

Year 5 - Lesson 7 - Coded Pictures

In this lesson we will create pictures using code. You will need to print this document.

Task 1:

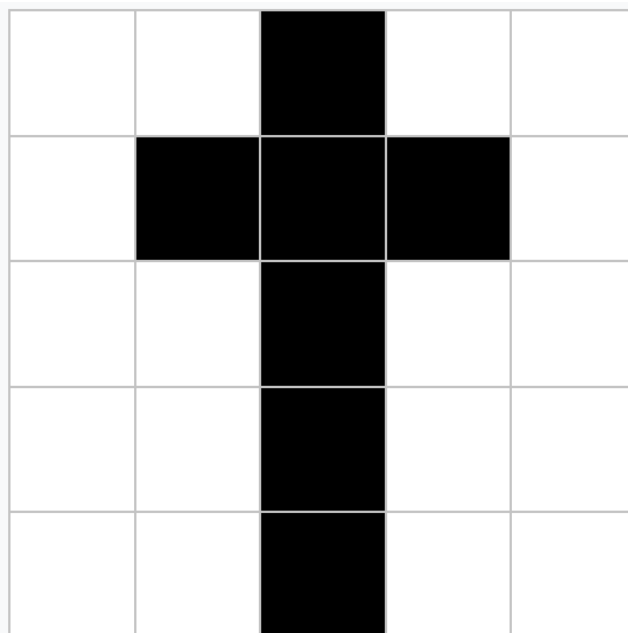
The numbers below are a code to make the picture on the right. The picture is made up of pixels on a grid 5x5. There are 5 rows of code and 5 rows on the grid.

2, 1, 2
1, 3, 1
2, 1, 2
2, 1, 2
2, 1, 2

Look at the first line of code (2,1,2) and look at the first row on the picture grid. You will see that there are 2 white pixels, then 1 black pixel, then 2 white pixels.

When we match line 2 of the code (1,3,1) with row 2 of the picture you can see we have 1 white pixel, 3 black pixels, then 1 white pixel.

Look at the other lines of code to see how they match up.



Task 2:

Look at this row of pixels



The code for this row would be 1, 2, 1, 3, 1. This is because there is 1 white pixel, then 2 black pixels, then 1 white pixel, then 3 black pixels, then 1 white pixel.

See if you can work out the code for this row.



Task 3:

See if you can use a pencil to shade in the correct pixels on the row below using the code: 2, 4, 1, 1

Remember! 2 white, 4 black, 1 white, 1 black

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Here is another: 1, 1, 1, 2, 1, 1, 1

See if you can do this on your own. Remember to start with white.

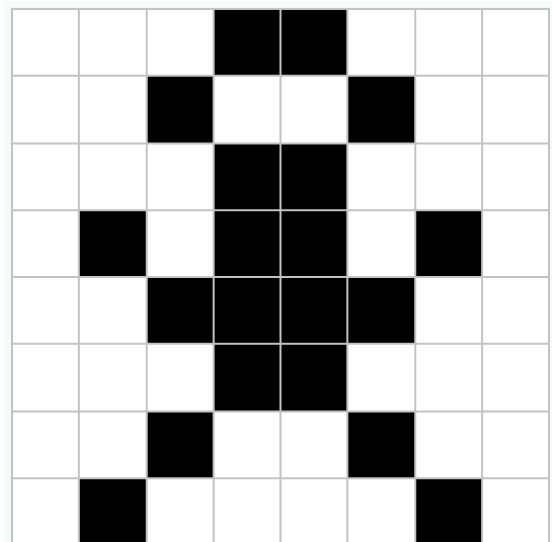
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Task 4:

See if you can complete the code below for the picture on the right.

REMEMBER! We always start each row with WHITE.

3	2	3				
2						
3		3				
1	1					1
		2				
3	2	3				
2					2	
1	1		1			

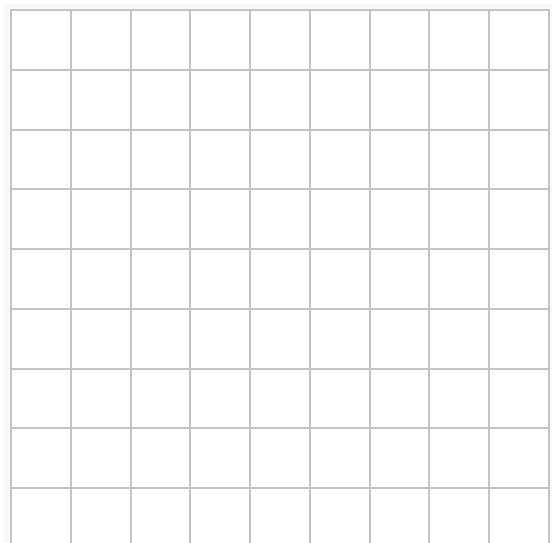


Task 5:

See if you can use the code below to shade in the correct pixels on the grid on the right.

9
 3, 3, 3
 2, 1, 3, 1, 2
 1, 1, 1, 1, 1, 1, 1, 1, 1
 1, 1, 5, 1, 1
 1, 1, 1, 3, 1, 1, 1
 2, 1, 3, 1, 2
 3, 3, 3
 9

What picture did you get?



Task 6:

We always begin our code with white but what happens if the first pixel on a row is black?

Look at the pixels in the row below, the first pixel is black.



Because the first pixel on the row is black it means there are 0 whites at the beginning, therefore we start the code with a 0. The code would therefore look like this

0, 1, 1, 3, 1, 1, 1

This is because there are 0 white, then 1 black, then 1 white, then 3 black, then 1 white, then 1 black, then 1 white.

Here is another example

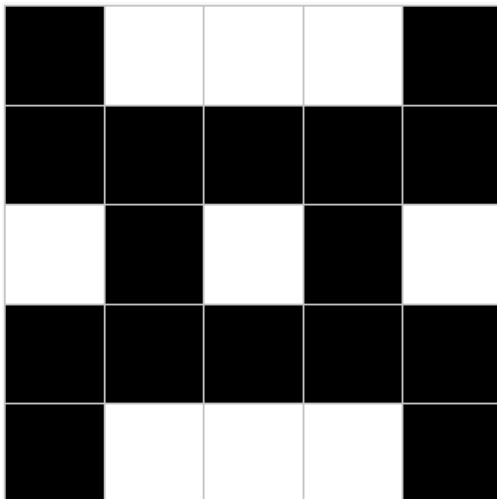


The code for the above row of pixels would be

0, 1, 1, 3, 1, 2

This is because there are 0 white, then 1 black, then 1 white, then 3 black, then 1 white, then 2 black.

Look at the grid of pixels and the code below



0, 1, 3, 1

0, 5

1, 1, 1, 1, 1

0, 5

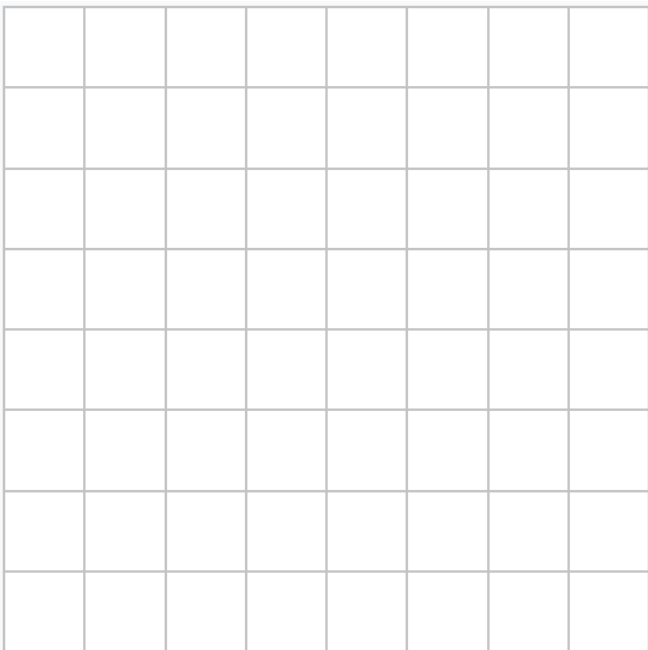
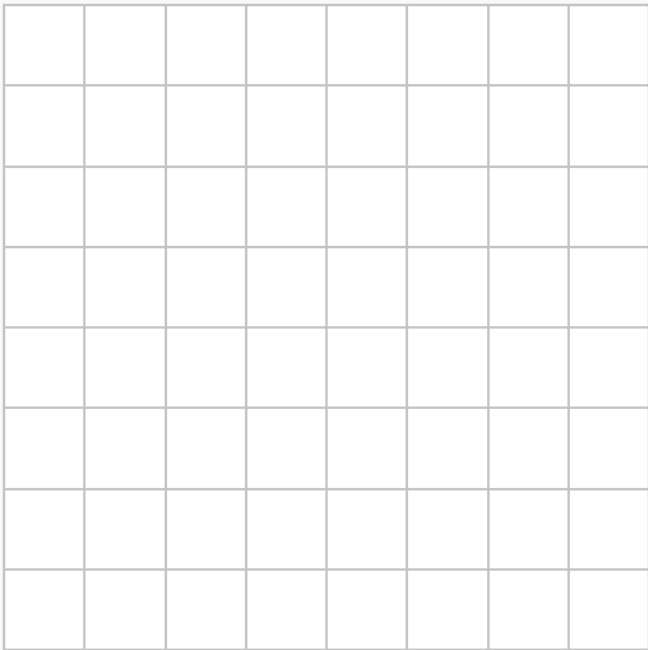
0, 1, 3, 1

Put a circle round the correct answer.

The code above is **RIGHT** **WRONG**

Task 7:

Use the grids below to create your own pictures and then write the code for your picture in the space on the right.



Task 5: Use the following code to reveal a secret message

20

1, 1, 1, 1, 1, 1, 1, 3, 1, 1, 3, 1, 4

1, 1, 1, 1, 1, 1, 1, 1, 3, 1, 3, 1, 4

1, 1, 1, 1, 1, 1, 1, 3, 1, 1, 3, 1, 4

1, 1, 1, 1, 1, 1, 1, 1, 3, 1, 3, 1, 4

1, 5, 1, 3, 1, 3, 1, 3, 2

20

20

1, 3, 2, 3, 1, 3, 1, 3, 3

1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 5

1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 3, 3

1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 5

1, 3, 2, 3, 1, 1, 1, 1, 1, 3, 3

20

3, 1, 3, 1, 1, 3, 1, 1, 1, 1, 4

4, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 4

5, 1, 3, 1, 1, 1, 1, 1, 1, 1, 4

5, 1, 3, 1, 1, 1, 1, 1, 1, 1, 4

5, 1, 3, 1, 1, 1, 1, 1, 1, 1, 4

5, 1, 3, 3, 1, 3, 4

