Guide for Surrey Schools Educators

Table of Contents

Note As there are numerous links throughout, this guide is best viewed digitally on an internet-connected device.

What is *Minecraft: Education Edition*?

Minecraft: Education Edition is a program that transforms learning into an engaging and fun activity that promotes creativity, collaboration and problem-solving in an immersive environment where the only limit is your imagination.

The *Education Edition* puts an even greater emphasis on the core learning elements of *Minecraft*, while also providing educators with additional tools for learning not found in the standard version. These can include additional items such as elements and chemicals for conducting experiments, settings that can alter the environment and a new mode that allows teachers to manage and change the world their students are engaging in.

Included as part of the Office 365 suite of educational apps provided by SD36, *Minecraft: Education Edition* is available to all teachers, students, EAs and administrators within the district.

Curriculum-Based Gaming

Minecraft is, by nature, a game of exploration, creating, trying and building. This naturally encompasses the Applied, Design Skills and Technology (ADST) values of ideating, making and sharing. Using the materials and tools provided in the world of *Minecraft*, classrooms can explore and interact with numerous topics in ways that would otherwise be inaccessible in a classroom setting.

As a standalone experience, *Minecraft* aligns very well with the ADST curriculum, but it presents an even better opportunity to make use of cross-curricular context that combines the ADST skill set with several other learning intentions and subject areas all at the same time.

For example, your students could use *Minecraft* to recreate a historic landmark (Socials Studies) in the correct biome (Science) while calculating the area and perimeter of the structure (Maths), use the real-world materials they've gathered in the game to plan and build it (ADST), and finish by creating an in-game report to accompany and explain their learning (Language Arts).

Why *Minecraft*?

Due to its 'sandbox' nature, users can conduct experiments, engineer structures, explore the environment, solve equations and dive into history to gain valuable 'hands-on' experiences that may not otherwise be possible in a classroom setting:

- Have you ever wanted to take students on a walking tour of the International Space Station? Go for it!
- How about teaching students the differences between animal and plant cells? Let them see for themselves.
- Looking to introduce your classroom to the world of coding? Use the built-in coding tool.

Here are some other examples of how *Minecraft* can be used in the classroom:
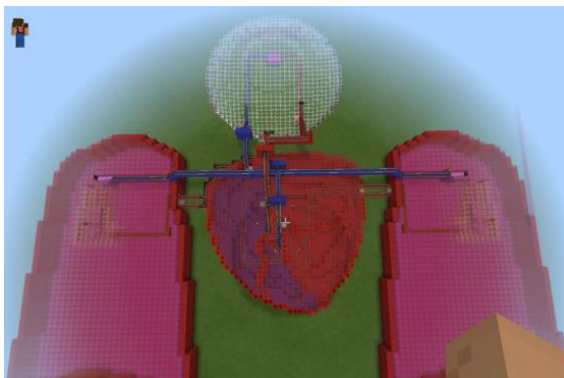
HELP STUDENTS UNDERSTAND THE CIRCULATORY SYSTEM.

DEMONSTRATE HOW PHYSICS AND MOMENTUM WORK.

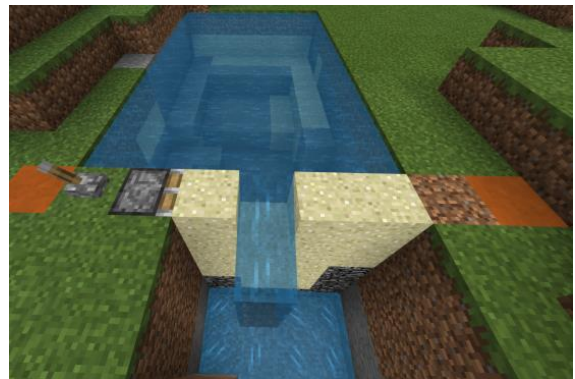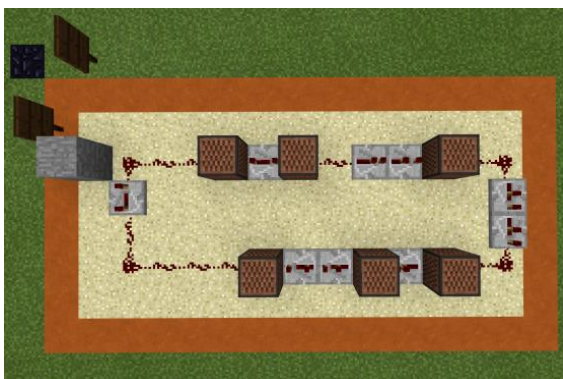EXPLORE ANCIENT STRUCTURES, ARCHITECTURE AND DESIGN.

DISCOVER THE RELATIONSHIP BETWEEN ANIMALS, HUMANS AND THE ENVIRONMENT.

TELL VISUAL STORIES THROUGH ART AND LITERACY.

ENGINEER AND CONSTRUCT DAMS.

LEARN HOW TO CREATE, CONNECT AND OPERATE CIRCUITS.

BUILD AND MAINTAIN A FARM USING CODING.

To browse the full library of lesson plans available in *Minecraft: Education Edition*, click here.

Getting Started

Ready to get going in *Minecraft*? Before you begin, you need to ensure all of your classroom's devices have *Minecraft: Education Edition* installed. If your devices do not already have it, please open an install request with IMS Service Desk. Additionally, for teacher devices, please also request IMS install the Classroom Mode client.

Minecraft: Education Edition is available for the following platforms:

- iOS (iPads)
- PC
- Mac

Depending on your school's network, certain devices may or may not be able to play together

Secondary schools should have full compatibility with all devices on any network.

For elementary schools, the following network compatibility chart applies:

	iPad	Mac	PC
iPad	SD36.Guest	SD36.Guest	Incompatible
Mac	SD36.Guest	Both SD36.PSK or SD36.Guest	SD36.PSK (Mac), SD36.Secure (PC)
PC	Incompatible	SD36.PSK (Mac), SD36.Secure (PC)	SD36.Secure

For reference, there are four types of internet available in elementary schools:

- **SD36.Guest** (Guest Wi-Fi for mobile devices)
- **SD36.PSK** (Secure Wi-Fi for Macs)
- **SD36.Secure** (Secure Wi-Fi for PCs)
- **Wired** (for both Macs and PCs)

Signing in: Once the program has been installed on your classroom devices, you're ready to sign in.

Upon opening the program, users (students and staff alike) will be prompted to sign in using their Surrey Schools account:
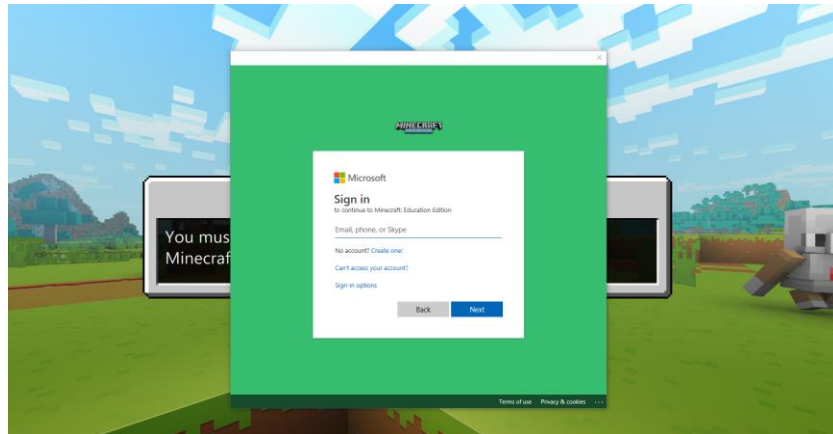
Tutorials: Before beginning a class session, it is highly recommended that you spend some time with *Minecraft* and get a feel for the controls and the world itself. There are several tutorial worlds you can generate at the beginning, each designed to teach users how to navigate and interact with the *Minecraft* world, with some focused more on specific educational subjects.

For first-time users, it's recommended that they load the basic tutorials by clicking *Play > View Library > How to Play > Start Here* (there is also a touch tutorial for iPad users). The tutorial will pre-load all of your game's settings and features several areas with instructions on how to interact and proceed with the environment. *Note* press F5 to change your character's perspective (from third-person to first-person).
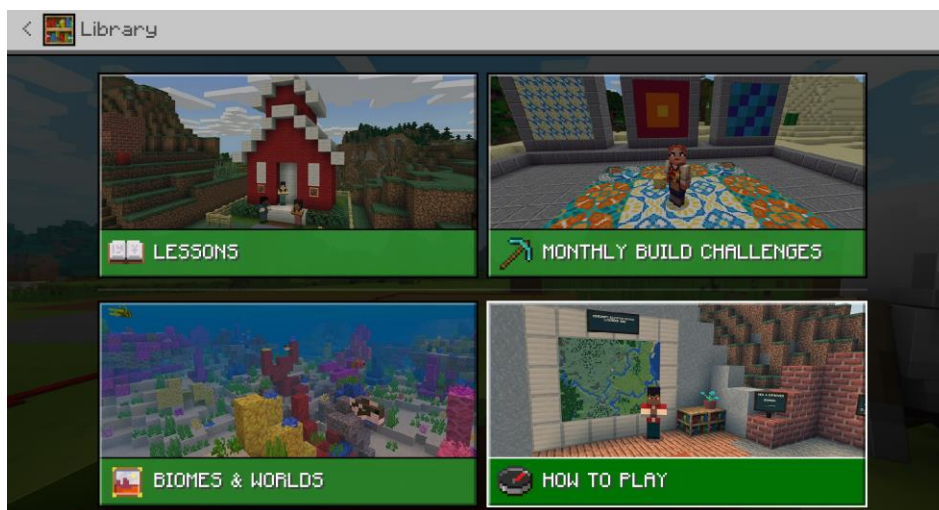
Later, there are tutorials for chemistry and code building located in the 'Additional Tutorials' section:

Once you've gone through the tutorial, you can exit out and try another tutorial, or if you're looking for a more in-depth resource, you could make use of Microsoft's own *Minecraft: Education Edition* training sessions, which are free to take using your Surrey Schools Account.

To access *Minecraft: Education Edition* training, click here. If prompted, select the Office 365 account option and use your Surrey Schools account to log in.

Multiplayer Mode (Classroom Session):

Multiplayer mode allows you to host a *Minecraft* session with your students (up to 30 players), as well as allow students to host their own sessions with classmates. This enables students to take collaboration to the next level as they work on projects in the same session, honing their communication and problem-solving skills.

Before you begin though, please note the following points regarding multiplayer sessions:

- Multiplayer games are designed for a maximum of 30 users at a time.

- It is recommended that the host computer has at least 1.5 Mbps of bandwidth on average.

- If the host computer disconnects (even temporarily), everyone on the world will lose connection.

- Performance in a multiplayer world can begin to decrease at 20 players in some cases.

- For more information on how to best utilize multiplayer with 30 or more students, you can connect with other teachers in the Minecraft community forums.

To begin hosting a multiplayer session, click 'Play' from the main menu, then select 'Create New'.

From there, you can either create a new world by clicking 'New', or select one of the pre-existing maps under 'Templates'.

In the setup menu, you can change various settings in your world. For multiplayer, the most important setting will be to determine the permission level for others that join your session. For classroom sessions where students are expected to build and interact with the map, the 'Member' permission level is your best bet. For other sessions where you would just want students to view and explore, but not be able to build or destroy elements on the map, the 'Visitor' setting is recommended.

You can also set the difficulty of the game in this menu. For the vast majority of classroom sessions, you would likely want to have it set to 'Peaceful' as this means there would be no enemies (monsters) in the game, and ensures students will not be able to damage each others' characters. Some of the more advanced maps or ones exploring climate change or animal extinction may require it to be not on peaceful in order to explore animals and the environment perishing.

For game mode, you can either select Survival or Creative Mode. Survival Mode means students will need to explore and locate materials in order to craft and build, while Creative Mode allows users to fly and produce any material they may need in the game at the touch of a button. Both game modes have their uses with regards to educational merit.

Once you have selected your settings, click 'Host' to begin your session:

Once your session has loaded, others will be able to join using your Join Code, which can be found when you pause the game by hitting the 'Esc' key. The code uses symbols rather than letters and numbers.

Using these codes, students will be able to join specific sessions by selecting the 'Join World' option in the 'Play' menu:

For an in-depth guide on how to use Multiplayer Mode, click here.

Classroom Mode:

Classroom Mode is a separate application that allows you to host *Minecraft* sessions with multiple users. While you can run a multiplayer session using the method above, Classroom Mode allows teachers to set even more restrictions, as well as explicitly manage what students can build, which in-game materials are available to them and how students can interact with the world and each other.
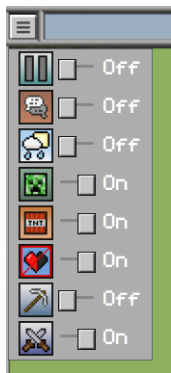
Classroom mode allows you to toggle various items and abilities on/off.

Classroom mode also allows moderators to monitor and enable chat among users.

The Classroom Mode client is a separate download from *Minecraft: Education Edition* and requires a separate install. To request an install of Classroom Mode, contact IMS (or include it during your main request to have Minecraft installed).

For an in-depth guide on how to use Classroom Mode, click here.

Lesson Plans:

One of the biggest selling points for *Minecraft: Education Edition* is the fact that there are so many pre-designed lesson plans. These lesson plans are created by both Microsoft and fellow educators who have chosen to share their own work with the community. *Minecraft* lesson plans can vary in terms of what's included, as some may be a detailed set of guidelines and instructions, while others may include a custom-made map.

To explore the various lesson plans available in *Minecraft: Education Edition*, ctrl+click on the image below:
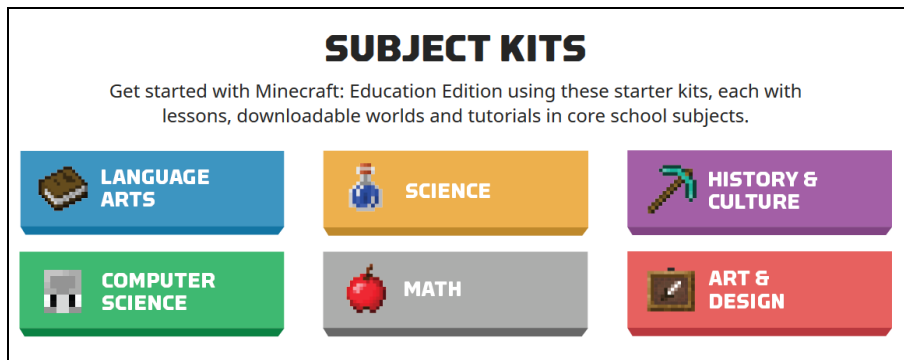
Some plans may have assets that can be downloaded as well. These assets may include everything from classroom materials (such as worksheets) to fully customized maps that were built for a specific lesson plan.
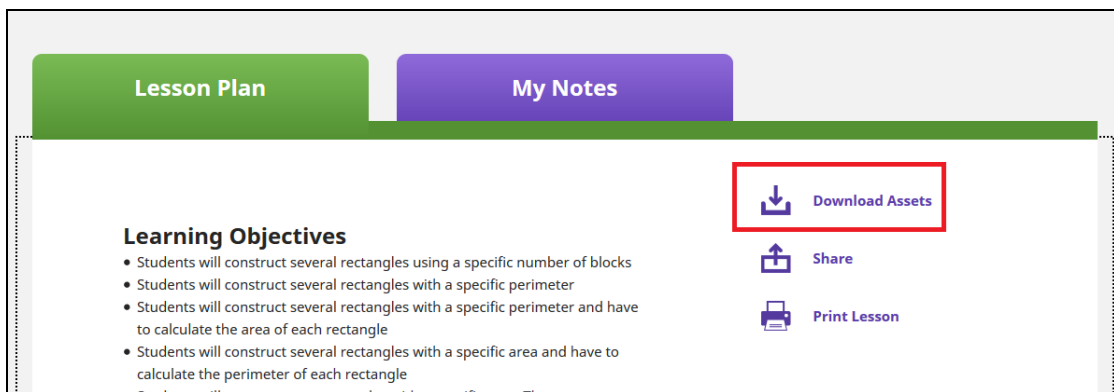
For lessons that do not have downloadable assets, there will still be detailed instructions to follow on specific *Minecraft* lesson plans, including the Learning Objectives, Guiding Ideas, Student Activities and Performance Expectations.

An example of a lesson plan can be found at the Geometry World lesson page and notes the following student activities for exploring the relationships between area, perimeter and how they relate to quadrilaterals:

Student Activities

- At first, students have to build simple rectangles without considering any kind of calculation

- On the next assignments, students have to build specific rectangles with specific perimeters or areas

- Students have to build all possible rectangles having specific perimeters and need to calculate their areas

- Students have to build only two rectangles - those with the maximum and minimum perimeter

- Students have to calculate the perimeter of figures that aren't rectangles

- Students have to build figures formed by two different rectangles and calculate the perimeter and area of every figure, expressing also their consideration about the sum of perimeters and areas of adjacent figures

- Students have to share the area where they are building their rectangles because it's quite limited and tight

Loading Purpose-Built Educational Maps:

Conducting a unit on space? Take students on a tour of the International Space Station!

Imagine being able to walk your students through the world of Fantastic Mr. Fox after having read it in class, or exploring the inner workings of the human eye to help complement a science lesson. With specialty maps created specifically for *Minecraft: Education Edition*, teachers now have even more tools to immerse students in the various topics tackled in the classroom.

From maps created with a chemistry focus in mind, to others that let you walk through a scale model of the International Space Station, these specialty maps allow users to explore subjects and locations like never before. These maps are specially made for the *Education Edition* and may even contain special items depending on the theme of the map (for example: chemical compounds for a chemistry map).

- To explore these specialty maps, open up *Minecraft: Education Edition* and click 'Play' from the main menu.

- From there, click 'View Library' and you'll be presented with options to explore Lessons, Monthly Build Challenges, Biomes & Worlds and the How to Play tutorials. Monthly Build Challenges include numerous ready-to-play educational activities, while Lessons include more subject-specific lesson plans. Biomes & Worlds contain maps with various environments more suited for open-ended exploration free builds.
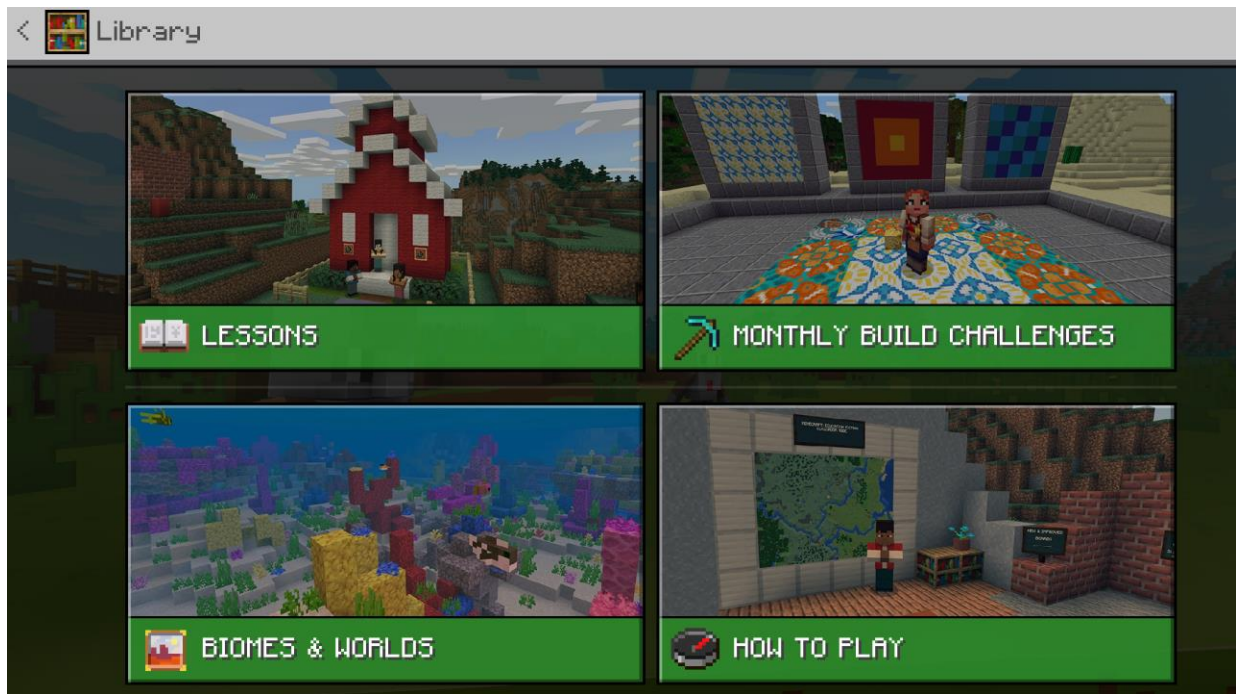
To open any of these maps, click 'Create World' to download and open.

- Additionally, Lessons and Monthly Build Challenges maps also contain lesson plans that will open in a web browser when clicked.
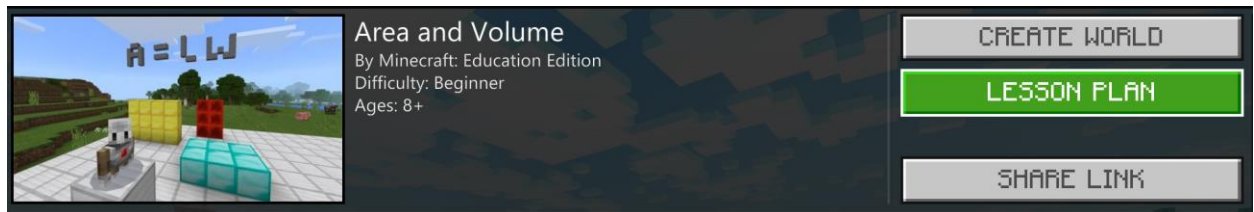
Saving and Exporting/Importing a World:

Saving: Once you/your class have loaded into a world, explored, built, learned and made some changes, it's time to save your progress. To save your map and all the changes you've made to it, hit the 'Esc' key to bring up the menu, then select 'Save & Exit:

Exporting a World: Once you've finished a class session, the fun and learning don't need to stop there. For those wanting to work on their worlds at home, it is possible to export your map and upload it into OneDrive or a USB storage device to be accessed elsewhere.

NOTE For now, it is recommended that exported worlds only be accessed by PC and Mac versions of Minecraft.

- To export your world, go into the 'Play' tab from the main menu and click on 'View My Worlds'
- From there, select the world/map you would like to export and click 'Settings'
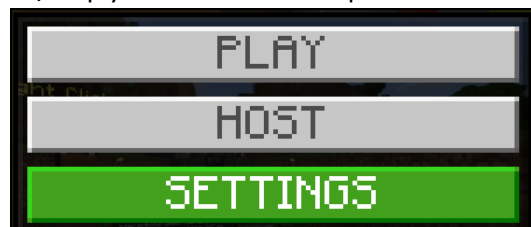
- From there, feel free to rename the world something simple:
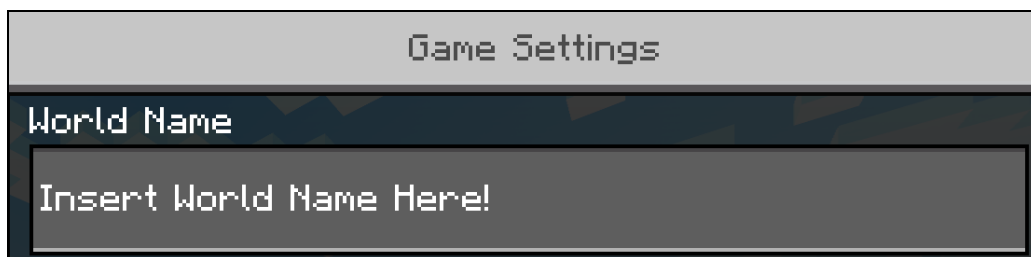
- Once you have a suitable name for your world, scroll down and select 'Export World':

- From there, either save it directly to your OneDrive if you have OneDrive synced to your computer, or save it to an easy-to-find location on your computer, and then copy it into the browser version of OneDrive or a USB storage device. The file will save as a MCWORLD file:

Once your world has been exported to OneDrive or a USB device, you should be able to import your world to another computer.

Importing a World: You or your students may wish to work on their worlds at home. To do so, you will need to import the world that you've previously exported.

- To import a world, start up *Minecraft: Education Edition* and click 'Play'
- Next, click 'Import' on the bottom left of the menu
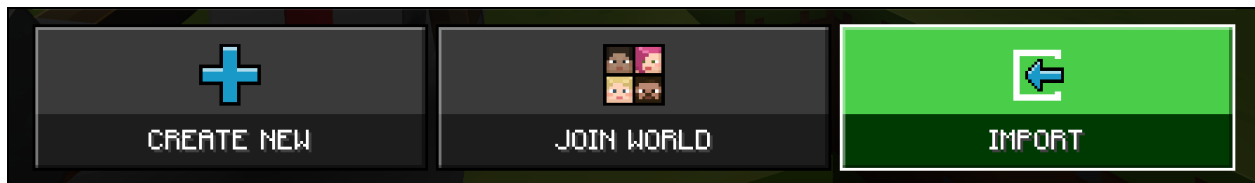
- From there, locate your exported MCWORLD file (you may need to copy this file from your OneDrive or USB to your local machine):
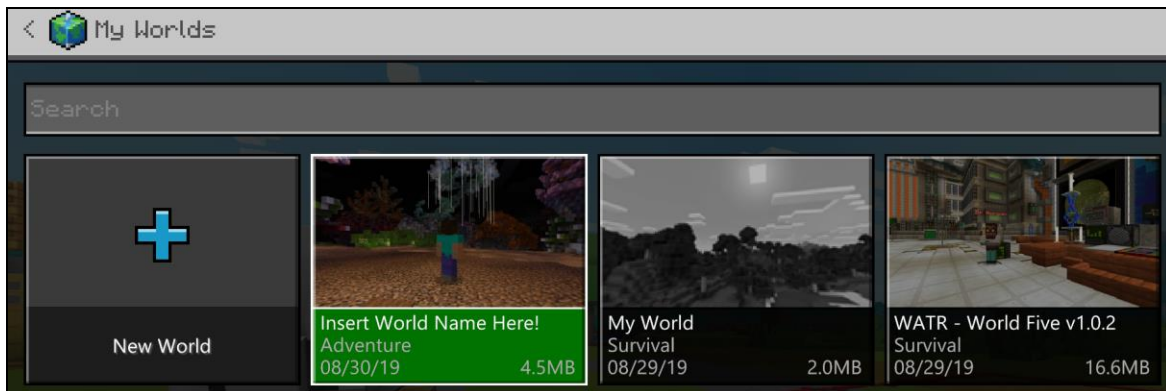
- Once your world has been imported, it should be selectable in your list of worlds. Click on it, and away you go!
- Once you've finished your session, save and quit, then export your world using the previous method and overwrite your MCWORLD file with the updated one.

Recommended Practices:

There are many ways to make use of *Minecraft* in the classroom, but for those new to the game, it can be overwhelming to figure out how to best integrate it into your lessons. Thankfully, one of the best aspects of *Minecraft: Education Edition* is how educators from all over the world have come together to share ideas, help one another out and discuss their own experiences using *Minecraft* in a classroom setting. With that in mind, here is a list of recommended practices compiled by fellow educators:

1. **Create a list of Classroom Community Guidelines with your students:**
   Inspired by the *Minecraft* group's Jokaydia Community Charter, mentor Trish Cloud created a list of expectations with her club. Providing students with the opportunity to understand and practise classroom community norms and help create those guidelines is a powerful way to set a good foundation when using digital tools. Additionally, your norms for players in a *Minecraft* world should mirror your norms for students in the classroom. The disconnect may cause unnecessary confusion for students.

2. **Take the time to prepare your world before using it with your students:**
   Mentor Brett Smith recommends preparing your worlds before students connect. For his science classes, he adjusts the game settings, plans how he wants his students to work, establishes working spaces for them and prepares his class groups offline. Think clearly about what you want your students to achieve and how your *Minecraft* world will serve this purpose. For additional settings, consider using *Minecraft: Education Edition's* Multiplayer Mode.

3. **Support your online work with offline documentation/instructions and tasks:**
   Mentor Michele McColgan suggests having a paper copy of the activity instructions, Math problems, questions or prompts that students can use as an offline record to show their work. This helps in connecting the real-world classroom to the *Minecraft* Classroom. Another idea to reduce frustration and encourage collaboration is take a break every 30 minutes and ask students to share with the class one example of how they're successfully completing the task and/or where they are struggling.

4. **Build unstructured time into your lessons:**
   A number of mentors found that allowing students to have a portion of the class period just to play significantly reduces or eliminates negative behaviors during the lesson. These 5 to 10 minutes might also be rich with opportunities for teachable moments. An example of how to do this could be a build challenge to unleash creativity in your students. Need some ideas? Check out activities of the week.

5. **Teach students how to play:**
   Just like with other learning activities, if a student does not know how to use the tools required to complete the learning task, then that student is more likely to misbehave and distract other students. Spending some time to make sure every student acquires the skills necessary to succeed will pay off, just like teaching students classroom routines. Mentor Kristine Holloway

recommends pairing novice players with experienced players to facilitate collaboration.

6. **Create alternative assignments:**
   One way to reduce misbehaviour is to develop assignments that accomplish the same learning goal but do not require *Minecraft*. This strategy is useful as a consequence for students who misbehave in the game, but it is also a useful tool for differentiation. Some students may not want to play *Minecraft*, so students can be offered a choice that will subsequently limit misbehavior.

7. **Balance structured activities with choice:**
   Mentor [Mike Johnston](#) notes that when working with a tool like *Minecraft*, it is important to let the game be a game to retain student engagement while maximizing the potential of the tool. This moves *Minecraft* from a gimmick to a legitimately enjoyable learning experience. However, there are times that teachers may want to assign a strict step-by-step process or place the students in a pre-built map. Balancing these activities with those in which students are offered more in-game choices and control over the learning experience will do wonders for student learning.

8. **Try, reflect, reset:**
   These tips may or may not work for your classroom. Be open to trying different strategies for management and eventually you'll find what works for you and your students. Just like teaching anything else, it may take some trial and error before you find the solutions that work best for you and your students.

The Rest of It:

Changing Player Appearance and View: If you would like to change how your character looks, you can do so by selecting the coat hanger icon on the main menu, then selecting a new 'skin.' Some teachers prefer students change the way their characters look in order to tell them apart from others. Teachers may also wish for their character to stand out when interacting with student characters in the *Minecraft* world:

You can also change your character's perspective (from first-person to third-person) by pressing F5:

First-Person Perspective
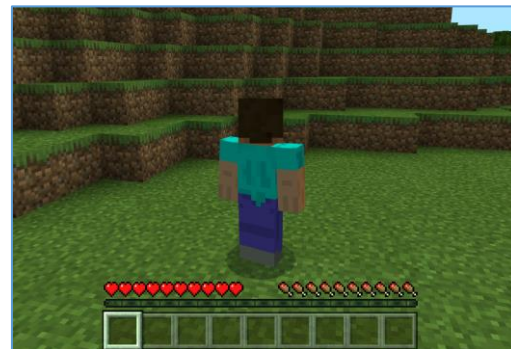
Third-Person Perspective

Glossary: There are various terms in the world of *Minecraft* that may seem confusing for newcomers. Below are several common *Minecraft* terms that may come up during your digital adventuring:

- **Mob:** A mob is virtually any living creature in the game. Some mobs are passive, such as horses and chickens, whereas others can be very hostile. To avoid all 'monsters' and hostile mobs (skeletons, zombies, etc.) it is recommended to only play in 'Peaceful' mode.
- **Creeper:** An aggressive green enemy creature that will blow up when near players.
- **Biome:** A region with a specific climate/environment and unique geographical features. These can vary from desert, jungle, forest, mountainous and more.

- **Creative/Survival Modes:** Creative and survival are two of the main game modes of *Minecraft*. The creative mode lets players build anything they want from an endless supply of blocks and renders them invincible from would-be enemies. The survival mode, by contrast, is the standard game mode wherein players have to collect resources, fight off enemy mobs and explore. Selecting the 'Peaceful' difficulty in either mode means there will not be any enemies and other players cannot damage one another.
- **Nether:** The Nether is an alternate dimension of the *Minecraft* world, resembling a volcanic landscape, complete with hazards such as lava and flames, as well as unique mobs.
- **Redstone:** Redstone is one of the raw materials that can be found in the world of *Minecraft* and is one of the most versatile materials in the game. It can be used to brew potions or craft components. Its most important feature is its ability to power devices such as doors, pistons, lights and other machines.
- **Skin:** 'Skins' refer to your character's appearance and outfit.
- **Sandbox:** You may hear *Minecraft* referred to as a 'sandbox' style game. What that refers to is the non-linear nature of the game and how, like a sandbox, the experience is whatever the user makes of it. You could build a castle and explore medieval engineering methods, or you could create a structure designed to show off the different physics or states of matter. Giving users the freedom to do essentially anything they want makes this a 'sandbox' style game.

Additional Tools for Recording/Reporting Student Work: Minecraft also has
several built-in features that allows students to record and save the results of their work. Using an in-game camera, portfolio, book and quill, students can record their work for later reflection and presentation. For more on these reporting tools, click here.

Learning the Finer Points of *Minecraft*: For more in-depth tutorials on how to make use
of *Minecraft: Education Edition*, explore the additional modules and online courses at Microsoft's training website by clicking here (requires district Microsoft account).

Connect with other SD36 Minecrafters: Still have some questions on how to get going
in *Minecraft*? Interested in hearing how others in the district are already using *Minecraft* in the classroom, or which subject kits relate to grade-specific learning content? You can connect with other SD36 Minecrafters on Microsoft Teams by clicking here.

Finally, Just Have Fun: *Minecraft: Education Edition* is a powerful new teaching tool with
endless possibilities, but it's up to educators to discover how best to apply it to their classroom. The learning doesn't necessarily have to come from a predetermined lesson plan or pre-built map. As you become more familiar with the program, feel free to create your own lessons and determine how *Minecraft* can apply to the lessons and units in your classroom.