

# Bubble sort

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**Problem** - Given an array of integers, sort the array.

```
const arr = [-6, 20, 8, -2, 4]
```

```
bubbleSort(arr) => Should return [-6, -2, 4, 8, 20]
```

# Bubble sort idea

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Compare adjacent elements in the array and swap the positions if they are not in the intended order

Repeat the instruction as you step through each element in the array

Once you step through the whole array with no swaps, the array is sorted

# Bubble sort example

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[ -6 **20** 8 -2 4 ]

[ -6 **20** 8 -2 4 ] → [ -6 **8** **20** -2 4 ] Swap since 20 > 8

[ -6 8 **20** -2 4 ] → [ -6 8 -**2** **20** 4 ] Swap since 20 > -2

[ -6 8 -2 **20** 4 ] → [ -6 8 -2 **4** **20** ] Swap since 20 > 4

End of array. Elements swapped? Yes? Repeat the comparison.

[ -6 **8** -2 4 20 ]

[ -6 **8** -2 4 20 ] → [ -6 -**2** **8** 4 20 ] Swap since 8 > -2

[ -6 -2 **8** 4 20 ] → [ -6 -2 **4** **8** 20 ] Swap since 8 > 4

[ -6 -2 4 **8** **20** ]

End of array. Elements swapped? Yes? Repeat the comparison.

[ -6 -2 4 8 20 ] [ -6 -**2** 4 8 20 ] [ -6 -2 **4** 8 20 ] [ -6 -2 4 **8** **20** ]

End of array. Elements swapped? No? Array is sorted.