

Minecraft Christmas Tree

By Joshua Lowe

Original Code By Spencer Organ



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Objective

We are going to create a Christmas tree with Flashing Lights in Minecraft using EduBlocks.

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. To load up EduBlocks, go to the Raspberry Pi menu in the top left hand corner of your screen. Go to Programming and select EduBlocks.

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. The purple blocks in our code can be found in the Minecraft >> General tab and the pink ones in the BASIC 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()
import mcpi.block as block
import random
import time
```

? INFO:

This section of code will import the Minecraft & Time libraries. Also, the last block will connect to the Minecraft Server.



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Let's Code

Our next 3 blocks can be found in Minecraft >> Commands if they are green and Basic if they are pink.

```
x, y, z = mc.player.getPos()
```

```
x+ = 2
```

```
mc.setBlocks( -10 , 0 , -10 , 60 , 50 , 50 , block.AIR.id , 0 )
```

```
mc.setBlock( x+3 , y , z , block.WOOD.id )
```

```
mc.setBlock( x+3 , y+1 , z , block.WOOD.id )
```

? **INFO:** The first 2 blocks will get the players position and the first green block will clear the area and the next 2 blocks after that will create the tree trunk.

Our next 4 blocks can be found in the Minecraft>>Commands section of the toolbar.

```
mc.setBlocks( x , y+2 , z , x+6 , y+2 , z , block.LEAVES.id , 0 )
```

```
mc.setBlocks( x+1 , y+3 , z , x+5 , y+3 , z , block.LEAVES.id , 0 )
```

```
mc.setBlocks( x+2 , y+4 , z , x+4 , y+4 , z , block.LEAVES.id , 0 )
```

```
mc.setBlocks( x+3 , y+5 , z , x+3 , y+5 , z , block.LEAVES.id , 0 )
```

? **INFO:** These 4 blocks will create the leaves of the Christmas tree. The X, Y, Z coordinates correspond to the players position in the game



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Let's Code

Now let's move onto controlling our flashing light on the top of the Christmas tree. We need to set a list of colours to choose from and then pick those colours randomly. This can be done using a list. Then we need to set a variable to randomly choose a colour from the list and then set the light to that colour. The following code does that:

```
list = [1,3,5,7,10,13]
while True:
    c = random.choice(list)
    mc.setBlocks( x+3 , y+6 , z , x+3 , y+6 , z , block.WOOL.id , c )
    time.sleep( 0.5 )
```

? **INFO:** Light Colours -
1 – Orange, 3 – Blue, 5 – Lime, 7 – Grey, 10 – Purple,
13- Green

If you want to change these colours, go to:

<http://woolcolours.edublocks.org>



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Save Your Code

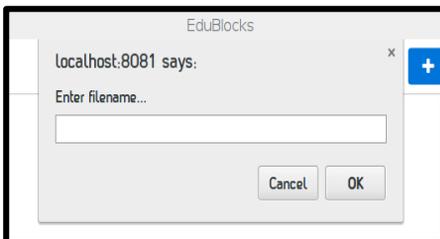
Here is the full code:

```
from mcpi.minecraft import Minecraft
mc = Minecraft.create()
import mcpi.block as block
import random
import time
x, y, z = mc.player.getPos()
x+ = 2
mc.setBlocks( -10, 0, -10, 60, 50, 50, block.AIR.id, 0 )
mc.setBlock( x+3, y, z, block.WOOD.id )
mc.setBlock( x+3, y+1, z, block.WOOD.id )
mc.setBlocks( x, y+2, z, x+6, y+2, z, block.LEAVES.id, 0 )
mc.setBlocks( x+1, y+3, z, x+5, y+3, z, block.LEAVES.id, 0 )
mc.setBlocks( x+2, y+4, z, x+4, y+4, z, block.LEAVES.id, 0 )
mc.setBlocks( x+3, y+5, z, x+3, y+5, z, block.LEAVES.id, 0 )
list = [1,3,5,7,10,13]
while True:
    c = random.choice(list)
    mc.setBlocks( x+3, y+6, z, x+3, y+6, z, block.WOOL.id, c )
    time.sleep( 0.5 )
```

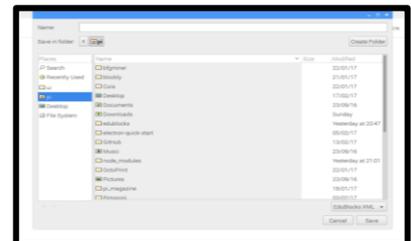
? **INFO:** Your program should look like the one on the left of this INFO BOX. Go back and check through all of your code to make sure you have not made any mistakes.

Before we run our code, lets save it. Click on the save button in the top right hand corner of the EduBlocks window. Name the file

Christmas.xml



Now select which folder you would like to save the file. The default folder 'Pi' will do.



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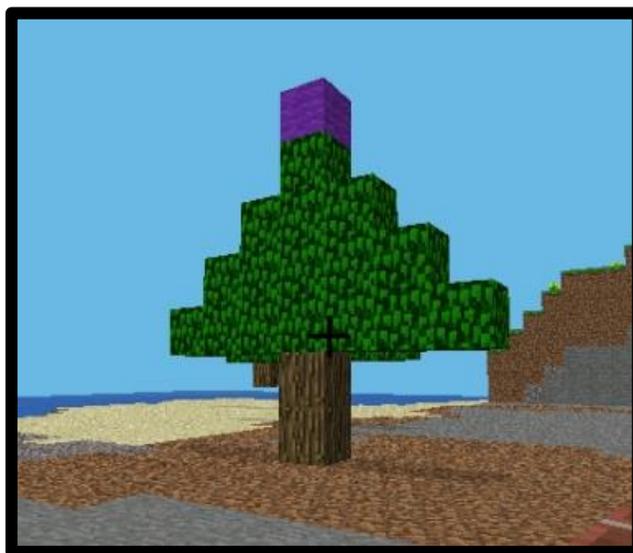
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Run Your Code

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 turn around and you should see your working Christmas Tree



Outcomes

In this tutorial we have learnt how we can use the EduBlocks program to interact with Minecraft to create a Christmas Tree.



Challenge: Add some more lights to the tree and make the lights flash more colours



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