Binary Search
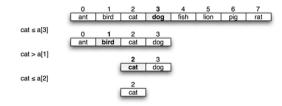
Now that you know the elements are in alphabetical order, (sorted), you can adopt an more efficient approach: **divide the array in half** and compare the key you're trying to find (**cat** in the illustration below) against the element closest to the middle, using the order defined by ASCII, which is called **lexicographic order**.

If the key you're looking for precedes the middle element, then the key—if it exists at all —must be in the **first half**. If the key follows the middle element in alphabetic order, you only need to look at the elements **in the second half**.

Because you can discard half the possible elements at each step in the process, it is much more efficient than linear search. Binary-search is a **divide-and-conquer** algorithm which is naturally recursive.