



HOUR OF CODE: A MINECRAFT TALE of TWO VILLAGES EDUCATOR GUIDE

45 minutes



This Educator Guide includes:

- Theme overview
- Talking points on diversity and inclusion
- Lesson procedures
- CSTA & ISTE standards
- Ideas for extension activities

HOW TO GET STARTED

- Install Minecraft: Education Edition by visiting <https://aka.ms/HourofCode2020>
- [Watch the intro video](#) to get acquainted with this Hour of Code theme
- [Watch the walkthrough video](#) to get a better understanding of how to start the lesson and navigate the world
- Open the world and play through
- Download a copy of the [answer key](#)
- Have additional questions? Check out our [FAQ](#).

THEME OVERVIEW

For centuries, the Villagers and Illagers shared the same space but seldom interacted with each other. Now you can use the power of code to bring the two villages together. Players will experience empathy and compassion for their neighbors, learn cooperation and inclusion, and embrace the diversity that makes us all uniquely special.

This year's lesson is offered in both Blocks and Python.

LESSON OBJECTIVES

By the end of the lesson the students will:

- Understand the importance and benefits of diversity, including the role of diversity and inclusion in a community
- Understand bias and recognize how it may cause harm
- Create coding solutions that include sequences, iteration, and loops
- Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions
- Iterate on coding solutions to complete a task

REMOTE LEARNING

If you plan to offer this lesson via remote learning, please consider these tips:

1. This lesson is not designed as a multiplayer experience. Each individual student should work in their own version of the world.
2. Divide students into pairs or small groups via breakout rooms so they can help one another troubleshoot as they solve coding puzzles.
3. Given that students are likely to have varying levels of familiarity with Minecraft and coding, it may help to assign student group leaders to help peers who may get stuck.

For more information on remote learning in Minecraft: Education Edition, please refer to <https://aka.ms/remote-learning-kit>.



LESSON CONCEPTS & LEAD-IN: 10 minutes

Introduce the following concepts and questions and/or allow students to discuss them in groups:

- What is bias and what are the factors that contribute to bias?
 - **Bias** is a cognitive (thinking) process in which we form thoughts and opinions based upon our own experiences and ideas.
 - **Unconscious bias** is preference for or against a person or group that one is **not** aware of having, but nevertheless communicates through statements, actions or assumptions. This means the person holds the bias without realizing it. Unconscious bias results in stereotypes, prejudices, or preferences that cause us to favor a person, thing, or group in a way that is deemed unfair.
 - **Conscious bias** is an explicit, or intentional bias. This means the person who holds the bias is aware that they are biased.
 - Some of the most common types of bias include prejudice based on race, ethnicity, age, gender, gender identity, physical ability, religion, and body weight.
- How can biases cause harm?
 - Both conscious and unconscious biases can cause us to behave negatively or discriminate against people.
 - When we stereotype people based on their gender, ethnicity, sexual orientation, or some other characteristic, it can be detrimental to us and our community. On a larger and extreme scale, bias can lead to oppression, genocide, and even slavery.
- How can we be aware of bias around us?
 - Pay more attention to your interactions with others, especially those who may be different.
 - Reflect upon and try to understand your own reactions to people who are different from you.
- What is diversity?
 - **Diversity** is all the ways in which people are different, including characteristics that make individuals and groups different from one another. Diversity may also include different ideas, perspectives, and values.
- What is inclusion?
 - **Inclusion** is bringing into processes, activities, and decisions individuals or groups who have been traditionally excluded.



- What is the advantage of diversity in a community?
 - When communities ensure inclusion and have diversity of ideas, perspectives, values, and people they can provide a wide-ranging understanding of things.
- What are some ways in which your thoughts and/or actions show that you are acceptant of someone who is different?
 - Are you considering and thinking about what is being said or shown?
 - Have you accepted any differences of belief, opinion, or ideas?
 - Do your thoughts and actions demonstrate tolerance?

There is value in understanding differences, but what's most important to understand is that how we *perceive* those differences can have positive or negative impacts on individuals, groups, or communities.

Consider the **CALM** mnemonic method below:

- Challenge your assumptions – focus on seeing people as individuals and not as stereotypes
- Adjust your perspectives – try seeing things from another person's point of view.
- Learn to become aware - of your biases and work on understanding when they are positive or negative.
- Mix it up – increase your opportunities to spend more time with and learn from people who are different from you. This includes in the books you read and the media you consume.

LESSON INTRODUCTION: 2 minutes

Students will read through this introduction in the game before they begin the coding activities:

This is a tale of two villages: The Farming Villagers to the East and the Fishing Illagers to the West. Both towns had enough food and neither saw a reason to interact with their neighbor. This led to both towns fearing anyone or anything that was different.

And so the Villagers and Illagers continued on the same way they always had, even as the world changed around them, until eventually the changes in their world could not be ignored. The Villagers could no longer seem to



grow enough crops, and the Illagers found their fish supply dwindling. Neither town knew any other way to survive, and yet they were both too afraid to turn to their neighbor for help. Today the Villagers and Illagers are still struggling with hard times. Perhaps, with your help, they can learn to value their differences and find a new way forward... together.

CODING ACTIVITIES: 30-40 minutes

Students start their coding journey at the castle with two onboarding coding challenges. These challenges will allow them to decide if they want to code in MakeCode Blocks or in Python. We recommend beginner coders start with Blocks.

ONBOARDING CODING CHALLENGES

Challenge 1: Agent Move. Move your Agent forward so that it stands on the gold block.

Challenge 2: Plant a Sapling. Receive a gift from the Agent and plant it in the center of the castle.

After completing the onboarding challenges, students proceed into one of the two villages. They can choose to go to the Illagers' side or the Villagers' side. There are 6 coding challenges which can be completed in any order.

VILLAGER CODING CHALLENGES

Challenge 1: Build a dock. Fishing is something Villagers have never been good at. The Illagers from the next town over offered to help them learn, but they recommended building a dock first. Use your Agent to build a dock at the edge of the shore. It should be 4 blocks wide and 6 blocks long.

Lesson: Equity is not about giving everyone the same thing, it is about making sure everyone has what they need to be successful. Before you built the dock, the Villagers didn't have what they needed to learn to fish. With your dock and some lessons from the Illagers, the Villagers learned to fish for themselves. Now they'll have plenty of food. Enough to share!



Challenge 2: Introduce the ravager to the Villagers. Ravagers are misunderstood creatures. Everyone in town is afraid of them, but one Villager has learned that they're friendly! Use your Agent to introduce the ravager to the three Villagers standing near their houses so they can see how gentle these creatures really are.

Lesson: The Villagers have always been afraid of ravagers based on the stories they had heard about them. Although they had never actually met a ravager, their fear created a bias against the creatures. Once the Villagers saw that this ravager was gentle, they started to re-think their opinions of them, and realized that it is important to take the time to get to know someone before making judgments.

Challenge 3: Protect the beet farm. Something keeps tearing up Villagers' beet farm and they think it's due to the ravagers that the Illagers keep as pets. The Illagers say it wasn't the ravagers, but who else could it be? Use your Agent to build a protective fence around the farm to keep out whatever is stealing the beets.

Lesson: Thanks to the fence around the Villagers' farm, we discovered it wasn't the ravager digging up the beets, but rather a pack of foxes that were the real culprits! The Villagers learned how important it is to get the facts before making assumptions or judgments.

ILLAGER CODING CHALLENGES

Challenge 4: Prepare the field for farming. Illagers don't have much farmland and don't know how to farm. The Villagers offered to help teach them, but first the Illagers need help tilling the soil. Use your Agent to teach them how to till this block of land.

Lesson: Equity is not about giving everyone the same thing, it is about making sure everyone has what they need to be successful. Though the Villagers and Illagers had similar amounts of land, the Illagers needed help before the two groups had equitable opportunity. Now that your Agent has helped till their soil, the Illagers have the same opportunities that the Villagers do.



Challenge 5: Help the kids get their ball. A group of Illager children have lost their ball on the roof of a Villager's home and are afraid to go get it. The children don't know much about the Villager, but they've have heard that it might be a witch. Use your Agent to move up wall and press the buttons along the way to get the Villager's elevator working so it can bring down the ball.

Lesson: Sometimes the unknown can be scary. The Illager children had never met the Villager, but they had heard stories that scared them. After your Agent fixed the elevator, the Villager was able come down and meet the children. The children learned that the Villager was very kind, and not the scary witch they had assumed it to be.

Challenge 6: Build a motorized railway. The Illagers host a fair for the two towns to gather and trade, but the Villagers have stopped coming. The Illagers think that the Villagers don't like them, but the Villagers say it's too hard to get their goods up the hill. Use your Agent to build a motorized railway so that Villagers can go up the hill to participate in the fair.

Lesson: Once the railway was completed, the Villagers did indeed come back to the fair! More people at the fair meant more things to buy and sell, and good trading between the two towns. The motorized railway benefitted both the Villagers and the Illagers and the fair is once again an event for all!

LESSON CONCLUSION: 5 minutes

Consider the following questions and/or facilitate student group discussions:

- Why is it important to recognize and understand the importance of diversity?
- How might the CALM method work in your daily life?
- Why is it important to be inclusive of all kinds of people regardless of their gender, race, socio-economic background, etc.?
- What are the ways in which we may benefit from diversity and inclusion?



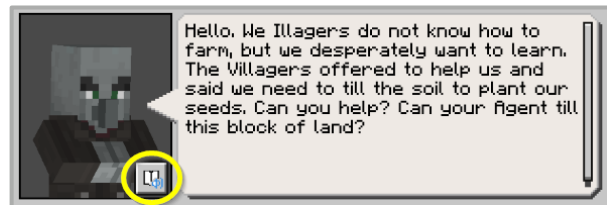
TIPS AND TRICKS

Look for the question mark: Look for NPCs (non-player characters) with a yellow question mark floating above their heads. These are the townsfolk most in need of help. By right-clicking on these characters, students can start a new coding challenge. This question mark will turn green after starting the challenge, and the NPC will be able to share a hint, reset, or quit the activity.



Draw a picture: If students get stuck or are unsure where to start, encourage them to draw a picture of the path they are planning for the Agent or talk to the NPC to get a visual hint. This will help them plan out their route and adjust their variables to overcome any pathing challenges.

Immersive Reader: Students can click the Immersive Reader icon in the lower right corner of NPC dialogs to have text read aloud or even translated to a different language.



Teleport, get hints, and more: After leaving the castle, students will be given a communication device. To get help in an activity or quickly travel between areas, right-click on the communication device. You can receive a hint, reset the activity, jump between the two villages, or return to check on the sapling.



PYTHON CODING TIPS:

- Run the sample code to learn about new commands as they are introduced.
 - Use CTRL+C and CTRL+V to copy and paste from the examples while writing your own code.
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ENHANCEMENT ACTIVITIES

Upon completion of the lesson in full, students can be offered a variety of options:

1. To do additional coding activities in the same world that will enable students to explore creative coding in Minecraft.
 - a. Replay the world in the other coding language.
 - b. Challenge themselves to code in a new way. For example, if students did not use loops the first time through the activities, encourage them to go back and try the activities again using loops.
2. To explore more on diversity and inclusion, please explore the following lessons/resources
 - a. Teaching Tolerance:
 - i. Diversity and Inclusion Grades K-2:
<https://www.tolerance.org/learning-plan/diversity-and-inclusion-1>
 - ii. Diversity and Inclusion Grades 3-5:
https://www.tolerance.org/search?query=diversity%20and%20inclusion&f%5B0%5D=facet_content_type%3Alearningplan&f%5B1%5D=facet_sitewide_grade_level%3A36
 - iii. Diversity and Inclusion Grades 6-8:
https://www.tolerance.org/search?query=diversity%20and%20inclusion&f%5B0%5D=facet_content_type%3Alearningplan&f%5B1%5D=facet_sitewide_grade_level%3A37



- iv. Diversity and Inclusion Grades 9-12:
https://www.tolerance.org/search?query=diversity%20and%20inclusion&f%5B0%5D=facet_content_type%3Alearningplan&f%5B1%5D=facet_sitewide_grade_level%3A38
 - v. Mix It Up – Create a Diversity Campaign at your School: Move out of your comfort zone and connect with someone new over lunch:
<https://www.tolerance.org/mix-it-up>
 - b. Topic Collections found in the Flipgrid Discovery Library:
 - i. Conversations About Race, Equity and Justice:
<https://admin.flipgrid.com/manage/discovery/collections/details/22304>
 - ii. ADL Education:
<https://admin.flipgrid.com/discovery/partners/37?name=adl-education>
 - iii. Equal Justice Initiative:
<https://admin.flipgrid.com/discovery/partners/53?name=equal-justice-initiative>
 - iv. Langston League:
<https://admin.flipgrid.com/discovery/partners/31?ns=&name=langston-league>
 - c. Explore age appropriate books/literature on diversity and inclusion
 - i. [ADL Books Matter](#)
 - ii. [Celebrate our Differences](#)
 - iii. [Diversity and Inclusion - Secondary](#)
- 3. To explore other Minecraft coding activities in block-based coding or Python:
 - a. Minecraft Computer Science Subject Kit:
<https://education.minecraft.net/class-resources/computer-science-subject-kit>
- 4. To explore additional Hour of Code activities through Code.org:
 - a. Hour of Code activities at Code.org:
<https://hourofcode.com/us/learn>



Minecraft Control Guide

KEYBOARD

W – Move forward
S – Move Back
A – Move Left
D – Move Right
SPACE – Jump
C – Open coding window

MOUSE

Left Click – Mine or Attack
Right Click – Use the selected item in your hotbar or Interact with a character
Move mouse – Look around

TOUCH

If you're using Minecraft with a touchscreen device, the game controls are different from a keyboard/mouse device.

- **Movement:** look for the movement control pad in the lower left corner of your screen.
- **Look around:** Drag anywhere on the screen to look around.
- **Talk with characters:** As you approach characters in the game, a “talk” button will appear allowing you to interact with them.
- **Code:** Tap the Agent/robot icon on the top of the screen to open the coding interface.
- **Jump:** The button on the lower right is for jumping.

For a printable .pdf file with more Minecraft controls, visit:

https://education.minecraft.net/wp-content/uploads/Key-Terms-and-Control-Guide_MEE.pdf



EDUCATION STANDARDS

CSTA K-12	
1A-AP-08	Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.
1A-AP-09	Model the way programs store and manipulate data by using numbers or other symbols to represent information.
1A-AP-11	Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.
1B-DA-07	Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.
1B-AP-10	Create programs that include sequences, events, loops, and conditionals.
1B-AP-13	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.
1B-IC-18	Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.

ISTE	
1C	Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
2B	Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
3A	Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.
3B	Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.
6B	Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field.



SOCIAL JUSTICE STANDARDS FROM TOLERANCE.ORG

6.	Students will express comfort with people who are both similar to and different from them and engage respectfully with all people.
7.	Students will develop language and knowledge to accurately and respectfully describe how people (including themselves) are both similar to and different from each other and others in their identity groups.
9.	Students will respond to diversity by building empathy, respect, understanding and connection.
11.	Students will recognize stereotypes and relate to people as individuals rather than representatives of groups.
13.	Students will analyze the harmful impact of bias and injustice on the world, historically and today.



CODING CONCEPTS

The lesson explores the following computer programming concepts including:

- **Sequencing:** The Agent will move in order that you sequenced. A sequence is one of the basic logic structures in computer programming. In a sequence structure, an action, or event, leads to the next ordered action in a predetermined order.
- **Iteration:** In Computer Science, “iteration” is just a fancy term to make things repeat over and over again. To learn more: <https://minecraft.makecode.com/courses/csintro/iteration>
- **Loops:** The loop command only repeats when a condition is met ('true'). The condition can only be 'true' or 'false'. If it is 'true', the while coding block will repeat the code and if it is 'false' it will stop.



Glossary

Mob – Mobs are living, moving, entities, such as animals and monsters.

NPC – Non-Player Characters are Minecraft mobs that will interact and speak to the students. Some will even offer activities to be completed.

Spawn – The term used when a character, animal or mob is generated into Minecraft.

Agent – The Agent is a Minecraft mob that helps students learn coding. Through code, the Agent can complete tasks like moving, mining, building, planting and harvesting.

Ravager – In Minecraft lore, the ravager is a large Minecraft mob with four legs and horns that's hostile to both players and Villagers. They are found roaming with groups of Illagers and are sometimes ridden by them. In this lesson, the ravagers are friendly and can be found in the Villager's side of the world and initially are misunderstood by the Villagers.

Illager – In Minecraft lore, the Illagers are hostile mobs that live in the world and can attack the player or Villagers. In this lesson, the Illagers are friendly fishers on the west side of the world and are initially misunderstood by the Villagers.

Villager – In Minecraft lore, the Villagers are friendly mobs that live in the world tending to their villages and can trade with the player. In this lesson, the Villagers are friendly farmers on the east side of the world and are initially misunderstood by the Illagers.

Assumption – The belief that something is true without real facts or evidence.

Diversity – To have variety or different parts.

Equity – The act of being fair and reasonable.



Identity – The characteristics and features that you associate with yourself.

Inclusion - The act of making a person or thing a part of the group.

Bias - To show favour or preference for or against a person, thing or idea over another in a potentially unfair way.

Collaboration – The act of working together with other individuals or in a group to create something or to solve a problem.

Stereotype – A fixed general image, idea, or belief about a group of people that a lot of people believe but may not necessarily be true.

Point of view - The opinion or attitude a person has about another person, thought, or idea.

Perspective – A specific way of viewing or thinking about something based on your beliefs or experiences.

Acceptance – The approval or acknowledgement of something.

