#### Get Started with Minecraft Pi Edition & Python



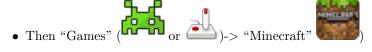
### First Steps

- 1. Open up the "mcpi\_ideas" folder on the Desktop
- 2. Double click on "1\_Get\_Started.py" and Python (IDLE) will open.
- 3. Open up Minecraft









• Click "Start Game" -> "Create World"

#### Move about a bit

- Once in Minecraft make sure you know how to get about
- ASWD
- Space bar to jump / fly
- Mouse to look, mouse buttons to build blocks and destroy them.
- ESC to get your mouse back and get out of the Minecraft

#### Run your first code

- 1. Move the windows around so you can see this guide, IDLE and Minecraft
- 2. Click back into python editor (IDLE)
- 3. Press F5 to run the code
- 4. Quickly click back into Minecraft to see what happens.
- 5. Clicking on the Minecraft window entry in the menu bar at the top can help.

### Did you see it?

If not try one more time yourself. And then wave for assistance.

#### Well done

You have run your first program that manipulates Minecraft

### The Code Explained 1/3

```
from mcpi import minecraft
from mcpi import block

# Store the connection to Minecraft in a variable called mc
mc = minecraft.Minecraft.create()
```

Get the code that allows the python programming language to talk to Minecraft.

And create the connection, you have to be in a world in Minecraft for this to work

### The Code Explained 2/3

```
# Store the position player is standing in a variable called pos
pos = mc.player.getTilePos()
```

Python asks Minecraft what tile the player is standing on

# means a line is a comment in English and is not part of the program. We use them to explain what is going on in the code.

#### The Code Explained 3/3

```
# Store a string which contains the x,y,z of your position
message = "You are at x="+str(pos.x)+", y="+str(pos.y)+", z="+str(pos.z)
# Print the message in the python screen
print(message)
# Send the message to the Minecraft chat
mc.postToChat(message)
# A quicker way to print the position
message2 = "You are at "+str(pos)
print(message2)
```

#### Make some blocks

```
Below your current code type

mc.setBlock(pos, block.DIAMOND_BLOCK)

above = pos
above.y = above.y + 4
mc.setBlock(above, block.TNT.id, 1)
```

• Run it with F5

- Look above you and below, can you see some new blocks?
- You can get a list of the blocks by typing "block." and then press CTRL + SPACE
- Experiment making different blocks and changing how far away they are

#### I'm walking on sunshine

```
Add this code below what you have already written
What does it do when you run it?

while True:
    pos = mc.player.getTilePos()
    mc.setBlock(pos, block.GOLD_BLOCK)

What happened?
```

#### Moving on

Well done. Now delete these lines from our code so we can get on .

```
mc.setBlock(pos, block.DIAMOND_BLOCK)
above = pos
above.y = above.y + 4
mc.setBlock(above, block.TNT.id, 1)
while True:
    pos = mc.player.getTilePos()
    mc.setBlock(pos, block.GOLD BLOCK)
```

#### Rainbow Road

Now add this piece of code

```
while True:
   pos = mc.player.getTilePos()
   num = (pox.x+pos.y+pos.z) % 16
   mc.setBlock(pos, block.WOOL.id, num)
```

- There is a mistake in this on purpose.
- It will appear in red in the Python window.
- See if you can see what the problem is and fix it.
- Once it works can you work out what the code is doing?

## Well done you have completed this bit

#### Teleporting



#### Open File

- 1. Open "2\_Teleporting.py"
- 2. Press F5

#### What has happened?

#### Find out your IP address

- 1. Click on "LX Terminal" ( or "Terminal" ( or or or
- 2. Type

```
ifconfig | grep "inet addr:"
```

- 3. The text after "inet addr" is your IP address (it has 4 sets of number and dots in between each set) (You may have a Wifi or Wired IP address)
- 4. Write down your IP address and swap it with a friend

#### Controlling Someone Elses Minecraft

- 1. On the 4th line in "teleport.py" swap "127.0.0.1" for your friends IP address
- 2. Run it and see what happens
- 3. Can you make them move forward quickly?
- 4. Can you make them teleport off the world?

## Buildings



### First Steps

- 1. Open up the "mcpi ideas" folder
- 2. Double click on "3\_Buildings.py" and Python will open.

### Code Explained

Same code at the top.

```
pos = mc.player.getPos() #Find the players position
print(pos) # print the position

mc.player.setPos(0,50,0) # Teleport Steve into the sky in the centre of the world.
mc.setBlocks(0,-1,0,6,6,6,block.STONE_BRICK) # Make a solid box of blocks between 0,-1,0 and 6,6,6
mc.setBlocks(1,0,1,5,5,5,block.AIR)
```

#### Can you think how to :-

- 1. Make the building out of another material (this site might help http://www.stuffaboutcode.com/p/minecraft-api-reference. html)
- 2. Make it look like your house
- 3. Do a roof
- 4. Make it build near your player

Look at the "Castle.py" and "Large Tower.py" in the "misc" folder for inspiration.

#### Pictures in the sky - Using weird numbers (binary) to make big pictures



## Open the file

- 1. Open "4\_Pictures\_in\_the\_sky.py"
- 2. Run it, what does it do?

#### Variables and lists.

We have used variables before but here we are using an array, a list of values.

Find this code? All the other lines that start img = [ do EXACTLY the same thing.

# Draw a picture

- 1. Draw you picture on the squared paper by filling in each box.
- 2. Draw a box which contains your picture.
- 3. For each row have a look at the left hand square if it is filled in write a 1 if empty write a 0
- 4. Copy those numbers into the lines starting 0b (you need to keep the 0b and the commas.
- 5. Run the code.