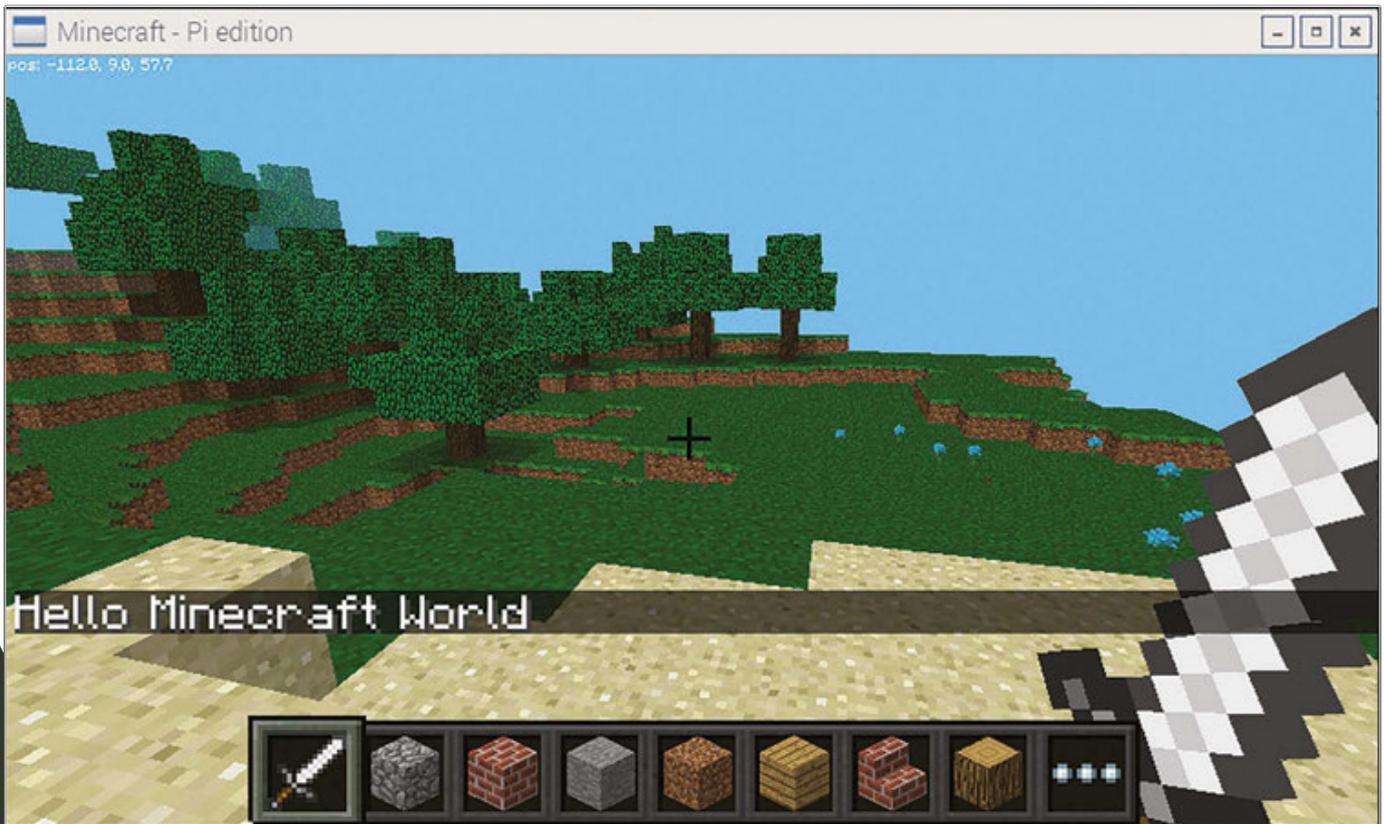


[CHAPTER ONE] GETTING STARTED WITH MINECRAFT: PI EDITION

Get off to a good start with Minecraft: Pi Edition. Play the game and write your first program using the API

Below Use the API to write a 'Hello Minecraft World' program



If you've never played Minecraft and want to be a master block builder, we'll help you get stuck into Minecraft, build a house, and get started with the API.

Minecraft is a game which has achieved monumental success; over 30 million copies, across all its versions, have been sold. Not bad for a game which doesn't really have a point! If it does have a point, as an indie sandbox game, it's to make stuff. And people have really made stuff, from fully functioning computers to scale models of the Starship Enterprise.

The best things about Minecraft: Pi Edition are that it's free and comes with an API; you don't get this with any other version of Minecraft.

Minecraft is installed by default on Raspbian. If you have an older version, you can get it by opening a terminal (Menu > Accessories > Terminal), typing the commands pressing Enter after each one:

```
sudo apt-get update
sudo apt-get install minecraft-pi
```

Playing the game

Click **Menu > Games > Minecraft: Pi Edition** to run the game.

Minecraft: Pi Edition offers one playing mode, Classic, which is all about exploring and building. Click Start Game, then click Create New (or choose an existing one) to enter a world:

- › **The mouse** changes where you look
- › **Holding the left button** destroys blocks
- › **Right button** places blocks
- › **W, S, A, D** move you forward, backward, left, and right
- › **1, 2, 3, 4, 5, 6, 7, 8** change what you are holding
- › **E** opens the inventory
- › **ESC** takes you back and to the **Menu**
- › **Space** is jump; double-tapping Space makes you fly or stop flying

The API

The API (application programming interface) allows you to write programs which control, alter and interact with the Minecraft world, unlocking a whole load of Minecraft hacking. How about creating massive houses at the click of a button, a game which uses a LED and buzzer to help you find a block, or recreating Nintendo's Splatoon in Minecraft?

The API works by changing the world as the game is being played, allowing you to:

- › Get the player's position
- › Change (or set) the player's position
- › Get the type of block
- › Change a block
- › Change the camera angle
- › Post messages to the player

[WATCH
FOR RED
TEXT]

Any errors in
your program
will appear in the
Python shell in
red text.

Hello Minecraft World

The first program all programmers create when learning something new is called "Hello World", which puts "Hello World" on the screen. You're going to do the same, but in Minecraft:

01. Go to the Minecraft menu with ESC, but leave the game playing.
02. Open IDLE by clicking Menu > Programming > Python 3.
03. Use File > New Window to create a new program and save it as **hellominecraftworld.py**.
04. At the top of your program type the following code to import the **minecraft** module, which will allow you to use the API and talk to the game:
import mcpi.minecraft as minecraft
05. Create a connection from your program to Minecraft and call it **mc**:
mc = minecraft.Minecraft.create()
06. Use your Minecraft connection and the function **postToChat()** to put a message in the chat window:
mc.postToChat("Hello Minecraft World")
07. Run your program by clicking Run > Run Module.

[PYTHON IS CASE-SENSITIVE]

Beware of upper- and lower-case letters; "Minecraft" and "minecraft" are different things to Python.

Switch back to Minecraft and you should see the message "Hello Minecraft World" on the screen; be quick, though, as the message will only stay on the screen for 10 seconds before it disappears.

Any errors will appear in red text in the Python shell window; check your code carefully for spelling mistakes, and ensure that you have used the right upper- or lower-case letters.

When you have successfully got the message to appear on the screen, try changing it and running the program again.



Left Minecraft Pi Edition is free and has an API you can use to program it

Teleportation

Using your new Python programming skills and the Minecraft API, you can teleport Steve around the world by adding just one more line of code to your program.

Minecraft is a world of blocks, all about 1m x 1m x 1m. The player and every block in the world has a position made up of x, y, and z; x and z are the horizontal positions and y is the vertical. By changing the player's x, y, and z position, you can teleport them wherever you want.

The player starts at position $x = 0$, $y = 0$, $z = 0$, which is the spawn point, and the player's current position is shown on the top-left of the screen.

Add the following code to your Hello Minecraft World program to teleport the player to position $x = 0$, $y = 100$, $z = 0$, which will put your player 100 blocks up in the air:

01. Teleport the player by setting their position:
`mc.player.setPos(0, 100, 0)`
02. Run your program by clicking Run > Run Module.
03. Switch back to Minecraft to see your player fall to the floor.

Try changing the values in `setPos()` to teleport your player to different places around the world; use values -125 to 125 for x and z and -64 to 64 for y, otherwise the player will be teleported outside the world.

