

Learning to Create Retro Games with MakeCode Arcade

Lesson Three Unplugged Challenge and Solutions

```
If our tilemap was 10 x 10:  
tileMapWidth = 12  
tileMapHeight = 8  
  
Let '0' represent black tile, '1' represent yellow tile and '2' represent red tile  
tileMap =  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]  
    [0,0,0,0,0,0,0,0,0,0,0,0]
```

Can you rewrite the pseudocode so that the tileMap would display the following:

- a) A 6 x 6 red square on a black background
- b) A black + dividing the tilemap into four yellow sections
- c) A yellow star on a black background
- d) Your first initial in black and second initial in yellow on a red background.



Lesson Three Unplugged Solutions

Note: You may have solved the same problem using different pseudocode.

Below is just an example of what you can do.

tileMap(square) =
[0,0,0,0,0,0,0,0,0,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,2,2,2,2,2,0,0,0]
[0,0,0,0,0,0,0,0,0,0,0,0]

tileMap(star) =
[0,0,0,0,0,0,0,0,0,0,0,0]
[0,0,0,0,0,1,1,0,0,0,0,0]
[0,0,1,1,1,1,1,1,1,0,0]
[0,0,0,0,1,1,1,1,0,0,0,0]
[0,0,0,1,1,1,1,1,0,0,0,0]
[0,0,0,0,0,0,0,0,0,0,0,0]
[0,0,0,0,0,0,0,0,0,0,0,0]
[0,0,0,0,0,0,0,0,0,0,0,0]
[0,0,0,0,0,0,0,0,0,0,0,0]

tileMap(cross) =
[1,1,1,1,1,0,0,1,1,1,1,1]
[1,1,1,1,1,0,0,1,1,1,1,1]
[1,1,1,1,1,0,0,1,1,1,1,1]
[0,0,0,0,0,0,0,0,0,0,0,0]
[0,0,0,0,0,0,0,0,0,0,0,0]
[1,1,1,1,1,0,0,1,1,1,1,1]
[1,1,1,1,1,0,0,1,1,1,1,1]
[1,1,1,1,1,0,0,1,1,1,1,1]

tileMap(initials) =
[2,2,2,2,2,2,2,2,2,2,2,2]
[2,2,2,2,2,2,2,2,2,2,2,2]
[2,0,0,0,0,2,2,1,2,2,2,2]
[2,0,2,2,2,2,2,1,2,2,2,2]
[2,0,2,2,2,2,2,1,2,2,2,2]
[2,0,0,0,0,2,2,1,1,1,1,2]
[2,2,2,2,2,2,2,2,2,2,2,2]
[2,2,2,2,2,2,2,2,2,2,2,2]

