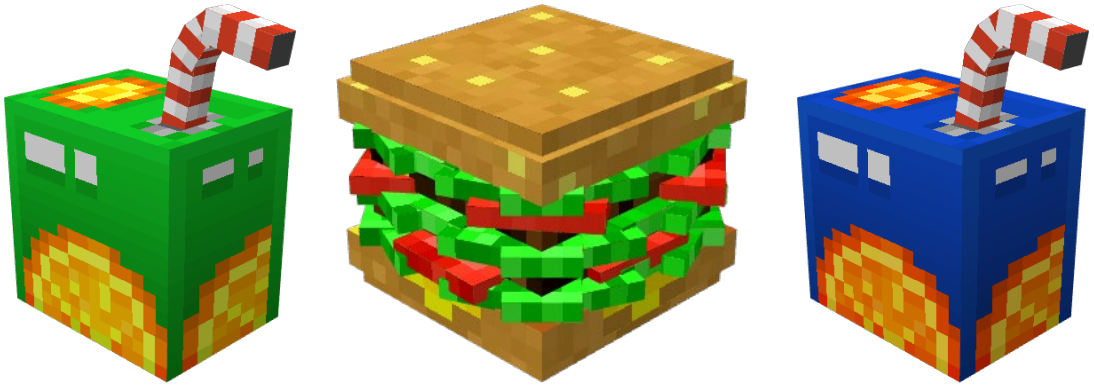
Book Name	Book Image
1. Milton: The Rat Who Could Fly (Inaccurate)	
2. The Secret Life of Bats (Accurate)	

3. The World of Bats (Accurate)	
4. The Lair of the Crystal Bat (Inaccurate)	
5. Bobby Bat Rides the Bus (Inaccurate)	
6. A Guide to Bats (Accurate)	

Obstacles – No Food or Drinks in the Library

As the player searches the library, they must avoid the food and drinks that roam the walkways. Colliding with any of these objects will result in the player being sent back to the librarian, consuming time and reducing their chances of finding the required sources in time.



Reflection 3

- Question
  - In what ways can you make sure that news and information you see is accurate and reliable?

- Example Answer
  - We need to find reliable sources of information. We can look for information in the library or speak to knowledgeable adults like our teachers, librarians, and our adults at home.

Once the player has finished their reflection, or if they need a reminder of the question and example answer, they can speak to the teacher.

AT HOME APPLICATION – SOMETHING SEEMS FISHY

Your Aunt Joanie wants to download a new mod for Minecraft because their results said it was the best one. The player must choose whether it should be okay to download, or if she should think twice. It turns out to be a virus, which reinforces the earlier concept of checking multiple sources of information to confirm the validity of what Aunt Joanie has found.

ACTIVITY 4 EXTENSION – OVERVIEW, LEARNING CONCEPTS, KNOWLEDGE CHECKS, AND EXTENSION ACTIVITIES

Output Accuracy and Verification

The following day at school, the players learn about the risks of misinformation, and misconceptions when receiving responses from AI. This prompts the discussion of AI being limited to the information and opinions that are shared with it, and stresses the importance of seeking additional sources of information to verify AI responses. This is reinforced at home when the player must help Aunt Joanie with a situation that requires some critical thinking. The main concepts covered are:

- Output Accuracy: Ensuring that the results provided by AI are factual and accurate is important. This scene shows how AI can provide misleading results when it shares images of bats that seem to be based off of fictional sources.

- Verification Strategies: The students learn the importance of looking for extra sources of information to help expand the AI's data set, so it can provide a more factual depiction of a bat. In this scene, they must explore the library and are challenged with locating non-fictional sources that will give them the details they need to make sure that their bat design is accurate.

- Detailed Prompts: Understanding the importance of providing detailed prompts to help guide the AI to produce more accurate and relevant results.

Knowledge Check

In this section, you will find a set of questions that you can use to assess learners' understanding of the concepts covered up until this point. They can also be used as discussion points to facilitate a conversation as a class, or in groups.

1. Output Accuracy:
    - Question: Why is it important to ensure that the results provided by AI are accurate?
    - Possible Answer: It is important to ensure AI results are accurate to avoid spreading misinformation and to make sure the information is useful and reliable.

2. Verification Strategies:
    - Question: What are some ways to verify that the information you get from AI is correct?
    - Possible Answer: Some ways to verify AI information include checking against reliable sources like books, asking knowledgeable adults, and looking at verified online resources.

3. Detailed Prompts:
    - Question: Why is it important to give detailed and factual prompts to AI?
    - Possible Answer: Providing detailed and factual prompts is important because it helps guide the AI to produce accurate and relevant results, reducing the chance of errors or misconceptions.

Opportunities to Expand

As you and your class discuss and review the main concepts above, here are some learning extensions that you can use to dive deeper into these topics:

Class Discussion

- Discuss why it's important to verify information provided by AI. What are some consequences of relying on unverified AI outputs?

- Encourage students to share their own experiences with misinformation. How did they verify the correct information? Think of times where they may have watched a video that says something that they learned was untrue, like a "hack" for a game they play.

AI Simulation (while both are optional, it is recommended to complete both to demonstrate the difference in responses between humans and AI)

- Unplugged - Either as individuals, or groups, have your learners review the following "facts" and determine which of them are true and which are false. Encourage them to check multiple sources to ensure they get an accurate response.

- Plugged - If your learners have an AI chat available, task them with asking the AI to verify whether the facts below are true or false. You can also do this activity together as a class.

- Here are the "facts", identified by true and false - you can use whichever ones you like, and mix them up as you see necessary.

    - (True) Penguins can't fly, but they are excellent swimmers.
    - (True) Honey never spoils as long as bacteria can't grow.
    - (True) The world's largest desert is Antarctica.
    - (True and False) Can the Great Wall of China be seen from space?
        - This is true and false because it is not visible by the naked eye, but can be seen through magnification.
    - (False) Bats are blind and rely entirely on echolocation to navigate.
    - (False) Goldfish have a memory span of only three seconds.
    - (False) Camels store water in their humps.

- Possible Reflection Questions
    - Unplugged
        - When researching whether the facts were true or false, did you find any sources that said different things?
        - What sources did you use to do your research and how did you make sure that the sources you found were reliable/trustworthy?
        - Did you find it helpful to use multiple sources to verify the facts? How did comparing information from different sources impact your understanding of the facts?
        - Did you come across any sources that seemed biased or presented the information in a way that made you question its accuracy? How can being aware of bias help you evaluate the reliability of information?

    - Plugged
        - Did the AI provide sources or explanations for its answers? How did you evaluate the reliability of the sources mentioned by the AI?

- How accurate were the AI's responses overall? Did you find any times where the AI provided incorrect or misleading information?
- Why is it important to verify the information provided by AI, even if it seems accurate at first glance? What steps did you take to ensure the information was correct?
- Based on your experience, what strategies can you use in the future to ensure you get accurate and reliable information from AI? How can you guide the AI to provide better responses?

DAY 4: THE RISKS OF USING PERSONAL INFORMATION

3D printed figures have shown up across the school, depicting a student's head on a chicken body. The Principal tasks the player with removing these figures from around the school. Along the way, the player hears about the concerns of their fellow students; voicing what could happen if this technology were applied in other ways.

ACTIVITY 5 – DON'T BE CHICKEN; TAKE ACCOUNTABILITY!

ACTIVITY SUMMARY: As the player begins their school day, they see a figure of a chicken with their friend Cristina's head on it. Cristina is upset by these figures and the teacher and principal are promising consequences for the one responsible. To support with reparations, the player must explore the school and retrieve the figures that have been placed in various locations. As they do, they encounter several students who express their concerns about this type of technology. Some comments include the issue of using something of someone else's without their permission, another being the concern of likeness-using technology being usable to impact someone's reputation.

The day begins and the player sees a group of people gathered at the hallway entrance. Once the player gets close enough, they see a figure of a chicken with their friend Cristina's head. A series of dialog cards appear from your peers, ranging between people finding it hilarious, to upset. The esports captain mentions that Cristina was really hurt when she saw it.

The player is then teleported to their class, where the principal is waiting for the class to talk to them about the situation. She explains how upset Cristina is by this, and that any form of bullying is unacceptable. She also speaks to the dangers of creating content using someone's identity, whether it was a joke or not, and that it's important to take accountability for your actions.

The player must explore the school to find all the figures. Once the player has collected all the figures, they bring them to the school principal. Your friend Brett comes forward as the person responsible, claiming it was just meant to be a joke, but they were afraid to say anything after they saw how upset Cristina was. Through this scene and the following reflection, the player learns about the concerns of using someone's identifying information (whether likeness, information, etc.)

Once the player has found all chicken figures, or the hidden timer has expired, the activity will end. A cutscene plays of the player and their group of friends in the Principal's office, with the figures on the desk. Brett comes forward as the one responsible, claiming to have only intended chickens to be seen as a joke. After discussing the risks of using someone's identity, whether personal or someone else's, the group returns to class, where they reflect on the experience.

Removing the Chickens from Around the School

Chicken Figure	Directions
Chicken #1: **The first figure is located in front of the classroom door, ensuring the player knows what to look for as they search the school.**	
Chicken #2: **At the end of the hallway, towards the front entrance. This is the first chicken the player saw, upon starting their school day.**	
Chicken #3: **In the Art Room, to the left of the stairwell, on the main floor.**	
Chicken #4: **In the gymnasium, on the lower level.** **Note: This chicken has a motor and will move around the gymnasium floor.**	

Chicken #5: **On top of the bookshelves, to the right of the upstairs stairwell.**	

GAME TIP

- This activity has a hidden timer that will end the scenario, to prevent the player from getting stuck
- Players can collect the chicken figures by right or left clicking

Reflection 4

- Question
  - What are the risks of using someone's likeness or identity in AI generated content?

- Example Answer
  - Misusing someone's personal information, such as their likeness, can be harmful to others. It could also be used to convince people that someone did or said something they did not do!

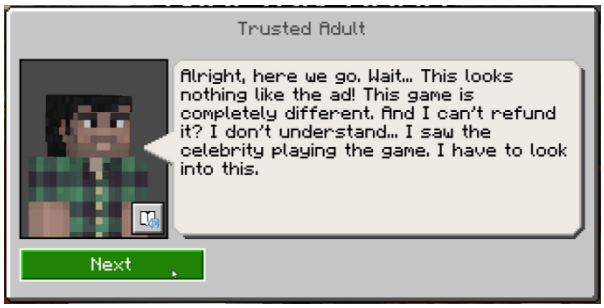
Once the player has finished their reflection, or if they need a reminder of the question and example answer, they can speak to the teacher.

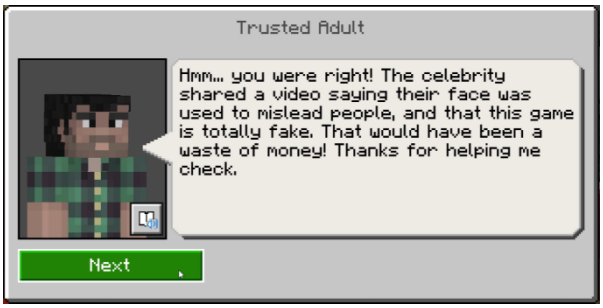
New Idea – Mixing Design Elements

Despite the concerns with using someone's personal identity, the class's reflection results in the idea to mix the elements of their designs; swapping the head, body, and legs to create unique designs. The player will have the opportunity to experiment with this concept, the following day.

AT HOME APPLICATION – CELEBRITY ENDORSEMENT

Your Trusted Adult is eager to show you a new game being promoted by a celebrity they like. The player must decide as to whether the celebrity endorsement is enough, or if they should look further into it. After your decision, you realize that the ad used a celebrity's likeness to gain validity with viewers, and the game is a scam. Reinforcing the lessons from earlier that day about the unethical practice of using someone's likeness, and the harm in using it to mislead.

Of 



Activity 5 Extension – Overview, Learning Concepts, Knowledge Checks, and Extension Activities

Responsible and Ethical Practice of AI and General Technology

In this scene, the students learn about the responsible use of AI and the potential implications of using someone's likeness or identity without permission. They experience the consequences of creating misleading content and the importance of using AI ethically. This is reinforced when the player returns home and has an interaction with their Trusted Adult that includes a celebrity's likeness being used without their permission. Main concepts covered include:

- Responsible Use of AI
  - The scene emphasizes the importance of using AI responsibly, particularly when it involves other people's personal information. Students learn that AI should be used ethically and with respect for others' privacy and identity.

- Implications of Using Personal Information:
  - The students witness firsthand the negative impact of using someone's likeness without their consent. This highlights the potential for harm and the importance of considering the consequences of their actions.

- Ethics in Technology:
  - The lesson focuses on the ethical considerations when using AI and technology. Students learn about the importance of thinking critically and making responsible decisions to avoid misuse and harm.

- Accountability and Consequences:
  - The scene demonstrates that actions have consequences, and students must be accountable for their behavior. They learn that even jokes or seemingly harmless actions can have serious implications.

- Respecting Privacy and Consent:
  - Students are taught the importance of respecting others' privacy and seeking consent before using their personal information. This fosters a culture of respect and consideration for others.

Knowledge Check

In this section, you will find a set of questions that you can use to assess learners' understanding of the concepts covered up until this point. They can also be used as discussion points to facilitate a conversation as a class, or in groups.

1. Responsible Use of AI:
   - Question: What are some examples of using AI responsibly?
   - Possible Answer:

2. Implications of Using Personal Information:
   - Question: What are the risks of using your own or someone else's identity when using AI or other technology?
   - Possible Answer: Using someone's personal information or identity (whether your own or someone else's) can lead to emotional upset, loss of trust, harmful content, and serious consequences. Overall it's difficult to understand how serious of an impact using someone's personal identity can have, so it's important to always reflect on the possible consequences before doing so, and asking permission if using someone else's. If you are using someone else's personal information, it's important that you both reflect and consider the consequences so they can make a clear decision.

3. Ethics in Technology:

- Question: What are ethics and why are they important when using AI and technology?
- Possible Answer: Ethics are beliefs that guide what is right and wrong. They are important when using AI and technology because they help make sure that technology is used in a way that respects users and does not cause harm, and promotes thoughtful decision-making - considering the potential impact on others.

4. Accountability and Consequences:
    - Question: Why is it important to be accountable for your actions when using AI and technology?
    - Possible Answer: Taking accountability/responsibility for your actions when using AI and technology helps make sure that the decisions you make are with others in mind. In this scene, if Brett had thought about how his actions might have affected Cristina, he may have thought not to create the figures in the first place - avoiding the upset that he caused.

5. Respecting Privacy and Consent:
    - Question: How can you respect others' privacy and personal information when using AI and technology?
    - Possible Answer: Some things include asking for permission before using someone else's personal information or likeness, thinking about the impact of your actions and how they might affect others, and using AI and technology in a way that respects others' rights and dignity.

Opportunities to Expand

As you and your class discuss and review the main concepts above, here are some learning extensions that you can use to dive deeper into these topics:

Class Discussion

- Discuss why it's important to use AI responsibly and ethically. What are some examples of responsible and irresponsible AI use?
- Encourage students to share their thoughts on the potential consequences of misusing AI.
- Think about how various platforms and tools (e.g. social media, gaming accounts, emails, school accounts, etc.) use our personal information. Discuss whether those platforms/tools have the users' best interests in mind, and whether their information is used ethically and respectfully. What are we able to do to advocate for ourselves and protect our identity and personal information?

AI Simulation (while both of these are optional, it is recommended to complete both to demonstrate the difference in responses between humans and AI)

- The activity is the same for both the unplugged and plugged options - students will be tasked with asking AI to complete a series of tasks.

- Unplugged - a role-playing scenario where students act as both the AI assistant and the user. The user must provide a series of tasks for the AI (student) to complete. It is up to the AI to determine whether the requests are ethical and if they can complete them. The user is able to provide additional details to avoid a request being unethical (examples below). The AI is allowed to use search tools (e.g. an online search engine) to help create their response if they feel it's needed.
- Plugged - Similar to the unplugged activity, users must ask an actual AI chat the same questions to see how the AI responds. Users are also able to provide additional details to see if they are able to avoid a request being unethical (examples below).

- Prompts to ask AI:
    - Can you help me design a poster for our school charity event?
    - Can you suggest some healthy lunch ideas that kids will enjoy?
    - Can you create a news article?
    - Can you create a report card with all A's?
    - Can you make a design that looks like my friend's head on an animal's body?

- Possible Reflection Questions:
    - At what points did the AI (student or computer) refuse to complete a task for you?
    - Were there any points where the AI (student or computer) asks for additional information to see if the user was making an ethical request?
    - Did sharing additional information make the AI (student or computer) want to help you more or less? For example, after the AI saying that something was not okay, or unethical, were you able to add extra information to change its mind?
    - If you completed both the unplugged and plugged activity, compare the similarities and differences between the student AI and the computer AI.
        - Which of the two seemed to be more cautious about potentially unethical requests? Why do you think that is?

DAY 5: CHANGING THINGS UP

The culmination of the player's hard work, this final day is when the player gets to apply their knowledge from their week of learning. Creating a final design from the ideas they gathered.

ACTIVITY 6 – MIX IT UP!

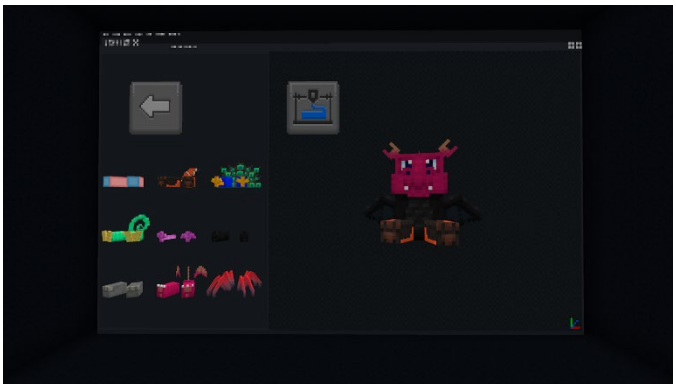
ACTIVITY SUMMARY: The player gets to use the 3D design software to create a unique design that combines elements from all the ideas they gathered.

The player starts their new day in the classroom. Based on the students' idea from the day before, the teacher provides some class time to create a model that mixes all of their unlocked designs. The player will only have access to designs that they have unlocked up until this point. If the player reaches this point of the world and does not have all 9 designs (including the base template), they will have to replay the world.

The player is prompted to log in to their computer, at which point they will have 2 minutes to choose the head, body, and legs that they want for their design. They can experiment with different combinations by re-selecting a folder and choosing a different part. If the player is happy with their design and wants to end the timer early, they can select the "Print" option. Once the timer expires or the player chooses to print their design, a cutscene will play, showing off their custom design!

GAME TIP

Players will have the opportunity to create new/more designs in the post-game section of the world.



Reflection 5

- Question
    - How can you use what you've learned in this project in other areas of your life or schoolwork?

- Example Answer
    - Being responsible for our own work, finding good resources of information, making sure we check for misinformation, and especially protecting our likeness and identity, are all good skills to use everyday, AI, or no AI.

Once the player has finished their reflection, or if they need a reminder of the question and example answer, they can speak to the teacher.

ENDING: THE BIG EVENT!

The final section of the world – players receive their certificate, can create more designs, reflect on what they've learned, or play more Dig It!

SUMMARY: It's time for the esports finals! The class' hard work pays off in this culminating moment, where they get to sell their custom models at the esports event.

A series of final messages appear from peers and staff. The esports captain is thrilled with the fundraising event, the teacher is proud of your work, and the Principal shares a certificate with the player, in appreciation for their positive use of new technologies.

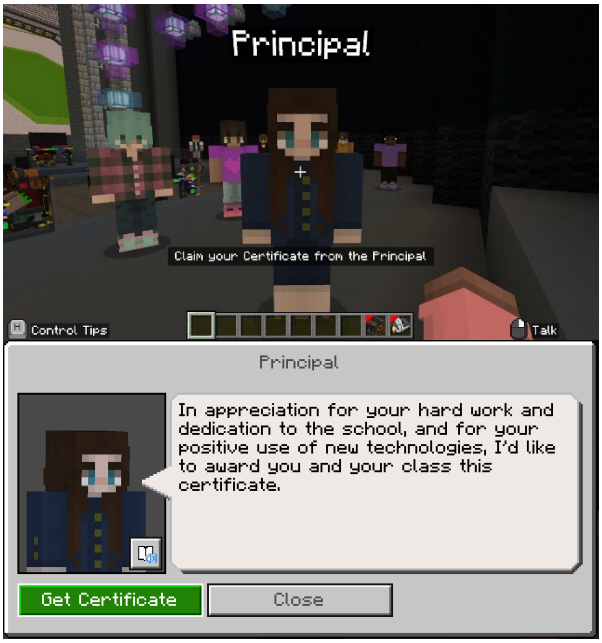
Fun Fact

The amount of people lined up are dependent on the amount of designs the player has unlocked!

End of Experience To-Dos

After the player has spoken with the teacher and the Principal, there are a series of things they can interact with:

The Computer: Players are able to create additional models by logging in to the computer, selecting their desired parts and printing. Their most recent design will be added to the shelves behind the 3D printer. The shelves can hold a total of 8 designs, at which point they will start overwriting previous iterations, in chronological order.	

The teacher: Players can speak to the teacher to review the reflection questions and example answers from throughout the world. By clicking "Let's Review", the teacher will share each question and answer, one after another.	
The Principal: If players skip the certificate to continue playing in the world then they can speak to the Principal again at any point to get the certificate later.	
The Dig It! Icon Once the players have interacted with the Principal, a floating icon for Dig It! will appear in the middle of the esports space. Players can interact with it to play a round of Dig It!	

Other NPCs:
Players can also speak with various other people within the esports venue for random thoughts and feelings regarding the experience.

THE END!

CONTINUE YOUR JOURNEY – MORE CYBERSECURITY WORLDS TO EXPLORE!

There's no better time than now to start working on developing cyber skills in young people and adolescents. Minecraft Education created a full cybersecurity pathway to support grades 2-12, from lower primary to upper secondary.

This is the Cybersecurity pathway in Minecraft Education. There are four collections of Minecraft worlds within the pathway. Although there are recommended age ranges and grade levels, there are many practical and applicable places for this learning content.

To learn more about the pathway, visit the Minecraft Education Cyber & Digital Citizenship site:
[Minecraft Education: Cyber & Digital Citizenship Site]