



# COMPUTATIONAL THINKING

Solving problems effectively, with or without a computer

## DECOMPOSITION

Breaking a problem or system down into its parts

## EVALUATION

Making judgements based on different factors, such as design criteria and user needs

## LOGIC

Establish and check facts, and make predictions

## CREATING

Planning, making and evaluating things

## COLLABORATING

Working together with others to ensure the best result

## CONCEPTS

## APPROACHES



## ABSTRACTION

Identifying what is important and leaving out detail we do not need

## PERSEVERING

Never giving up, being determined, resilient and tenacious

## DEBUGGING

Finding out what is wrong in an algorithm or program and fixing it

## PATTERNS

By spotting patterns we can make predictions, create rules and solve other problems

## TINKERING

Trying things out through experimentation

## ALGORITHMS

A precise sequence of instructions, or set of rules, for performing a task

Algorithm expressed as code = program

## PROGRAMMING

Designing and writing instructions for a computer in a language it understands (code)

## VARIABLES

A way in which computer programs can store, retrieve or change simple data, such as score or username

## SELECTION

When a computer executes instructions if a particular condition is met or not

## REPETITION

Repeating the execution of certain instructions (creating loops)

## SEQUENCING

Arranging instructions for algorithms and programs in a particular order

## PROGRAM

A stored set of instructions, in a language a computer can understand (code), that does some form of computation

## INPUTS

Data sent to a computer system from devices e.g. a keyboard or sensor



## OUTPUTS

Data sent from a computer system to the outside world e.g. displayed on a computer screen