**Searching Algorithms**

**Pair work:**

Linear Search:

1. Describe the steps of the linear search algorithm. (Sentences)
2. Write down pseudocode for a linear search algorithm. The algorithm should return the array index of the item searched for, or -1 if the search item does not exist in the list.
3. Write down the worst, best, and average case time complexity of linear search.

Binary search:

1. Describe the steps of the binary search algorithm. (Sentences)
2. Write down pseudocode for a binary search algorithm. The algorithm should return the array index of the item searched for, or -1 if the search item does not exist in the list.
3. Write down the worst and best case time complexity of binary search.

Write down the maximum number of array items that must be checked when conducting a binary search for an array of length:

1. 16
2. 140
3. 600
4. 1,000,000

How would you express the method for calculating the maximum number of array items that must be checked for an array of length n?

Use Cases:

* Describe a list for which linear search would be more appropriate.
* Describe a list for which binary search would be more appropriate.