

Vocabulary

algorithm - a set of rules followed by a program.

bugs - an error in an algorithm that stops a program working correctly.

debug - find and correct errors in a program.

program - a list of instructions that control a computer.

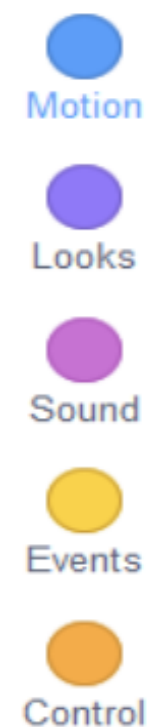
script - the name of the list of instructions in an algorithm.

Key learning points

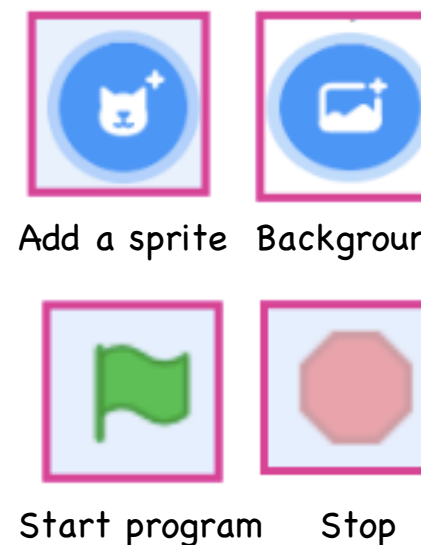
- I can develop a range of strategies to finding and correcting errors in code for a program.
- I can identify the type of error I find and suggest ideas to correct it.
- I can build up resilience for problem solving and continue to try multiple strategies.
- I debug programs created by others through understanding the purpose and the possible errors there could be.
- I can use logical reasoning and systematic strategies to aid the debugging.

Knowledge check

There are lots of blocks in scratch and they are organised into different categories:



These blocks are also important to know when using scratch:



E-safety

- Working collaboratively with others is a benefit of being online and a positive way to interact with the internet.
- You should still be respectful and think about your behaviours when interacting with others online as it has an impact on your online reputation.



Key learning points

Off-by-one bug

Here, an instruction in a program repeats one too many, or one too few, times.

Performance bug

This is where a program doesn't perform as well as it could. It could work more quickly or efficiently.

Multi-thread bug

These bugs occur when several things need to happen at the same time. For example, there might be two processes where each is waiting for the other to complete, or one process that races ahead of the other.

Conceptual bug

This happens when the programmer hasn't fully understood the idea of what is supposed to happen in the program. The bug lies in the idea for the program rather than the code. These sorts of bugs are tricky to find and fix!

Arithmetical bug

These bugs occur when the computer cannot 'do' the maths required, such as divide by zero.

Resource bug

These bugs happen when the programmer hasn't fully understood how the language or the operating system actually works, so the programming they want to do can't be done.