**ARRAY SORTING ALGORITHM PLAN**

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| **STUDENT NAMES:** Sophia, Kiran, Hannah  **SORT NAME:** Bubble Sort | | | | | **TIME**: |  |
| **RESOURCES:** Fellow classmates and diagram | | | | SortingNumbers.java |  |
| **Description of how the sort works:** *What does your function do? Where can you use it?*  Bubble sort is a sort that isn’t very efficient, but is easy to understand and a good learning sort. The algorithm focuses on the first part of the array and compares it with the second to see if it’s larger. If the first is larger, it swaps the two and compares it to the third. Once it comes across a value larger than it, the algorithm switches its focus to the larger value and swaps it until the largest value is at the end of the array. Then the algorithm goes back to the first value of the array and repeats the process until the second-largest element is in the second last spot, and so on until the whole array is sorted.The program knows that the array is sorted when none of the elements have to be swapped. It is a good sort to use for arrays that are already mostly sorted, but not one to be used for many other practical scenarios. | | | | | |  |
| **WORKSHOP TIMELINE:  *O****utline of all the steps included in your presentation including introduction, finished examples, and demonstration.* | | | | | |  |
| **#** | **Item** | **Student** | **Details** | | **Time** |  |
| **1** | Introduction | Sophia | * introduce what bubble sort is and what it does | | 2 mins |  |
| **2** | Explain with people first | Kiran | * Show diagram * Sort people by height * No special terminology, layman’s terms only | | 3 mins |  |
| **3** | Efficiency | Sophia | * talk about what efficiency is and time complexity cases for bubble sort | | 2.5 mins |  |
| **4** | Run code/ Explain code | Hannah | * Explain and show how it works using the code and possibly the white board * Compares the element at arrayName[i] to the next element * Reassigns value in the array | | 3 mins |  |
| **5** | When to use bubble sort | Kiran | * When to use bubble sort: for small, nearly-sorted arrays * Easy to program, used as a teaching method | | 1 min |  |
| **6** | Quick Tips/ Troubleshoots | Sophia | * talk about optimizing bubble sort code for efficiency and troubleshooting tips | | 1 mins |  |
| **7** | Conclusion | Hannah | * You learned: how bubble sort works, its efficiency, when to use it and quicktips/troubleshoots | | 1 mins |  |
| **TOTAL TIME** | | | | | **13.5 mins** |  |
| **(if completed and submitted prior to presentation)** | | | | |  | **/10** |
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