

# Wordle and the Wolfram Language

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The Wolfram Language’s built in `DictionaryLookup[]` function allows for some optimization of strategy at the game of Wordle, in which players attempt to guess a five-letter word, being informed after each guess what letters the hidden word has in common with their guess and whether those letters are in the correct position. Running

```
Select[DictionaryLookup[], StringLength[#] == 5 &] // Length
```

reveals that there are 6789 five-letter English words (at least in the Wolfram Language’s dictionary). We can determine the number of occurrences of each letter of the alphabet in these words via

```
Reverse[
  SortBy[
    Tally[
      Flatten[
        Characters /@
          Select[DictionaryLookup[], StringLength[#] == 5 &]]],
    Last]
]
```

This reports that the five most common letters are, in decreasing order of frequency, “e”, “s”, “a”, “r”, and “o,” which in turn suggests that the best opening word would be a five-letter word spelled with those letters. Being a better coder than a speller, I ran

```
Intersection[
  StringJoin /@ Permutations[{"e", "s", "a", "r", "o"}],
  Select[DictionaryLookup[], StringLength[#] == 5 &]
]
```

to discover that the only such word is “arose.”