National Coding Week

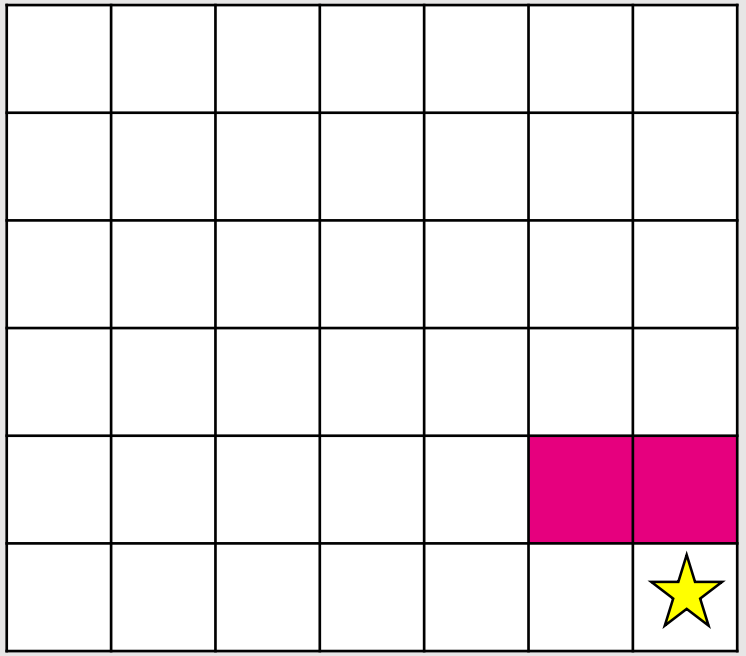
16th – 20th Sept 2019

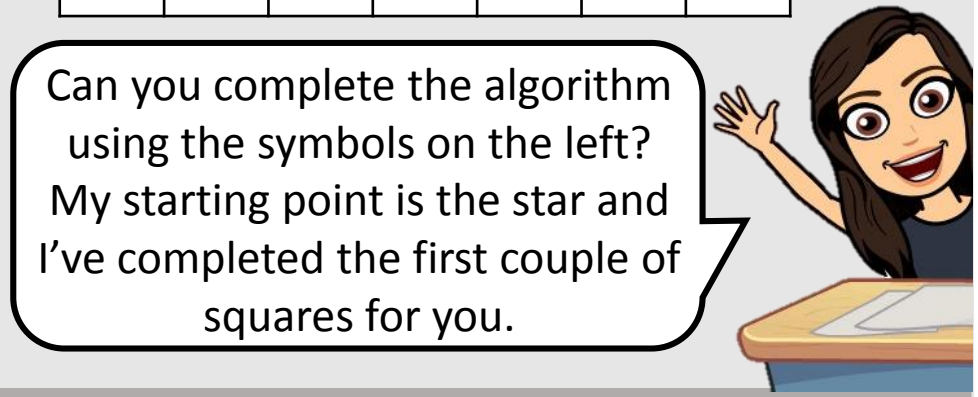
Hey Alex, want to complete some daily unplugged challenges to celebrate National Coding Week 2019?

#NationalCodingWeek

A school has asked Hannah if they can borrow some Micro:Bits but she can't remember how many they asked for. Can you help her complete the algorithm and reveal the number? Tweet your answer using #STEMGlasgow

1 ↑	2 ↘	3 ←	4 ↘	5 ←	6 ↘
7 ←	8 ↘	9 ↑	10 ↘	11 ↑	12 ↘
13 →	14 ↘	15 →	16 ↘	17 →	18 ↘
19 ↑	20 ↘	21 ↑	22 ↘	23 ←	24 ↘
25 ←	26 ↘	27 ←	28 ↘	29 ←	30 ←
31 ↘	32 ↓	33 ↘	34 ↓	35 ↘	36 ↓
37 ↘	38	39	40	41	42





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Alex is going to a big event this week. Can you break the binary code below and find out where she is going?

A	100 0001	H	100 1000	O	100 1111	V	101 0110
B	100 0010	I	100 1001	P	101 0000	W	101 0111
C	100 0011	J	100 1010	Q	101 0001	X	101 1000
D	100 0100	K	100 1011	R	101 1010	Y	101 1001
E	100 0101	L	100 1100	S	101 0011	Z	101 101
F	100 0110	M	100 1101	T	101 0100	a	110 0001
G	100 0111	N	100 1110	U	101 0101	b	110 0010

100 0111 – 100 1100 – 100 0001 – 101 0011 – 100 0111 – 100 1111 – 101 0111

101 0011 – 100 0011 – 100 1001 – 100 0101 – 100 1110 – 100 0011 - 100 0101

100 0011 – 100 0101 – 100 1110 – 101 0100 – 101 1010 – 100 0101

Break the binary code and meet us somewhere in Glasgow this week. I've provided the binary alphabet to help you.

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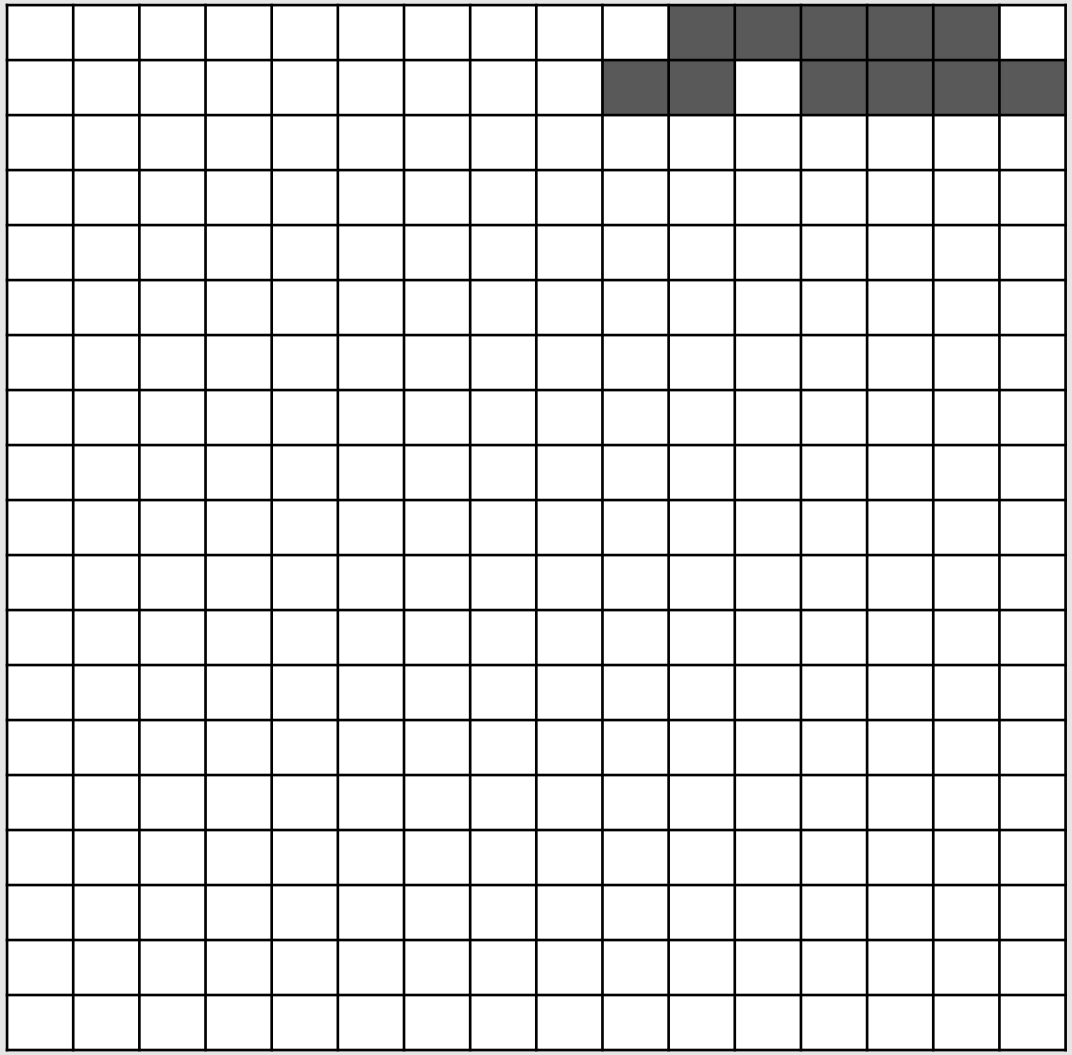
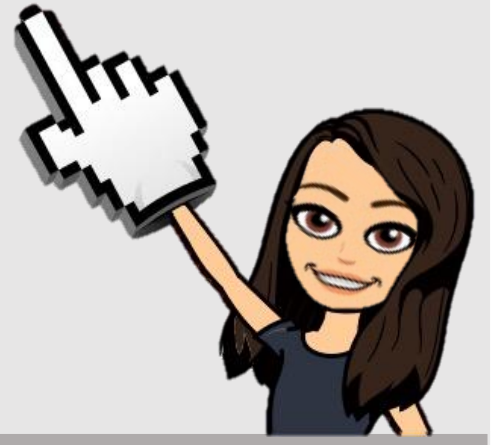
Hannah needs a hand with some image representation. The first couple of lines have been done for you. Can you complete the rest?



10, 5, 1
9, 2, 1, 4
9, 7
9, 7
9, 3, 4
9, 6, 1
0, 1, 7, 3, 5
0, 1, 6, 4, 5
0, 1, 5, 7, 3
0, 2, 3, 6, 1, 1, 3
0, 11, 5
0, 11, 5
1, 9, 6
2, 7, 7
3, 3, 1, 2, 7
4, 2, 2, 1, 7
4, 1, 3, 1, 7
4, 1, 3, 1, 7
4, 2, 2, 2, 6

Fill in the rows based on the numbers at the side and see what image it creates! The first number is how many blank squares you should leave, the next is how many you need to colour in.



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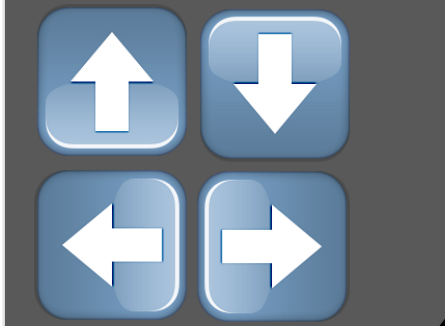
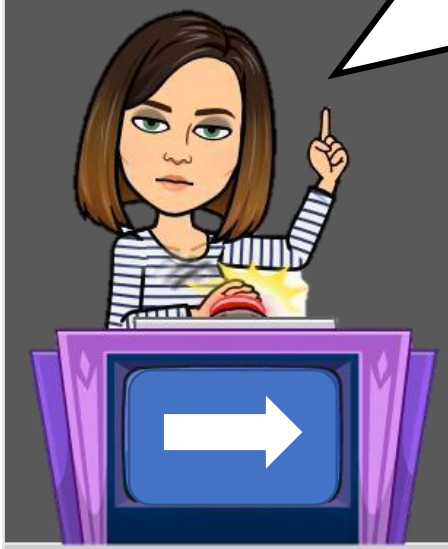
Can you help Alex programme the baby turtle to make it from it's egg to the safety of the sea in as few moves as possible? How many moves does it take? Watch out for crabs, seagulls and shells!





We can use these moves:

- One box up
- One box down
- One box left
- One box right

Watch out for the beach traffic!

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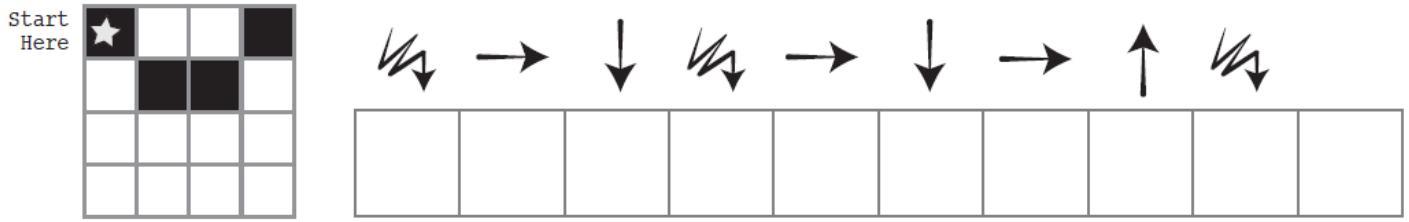
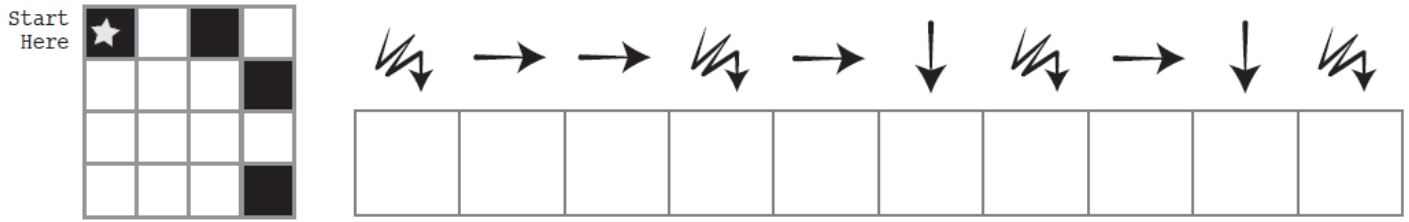
Can you work with Hannah and 'Debug' this programming malfunction?





Someone has written these programmes with the symbols above but they've made a mistake! Can you 'Debug' someone else's programming mistake? Circle the errors and then fill in the correct symbols in the boxes beneath.

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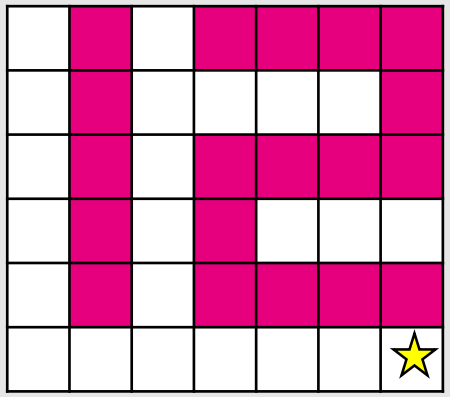
Answers

Challenge 1

A.

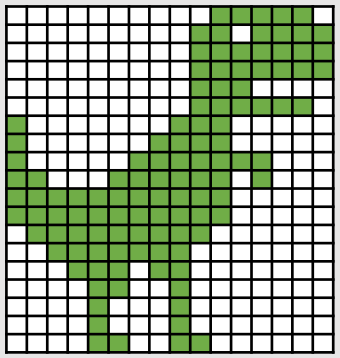


Challenge 2

A. Glasgow Science Centre

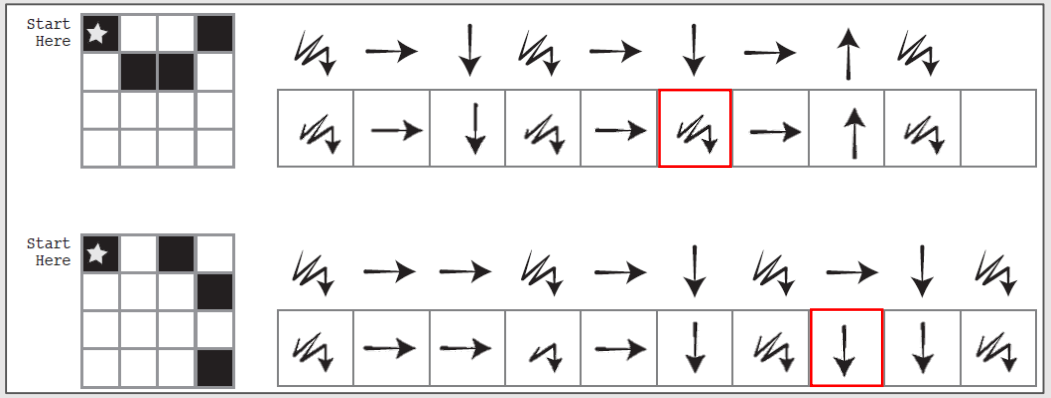
Challenge 3

A.



Challenge 4

A. 13 moves

Challenge 5

A.