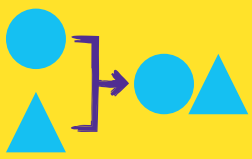
Computational Thinking

Solving problems effectively, with or without a computer

Concepts

Logic
Predicting and analysing

Evaluation
Making judgements



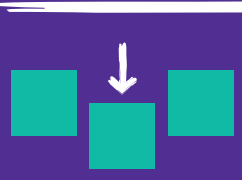
Algorithms
Making steps and rules

Patterns
Spotting and using similarities

Decomposition
Breaking down into parts

Abstraction
Removing unnecessary detail

Approaches



Tinkering
Changing things to see what happens

Creating
Designing & making

Debugging
Finding and fixing errors

Persevering
Keeping going

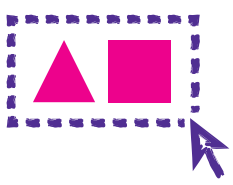
Collaborating
Working together

Programming

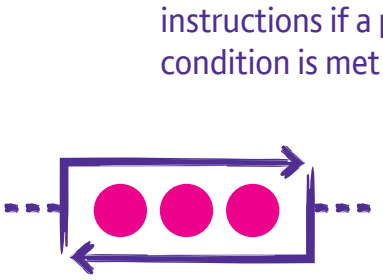
Designing and writing instructions for a computer in a language it understands (code)

Algorithm expressed as code = program

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

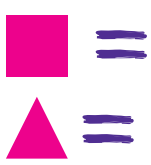


Selection
When a computer executes instructions if a particular condition is met or not

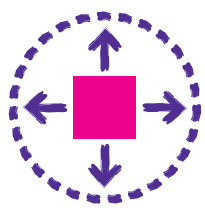


Repetition
Repeating the execution of certain instructions (creating loops)

Sequence
Arranging instructions for algorithms and programs in a particular way



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



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

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

Principal partners

BT

Computing at School

Barefoot