



EPITOME

HANDBOOK

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ID	Reference		Title
1	2020-1-UK01-KA226-HE-094536		EPITOME Proposal
2			

Applicable Documents

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1. Introduction

1 Epitome

1.1 The scope of the project

The project aims at supporting the use of digital learning spaces by European educators as a means to help them continue to deliver through virtual classrooms Problem Based Learning activities that were until now offered only through physical collaboration in classrooms. By helping HE institutions with pedagogical departments to extend their academic curricula with practical approaches towards remote PBL in combination with Game Based Learning, EPITOME aims to improve the current situation with respect to the teacher's ability to deliver remotely, through virtual classrooms, the same quality of education they delivered in physical classrooms until now.

1.2 Target groups

The target groups are academic staff of HE establishments which have pedagogical departments, and which can use the outcomes to extend their teaching so as to equip the educators of tomorrow with the knowledge and skills to deliver remotely PBL experiences to their students through their virtual classrooms. Target group is also the school community which is in desperate need of all-inclusive resources which can be immediately put to use by the teachers in order to facilitate remotely collaborative problem solving. Additional target group are the STEAM centres which also need to be in position to operate remotely and from a wider perspective, any teaching/training organisation that can benefit from the use of digital learning environments independently of the age groups it addresses as game-based learning has been proven to be efficient for all age groups.

1.3 The scope of this output

The purpose of this manual is to provide teachers with the practical technical elements to enable them to use Epitome's resources and create their own learning paths using Minecraft. It also provides tools for validating the learning pathways in order to measure the evolution and commitment of the students as well as their own evolution in the use of the PBL pedagogy in the classroom.

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2 How to play

2.1 Minecraft ?

Minecraft is a sandbox game that was released in the early 2010s by Mojang studios. It is the most popular video-game ever, where it has more *active* users from what any other game has *total* users. In the original game, the player is tasked to roam freely and explore their environments. It follows the simple premise of: “You mine things to craft with, and you craft things to mine with”. With that, a lot of different materials and buildings are able to be created inside the game, which is something that is being taken advantage of in Minecraft: Education Edition.

In Minecraft, players explore a blocky, procedurally generated 3D world with virtually infinite terrain and may discover and extract raw materials, craft tools and items, and build structures, earthworks, and simple machines. Depending on their chosen game mode, players can fight hostile mobs, as well as cooperate with or compete against other players in the same world. Game modes include a survival mode (in which players must acquire resources to build in the world and maintain health) and a creative mode (where players have unlimited resources and access to flight). There is also a wide variety of user-generated content, such as modifications, servers, skins, texture packs, and custom maps, which add new game mechanics and possibilities.

Minecraft: Education Edition, is an educational tool, built on top of the Minecraft BEDROCK engine. By using the familiar look and controls of Minecraft, students can explore a vast library of lessons that take place in the game.

2.2 Presentation of the different versions of Minecraft, especially Minecraft Education Edition

Minecraft has been released in many different versions over the years. The core version, that is the first to receive updates and new features is the Minecraft: Java Edition. It is called Java edition because it was developed using Java. After Microsoft purchased Minecraft, it released a version called: Minecraft: BEDROCK Edition, which is the engine that runs in all consoles, tablets, phones and some PCs. Also, it is the version that Minecraft: Education Edition was built on. Most versions are up to sync, these days, so everything that was discussed so far applies on all of these, with minor differences like specific item recipes, and the way that the game loads data.

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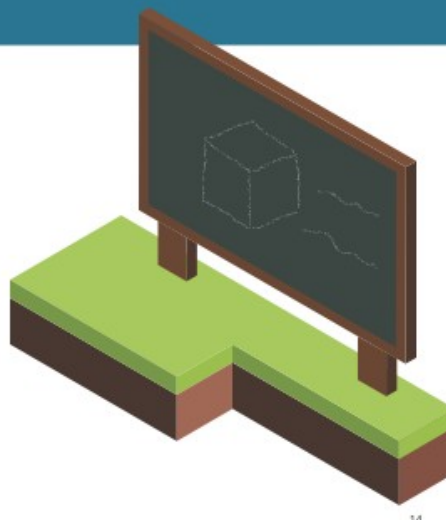
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WHAT IS MINECRAFT: EDUCATION EDITION?

- Game-based learning **that students love**
- Drives social-emotional and STEM learning
- Security, multiplayer, and assessment features
- Immersive, standards-aligned, and engaging content across subjects
- Available for Windows, Mac, iPad, and Chromebook via O365 Education and M365



Minecraft: Education Edition is a game-based learning platform that builds skills, unleashes creativity, and engages students in collaboration and problem-solving. There are basic differences to M:EE with its predecessors, like for example the “end-credits” event cannot generate automatically on M:EE, and M:EE has tools that are either completely new, or modified in order to accommodate the educational material that educators will provide.

K-12 and higher education educators use Minecraft: Education Edition to teach a range of subjects, including reading, language arts, writing, history, chemistry, computer science, and math. Minecraft can map lessons onto learning outcomes driven by curriculum standards.

2.3 Description of a typical party and the different goals, depending on the selected mode (survival, creative)

In survival mode, the player is free to roam the world, but has limited movement, and has to gather their own resources in order to ensure their survival.

In creative mode, the player is free to roam and even fly, they have unlimited resources and invincibility.

In adventure mode, the player is a bit more limited than in survival, but this mode is created to guide the player through a story, without making them able to interact with the environment too much, so much so that it would destroy it.

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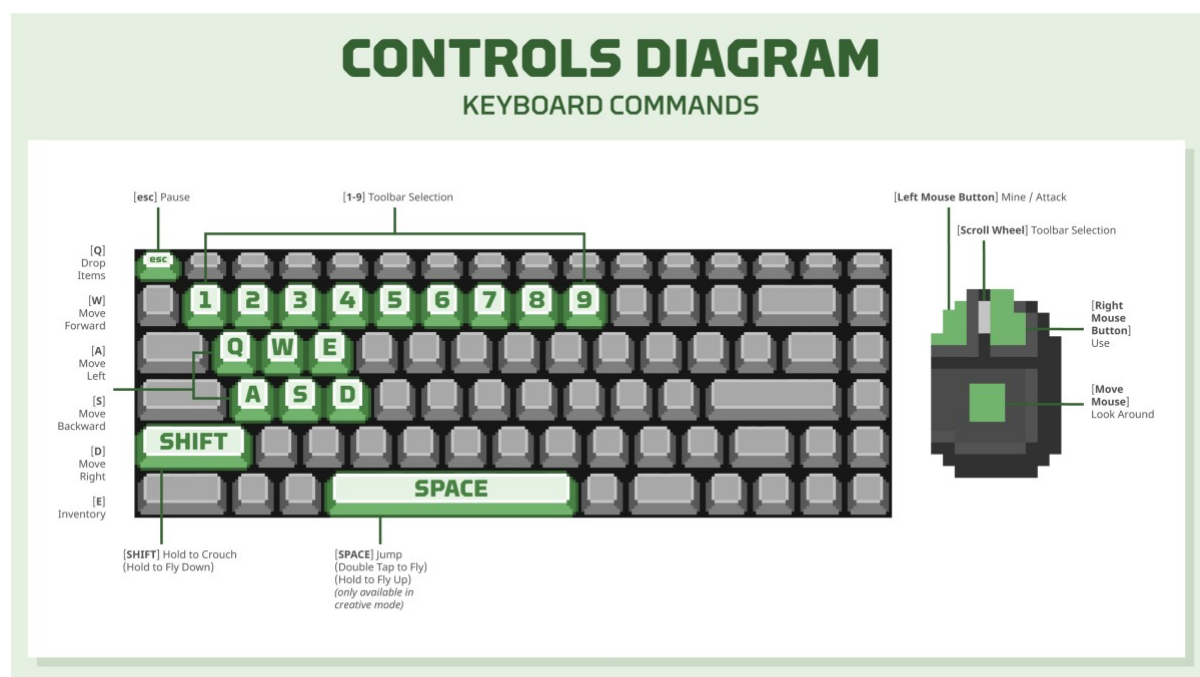
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2.4 Keybindings

Once you opened the world, you will need to navigate the game. The navigation is possible using your keyboard and mouse. The buttons of the keyboard to be used are:

KEY	USAGE	KEY	USAGE
W	Move Forward	E	Open Inventory
A	Move Left	Q	Throw selected object
S	Move Backward	T	Open the chat
D	Move Right	C	Open Code Builder
SPACE	Jump (Double SPACE to fly when runs in the creative mode)	/	Open chat and automatically add first character as "/"

You can point the direction also by moving your mouse.



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3 How to use Minecraft in the classroom / technical skills

In order for someone to create their own challenges and learning paths using Minecraft: Education Edition they will require knowledge that will vary depending on the complexity of the world itself. The most basic thing that anyone must require is to be comfortable using Minecraft. The controls in creative mode are generally easy to get a hang of. Although there are more complex tools that are used for building the game infrastructure, they are not necessary (see: [Minecraft Worldedit](#), [VoxelSniper](#)). In order to implement NPCs with more than 1 text-box each, then the user must be familiar with basic JavaScript, or at least understand the bare minimum of programming in order to replicate template files that can be found online, or be extracted from already existing projects. Optionally, the user could insert custom made entities, with the use of [blockbench](#). That means that they will require the skills necessary to create a 3D model, even though blockbench has a very user-friendly UI.

Description of tools used in Minecraft in order to record the work (step by step).

Learning Journal

The Minecraft: Education Edition (M:EE) platform provides a number of different tools that the learner can use as a learning journal. These tools are:

- Book and Quill [available in the Items tab or by using slash command:/give @s writable_book]:
 The Book and Quill is good for documenting stories. It is a tool essential for journaling one's learning experience. Learners can use it in order to take notes, record results, store photos and of course export them outside of M:EE in order to study it later, or give it to a teacher for review. Players can use it to add pictures taken with the Camera into a portfolio book, and edit the book text. After editing their book, players can click on Sign to personalize the cover and sign to lock their book. After locking, even the author cannot change the content and the book will appear in purple colour in the inventory. When clicking on the book from the inventory, it will open for exporting. The default filename for export is <Book Title> <Author Name> and by default is saved in the documents folder. The exported book will be a ZIP file. Picture pages are saved as JPEG files while text on the pages is saved as TXT files

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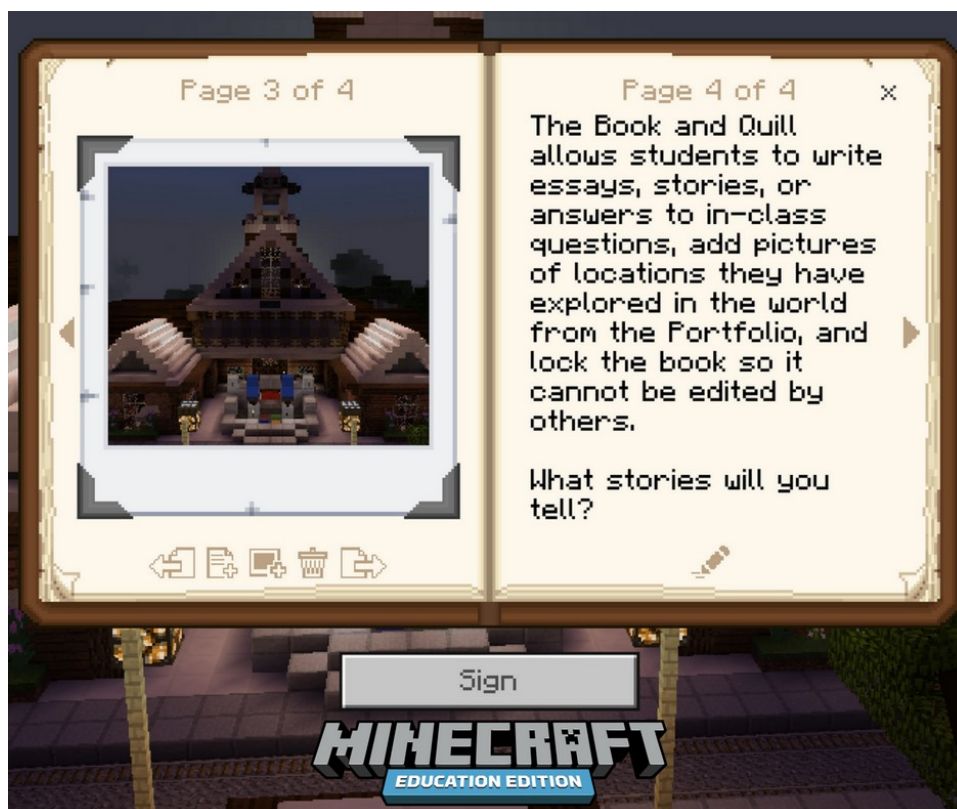
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- Portfolio [portfolios can be obtained in the creative inventory or through the [/give](#) command]:

The portfolio is a tool like the Book and Quill, which is basically solely used to take log of the pictures that the learner has captured on the M:EE world. The portfolio is a storage space where all the pictures taken are stored. Like the book and quill, it too is exportable to a different file for safe-keeping or review. Captures are saved there automatically, therefore it's easier to use and more convenient. Although this cannot act as a detailed log of one's journey, like a Book and Quill can, this can serve as a quick "highlight reel" of the lesson, or all the lessons the student has been this far or the same course.

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- Camera [it can be obtained in the creative inventory in Education Edition]:
The camera is the tool that the Minecraft users can utilize in order to capture pictures and store them in the two containers mentioned above. It provides a more gamified version of simply taking a screenshot of your progress every time it's needed and also requires a minor procedure (pointing the camera and setting it up), that makes the note taking process less tedious and more of a fun activity. Using a camera from the inventory captures a first-person screenshot. It may also be placed creating thus a camera entity that can track the player, and take pictures from the camera's perspective. Close-up snapshots of an item on the ground can be taken by holding the Shift key while right-clicking.
- Structure Block [available using the [/setblock](#), [/fill](#), or [/give](#) commands]:
Structure blocks are one of the few things in [Minecraft](#) that do not generate naturally but can be obtained using commands. The structure block is a block used to save an area of your Minecraft World, and export it as a 3D object (.obj file). With that, the learners can save their progress or send it for review, without being limited by the 2 dimensions of a picture. Also, producing 3D objects as homework, or using them to study seem more interesting to students because it's different from what they've been used to.

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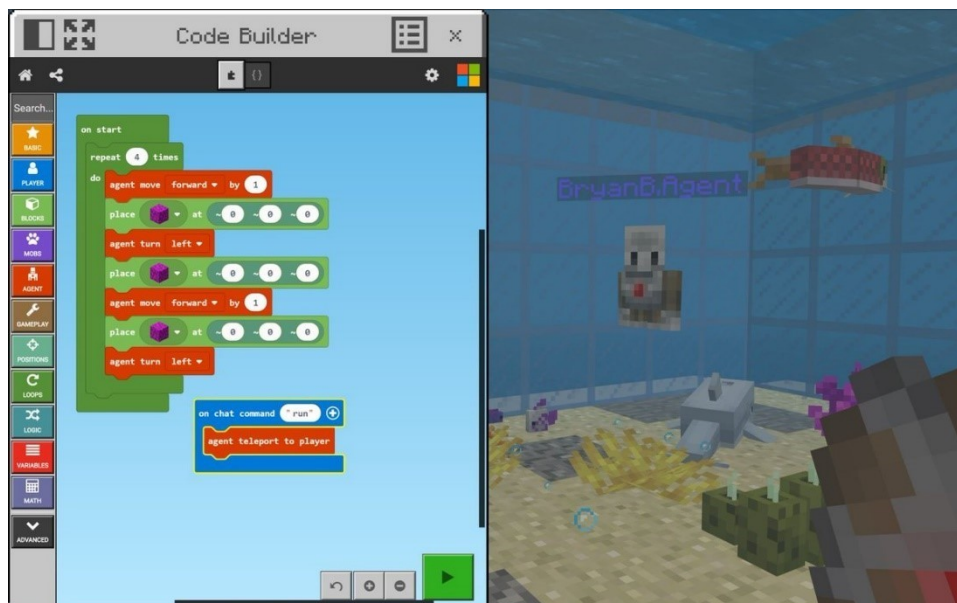
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- Command Blocks.



In all versions of Minecraft, there are a certain type of blocks, that are called command blocks. Those basically execute commands that maybe the player couldn't have done on their own, or as fast. At the beginning of the lesson, command blocks can be enabled, which will basically work as training wheels for the players. Once the players get the gist of the task at hand, command blocks can be turned off or disabled, so that the players can either repeat the task without the training wheels, or continue the same task but finish it without any help. Examples of what command blocks can allow the player include: Ability to fly, ability to place blocks, give more blocks to the player, more health, more resources, faster speed, jump boost, night vision etc.

- Code Builder.



The Code Builder is a feature exclusive to the M:EE platform. With the use of the Code Builder, players can set up commands that basically give them the effect of command blocks. The code builder can be set up by the teacher or the students themselves. The code builder

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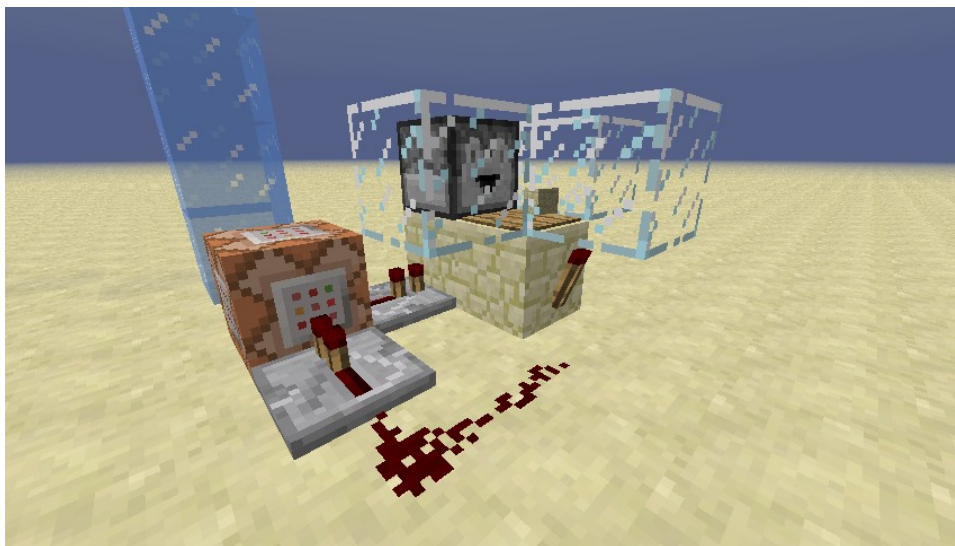
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holds more potential that will be discussed on later methods. As far as scaffolding goes, the code builder can do things similar to the command blocks, the only thing that is different is the way that they are set up and summoned. For example, there can be a set up where you have only a limited number of uses of a command blocks, or the code builder can be used infinitely, from anywhere in the world.

- Multiplayer Functionality.

M:EE provides an easy-to-use Multiplayer server. Through this functionality the teacher can demonstrate first hand to the students how to complete certain tasks, give immediate feedback, answer questions, enable-disable command blocks, set up the code builder etc. The multiplayer functionality will be discussed more, later on.

- Redstone



A vital part of Minecraft is redstone. Basically, redstone and its components are the implementation of basic circuits in Minecraft. With those you can alter the game, with less impact than command blocks. However, basic circuits like a combination lock, AND gates, OR gates etc. can be implemented and used for each game's purpose. The redstone contraption can run in the background or be exposed as it provides a nice visual effect for the students.

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4 Methodology

The digital learning methodology depends greatly on the equipment the teacher has in the classroom. The most comfortable case is that of the desk class where each student has access to a computer independently. But other paths are possible with more limited equipment.

In the case of the desk room, each student has a particular computer according to the modalities defined by the school (personal account, supervision of the room and the screens...). Before the session, it is advisable to check that everyone has all the necessary elements for the activity.

It is possible to let each student do the activity on a solo Minecraft world but it is much more interesting to develop collaboration through a shared Minecraft world thanks to a server. However, this requires defining very specific rules of use, or even making sure that students only have access to the Minecraft world from their school's network or at specific times. For example, a previous experience showed us that achievements made in the morning in a Minecraft world were the subject of a "clan war" during lunch break or in the evening, once the students went home. A reminder of the rules and some software restrictions solved the problem.

Regarding the technical aspects of the server, the teacher should contact the system administrator of his school. More information is available at this address:

- English: <https://education.minecraft.net/en-us/get-started>
- French: <https://education.minecraft.net/fr-fr/get-started>

When only one computer is available in the classroom. It is important to privilege a collaborative work with a complete vision of the screen for all at the same time. This is why a video-projector is essential.

Furthermore, the actions to be performed must be divided into groups, with small groups of students each having to think about the different problems posed by the Minecraft universe used. One can apply codesign methods that are accessible to children, such as brainstorming, drawing, creating scenes, etc.

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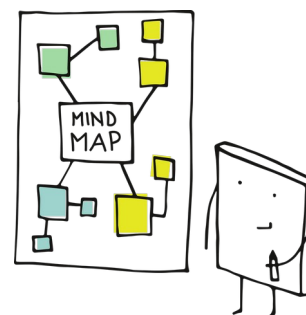
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Brainstorming is a technique that uses collective intelligence to produce as many new ideas as possible on a given theme. In small groups of a maximum of 8 participants, each person takes a turn to speak and give an idea on the given theme, on the exposed problem. This can also be done in a very quick way by saying everything that comes to mind in turn. Often the most unusual ideas are the best. Brainstorming allows you to clear your head and to come up with new ideas, sometimes by bouncing on the proposals of others. No judgement is made on the proposals, but brainstorming allows you to quickly explore the data on a subject, its positive and negative aspects and the solutions that can be found.

For students who are shy or afraid of being judged when they make their proposals, it is possible to use writing or drawing by asking them to verbalize or draw everything that comes to their mind regarding the given subject. The result is often very interesting. When words and expressions are used, it is possible to use a mind map, but the students must have been made aware of and trained in this practice beforehand.



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When the brainstorming is done through drawings, the idea is to share the different ideas proposed in small groups. This can be done in the following way:

- have the students vote on which drawing best represents the idea shared by the groups
- discuss and add elements from the other drawings to complete the idea so that everyone can contribute,
- have the students vote regularly to validate the drawing: as long as the participants think that there are things to add, the drawing is not validated.

This method allows all the students to participate in a common proposal which is then transcribed in the Minecraft world into actions to be realized. In this case, a reporter is designated for each group, and this reporter is changed regularly so that everyone can participate. The idea is not to let one student monopolize the action.

These methods can also be applied in "one computer/child" mode to make them think about their actions and avoid being only instantaneous. They allow to plan the actions, to develop the course of action and the consequences, like a strategy that one would build for a game like chess.

Through these different methods, the aim is to encourage reflection and exchange between students in a collaborative manner. We are not looking for a solution proposed by one student and validated by the others, but rather a solution created collaboratively and augmented by the contributions of everyone. There can also be several solutions to the same problem, like the Perl language slogan "There's more than one way to do it". The advantages and disadvantages of each solution will be analyzed in class.

The rendering and presentation of each solution, whether in a classroom or in a class with one or few computers, should also be as participatory as possible in order to avoid a "television-like" rendering.

Minecraft Education Edition also exists on a tablet, as well as in a classic version. We will take into account the differences in handling between the mouse/keyboard combination and the touch screen alone, which can make some actions difficult to perform.

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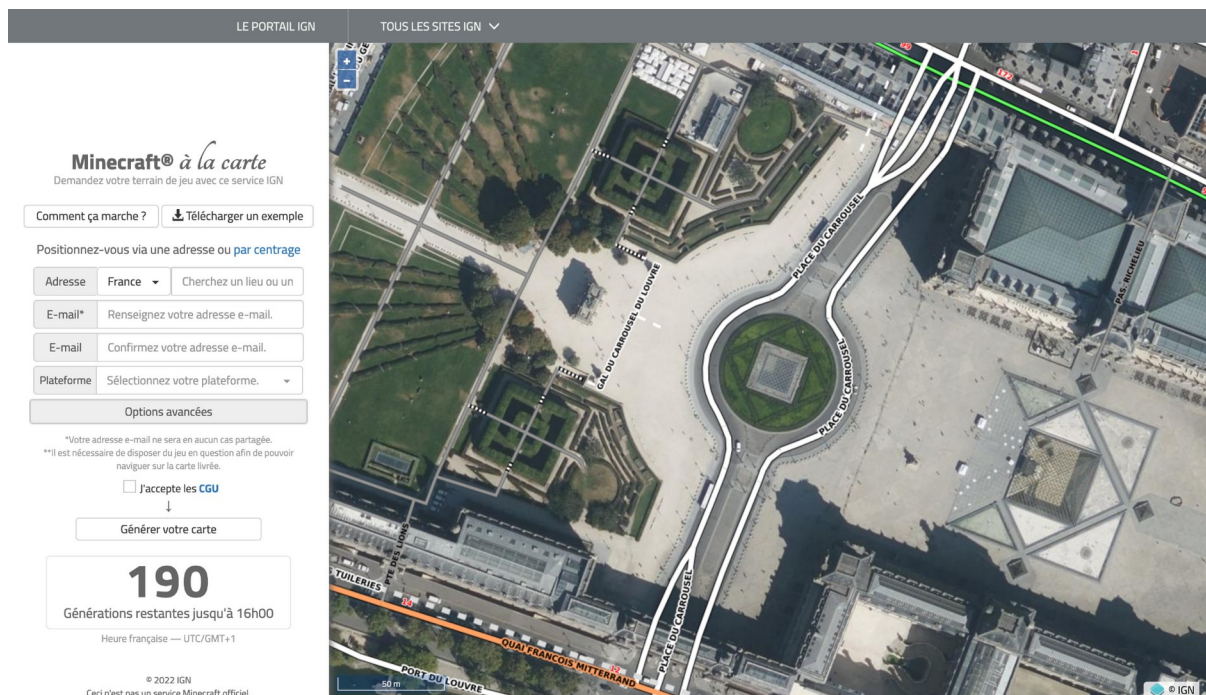

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4.1 How to create a world based on a map

4.1.1 Introduction

The French National Geographic Institute (IGN) offers a free online service, called “Minecraft à la carte”, to generate a Minecraft world from an existing map, accessible at this address : <https://www.ign.fr/minecraft/>

However, the service is only available in French.

You can choose a particular geographical area through the form and the satellite view and then define its characteristics, as well as those of the platform used to play, to retrieve a file containing the map.

The download link is sent by email, so you have to fill in the form to receive all the necessary information.

It is possible to choose a location anywhere in the world. You can then specify the contours by moving the black square with the mouse on the right, as in the example below concerning the Montmartre hill in Paris.

Fill in your email address and the operating system you use.

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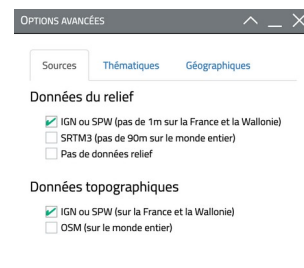
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4.1.2 Advanced Options

The "advanced options" part offers some additional possibilities to configure your map, divided into three tabs: sources, thematic and geographic.

4.1.2.1 Sources

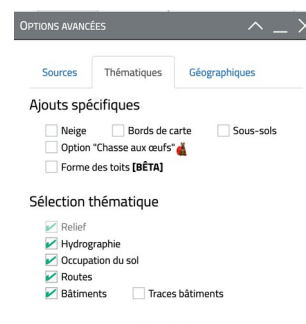
The sources concern the geographic databases used to model the maps and their impact on the relief, some databases not including information on the relief or not exceeding a certain height, or on the topography, i.e. the representation of the details of the map.



4.1.2.2 Themes

The thematic options concern the elements that will be included in the generated Minecraft world, including :

1. the presence of snow,
2. the creation or not of basements,
3. the integration of an "egg hunt" mode, famous in the Minecraft universe,
4. the creation of the hydrographic fabric (rivers, seas...),
5. the presence of roads and buildings,
6. etc.



4.1.2.3 Geographic

The scale ("Échelle") allows you to define the size of the cubes. By default, a cube is 1 meter square.

The area ("Emprise") allows you to define the size of the area, by default a square of 2.5 kilometers.

The orientation offers the possibility to turn the square according to a defined angle.



The exceptional right-of-way ("Emprise exceptionnelle") is for very large maps and allows you to exceed the default right-of-way limits. This option should be used sparingly because the generation of the maps requires a lot of computing power and several days. The default right-of-way is sufficient for most projects.

Finally, the "large relief" option only concerns Minetest, a free and open source version of Minecraft.

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4.1.3 Validation

To receive your card, you must accept the "Terms and Conditions" by clicking on the box "J'accepte les CGU".

Once you've done all that, click on the "Generate your map" button.

You must then solve the CAPTCHA by copying the letters and numbers that appear on the screen into the form. Be careful with upper and lower case letters. You must also accept the processing of personal data by validating the box asking for your age and then validate the other elements proposed. IGN does not really collect any personal data but needs your consent to use your email address and send you the different information. Then click on the "Valider" button once the CAPTCHA is solved.

You will then receive a confirmation email, indicating that your request has been processed.

Integration in Minecraft

Once the IGN has generated the map, you will receive an email indicating the link to download the files. The Minecraft world received is in "zip" format, a classic compression format facilitating file transfer. It must be decompressed before it can be used. Please refer to your operating system's instructions for this.

On Windows, just right click on the file and choose the option "Extract all". On Mac OS X, you need to open the file and it will decompress automatically. On Gnu/Linux, depending on your distribution (Ubuntu, Mint, Debian, Arch...), one of the two previous methods can be used.

We advise you to rename the resulting folder by giving it an explicit name, for example here "Montmartre", name of the district of Paris recovered on the map.

This folder should then be placed in the "Saves" folder of your Minecraft folder. This folder is located in a different place depending on the operating system you use. See Minecraft's instructions on this subject.

The created world now appears in the list of available worlds. Please note that it may take some time to load the world.

Then click on "play with the selected world".

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4.2 Minecraft Tutorial : Creating an NPC from scratch

Minecraft: Education Edition is an educational platform that is based on the engine of Minecraft: BEDROCK Edition. Before you start, you need to download the Minecraft Education Edition Package according to the requirements of your device.

If your computer runs in Microsoft Windows S mode, you need to deactivate the S mode to be able to download the Minecraft Education Edition.

How to deactivate Microsoft S mode.

Using the Microsoft S mode, the user has only access to apps that can be downloaded from the Microsoft App store. To deactivate the S mode, you need:

- To create a new Microsoft account that is not licensed as work or school
- Connect this Microsoft account to the laptop
- Then on your PC running Windows 10 in S mode, open Settings > Update & Security > Activation.
- Find the Switch to Windows 10 Home or Switch to Windows 10 Pro section, then select the Go to the Store link.
- Note: Don't select the link under Upgrade your edition of Windows. That is a different process that will keep you in S mode.
- On the page that appears in the Microsoft Store (Switch out of S mode or a similar page), select the Get button. After you confirm this action, you will be able to install apps from outside the Microsoft Store.

To start using the game you need to acquire a Minecraft Education License. There are 2 types of licences to be acquired, academic and commercial.

To create courses on M:EE, one should first learn how to navigate the M:EE software. Keep in mind, that for more advanced edits of the world, back-end coding is required, however this After the game opens, the user will be asked to log in using their credentials. Look for the [licencing information](#), to find out for what program your institution is eligible for. Regardless, you can always use your personal email address and start a free-trial run of the game, which gives you limited tries at Minecraft worlds. Purchasing a licence is of course recommended, since for some of the setup, closing the game and turning it back on is often required.

When you open the game:



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This is the title screen. Depending on the version you're playing in, the background may alter. *You can find the version of your game by looking at the lower right corner of the screen.* Each of the buttons that appear on screen serve a different role:

- **Play**: Navigate to the menu where you will be able to either play, create or join a Minecraft world.
- **New & Featured**: Opens a library with promoted material that gets updated from time to time.
- **Settings**: Opens a menu where it lets you configure settings (more on the “Configure Settings” section)
- **Switch Accounts**: Opens the log-in window where you can change your log in information.
- **“Hanger Icon”**: Change your appearance
- **?**: Redirects you to the [Minecraft: Education Edition community hub](https://education.minecraft.net/).

4.3 Configure Settings

The “Settings” menu has many features that can help you customize your gaming experience. It even includes accessibility features. For this tutorial, we are only going to focus on configuring the basic controls that a teacher might need to alter, in order to navigate inside the game.

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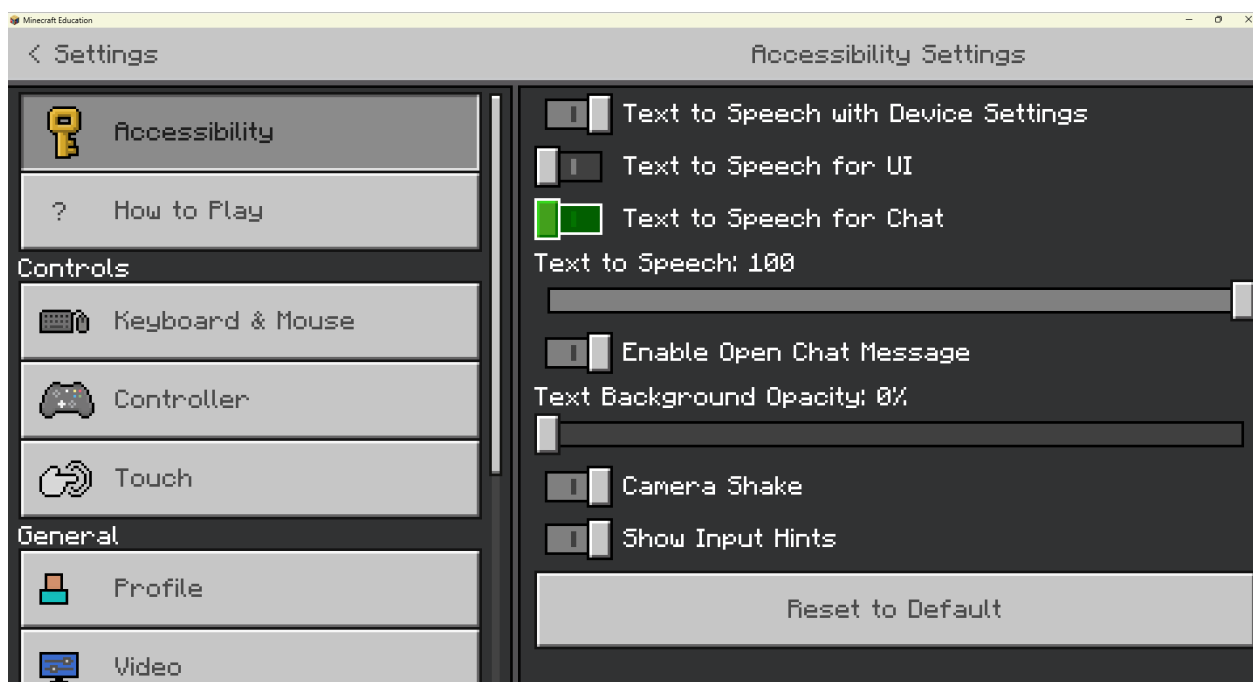
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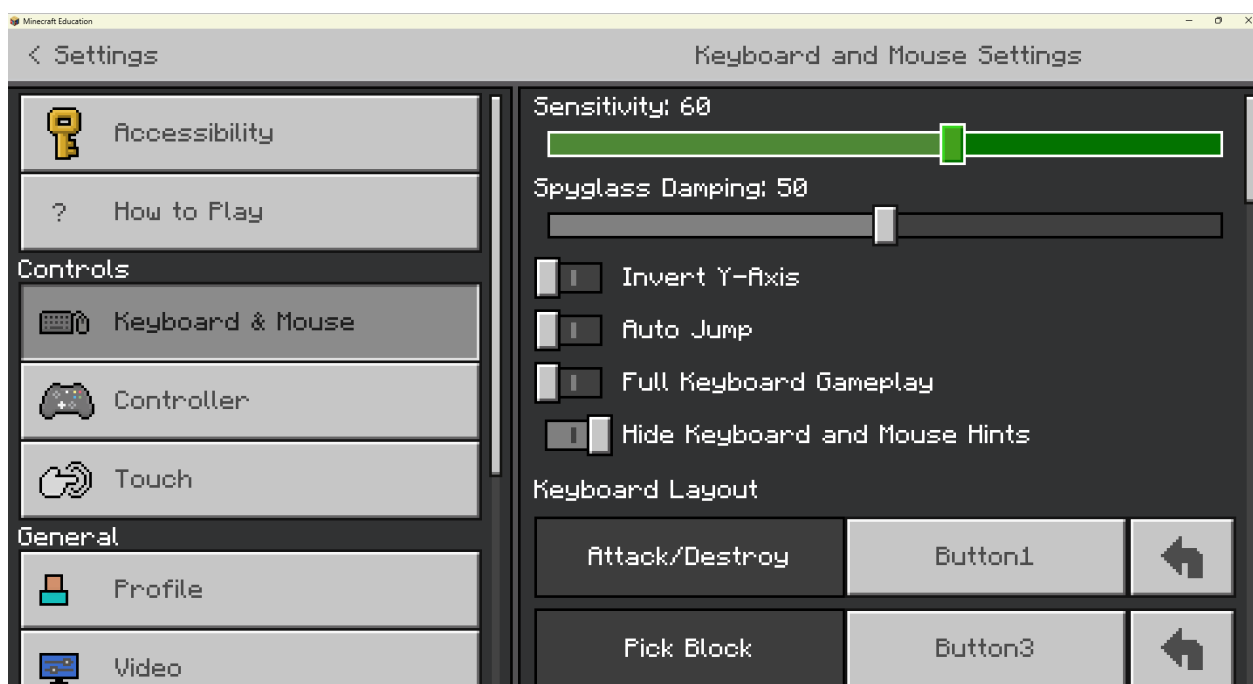
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This is the interface of the main setting menu. It is separated in two sections (left and right), in which the left section indicates the category in which you are in, and the right section indicates the contents of the category you chose. The category that we will focus on the most is going to be the “Keyboard & Mouse” category.



In the “Keyboard & Mouse” category, we can alter the controls of the game to our liking. The default settings are usually ok for most people, but people who haven’t gotten used to first-person point of view video games, might want to adjust the mouse sensitivity to something a

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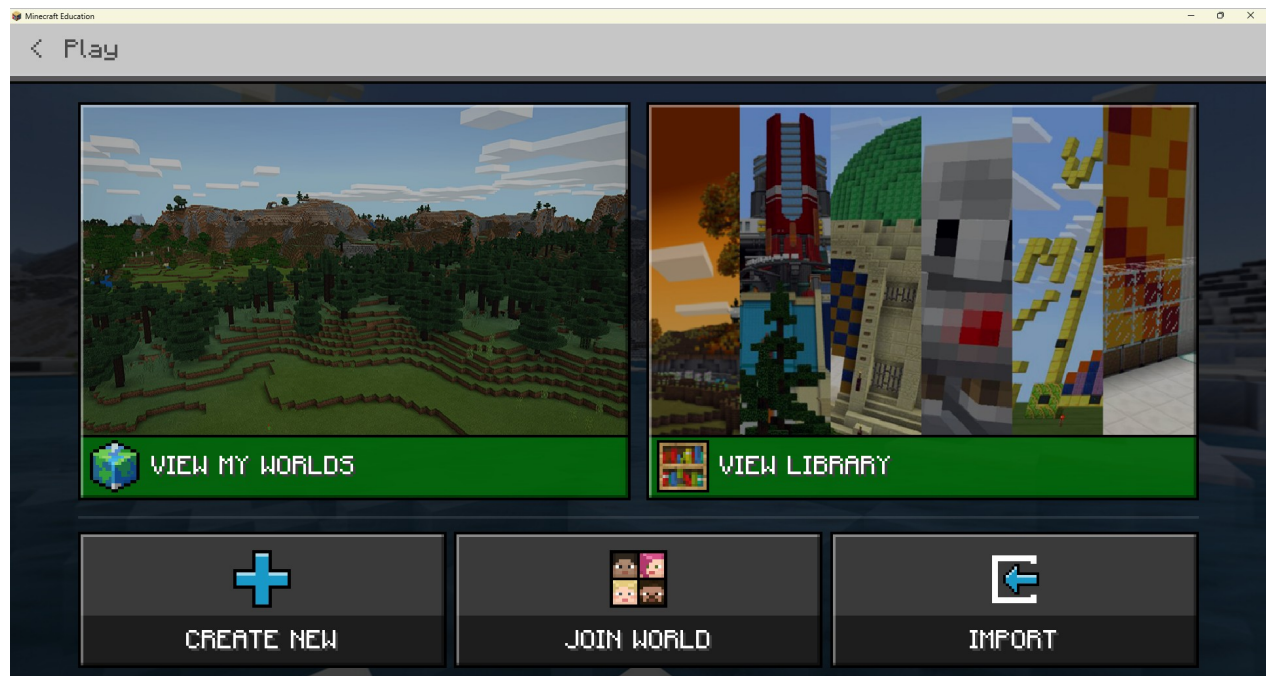
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lower value. Also, the controls are made to accommodate for right-handed people, each key can be bound to something else however, to assist left-handed people, or people with disabilities. Below are some of the recommended key-bindings for left-handed people.



4.4 Creating and Playing a new world

After selecting the “Play” option in the title screen, this is what your screen should look like:



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4.5 Each option serves a different purpose:

View My Worlds: Play worlds that are already saved in your game.

View Library: Browse and download worlds that are uploaded by the community.

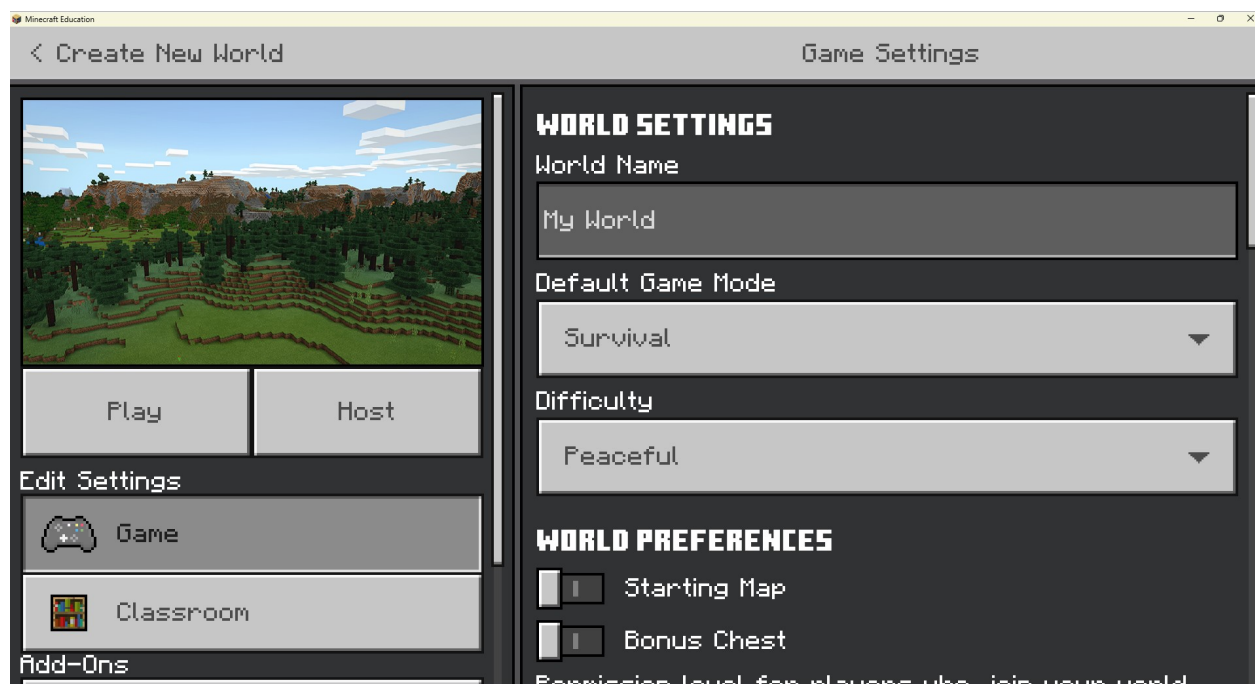
Create New: Create a new world from scratch or from a template.

Join Word: Use a code to join other players online. You can only play in multiplayer courses together with people who share the same email domain.

Import: Import worlds or templates from a different file in your device.

We will create a new world from scratch and show off the initial parts of creating an NPC.

By selecting the “Create New” option, this should appear on our screen.



Similar to the “Settings” menu, this interface is also separated into two different columns. You can immediately create a new world and start playing with the default settings, which is what this tutorial will assume you did.

For future reference, these are some variables you should consider altering when creating a new world:

- **World Name:** Name the world as something indicative of the lesson you are creating. This will reduce friction in the classroom when switching from traditional teaching to the Minecraft world. Also, this might be the first impression your students will have from the world. Try to make it interesting to engage your students.
- **World Type:** “Infinite” refers to the default Minecraft world type, which means that there is landscape infinitely generating. This might help you during the world creation.

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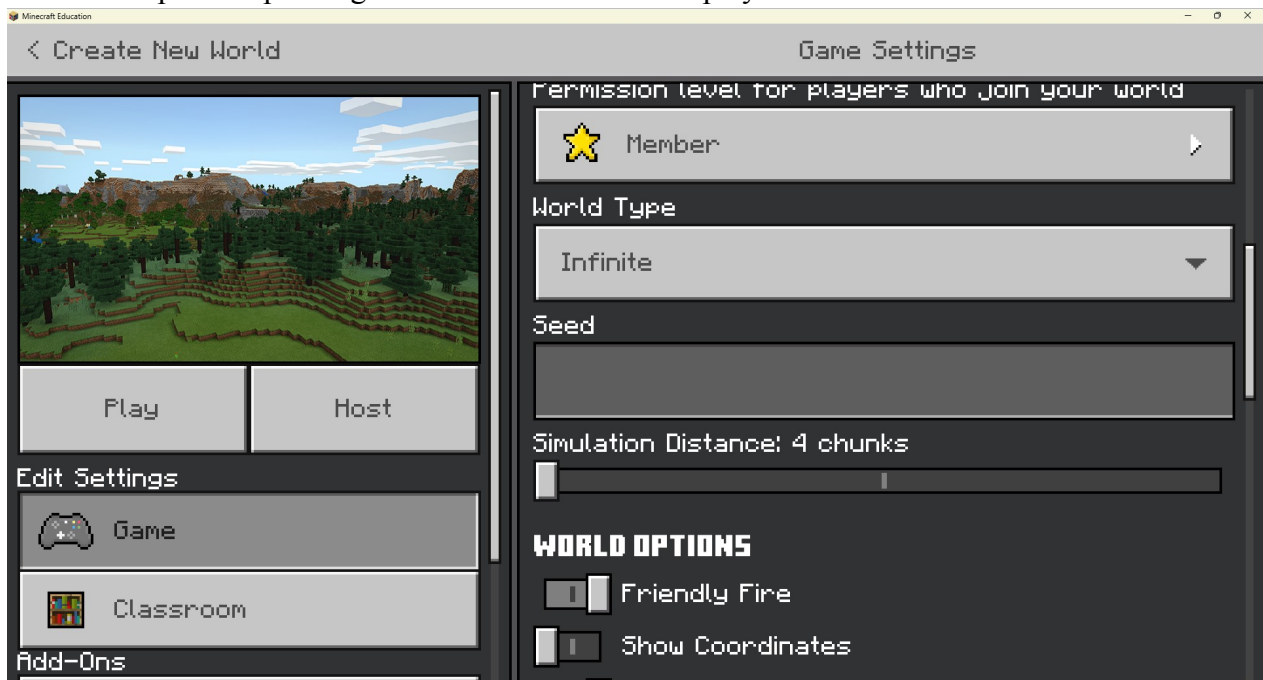
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- **World Options:** There are multiple boxes to check in this, that are pretty self-explanatory. The “Friendly Fire” allows players to harm each other when in multiplayer mode, so I would recommend turning it off so that it does not mess up with the flow of the lesson.

Show Coordinates is the most important box that should be on when creating a world, since events take place depending on the location of certain players and blocks.



If you scroll down on the left column and look at the “Add-Ons” section, you can see all your saved resource and behaviour packs. This refers to more advanced settings, however for some features of Minecraft: Education Edition, they are vital. If you activate more than one resource/behaviour pack, on the top section of the right column you can adjust their order. The default pack goes last by default, while all the other packs go above it. If two resources are identical between two packs, the one that will appear in-game will be from the resource pack that is listed on top of the list.

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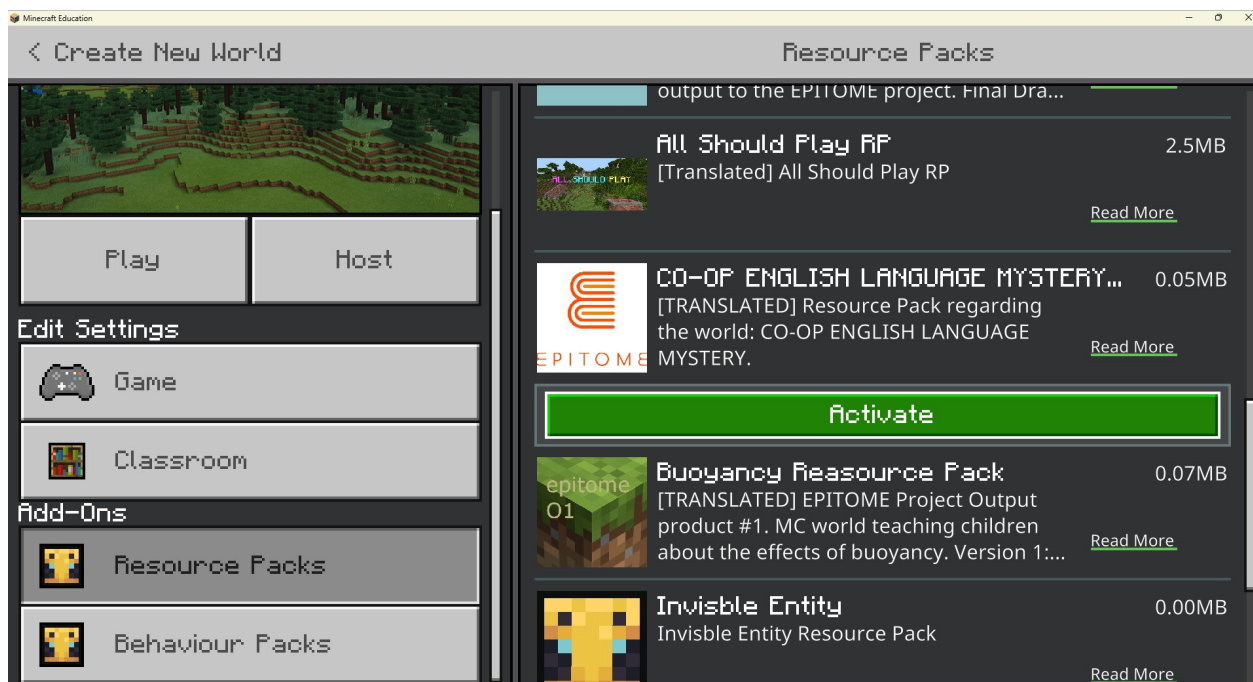
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4.6 Creating and editing an NPC in-game.

After we create a new world and press “Play,” you will spawn in a randomly generated terrain. The environment of the next pictures may vary from your experience; however, the main functionalities will be identical. This tutorial assumes you have logged inside the world using the “Default” settings for creating a world. If you have altered the settings in any way, you might have to skip some of these steps.

When you log in, you will be in “Survival Mode.” This is indicated by the hearts and the pieces of meat in the lower part of the screen. This whole area is called the “hotbar.” Feel free to run around and test the controls of the game.



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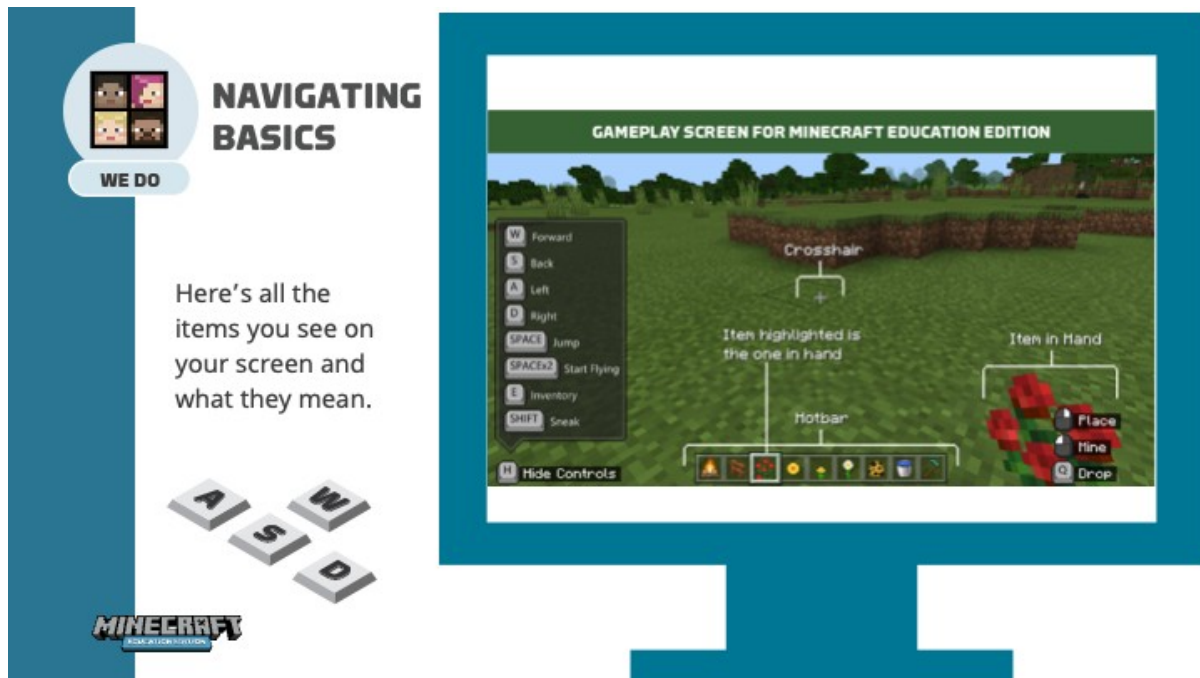
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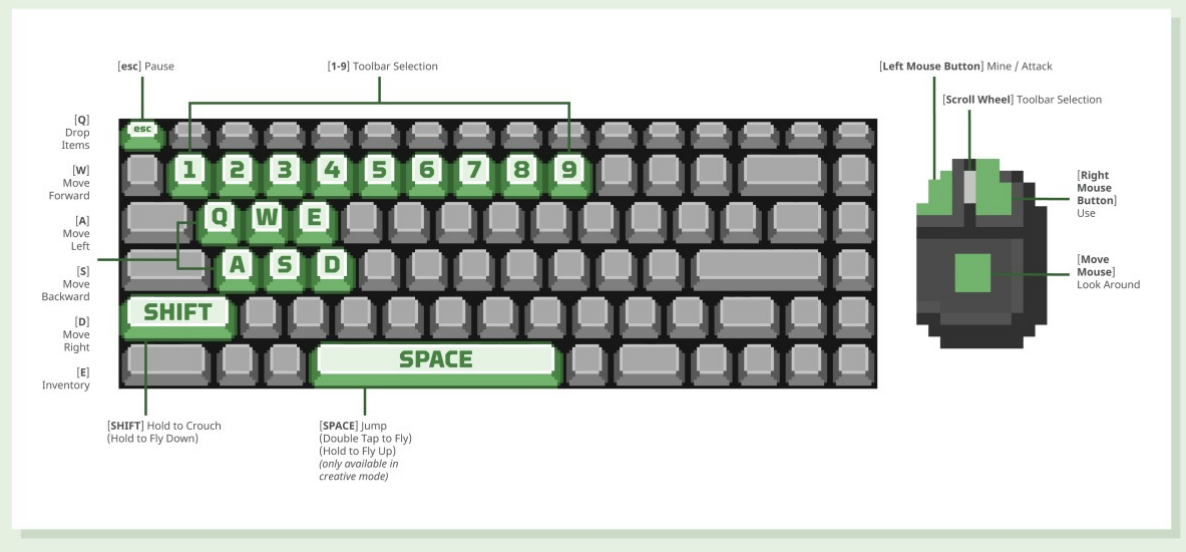
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CONTROLS DIAGRAM

KEYBOARD COMMANDS



After you think you have the hang of it, try to go into "Creative Mode". This can be done from the menu or in-game. Just hit T on the keyboard and the "Chat and Commands" menu will pop up. Insert the command:

```
/gamemode c
```

This will help you go to creative mode. In the creative mode you are invincible and can fly and freely select any block you want from the game.

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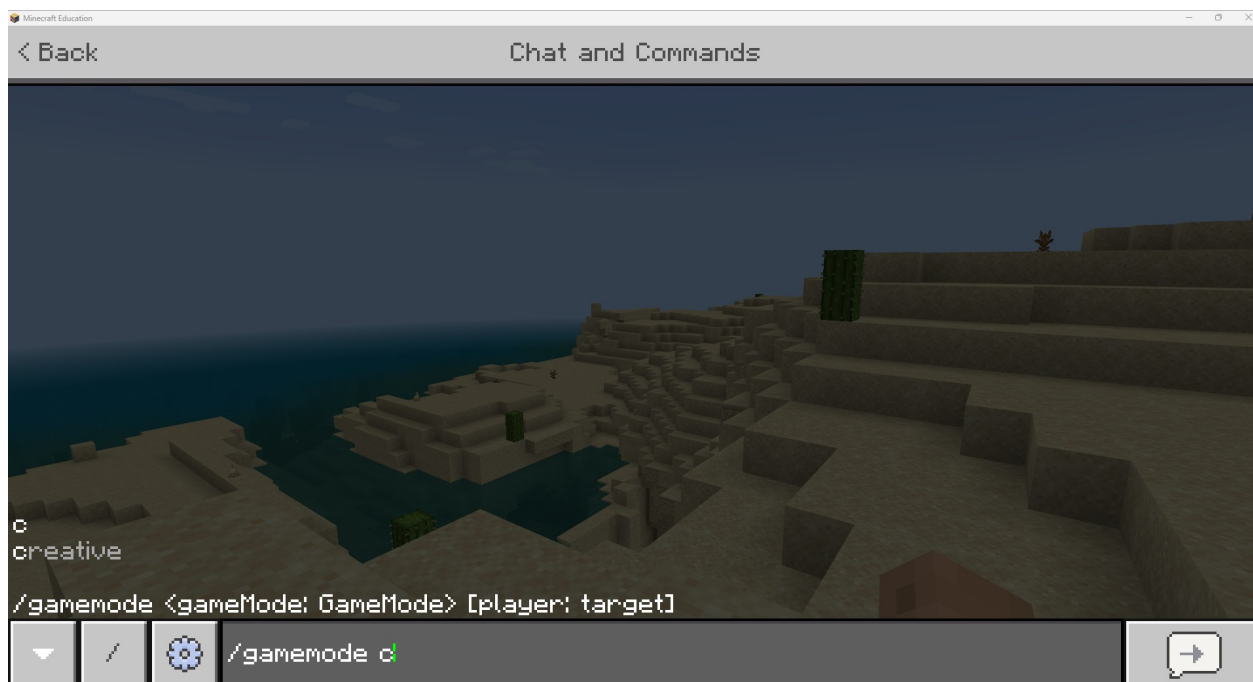
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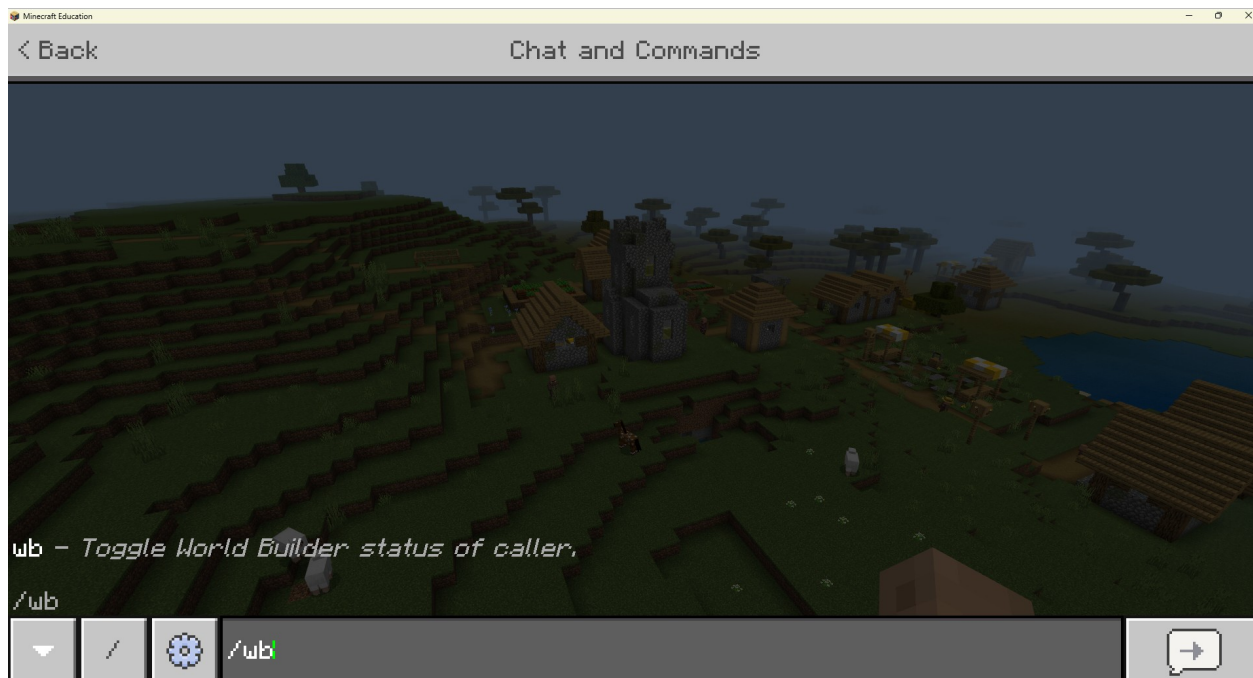
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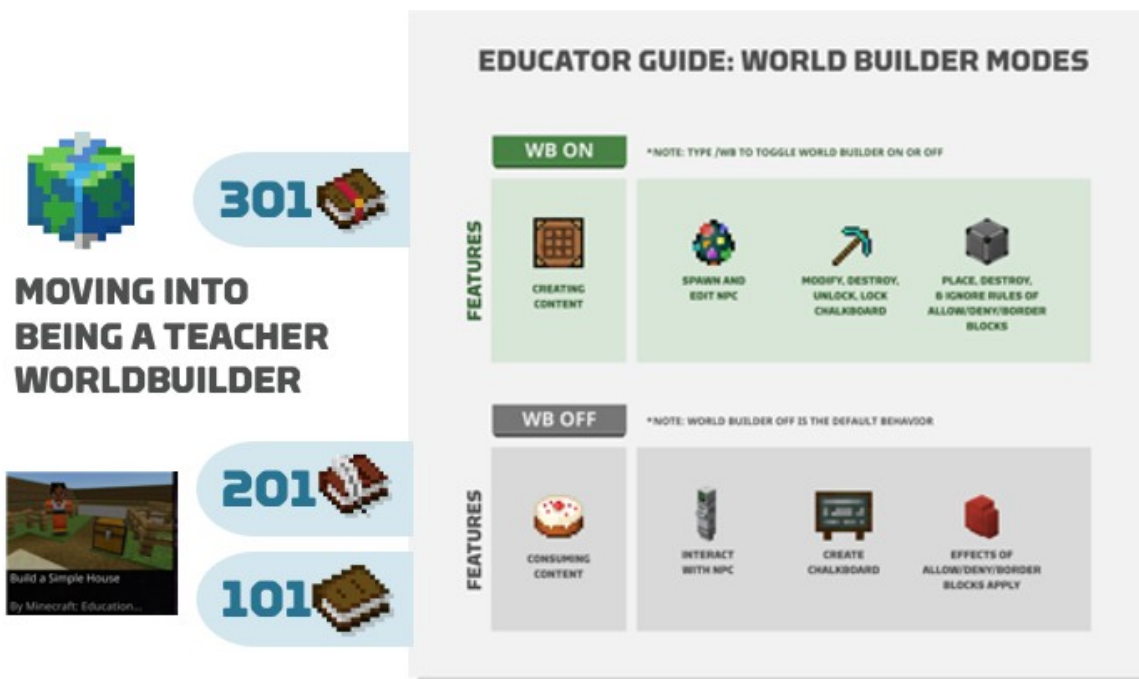
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The next command that you should insert into the game and is the first step that most users struggle with is the “World Builder” command. Just like the last time, type T on the keyboard and insert the command:

/wb



The differences between having world builder enabled or disabled are conveniently displayed in the graphic below:



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After running the command, it would seem like nothing has changed.

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Press E on the keyboard and this will change to the inventory menu. The creative inventory menu is vastly different from the survival menu, that is why we had to change to creative mode. **This is the same place one would go in order to find signposts and boards.**



Type to the search bar: NPC, and this will filter out all other items. Now you will have the NPC spawn egg in your disposal. Just drag and drop it from the menu to your hotbar, so that you will be able to use it in-game.



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Press escape to exit the menu and find a good spot to place your NPC. Look at a block on the ground and hit [Right Click]. This is when an NPC should appear on your screen, like what is happening in the screenshot below.



If you right click on the NPC, this menu should pop up:



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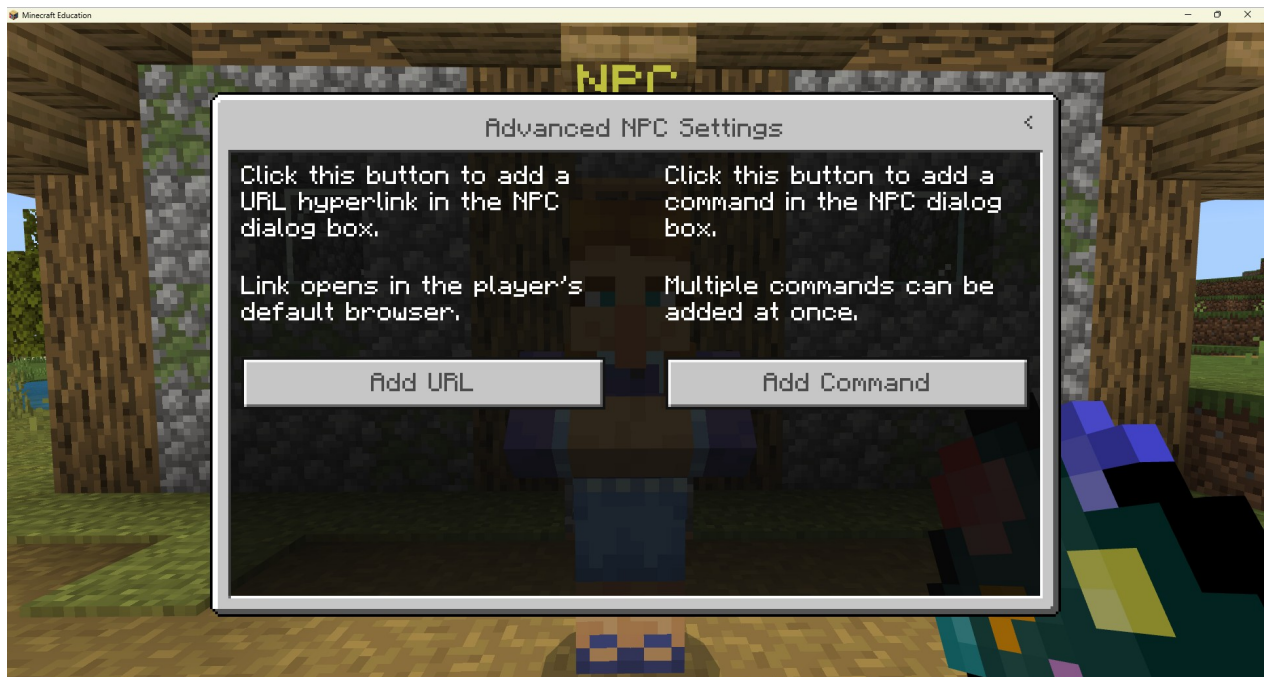
The “Name” Section allows you to edit the name of your NPC.

The “Edit Dialogue” Option opens this window:



In this window you can freely type the main text that will appear on your NPC when you interact with it **outside world builder mode**.

The Advanced NPC settings opens the following window:



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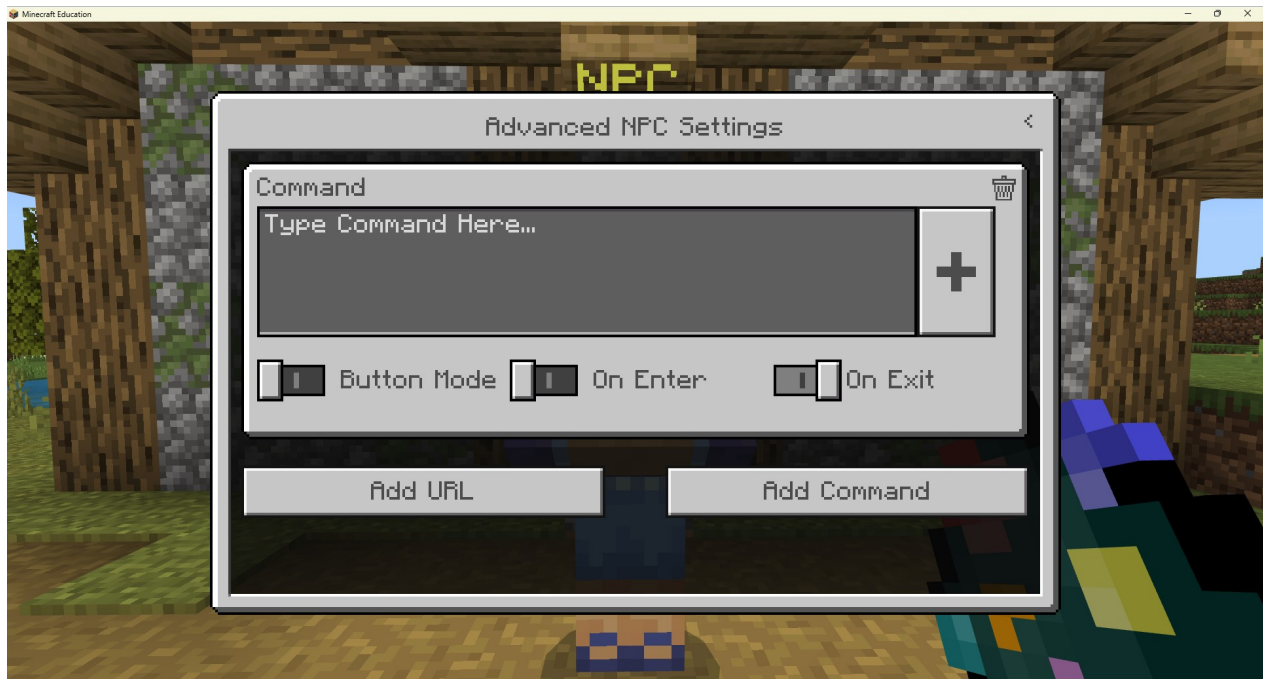
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If you hit either, it will lead you to the same menu, but having either the command box or the url box enabled. If you hit the “Add Command” option:



This allows you to add in-game commands to trigger specific actions in your world. Below these commands, there are three switches: [Button Mode, On Enter and On Exit]. If you want your NPC to have buttons where the players will have to choose select different options, you should turn on the button mode. After turning on the button mode, there will be a different box that will give you the ability to name your button. Do not add the name of the button on the “Type Command Here” section. The “+” section lets you grow the section of the text box of the “Type Command Here” section.

On Enter and On Exit refers to whether you want commands to activate when the player starts to interact with the NPC or when they close the text window.

You can add multiple commands, buttons and URLs by using the “Add URL” and “Add Command” option.

4.7 More on Commands

This is a more advanced introduction on what commands you can use to help you with NPCs. If you are going to be dealing with more than one NPC, it is vital that you add a tag to each one, to differentiate them from one another.

A fool proof method of doing that, is to walk into an NPC (as close as you can) and type the command (by typing T in the keyboard)

```
/tag @e[type=!player,r=1] add one
```

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This command tags an entity that is not a player, in a radius of 1 meter. The name of the tag that it gives is “one”. Tags are case sensitive. Every NPC should have a different tag for this to work.

Let’s assume that you’ve created three NPCs, each with their own tag (one, two and three respectively). How would we make it so that each time you interacted with one NPC, it gave you the option to open the dialogue box of the other two NPCs?

The NPC with the tag “one” should have two buttons, with the commands:
 (In order to open the “two” NPC)

```
/dialogue open @e[tag=two] @a
```

(In order to open the “three” NPC)

```
/dialogue open @e[tag=three] @a
```

The NPC with the tag “two” should have two buttons, with the commands:
 (In order to open the “one” NPC)

```
/dialogue open @e[tag=one] @a
```

(In order to open the “three” NPC)

```
/dialogue open @e[tag=three] @a
```

Lastly, the NPC with the tag “three” should have two buttons, with the commands:
 (In order to open the “one” NPC)

```
/dialogue open @e[tag=one] @a
```

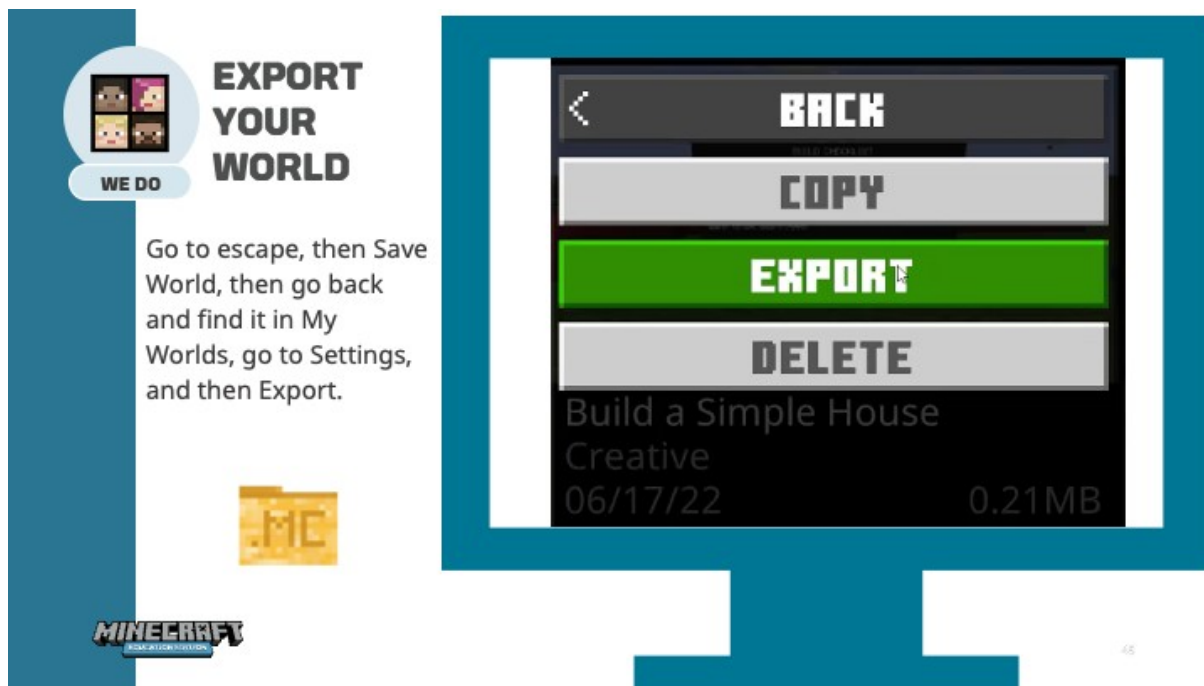
(In order to open the “three” NPC)

```
/dialogue open @e[tag=two] @a
```

This logic can be extended further. For example, you could have identical looking NPCs hidden around the map. In the dialogue box it would appear that the same NPC is talking, but with different text.

There is an easier and “lighter” way of doing this, which is by creating a dedicated behaviour and resource pack for your world. However, this requires some prior knowledge of front-end programming, and would not fit to the nature of this tutorial.

4.8 Exporting your world



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5 Validation methodology

5.1 Metrics

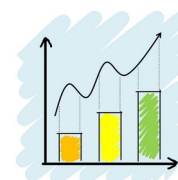
5.1.1 What is a metric?

A statistical measure is a value that allows us to evaluate a process or a concept. It is defined according to the desired objectives.

Because of the great diversity of educational projects that can be initiated within the framework of Epitome, we cannot define systematic standard measures. These measures must be adapted to the project.

Nevertheless, the Epitome project is mainly concerned with impact metrics.

The impact metrics are based on four main criteria: specific (one information by metric), measurable or not (qualitative or quantitative), acceptable (ambitious and acceptable by all), realistic (challenging and not disengaging), time-bound (defined on a specific period).



Crédits : Tumisu (Pixabay)

Statistical measures must be able to be evaluated afterwards correctly, i.e. they must :

1. be named: a measure must be clearly identifiable,
2. be part of a set: a single measure is unusable because it cannot be compared to others,
3. have a standard, a reference: this makes it possible to establish the estimation method.

A statistical measure can be quantitative (measured by numbers) or qualitative (measured by a feeling for example). In the case of a qualitative measure, one can use a system of smileys well known to most people, taking care however to include a neutral value.

5.1.2 Examples of statistical measures that can be used in Epitome

In the classroom

- Student engagement / motivation
- Social skills building
 - o working together (team / community building in the classroom, taking responsibility for help)
 - o imagination / curiosity / creativity / ingenuity
 - o concentration
 - o organization / planning
 - o self-confidence

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- problem solving behavior
- evolution of the student's results in the subject(s) covered by Epitome and more globally in his or her school career
- evolution of the class average

On a territory, a group of schools

- Number of students concerned by the project distributed by age, gender and education level
- Number of schools located in difficult areas
- Type of schools : urban, rural, located in a priority education zone...
- Engagement level of teachers and schools (number and hours) and own learning growth
- Inclusion of girls in technological processes
- ...

5.2 Validation process

The EPITOME methodology includes an evaluation process that analyzes the user's success rate in each activity, focusing on aspects such as ease of use, quality, experience and playability.

The use of recreational activities for educational purposes has been present throughout history, and the increasing importance of information and communication technologies (ICT) in education today has made the use of video games as a teaching tool more relevant. The educational potential of video games lies in their ability to create an immersive learning environment, in which the player acquires and internalizes new information without realizing it.

To implement EPITOME in the classroom, educators need technical knowledge of Minecraft, creativity, subject matter knowledge, problem-solving skills, teamwork skills, ability to engage students, knowledge of online safety, and knowledge of problem-based learning methodology.

Epitome's validation process validates each of these elements through an easy-to-use assessment grid and checklist.

The process for validating Epitome challenges, activities and workshop sessions is fully described in the "Epitome on tour" document. We refer you to the more complete document which indicates all the necessary steps and elements.

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6 Checklist

This model of checklist allows us to verify all the elements necessary to the realization of activities. It must be adapted according to the pedagogical scenarios. This checklist is specifically for the use of the teacher and those involved in the organization.

Training session plan / E-learning session plan

Item	Description (if needed)
Title	It is advisable to highlight the concepts that will be learned or mobilized during the session.
Required knowledge and skills	Providing this information to the students allows them to review the concepts required to complete the activity and can serve as a basis for follow-up.
Day, date and time, time required	
Target group and number of people	
Objectives of the session	What do you expect from this session in terms of student progress?
Methodology	Step-by-step session (with timing and responsibilities)
Space needed	Space requirements and type of class
Materials needed	Handouts and other training materials
Concrete outcomes of the session	What short and long term results do you expect from this exercise?
Debriefing questions	How to evaluate the practical and technical progress of the session?
Evaluation	Method of assessment with students in terms of acquired or confirmed skills
Follow-up	Long-term monitoring of the project

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Example with “All should play” Epitome challenge

“All Should Play” is a Minecraft world that promotes inclusion. In this challenge, you are tasked with gathering signatures from all the residents of your town in order to build a park in the centre square.

SESSION OUTLINE

TITLE	ALL SHOULD PLAY
RESPONSIBLE PERSON	Teacher or trainer
DATE AND TIME	90 minutes duration
TYPE OF PARTICIPANTS	12+ years Maximum 20 participants per group
Space requirements	Classroom
Background/ Description	Learning about the stereotypes and prejudices is important in today’s world knowing all the challenges we are facing. If not understood properly they can lead to discriminative practices that are unwanted in democratic societies.
SESSION OBJECTIVES:	<ul style="list-style-type: none"> ▪ Fighting stereotypes and prejudices, empathy, tolerance, education for democracy ▪ Students will develop an analytical understanding of stereotypes and prejudices. ▪ Students will experience themselves the obstacles that many of their peers meet on their way and this way learn about empathy ▪ Students will build their competences for participation in democratic processes
METHODOLOGY	<ul style="list-style-type: none"> ▪ Team building activity with focus on discriminative practices ▪ Minecraft challenge
THE SESSION STEP BY STEP (WITH TIMING AND RESPONSIBILITIES)	<p>Step 01 The wind is blowing (20 min)</p> <p>At the start of activity do the energizer “The wind is blowing...” with your students. In this exercise everyone who matches your statement should stand up from their chairs to find their new place to sit. Chairs are placed in a form of circle and there is one less compared to the number of participants. The one without the chair should stand in the middle and give the task to the others. Tasks should be like the following:</p> <ol style="list-style-type: none"> 1. The wind is blowing for everyone with brown eyes 2. The wind is blowing for everyone who lives downtown 3. The wind is blowing for everyone who plays an instrument 4. The wind is blowing for everyone with B in physics 5. Etc. <p><u>Debriefing:</u></p>

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	<p>Ask your students how they felt during this exercise?</p> <ol style="list-style-type: none"> 1. How did you feel during the activity? 2. What happened during the game, what were the interesting moments? 3. Was it always pleasant to be the one for whom the wind was blowing? 4. Did they change their opinion about their friends when they found out some new details about them thanks to the activity? 5. How much our physical characteristics and capabilities influence our identity? 6. How much the circumstances we live in present who we really are? 7. Is it easier for us to have stereotypes and when it becomes challenging having them? <p>Step 02- All should play Challenge (60 min) Students are starting this step in Minecraft environment, launching “All should play” Challenge <i>(Open the file named All Should Play.mcworld > Enter personal credentials > Wait for the world to load > Enter the world and explore)</i></p> <p>You should offer three options to your students. They should be able to choose to make:</p> <ul style="list-style-type: none"> ▪ Urban playground ▪ Playground in the wilderness ▪ Exclusively educative playground <p>Playground should be places outside at the surface big as half of basketball field. You should offer to them standard playground furniture and setting such as swings, seesaws, benches, stairs etc. but encourage them to invent new ones also. At the start, the playground is placed at not so approachable space, so students should arrange the surroundings as well to make it more user friendly.</p> <p>Suggest to your students to place sound guiding at the playground, visual explanations etc. to make learning and playing experience of their peers more comfortable.</p> <p><u>Task 1:</u> Tell your students that the task is to <u>build the inclusive</u> playground. Give them clear instructions and demonstrate some possible solutions to help them learn about the topic and proceed with original ideas. They should think about the solutions for engaging kids with any kind of physical or mental challenge to play actively with their peers on this playground. Playground should also have some educational components as well and if they choose the option 3 it should be only made for this purpose.</p> <p><u>Task 2:</u> Tell your students to prepare a presentation and video about the playground they have invented. They should also propose new games that can be played there.</p> <p><u>Optional:</u> Tell your students to do the challenge with one eye closed, with the hand they are not dominantly using to experience at least this way the position of students with physical challenges and to be able to give them empathy this way by “entering into their shoes”.</p> <p><i>(Students record progress with the resources given to you > When they are done, they should export and share them with the class>)</i></p> <p>Step 03 – Debriefing (20 min): Lead the discussion with the participants after the exercise. Ask questions like the following.</p> <ol style="list-style-type: none"> 8. How did it feel to do the task without the use of one hand or full eye sight? 9. Do you have now more understanding for the challenges your friends with physical and mental obstacles are facing in their lives? 10. Can people with fewer opportunities and physical obstacles participate
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	<p>equally in everyday activities?</p> <p>11. How can we change the rules of the game to include more people in other society segments?</p> <p>Step 04 (10 min) Explain to students what empathy is. Give them the handout about tolerance and empathy and let them discuss in plenary about it through looking for the real-life examples.</p>
MATERIALS REQUIRED	<p>12. Pens and crayons</p> <p>13. Laptop/tablet per group</p> <p>14. Installed Microsoft Minecraft on laptop per group</p>
Handouts and other training materials	<p>15. Handout about prejudices and stereotypes</p>
SESSION OUTCOMES	<p>Participants will learn about:</p> <p>16. Prejudices and stereotypes</p> <p>17. Inclusion</p> <p>18. Team work and collaboration</p>
EVALUATION	<p>Prepare the questionnaire for evaluation of the activity.</p> <p>Ask about the level of their satisfaction with the activity and how much they have learned through it.</p>
FOLLOW-UP	<p>Encourage your participants to do some joint project as continuation of the activity. Give them the needed support for this and be available for possible questions from their side.</p>

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7 Troubleshootings

Once you download the Minecraft Education Edition, you need to have the worlds which are “McWorld” files. Once you double click on these files, they will automatically open the Minecraft Education system. It will request you to log in with your account for which you acquired a license from Microsoft for Minecraft Education. The worlds require the latest Minecraft Education version to work properly.

For Educational Organisations, there are free licences to be acquired following these procedures. <https://educommunity.minecraft.net/hc/en-us/articles/360061371532-Purchasing-Options-for-Minecraft-Education-Edition-Licenses>

Another option will be to import the world manually. When loading the game, after adding your credentials, press play and then you will see on the right bottom part the “Import” button.

Do you face any other problems when loading the world? See if any of these solutions might help.

PROBLEM: I download the worlds and it says import failed.

SOLUTION: That could happen for a number of reasons.

You could try importing the world manually, by opening the game, selecting play, and then select IMPORT on the bottom right of your screen. Then select the file. If this fails, check the steps below.

You could try closing and re-opening the Minecraft: Education Edition app. Maybe there was an import that didn't finish properly and that caused the game to fail to import the next worlds. Restarting your PC might also help.

Last resort solution: Change the name of the *<name of world>.mcworld* file to *<name of world>.zip*. This will turn the file into a zip file. Unzip the file and open it. Go to the manifest file and change the UUID using a [UUID online generator](#). Zip the new folder and rename it to .mcworld. Try opening the world again.

Depending on the different error message, different actions have to happen, so if there is something specific addressed to you, like a numbered code or an explanation about why the import failed, feel free to check out the Minecraft education edition community for solutions to your problem.

PROBLEM: The world doesn't have any NPC in.

SOLUTION: That means that the BEHAVIOR PACK didn't load appropriately with the world. Exit the world (but not the Minecraft app). Find the world you are looking for and

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select SETTINGS. On the left side of your screen try to find the TAB that says BEHAVIOR PACKS. Then you will see two TABS on the main screen. ACTIVE PACKS and MY PACKS. Your behaviour pack should be in the tab MY PACKS, which you should click and select activate. If you are not sure what pack you need, go look at the ACTIVE PACKS and one of those should say that "This pack is missing". Find the Pack with the same name on the MY PACKS tab and activate it.

PROBLEM: The world has boards that have weird text, say something like board.act.1. NPC's have weird dialogue. ETC

SOLUTION: That means that the RESOURCE PACK didn't load appropriately with the world.

Exit the world (but not the Minecraft app). Find the world you are looking for and select SETTINGS. On the left side of your screen try to find the TAB that says RESOURCE PACKS. Then you will see two TABS on the main screen. ACTIVE PACKS and MY PACKS. Your behaviour pack should be in the tab MY PACKS, which you should click and select activate. If you are not sure what pack you need, go look at the ACTIVE PACKS and one of those should say that "This pack is missing". Find the Pack with the same name on the MY PACKS tab and activate it. *Check if you are facing both of these problems, go to both of these solutions*

PROBLEM: The world is in a different language.

SOLUTION: The worlds have been translated into different languages. Maybe you have a world that is in a different language than yours, find the appropriate language and start again. If this doesn't work, make the language of the Minecraft app is set to your preference. In the English version look for the English US option, not the UK.

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8 Tips

8.1 Accessibility

The users can alter the controls of the game to their liking. They can even use a controller if this is something that they are more familiar with. A useful tip for left-handed people is instead of WASD controls, change them to IJKL, and mirror the remaining commands from there.

8.2 What to do when you're stuck in a Minecraft world

If you are ever stuck, check if the world you are playing has commands enabled. If this is the case, a simple command: `"/gamemode c"` can get you to creative version and help you get unstuck or get the resources you need. Remember to get back to the default game mode with the command `"/gamemode s"` or `"/gamemode a"` depending on the world you are playing.

8.3 How to convert Minecraft worlds

When using a different version of Minecraft Education Edition or another version of Minecraft, it is mandatory to convert the worlds in order to make them compatible. There is an online tool that can help you, Chunker (<https://chunker.app/>). However, Chunker does not convert entities and NPCs and this tool will only be suitable for simple worlds. You risk losing all the interactive elements you have created.

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9 Examples

This section provides examples of uses and challenges created for and by Epitome. It can serve as a source of inspiration for teachers.

9.1 All Should Play

“All Should Play” is a Minecraft world that promotes inclusion. In this challenge, you are tasked with gathering signatures from all the residents of your town in order to build a park in the centre square. However, you will soon realise that there are people with disabilities who have needs that need to be addressed before anything else. You get to photograph each section of your town that isn’t friendly to people with disabilities and correct them yourself! Finally, you get to create your own park that will be accessible to everyone in the town.

9.2 Buoyancy Challenge

The “Buoyancy Challenge” Minecraft world is designed to fit into the curriculum of children from ages 12-14 years old, who learn about buoyancy in school. You get to see simulated experiments and learn about applications of your newly found knowledge. You are free to take a quiz about general knowledge regarding buoyancy. Experience the benefits of game-based learning first hand, by comparing how much you scored on the quiz before playing the game and after.

9.3 CO-OP English Language Mystery

CO-OP English Language Mystery, is a role-playing mystery game, set in Minecraft: Education Edition. Collaborate with your friends to solve the mystery of the whereabouts of Mr. Elm! Here is the catch: The hints are all in English. You must complete the sentences correctly to get each clue. Some players might also have to go through a maze, or escape from their locked room. The only certain thing is that every player has something to offer to this story.

9.4 Discover Work

In the “Discover Work” challenge, the players get to embody people who used to practice professions that are now extinct. In this challenge, you need to take on the roles of: “The Knocker Upper”, “The Switch Board Operator” and “The Sponge Harvester”, in order to fix the space-time continuum. All the 3 challenges are different in their nature, since they take

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advantage of different capabilities of the Minecraft engine. This course aims to promote gender equality and provide contextualization for history events.

9.5 Studying Crystals

Traverse through the laboratory of crystallography of a university, to understand the structure of crystals and create a diamond! Go through 1-dimensional crystal all the way to 3-dimensional crystal bonds! This takes advantage of the first-person view of Minecraft and the 3D render it provides.

9.6 Learning directions

The objective of this challenge is to help children find their way around for extracurricular activities in places such as the swimming pool, the sports hall or the music conservatory. A map of the neighborhood has been created on Minecraft and the children learn to move around in the virtual universe by locating known places indicated by small signs made beforehand. Then, in small groups, they have to produce itinerary cards indicating the directions to take: for example, turn right with their back to the school, then go straight ahead and take the third street on the right.

9.7 Discover London

The objective of this challenge is to compare the tourist map of London to the paper format and to locate the most important elements in the specially created Minecraft world. This activity teaches students to navigate in space, to examine the features of key buildings by searching the Internet and platforms such as OpenStreetMap, and to comment on their visit in English.

9.8 Rebuild ~~to the identical~~ in the antique way (or not)? ;-)

The objective of this activity is to study a real ancient site rebuilt in Minecraft, then to think about its future. Should it be rebuilt identically or should the buildings and structures be modernized? This workshop forces to question the living conditions of the inhabitants at the time studied, the methods of manufacturing buildings, the existing risks (fire when building with wood for example), while confronting the reflection with modern issues such as ecology for example.

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10 FAQ - Frequently Asked Questions

Q: Is Epitome project related to Microsoft ?

A: The Epitome project, although based on Minecraft, has no direct connection with Microsoft.

Q: Is Minecraft Education Edition RGPD compliant?

A : Minecraft: Education Edition takes data privacy seriously and is designed to be used in compliance with COPPA, CCPA, FERPA, and Microsoft's Privacy Statement and General Data Protection Regulation (GDPR). Minecraft: Education Edition processes data per the Microsoft Privacy Statement and the underlying agreement in place with the school or organization that purchased Minecraft: Education Edition for your use. For Microsoft enterprise products, including Office 365 Education, Microsoft 365, and Minecraft: Education Edition, Microsoft, as the data processor, will:

- Not collect or use student personal data beyond that needed for authorized educational or school purposes.
- Not sell or rent student personal data,
- Not use or share student personal data for advertising or similar commercial purposes, such as behavioral targeting of advertisements to students.
- Not build a personal profile of a student, other than for supporting authorized educational or school purposes or as authorized by the parent, guardian, or student of appropriate age.
- Require that our vendors with whom student personal data is shared to deliver the educational service, if any, are obligated to implement these same commitments for student personal data.

Source : [User Privacy and Minecraft: Education Edition webpage](#)

Q: Where can I play Minecraft: Education Edition courses?

A: Devices that support Minecraft: Education Edition are Windows 7, 8.1, 10, and 11, Macs, iPads, Chromebooks and Mobile. Review Supported platforms for Minecraft: Education Edition for more information on available platforms.

Q: I have never played Minecraft. Do I need strong IT skills to join the Epitome project?

A: The Epitome project is intended to be used by everyone and this manual provides a step-by-step guide to using Epitome's resources and to creating your own worlds.

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Q: Where should I place the worlds I have created, for example with "Minecraft à la carte", in order to use them in the game?

A : The folders containing all the files related to the world created should be placed in the "Saves" folder of your Minecraft folder. This folder is located in a different place depending on the operating system you use. See Minecraft's instructions on this subject.

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11 Resources

In addition to Epitome, you can find here a list of resources (websites, books...) to help realize your projects.

Official websites

- [Minecraft Education Edition official website](https://education.minecraft.net/) (https://education.minecraft.net/)

Tools to create a Minecraft: Education Edition Course, as mentioned

- [Worldedit](https://www.curseforge.com/minecraft/mc-mods/worldedit) – Building tool (https://www.curseforge.com/minecraft/mc-mods/worldedit)
- [VoxelSniper](https://dev.bukkit.org/projects/voxelsniper) – Infrastructure tool (https://dev.bukkit.org/projects/voxelsniper)
- [UUID Generator](https://www.uuidgenerator.net/) – Useful for tampering with the manifest files. (https://www.uuidgenerator.net/)
- [Chunker](https://chunker.app/) – Change the version of Minecraft that a world is compatible with. (https://chunker.app/)
- [Blockbench](https://www.blockbench.net/) – Create 3D models and implement them directly to Minecraft.
- Community resources, information, forums. (https://www.blockbench.net/)
- [Minecraft Wiki](https://minecraft.fandom.com/wiki/Minecraft_Wiki) (https://minecraft.fandom.com/wiki/Minecraft_Wiki)
- [Minecraft: Education Edition community](https://educommunity.minecraft.net/hc/en-us). (https://educommunity.minecraft.net/hc/en-us)

Aid for Teachers

- [Minecraft: Education Edition - Teacher Academy](https://learn.microsoft.com/en-us/training/paths/minecraft-teacher-academy/). An online course series that helps teachers understand what Minecraft is and how to integrate it inside their classroom. (https://learn.microsoft.com/en-us/training/paths/minecraft-teacher-academy/)

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