

Raspberry Pi

Investigate the code: Solutions

You will need:

- This link to the Scratch project: ncce.io/flycatfly

Answer these questions with your teacher

Questions

Your answers ▾

What is the following block of code being used for?



This sets the start position of the building sprite to 280 which is on the right-hand side of the screen. This makes sure that the building is at the right place at the beginning.

What happens when you **Set x to '50'**? Remember to change it back.

The building is much closer to the cat and is no longer moving in a realistic way.

What is the following block of code being used for?



Each time this block runs it will move the building to the left 10 steps. Minus 10 reduces the value of x by 10.

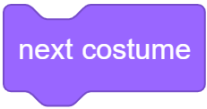
What happens when you **Change x by '-30'**? Remember to change it back.

Because the value has increased, the building will move in larger steps each time. This will make the building appear to move faster (or the cat depending on how you look at it).

How do the two blocks above relate to each other?

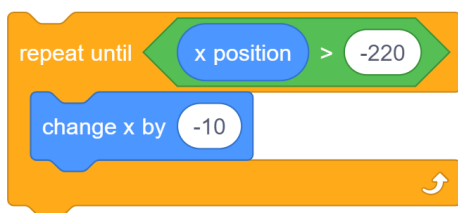
Set x to 280 initialises the value of x and sets up the starting position. Change x by -10 presents and incremental change to the position of the building each time it is run. This change is applied to the value of x.

Answer these questions **with your partner**

Questions	Your answers ▾
What does the Next costume block do? 	This changes the appearance of the building by switching to a different costume.
How many costumes does the building sprite have?	10
Does the program ever run out of costumes? Explain your answer.	No, because this takes place in a loop so it will just go back to costume 1 when it gets to 10.
What needs to happen for the program to stop? Why do you think this is?	The user has to physically stop the game by pressing the Stop button. This is because the code is stuck in a Forever loop and there is no way to break out of it.

Answer these questions **by yourself**

Questions	Your answers ▾
This block is a condition like the ones that you have seen in an If statement (selection). 	This condition will be true when the sprite is in the x position that is higher than -220.
When will this condition be 'true'?	
When will this condition be 'false'?	This condition will be false when the x position is less than -220.
What specifically will happen when this block of code is executed?	



For as long as the x position is less than -220 the sprites' x position will change by -10. This is making the sprite move left along the screen until it gets to the edge.

All of the code underneath **When green flag clicked** is surrounded by a **Forever** block. What do you think the **Forever** block is being used for?

The **Forever** block is repeating whatever is inside the loop, over and over again. It will keep doing this until the game is physically stopped by the user.

When will the **Forever** block stop running?

It will only stop running if the game is physically stopped by the user.

The **Repeat until** block repeats until the condition becomes 'true'. Why does the loop start again once the building has left the screen?

Because the whole loop is inside a **Forever** loop. This means that the **Repeat until** loop will run until the sprite gets to the left of the screen (at position -220) and then the loop will break. Because the loop is inside a **Forever** loop, it starts again.

Explorer tasks

Questions

Describe what is happening at each line of code on the building sprite.

Your answers ▾

When green flag clicked: This starts the code running.

Forever: This is wrapped around all of the following blocks of code and ensures that the code will loop until the game is stopped by the user.

Set x to 280: This block sets the building's start position to 280 on the x-axis.

Next costume: This will switch to the next costume whenever it is run.

Repeat until: This block of code sets a condition for the blocks that are inside it. The blocks will repeat until the

condition is 'true'.

Change x by -10: This block is inside the **Repeat until** loop and will keep moving the sprite to the left until the condition of the loop becomes 'true'.

Explain how a **Forever** loop works.

A **Forever** loop will continuously repeat the blocks of code within it until it is physically stopped by the user.

Explain how a **Repeat until** loop works.

A **Repeat until** loop will repeat the blocks of code inside it until the condition is 'true'.

Please move on to the 'Modify the code' worksheet

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