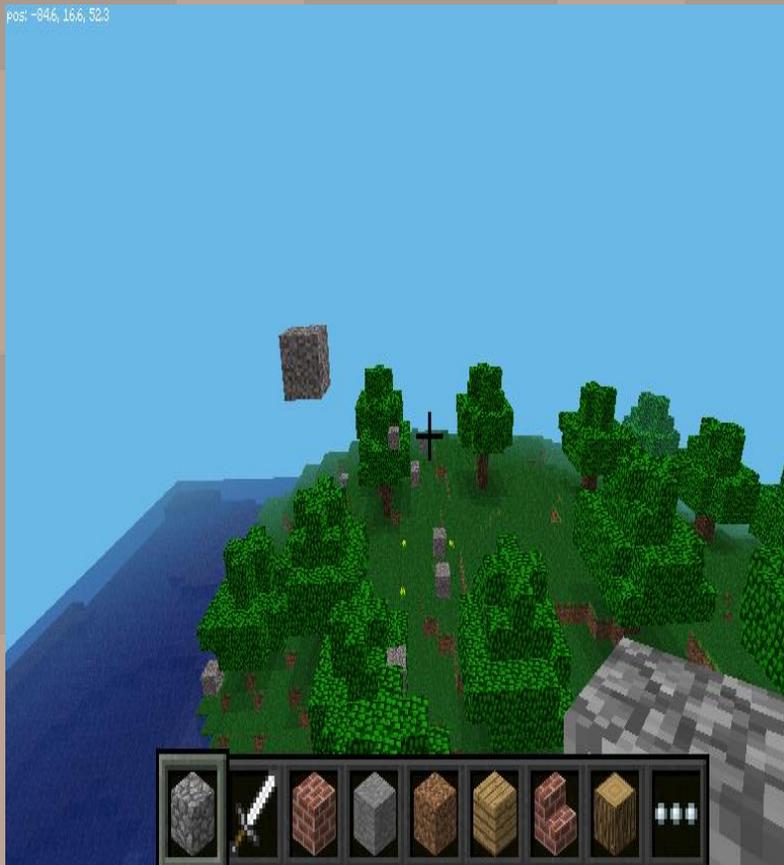


EQUALLOWS

Minecraft Collection



The Sand Drop

www.edupython.co.uk
www.allaboutcode.co.uk

The Sand Drop (Dan Aldred)

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Objective

There are some strange things happening in the Minecraft world. Watch out because as you walk around random blocks of sand are dropping out of the sky. Don't let them hit you or else it's game over.

Getting Started

1. Start by going into the Raspberry Pi menu and clicking on games, then Minecraft Pi. Select Start Game then Create New. Press ESC on your keyboard and minimise the window.
2. Double click on the EduBlocks desktop icon to open up the program. You are now ready to start coding.

Let's Code

Now its time to build our code. We can drag our code blocks from the EduBlocks toolbar which is on the left hand side of the screen. Our first 2 blocks of code can be found in the Minecraft General Tab, take a look, they are colour co-ordinated. Drag the blocks onto the workspace as shown in the diagram.

```
from mcpi.minecraft import Minecraft  
mc = Minecraft.create()
```

In this section of code we are importing the Minecraft Module from the Minecraft Pi Library. The 2nd block creates a connection to the Minecraft server.

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Let's Code

Our next 2 blocks can be found in the Basic section of the toolbar. Drag them over to the workspace and connect to the previous blocks . When entering text into blocks , click inside - you can tab across.

```
import time
```

```
pos = mc.player.getTilePos()
```

This first block imports the time library. The 2nd block is a variable it allows us to shorten a command, in this case when we want to get the players position we just need to enter pos.

The next block can also be found in the Basic section of the toolbar. Drag them over to the workspace and connect to the previous blocks. Enter text as shown.

```
while mc.getBlock(pos.x, pos.y, pos.z)!=13 :
```

This block is a while loop, this is a way of looping through commands until the condition is met.

This next block can be found in the Minecraft commands on the toolbar. We need to click it inside our while loop.

```
mc.setBlock( pos.x , pos.y+25 , pos.z , 13 )
```

This next block allows us to set the co-ordinates for our sand block.

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Let's Code

The next 2 blocks can be found in the Basic section of the toolbar. Drag them over to the workspace and attach to the previous blocks inside the while loop.

```
time.sleep( 1 )
```

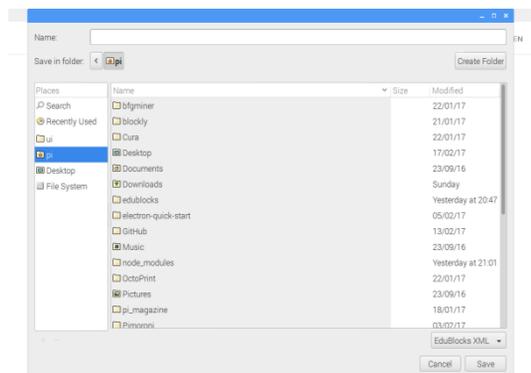
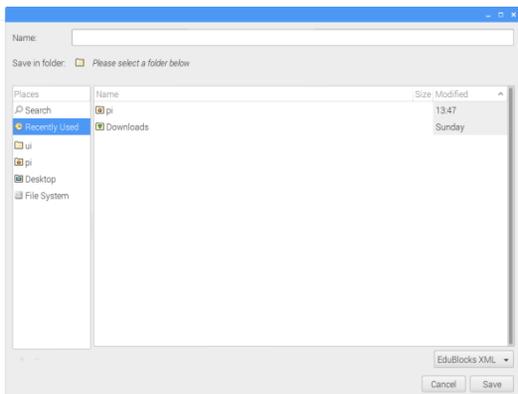
```
pos = mc.player.getTilePos()
```

This first block is a sleep which allows a pause in this case for 1 second before the rest of the code runs. The 2nd block, which we have already met before is a variable it allows us to shorten a command, in this case when we want to get the players position we just need to enter pos.

Save your code

Before we run our code, lets save it. Click on the save button in the top right hand corner of the EduBlocks window. Select the folder called Pi.

Type in the file name box lets call it **Thesanddrop** then click save.



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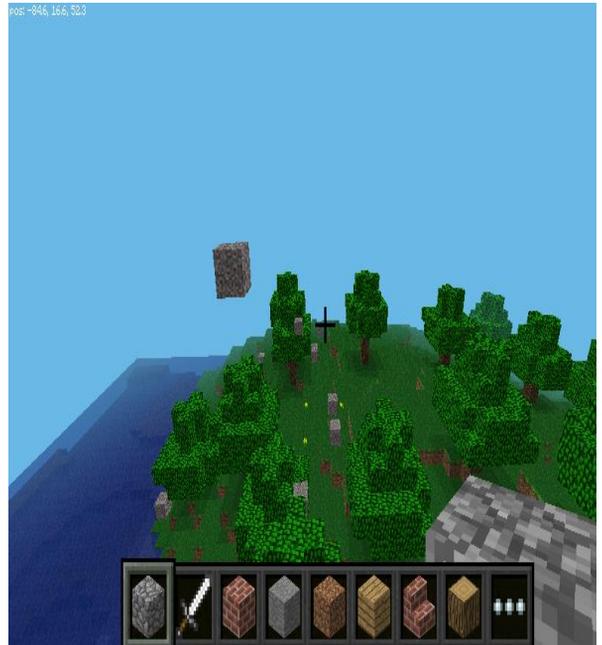
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Run your code

Now it's time to run our code. Click on the run button in the top right hand corner of the EduBlocks window.

Then click on the Minecraft tab to return to our Minecraft world. Now go and walk around the Minecraft world but watch out for those falling blocks of sand.

```
from mcpi.minecraft import Minecraft
mc = Minecraft.create()
import time
pos = mc.player.getTilePos()
while mc.getBlock(pos.x, pos.y, pos.z) != 13 :
    mc.setBlock( pos.x , pos.y+25 , pos.z , 13 )
    time.sleep( 1 )
    pos = mc.player.getTilePos()
```



Outcome

In this tutorial we have learnt how to import libraries. We have used a forever loop & variables . We have also looked at block ID's for Minecraft and used knowledge of the x, y and z co-ordinates to allow us to drop blocks of sand from the sky.

Challenge: Can you change the sand block for random blocks?