

Algorithm

Bubble Sort
Time Complexity





Bubble Sort

**Bubble
Sort**

Best Case

Average Case

Worst Case





Let's think about...
Best Case





Bubble Sort

**Best
Case**

**Already
Sorted**

[1, 2, 3, 6, 8]



Bubble Sort

How many comparisons?

[1, 2, 3, 6, 8]



Bubble Sort

Best-Case Time Complexity

$O(n)$



A large blue octagonal shape is centered on the slide. Inside the octagon, the text "Let's think about... Average Case" is written in white. To the top right of the octagon is a brain shape composed of many small, colorful puzzle pieces. To the bottom left of the octagon is a circular icon with a yellow-to-orange gradient border, containing the Python logo (two interlocking snakes, one blue and one yellow).

Let's think about...
Average Case



Bubble Sort

**Average
Case**

[1, 2, 8, 3, 4]



Let's think about...
Worst Case





Bubble Sort

**Worst
Case**

[8, 6, 3, 2, 1]



Bubble Sort

Average-Case & Worst-Case Time Complexities

$O(n * n)$





Bubble Sort

Average-Case & Worst-Case Time Complexities

$O(n^2)$





Time to Practice!

