

## Help with the Jumble

A well-known puzzle, and form of basic cryptography, is to unscramble the letters of a word. A big help is knowing which letter comes first. It turns out that this is surprisingly far from equally likely. The letters W, J, B, if they appear at all, are quite likely to come first. On the other hand, the letters N, E, X, if they appear at all, are quite UNlikely to come first.

An analysis of the huge Google (English) books data set (743 billion words) appears in [1]. In this data, there are 59,712,390,260 W's present, of which 40,889,321,958 appear first in their word, which is 68.5%. The full table follows.

Likelihood of being the first letter of its word					
W 68.5%	T 36.0%	S 21.4%	K 17.6%	L 12.4%	U 9.0%
J 67.2%	F 35.0%	O 20.8%	D 17.4%	Z 10.5%	N 6.6%
B 62.3%	C 32.7%	I 20.1%	H 17.3%	Y 9.6%	E 4.7%
P 42.2%	M 31.8%	G 18.3%	V 16.3%	R 9.4%	X 4.0%
Q 38.4%	A 30.3%				

### REFERENCES

1. P. Norvig, English Letter Frequency Counts (2013), <http://norvig.com/mayzner.html>.

—Submitted by anonymous

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