



Merchant Venturers School of Engineering  
Outreach Programme

# **Micro:bit Space Invaders**

## **Answers (Block Editor)**

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# 1 Controlling the game

## Questions

1. Can you work out what is going on in this code?

**Loops round playing each level until the player dies 3 times. After each death, the difficulty resets. At the end, the total number of levels completed across all lives is displayed.**

**(a) Waits for game to start (Playing == true)**

**(b) Sets lives to three and level to 1**

**(c) Loops around the following until player has died 3 times (while Lives >0 / until Lives == 0)**

**i. Sets up initial invader positions and player state (i.e. alive)**

**ii. While alive, it moves the invaders 1 to the right if it can. Otherwise, if the game can, it moves them down one row and back to the left hand side. If it can't move them down any further, the player dies. If all the invaders have been destroyed, the next level starts.**

**iii. After the player dies, the number of lives left is decremented.**

**(d) Sets Playing to false to end the game**

**(e) Displays score**

2. Before you run the code, from your understanding of the code, do you think the space invaders will move from left to right or from right to left?

**Left to right**

3. Before you run the code, from your understanding of the code, how many lives will the player get?

**3**

4. Before you run the code, from your understanding of the code, will the speed of each level increase? If so, by how much each time?

**Yes. 10% faster each time. Level speed resets when player dies.**

### Questions

5. Now you've tried running the code, which direction do the space invaders move?

**Left to right - if they programmed it correctly.**

6. How many lives did the player get?

**3 - if they put in the correct starting value.**

## 2 Shooting invaders

### Questions

7. Are there any improvements to the game you can think of? Have a go at programming them. Remember: code-test-repeat.

**Invaders could move back in the other direction instead of just jumping to left hand side. Score could be displayed continuously till next game starts. Initial how to play prompts (e.g. show A+B) could be displayed.**