

Computing Vocabulary

Abstraction

In computer science the term **abstraction** refers to hiding the complexity of tasks to suit the understanding of the user. For example, for you to use a calculator you only have to press buttons in order to receive the correct answer, however the person that built the calculator understands how it works underneath.

Algorithm

An **algorithm** is a set of instructions that we complete in order to achieve a task. You could write an algorithm to complete mundane tasks such as making a cup of tea or to complete complex tasks such as calculating the odds that a team will win a football match. In computing an algorithm refers to the set of instructions that a computer follows in the order in which they are given.

Binary

Binary is the language computers use. It is a series of 1s and 0s and is also used in mathematics.

Coding

Coding is putting information and commands into a **program**, making it possible for u to create software, apps and websites.

Communication technology

Equipment that we use to communicate with, such as a mobile phone or tablet.

Computational logic is used to allow a program to decide what to do and when. For example you may write code that says: "When the user clicks this button, perform this calculation."

Compile

When we program, we use human words in our codes and programs. However the computer doesn't understand human words, so we have to compile the program – using a compiler – which converts the human words into binary.

Computational logic / thinking

Computational logic is a term that describes the decision-making process used in programming and writing algorithms.

Data

Data is Information.

Debug

Debugging is checking the code in a computer program to ensure it works, and changing it if it doesn't. When writing a computer program things will often go wrong. When writing a program you have to test and debug your program to ensure that it produces correct results.

Decomposition

Decomposition is the process by which a large, difficult problem can be broken down into a series of smaller, simpler problems, thus making the overall problem easier to solve.

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Network

Computers linked within a building or area.

Output

Information that comes out of the computer.

Procedure or function

A **procedure/function** is used in programming to break a complex task down into simple steps or sections.

Program

A **computer program** is a collection of instructions or algorithms designed to simplify processes, whether that be writing a Word document or connecting to a website. A computer program is written using a **programming language**, which allows a computer scientist to teach a computer how to achieve a result. Examples of programming languages are Scratch, Java, Python, C++ and Ruby.

Programming language

Computers are very good at completing lots of mathematical functions in a short space of time, however they don't have the ability to think for themselves. **Programming languages** bridge this gap and allow us to teach a computer how to do things.

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Repetition

Sometimes called iteration, when part of a program repeats itself. For example, in animation you may repeat the movements of a character to make it look like it's moving along.

Selection

When you choose part of something. For example, when you copy and paste text, the passage that you highlight to copy is called the selection.

Sequence

When doing anything in life it is important to complete things in the correct order; you wouldn't pour water into a teacup before you had boiled the kettle, for example! In a program we have to control what happens and when in order to produce correct results. A **sequence** helps us to ensure that things happen in the correct order.

Software

Software is created using a **programming language** and is the non-physical part of a computer. Software can be written once and sold multiple times, for instance Microsoft doesn't have to rebuild Microsoft Word every time they have a new customer, they just make a copy of the files they already have.

System (Operating System)

The **Operating System** sits between the software and hardware and acts as a translator. It tells the hardware when to run calculations and passes the answers back to the software so that it can decide what calculations to run next.

Variable

A **variable** is a piece of information in a program that we want to store, but is able to change. We can compare it to a box in which we put information. This information could be a number, and during the program we might change the initial number (for example as part of the scoring system in a game).

World Wide Web

This is like the Operating System for the internet. We use the web to help us communicate with and over the internet.