

Minecraft 1.6.2 (42 fps, 47 chunk updates)
C: 1943/19816, F: 1162, O: 9, E: 8611
E: 6/135, B: 9, I: 129
F: 9, T: RU: 135
MultiplayerChunkCache: 441

Used memory: 35% (326MB) of 919MB
Allocated memory: 65% (591MB)

x: -123,65231 c:-1240 // c: -8 (4)
y: 194,999 (feet pos, 195,629 eyes pos)
z: 824,23067 (824) // c: 51 (8)
F: 2 (NORTH) / 174,99917
lc: 111 b: Extreme Hills b: 9 sl: 15 r: 15
ws: 0.100, fs: 0.050, gl: true, fl: 194



MINECRAFT!

Minecraft is a work of genius.

3rd best selling game ever?

→ Exploring new worlds

→ Building *anything*

→ Mining and farming

→ Various mechanisms

➤ From railways

→ To computers

→ And Collaborating

My kids have made:

Houses & Castles

Powered Railways

Ships

Spaceships

More Spaceships

And even more Spaceships

... without fighting

(much)

Play with friends (or siblings)

Safety online

Playstation network etc? Settings

Various public servers

Minecraft Realms

Or run your own!

Community

Instant conversation starter

YouTube videos

Stampy

Programming?

The sky's the limit

Raspberry Pi version

FREE TO DOWNLOAD

Subset, but still playable

Simple programming API

- Add block(s) of various kinds
- Get block info
- Get/set player position
- Post messages
- Track 'hit' events

```
import minecraft.minecraft as minecraft
import minecraft.block as block
import time
```

```
mc = minecraft.Minecraft.create()
mc.postToChat("Hello Minecraft World")
time.sleep(5)
```

```
myPos = mc.player.getPos()
mc.player.setPos(myPos.x, myPos.y + 50, myPos.z)
mc.postToChat("Dont look down")
time.sleep(5)
```

<http://www.stuffaboutcode.com/2013/04/minecraft-pi-edition-api-tutorial.html>

'Client' sends text messages

Game 'Server' receives & acts

Libraries for various languages

Useful CS ideas lurking

Can even use SCRATCH to
control Minecraft!

And H*sk*ll too

Enough for fairly complex tools:

Automatic bridges

Towers & houses

Big holes

Rainbows and pictures

FROM: www.minecraftforum.net/forums/other-platforms/minecraft-pi-edition/1959851-my-first-script-for-minecraft-pi-api-a-rainbow

```
import mcpi.minecraft as minecraft
import mcpi.block as block
from math import *

colors = [14, 1, 4, 5, 3, 11, 10]

mc = minecraft.Minecraft.create()
height = 60

mc.setBlocks(-64,0,0,64,height + len(colors),0,0)
for x in range(0, 128):
    for colourindex in range(0, len(colors)):
        y = sin((x / 128.0) * pi) * height + colourindex
        new_col = colors[len(colors) - 1 - colourindex]
        mc.setBlock(x - 64, int(y), 0, block.WOOL.id, new_col)
```

And **EXPLOSIONS!!!**

Lots of physics and maths

Lots to discuss

And enough for games too

Nicholas Harris - eBook

“Minecraft Pi: Making Games

Inside a Game”

(bargain at £1.23)

DEMO

→ Martin O'Hanlon

→ <http://www.stuffaboutcode.com/p/minecraft.html>

→ A collection of scripts

→ <https://github.com/brooksc/mcpipy>

→ Scratch to Minecraft

→ <http://cymplecy.wordpress.com/scratchgpio/>

Redstone Mechanisms

http://minecraft.gamepedia.com/Redstone_circuit

Or *The Official Redstone Handbook*

Railways, automatic doors, ...

Lots of useful components

Logic circuits – even computers

ScriptCraft!

Server mod, for JS programming

Allows a bit more oomph

<http://scriptcraftjs.org/>

Full-scale Modding

→ Too much information!

- <http://www.kegel.com/minecraft/> - Grown-up's guide
- http://minecraft.gamepedia.com/Mods/Creating_mods
- *Learn to Program with Minecraft Plugins* by Andy Hunt
- Bukkit: http://wiki.bukkit.org/Setting_up_a_server
- Raspberry Juice <http://dev.bukkit.org/bukkit-plugins/raspberryjuice/>
- O'Hanlon intro: <http://is.gd/SFVGTY> (or search stuffaboutcode.com)

Be cautious!

Many mods out there

Not all are legitimate/safe

Guidelines?

A few more useful resources:

→ *Adventures in Raspberry Pi* - Carrie Anne
Philbin

→ <http://www.raspberrypi.org/tag/minecraft/>

→ <http://minecrafterdu.com/>

→ http://minecraft.gamepedia.com/Minecraft_Wiki