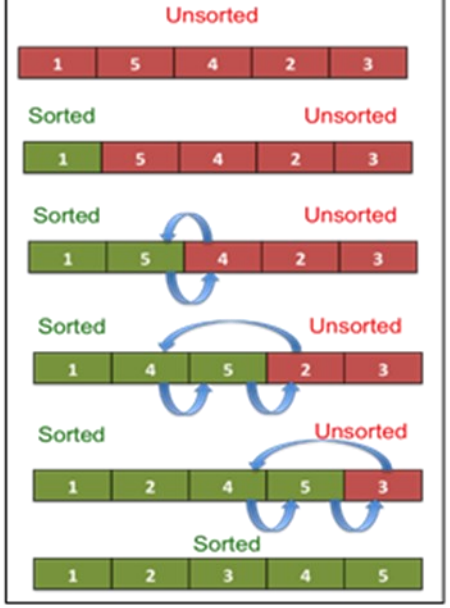
Insertion sort

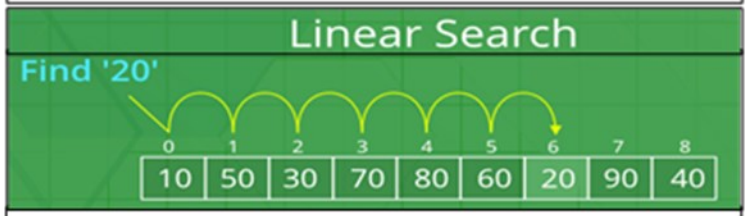
Each item in the list is inserted into its correct place, until the last item has been inserted and the list is sorted.



Binary Search

Binary Search – Find the middle of the list, compare with the value being search, and discard the half of the list that isn't required. List must be sorted.

Linear Search



Linear Search – Checks each item from the beginning to find the search value. List doesn't need to be sorted.

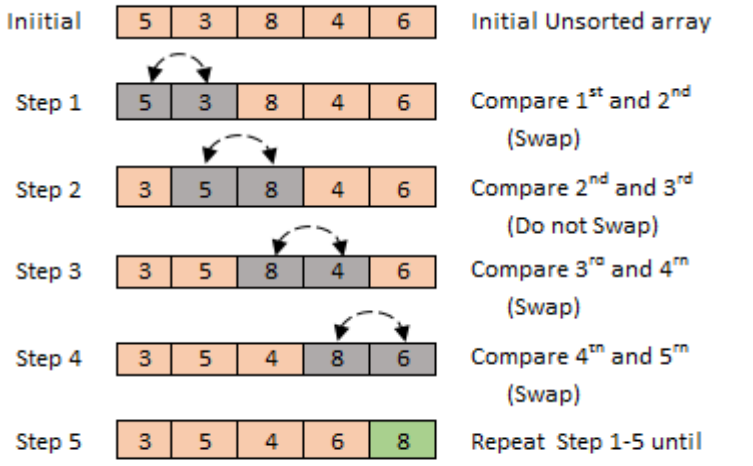
Computational thinking	Thinking like a computer – no common sense or instinct. Every small detail required to complete tasks.
Abstraction	Filtering the problem to only include the relevant/ important information.
Decomposition	Breaking the problem down into smaller and more manageable chunks.
Pattern Recognition	Finding patterns within the problem that can be solved together.
Flowchart	A visual way of representing an algorithm. See image.
Pseudocode	A simple way of writing an algorithm, which looks like code, but doesn't use specific syntax (punctuation).

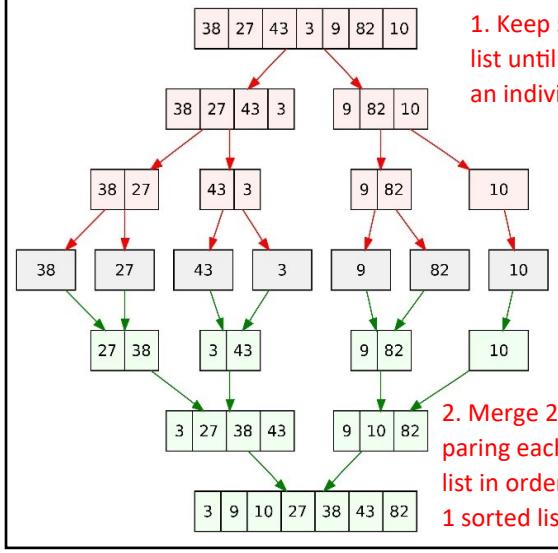
Pseudocode Examples

```
set total to zero

get list of numbers

loop through each number in the list
   add each number to total
end loop

if number more than zero
   print "it's positive" message
else
   print "it's zero or less" message
end if
```

```
INPUT hours
INPUT bears
hourswage = hours * 7
bearswage = bears * 0.45
total = hourswage + bearswage
OUTPUT "Your total wage is £" + total)
```

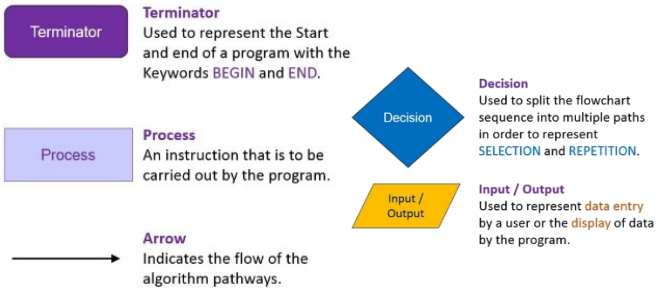
Bubble sort example





1. Keep splitting the list until each list is an individual item.

2. Merge 2 lists by comparing each item in the list in order, repeat until 1 sorted list is left.



Helpful websites:

Youtube – Algorithms

BBC Bitesize | Seneca

https://www.computerscience.gcse.guru