

Kit's Computing: Mastering Algorithms

Learning objective: To understand, create, and debug simple algorithms as sequences of instructions.

Read the front of each flashcard to test your knowledge of algorithms. Check the answer on the back to see how Kit the fox solves computing puzzles!

What is an algorithm?

An algorithm is a precise, step-by-step set of instructions used to complete a task or solve a problem.

Why is the order of instructions important in an algorithm?

The order is vital because computers follow steps exactly as they are written; changing the order can lead to a different result or a mistake.

What is a 'bug' in computing?

A bug is an error or a mistake in an algorithm or computer program that stops it from working correctly.

What does 'debugging' mean?

Debugging is the process of finding and fixing mistakes in an algorithm so that it works exactly as intended.

If Kit wants to make a sandwich, why does he need an algorithm?

He needs an algorithm to ensure he performs the steps in the correct sequence, like spreading the butter before putting the slices together.

What is a sequence?

A sequence is the specific order in which instructions must be carried out to complete a task successfully.

True or False: An algorithm must always be written for a computer.

False. Algorithms can be used for everyday tasks, like following a recipe for baking a cake or instructions for a board game.

If you are writing an algorithm for a robot to move, what is an 'instruction'?

An instruction is a single, clear command given to the robot, such as 'move forward two steps' or 'turn right'.

What does it mean to 'predict' an algorithm's output?

Predicting is thinking about what the result will be after following all the steps in your algorithm before you actually test it.

Why should algorithms be precise and clear?

They must be clear so that anyone or anything following the instructions avoids confusion and achieves the correct final result.