

# TOPIC - Programming Knowledge Organiser

## Control flow

- Sequence
- Logical Operators
- Selection
  - IF... ELSE...
- Iteration
  - For
  - While

## Interpreting Algorithms

- Dry Runs
- Trace Tables
- Identifying Errors

## Searching & Sorting

Describe how each of the following work and how to implement them, and advantages & disadvantages of each.

- Linear Search
- Binary Search
- Bubble Sort
- Merge Sort

## String Manipulation

- Concatenation
- String Indexes
- Escape Sequences

## Data types

- Integer e.g. 23
- Real (Float) e.g. 23.7
- Character e.g. A or 5
- String e.g. A546TH
- Boolean e.g. TRUE or FALSE.

## Mathematical Operators

- ADD +
- SUBTRACT -
- DIVIDE /
- MULTIPLY \*
- MOD
- DIV
- EXP

Order of Operations: BIDMAS

## Data structures

- Arrays;
  - Examples
  - 2D Arrays
  - Indexes

## Subprograms

- Advantages
- Types;
  - Function
  - Procedure
  - Parameter Passing

## Variables & constants

- Named storage location reserved in memory.
- Both declared.
- Definition of variable.
- Definition of constant.

## Testing

- Test data should be chosen to cover valid, invalid, extreme & erroneous situations.
- Logic errors
  - Definition & examples.
- Syntax errors
  - Definition & examples.

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