Field Agent
Educator Guide

OVERVIEW

In **Field Agent**, a single-player Minecraft experience for students ages 8-12, students work with Farmer Fred to train an AI agent through a series of farm-themed challenges. As they provide examples, observe mistakes, and correct errors, students discover how missing or incomplete data can lead to poor results. Through this process, they learn that AI depends on quality data, clear instructions, and human oversight to produce useful results. The experience encourages critical thinking and builds a foundation for understanding the AI technologies students will encounter in their lives.

Important Note: Field Agent is a simulated AI-literacy experience. No artificial intelligence or machine-learning model is used during gameplay. The Agent follows programmed game rules that represent selected ideas about data, patterns, testing, and human review. The simulation simplifies how real AI systems are developed and used.

TARGET AUDIENCE

Grades 3-7 | Ages 8 -12

ESSENTIAL QUESTION

How can the information that people provide an AI system affect the results? What can happen when important information is missing?

LEARNING OBJECTIVES

- Explain how AI relies on data to function, including how missing or unclear information affects the results it produces.
- Demonstrate responsible AI use by providing good data and checking AI outputs for accuracy.

MATERIALS NEEDED

- Computers with Minecraft Education installed
- Projector to introduce and facilitate the lesson

LESSON DURATION

- 1 Class Period (45–60 minutes)
- Online and offline activities are intentionally balanced in the lesson, with approximately 20-30 minutes spent in gameplay on device.

KEY VOCABULARY

- **Artificial Intelligence (AI):** Technology that uses data and computational methods to identify patterns and produce outputs.
- **Data:** Information, such as words, numbers, images, measurements, or examples.
- **Debug:** Find and fix a problem in a computer program or system.
- **Input:** Information or instructions supplied to a system.
- **Output:** A result produced by a system.
- **Train:** Develop an AI model using data and examples so it can identify patterns.
- **Test:** Check how consistently, accurately, safely, and fairly a system performs in different situations.

ADDITIONAL VOCABULARY

- **Model:** A computational system developed to identify patterns and produce particular types of output.
- **Predict:** Produce an estimate based on patterns in data.
- **Prompt:** An instruction or request given to an AI system.

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Plan

Step 1: Get the Big Picture

Review the learning outcomes and lesson resources to understand how the online and offline activities work together to support learning.

Lesson Flow:

- Part 1: Offline: Setting the Scene (Essential Question, Confused Robot Activity, Vocabulary)
- Part 2: Online: Gameplay (Opening Tutorial / 3 Activities / Closing)
- Part 3: Offline: Reflection (Reflection Questions)

Lesson Features:

Teacher Support	Facilitation steps, pacing guidance, and prompts for leading each part of the lesson.
What Students Do and See	Learner actions, gameplay screenshots, and tasks.
TEACHER TO TEACHER	Differentiation tips for younger students or students who need more support and older students or students who need greater challenge.

Optional Instructional Resources:

- **Educator Presentation:** Display to guide lesson delivery and discussion.
- **Student Workbook:** Flexible handouts for preview, practice, and formative assessment.

Step 2: Play

Play through Field Agent before teaching. Experience the fun and engagement students encounter while getting familiar with the gameplay and learning activities

New to Minecraft? No worries! You don't need to master the controls. Ask a student be your "Minecraft mentor" to play while you watch over their shoulder. A quick preview takes only a few minutes.

Overview of the Field Agent Gameplay Sequence

- **Opening:** The player, the farmhand, trains Agent, an new AI-powered robot, to help run the farm.
- **Activity: Barn Raising:** The farmer prompts Agent to finish building the barn. The player trains Agent to match each animal with the correct gate size.
- **Activity: Fence Building:** The farm animals must be contained. The player trains Agent to determine the fence height needed for each animal.
- **Activity: Crop Harvesting:** Crops need to be harvested at the right time! The player trains Agent to cut crops at the optimal stage of growth.
- **Closing**: While Farmer Fred and farmhand are enjoying lemonade, a new neighbor, Farmer Frank, arrives and asks for help setting up his farm.

Step 3: Make It Your Own

Consider your students and adjust the lesson to meet their needs.

- **By Age:** Students ages 8–9 can complete the opening and one gameplay activity, while students ages 10–12 can complete the opening, all three activities, and the extension questions.
- **By Time:** For a 45-minute lesson, skip the optional embedded discussion questions and choose 1–2 debrief questions to prioritize after gameplay. Use student workbook activities as formative assessment outside of the lesson.
- **By Learner Need:** Keep the core learning goals consistent while adjusting the level of support or challenge. Use read-alouds, modeled examples, or fewer vocabulary for students needing more support. Add vocabulary, deeper explanations, or additional workbook activities for students ready for more.

Teach

PART 1: SETTING THE SCENE | OFFLINE | SUGGESTED PACING: 15 MINUTES

Teacher Support

- Have students to use think-pair-share to respond to the essential question.
- Engage students in the Confused Robot activity which is a simplified analogy. AI systems use data and programmed processes to identify patterns and produce outputs; real AI systems are more complex.
- Select one student to act as the robot. The robot must follow directions exactly without guessing or asking clarifying

What Students Do and See

Essential Question: How can the information that people provide an AI system affect the results? What can happen when important information is missing?

The Confused Robot:

- One student acts as the robot while classmates provide the data and instructions. **Goal:** Make the robot draw a square in the air with one finger. The robot may do only what students say.
- **Round 1: Unclear Instructions:**
  Students give vague or incomplete directions, such as “Draw a square,” “Go over there,” or “Make a sandwich.” They observe how missing information affects the result.
- **Round 2: Too-Specific Instructions:**
  Students give narrow or overly detailed directions, such as “Only use tiny steps,” “Draw a square exactly three inches tall,” or “Walk using only your left foot.” They observe how limited information can make the task harder.
- **Round 3: Clear Instructions**
  Students provide complete step-by-step directions: lift your finger, move it straight up, stop, and move it right. They compare the result with earlier rounds.

questions. Facilitate a brief reflection.

- Activate prior knowledge of key vocabulary by using the Previewing Vocabulary QHT in the Student Workbook.

TEACHER TO TEACHER

More Support

Model the first instruction, use fewer vocabulary terms, and invite students to offer one direction at a time.

More Challenge

Have students do the Confused Robot activity in small groups instead of whole class; use additional vocabulary terms.

The Confused Robot Reflection:

- When did the robot succeed?
- What happened when information was vague, missing, or too narrow?
- How is this activity similar to one part of working with AI?

Vocabulary Preview:

Review: *artificial intelligence (AI), bias, data, debug, input, output, train,* and *test*.

PART 2: GAMEPLAY | ONLINE | SUGGESTED PACING: 25 MINUTES

Opening tutorial

Teacher Support

- Have a student model controls by showing one input method, if needed.
- Circulate to check that students can look, move, and jump.
- It is important for students to fully read the dialog boxes, as they contain important information. If students need assistance or translation for the dialog boxes, they can use the Immersive Reader feature by selecting the icon next to the NPC (Non-Player Character).

TEACHER TO TEACHER

More Support

Pair students strategically and allow extra practice time.

More Challenge

Ask confident students to explain controls without

What Students Do and See

Beginning Game Play

Players will spawn into the Minecraft world; they will see an all-black screen with a flyer in the middle. They will need to interact with the item to begin the game.

Student Tutorial

They will start with a Minecraft tutorial – how to look and how to move in the game.

Keyboard / Mouse

Look Tutorial

Use your mouse to look at each golden orb.



Movement Tutorial

Use WASD keys to move.

W = Move forward / A = Move left

S = Move backward / D = Move right



taking over a partner's device.

Touch

Look Tutorial

Tap and drag the screen to the center of each golden orb.



Movement Tutorial

Tap and hold the control buttons to move and jump.



Immersive Reader

Immersive Reader

Select the icon next to the NPC to use Immersive Reader.



Activity: Barn Raising

Teacher Support

- The barn raising activity is at the red entrance. Students help finish the barn by building a correctly sized gate for each animal.
- Remind students to use the ghost blocks as guide points.
- Student will need to select “Submit Build” to verify each build or “Reset Build” to start over.
- Prompt students to observe the Agent first, then train it by guiding each animal through the correct gate.
- Demonstrate how to sneak to switch among the chicken, sheep, and cow.
- Facilitate the optional discussion questions offline.

TEACHER TO TEACHER

What Students Do and See

Players will arrive inside of the barn where they will interact with Farmer Fred for their farm task – raising the barn.



Farmer Fred will explain that they need to finish building the barn by completing the gates for the animals. Each animal will need their own gate as each of them are different sizes.



Task: Make a standard wall

Players will be instructed to make a standard wall. This can be as fancy or simple as a player would like. They will need to collect blocks from the chest and place into their hot bar so they can build the wall.



These strategies can be used with any of the in-game activities.

More Support

Select one activity to complete as a class, using think aloud to model observations and decisions. Then, have students work in pairs, talking through their predictions and choices as they tackle the other activities.

More Challenge

Give students more independence to work through the activities in any order, inviting them compare approaches with a partner and explain their reasoning.

Task: Chicken Gate

Build the chicken gate using blocks from the chest. Use the “ghost” blocks as guide points. The gate is 1 × 1. Submit the build to continue.



Task: Sheep Gate

Build the sheep gate using blocks from the chest. The gate is 2 × 2. Use a different block type for each gate.



Task: Cow Gate

Build the cow gate using blocks from the chest. The gate is 3 × 3. Use a different block type for each gate.



After watching watch the Agent to see how it does on its own, it will be the players’ responsibility to train the Agent to ensure the animals go through the correct gates.



You must sneak to change the animal (between chicken, sheep, and cow) and navigate through the course of the animal gates.

How to "Sneak" in Minecraft

Keyboard / Mouse	Touch
Select the "Shift" key to switch through the animals.	Select the "Sneak" icon on the screen.





Players will watch the Agent complete the course based on their assistance (training).

Barn Raising Discussion Questions [Facilitated Offline]

- What role did Agent play in this activity?
- What data did the Agent need to be successful in this activity?
- What did you do to fix the Agent's mistakes?
- If you had to train the Agent again, what data or examples would you add to help it build the barn better next time?

Activity: Fence Building

Teacher Support

- The fence building activity is at the blue entrance. Escaped animals have damaged the crops, and students will train Agent to build fences of appropriate heights.
- Remind students to use ghost blocks, submit each build, and test the fences on the practice course.
- Students will to observe Agent first, then add examples by showing how high each animal can jump.
- Demonstrate how to sneak to switch among the rabbit, donkey, and horse and how to jump, if needed.
- Facilitate the optional discussion questions offline.

TEACHER TO TEACHER

What Students Do and See

Players meet Farmer Fred and learn that animals have escaped and damaged the crops. They help Agent determine which fence heights contain animals with different jumping abilities.



Task: Build and test three fences

Small Fence — Build a fence a rabbit can scale. Use ghost blocks, then submit the build.



Medium Fence — Build a fence a donkey can scale and provide Agent an example of the needed height.



Large Fence — Build a fence a horse can scale and show how requirements change for stronger jumpers.

If using the optional discussion questions, tailor for your students:

More Support

Choose one reflection question to discuss as a class. Model a response, then invite students to build on the idea with a partner.

More Challenge

Have students choose a reflection question and complete a quickwrite to develop their own response. Then, have them share their thinking in a small-group discussion, asking follow-up questions and building on one another's ideas.



Students first watch Agent test the course, then train it by switching among the rabbit, donkey, and horse and jumping over the appropriate fences.



How to Jump in Minecraft

Keyboard / Mouse
Select the Spacebar to jump.



Touch
Select the Jump icon.



Fence Building Discussion Questions [Facilitated Offline]

- What was the identified problem?
- What did Agent get right or wrong when testing the fence?
- What changes were necessary for success?
- What new examples or data would help Agent build a better fence?

Activity: crop harvesting

Teacher Support

- The crop harvesting activity is at the yellow entrance. Students will use a combine harvester and learn why people need to review and correct outputs.
- Students practice movement controls while harvesting the first wheat field.
- Students will work with five crop-growth stages in the game, with Stage 3 representing the optimal harvest point
- Prompt students to compare Agent's first attempt with its performance after receiving better examples.
- Facilitate the optional discussion questions offline.

What Students Do and See

Players meet Farmer Fred and learn that AI outputs may be inaccurate or incomplete, so people must check and correct them.



Task 1: Harvest all the wheat

Students use movement controls to drive the combine harvester and collect all the wheat in the first field.

How to Move in Minecraft

Keyboard / Mouse
W = forward, A = left
S = backward, D = right



Touch
Use the control stick to move.



Students observe Agent's first harvesting attempt.



Task 2: Harvest by growth stage

- Stage 1: Just planted
- Stage 2: Flowering
- **Stage 3: Fully yellow — time to harvest**
- Stage 4: Wilting
- Stage 5: Dead

Scoring: Stages 1 and 5 = 0 points; Stages 2 and 4 = 2 points; Stage 3 = 5 points. The goal is at least 1,000 points.

By harvesting at the optimal stage, students teach Agent which crops to collect and which to leave alone.



Crop Harvesting Discussion Questions [Facilitated Offline]

- What problem was Agent trying to solve?
- What data was important for training Agent?
- What went wrong, and how did the new data improve performance?
- What additional data could help Agent harvest even better?

parT 3: REFLECTION | OFFLINE | SUGGESTED PACING: 10 MINUTES

Teacher Support

- Gather the class for an offline debrief after gameplay.
- Select questions that best address learner needs and available time.
- Reinforce the key learning about data quality, human oversight, and improving outputs.
- Introduce Code Yard as an optional extension after students complete the activities.

TEACHER TO TEACHER

More Support

Use sentence starters, partner rehearsal, or one gameplay example at a time.

More Challenge

Ask students to connect the simulation to another setting where people must review AI outputs.

What Students Do and See

Reflection Questions

- What is artificial intelligence (AI), and how does it work?
- Why do the quality and quantity of data matter?
- How are people involved in guiding and using AI?
- How can AI help solve problems, and what problems would you like it to help solve?

Key Learning

- AI systems use data and examples to identify patterns and produce outputs.
- Missing, unclear, or biased data can lead to inaccurate or incomplete results.
- People must review, guide, and correct AI-supported systems.
- Better examples and corrected errors can improve performance.
- AI-supported decisions can affect real-world environments and systems.

Optional In-Game Code Yard

After completing Field Agent, students may visit Code Yard and use MakeCode to create, customize, and decorate the yard.



Assess

Student workbook | OFFLINE | OPTIONAL

Teacher Support

- Use any of the optional activities located in the Student Workbook for formative assessment or additional practice.
- Pre/Post Knowledge Check: Have students answer independently, repeat it in a different color, compare responses, and discuss changed thinking.
- Vocabulary Preview & Practice: Use the Vocabulary Preview and QHT ratings before gameplay. Explain that ratings are not a test. After gameplay, use Vocabulary Practice to deepen conceptual understanding.
- Exit Ticket Options: Select an option that matches students' needs or allow students to choose their preferred option. Use responses to identify ideas needing clarification or future instruction.

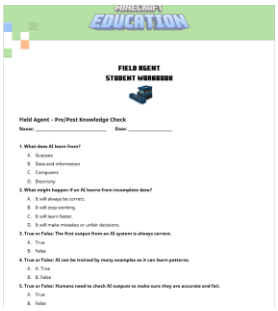
TEACHER TO TEACHER

Use formative assessment to guide what comes next.

What Students Do and See

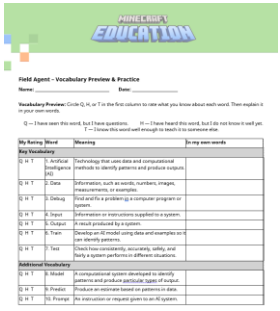
Pre/Post Knowledge Check

Students complete the same check before and after the lesson to show how their understanding has changed.



Vocabulary Preview & Practice

Students preview vocabulary, rate their familiarity, and demonstrate understanding through drawing, writing, and discussion.



Exit Ticket Options

Students use an exit ticket option to reflect on and demonstrate what they learned.



These activities are opportunities to notice student learning, not high-stakes tests. Pay attention to what students understand, how their thinking has changed, and where they may need more practice.

Note on AI Output Review Checklist

This is designed as an optional extension resource to use outside of Minecraft. It is not intended to encourage or require students to use AI tools. Use the checklist with teacher guidance, prepared models, and in accordance with your local guidelines.