

Kit's Coding Challenge: Computational Thinking Flashcards

Learning objective: To understand, define, and apply key concepts of coding and computational thinking, including algorithms, debugging, and variables.

Use these flashcards to test your knowledge of coding vocabulary. Read the term or question on the front, then flip to check if your definition matches the meaning.

What is an Algorithm?

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

Define 'Debugging' in the context of coding.

Debugging is the process of identifying, investigating, and fixing errors (bugs) within a computer program.

Explain the purpose of a 'Loop'.

A loop is a programming structure that repeats a sequence of instructions multiple times until a specific condition is met.

What is a Variable?

A variable is a container or a 'storage box' used to hold information, such as a number or a word, which can change while the program is running.

What is 'Decomposition'?

Decomposition is the act of breaking a complex problem down into smaller, more manageable parts that are easier to understand and solve.

Define 'Selection' in a program.

Selection is a decision-making process where the computer chooses which path to take based on whether a condition is true or false (often using 'if' statements).

What is the difference between Input and Output?

Input is data sent into the computer (e.g., a keyboard click), while Output is the result the computer produces (e.g., text on a screen).

Why is 'Sequence' important in coding?

Sequence refers to the order in which instructions are executed; if the order is incorrect, the program will not perform the task as intended.

Explain why Kit the Fox needs to use 'Logical Reasoning'.

Kit uses logical reasoning to predict how a program will behave and to detect errors in the sequence of instructions.

What is a 'Bug'?

A bug is an unexpected error or mistake in the code that prevents the program from working correctly.

Compare and contrast a 'Loop' and a 'Selection'.

A loop repeats an action, whereas selection allows the computer to make a choice between different actions based on a condition.

Justify why it is important to document your code.

Documenting code is essential so that others can understand the purpose of your instructions and so you can remember how your logic works when you revisit it later.