

A Catalog of Spellings

The top spellings for phonemes and their percentages of the 17,000 most frequent words were investigated by Paul Hanna (see Hodges, R E. (1966). The case for teaching sound-to-letter correspondences in spelling. *Elementary School Journal*, 66, 327-336, and the update, Fry, E. (2004). Phonics: A large phoneme-grapheme frequency count revisited. *Journal of Literacy Research*, 36, 85-98). I will only include graphemes that account for at least 3% of the example words. For the reliability of phonics generalizations, see the chart below summarizing Francine Johnston's research.

Phoneme	Principal spellings in order of frequency (Hanna, Fry) and example words
/a/	a (<i>sack</i>), 97%; a_e (<i>have</i>), 3%
/A/	a (<i>bacon</i>), 45%; a_e (<i>bake</i>), 35%; ai (<i>raid</i>), 9%; ay (<i>play</i>), 6%
/Ar/	ar (<i>parable</i>), 29%; are (<i>bare</i>), 23%; air (<i>fair</i>), 21%; ere (<i>there</i>), 15%; ear (<i>bear</i>), 6%
/ar/	ar (<i>bar</i>), 89%; are (<i>are</i>), 5%; ear (<i>heart</i>), 3%
/aw/	o (<i>lost</i>), 41%; a (<i>ball</i>), 22%; au (<i>haul</i>), 19%; aw (<i>saw</i>) 10%
/b/	b (<i>big</i>), 97%
/ch/	ch (<i>chair</i>), 55%, t (<i>feature</i>), 31%; tch (<i>catch</i>), 11%
/d/	d (<i>do</i>), 98%
/u/ (schwa)	o (<i>other</i>), 24%; u (<i>up</i>), 20%; a (<i>alarm</i>), 19%; i (<i>panic</i>), 18%; e (<i>enough</i>), 11%; ou (<i>famous</i>), 5%
/e/	e (<i>bed</i>), 91%; ea (<i>bread</i>) 4%
/E/	y (<i>very</i>), 41%; e (<i>beware</i>), 40%; ee (<i>feet</i>), 6%; ea (<i>seat</i>), 6%
/Er/	er (<i>experience</i>), 32%; ear (<i>fear</i>), 25%; eer (<i>deer</i>), 18%; e_e (<i>here</i>), 14%; ier (<i>tier</i>), 7%
/ul/	le (<i>table</i>), 95%
/er/	er (<i>hammer</i>), 77%; or (<i>odor</i>), 12%; ar (<i>cellar</i>), 8%
/f/	f (<i>fox</i>), 78%; ph (<i>phone</i>), 12%; ff (<i>stuff</i>), 9%
/g/	g (<i>girl</i>), 88%; gg (<i>egg</i>), 5%; x (<i>exit</i>), 3%
/h/	h (<i>hot</i>), 98%
/hw/	wh (<i>white</i>), 100%
/i/	i (<i>hit</i>), 92%; i-e (<i>give</i>), 6% [y (<i>gym</i>), 2%]
/I/	i_e (<i>pipe</i>), 37%; i (<i>Bible</i>), 37%; y (<i>by</i>), 14%; igh (<i>right</i>), 6%
/j/	ge (<i>age</i>), 66%; j (<i>jet</i>), 22%; dge (<i>edge</i>), 5%; d (<i>soldier</i>), 3%
/k/	c (<i>car</i>), 73%; k (<i>kit</i>), 13%; ck (<i>sick</i>), 6%; ch (<i>choir</i>), 3%
/ks/	x (<i>six</i>), 90%; cs (<i>tocsin</i>), 10%
/kw/	qu (<i>quit</i>), 97%
/l/	l (<i>leg</i>), 91%; ll (<i>tell</i>), 9%
/m/	m (<i>mad</i>), 94%; mm (<i>dimmer</i>), 4%
/n/	n (<i>no</i>), 97% [kn (<i>know</i>)<1%]

/ng/	ng (<i>sing</i>), 59%; n (<i>monkey</i>), 41%
/o/	o (<i>hot</i>), 94%; a (<i>want</i>), 5%
/O/	o (<i>focus</i>), 73%; o_e (<i>hope</i>), 14%; oa (<i>boat</i>), 5%; ow (<i>row</i>), 5%
/oi/	oi (<i>oil</i>), 62%; oy (<i>toy</i>), 32%
/oo/	u (<i>bush</i>), 61%; oo (<i>hook</i>), 35%; o (<i>woman</i>), 5%
/Or/	or (<i>for</i>), 97%; ore (<i>core</i>), 3%
/ow/	ou (<i>shout</i>), 56%; ow (<i>howl</i>), 29%; ou_e (<i>house</i>), 13%
/p/	p (<i>pin</i>), 96%, pp (<i>happen</i>), 4%
/r/	r (<i>run</i>), 97%
/s/	s (<i>say</i>), 73%, c (<i>cereal</i>), 17%; ss (<i>toss</i>), 7%
/sh/	ti (<i>action</i>), 53%; sh (<i>shy</i>), 26%; ci (<i>special</i>), 5%; ssi (<i>fission</i>), 3%
/t/	t (<i>top</i>), 97%
/th/	th (<i>bath</i>) 100%
/u/	u (<i>bus</i>) 86%; o (<i>ton</i>), 8%
/U/ or /OO/	u (<i>human</i>), 59%; u_e (<i>use</i>), 19%; oo (<i>moon</i>), 11%; ew (<i>few</i>) 4%
/v/	v (<i>very</i>), 99.5%
/w/	w (<i>way</i>), 92%; u (<i>suede</i>), 7.5%
/y/	i (<i>onion</i>), 55%; y (<i>yes</i>), 44%
/z/	s (<i>was</i>), 64%; z (<i>zero</i>), 23%; es (<i>flies</i>), 4%, x (<i>xylophone</i>), 4%
/zh/	si (<i>incision</i>), 49%; s (<i>pleasure</i>), 33%; g (<i>garage</i>), 15%

The frequency of spelling patterns is a matter of scientific discovery. Much of what I learned from Hanna's study surprised me, e.g., that *s* is the most common spelling of /z/. We don't want to burden children and teachers with rare spellings, nor do we want to omit common ones.

How reliably do vowel spellings represent phonemes?

Evidence from Johnston's study of the 3000 most common words

From Johnston, F. P. (2001). The utility of phonic generalizations: Let's take another look at Clymer's conclusions. *The Reading Teacher*, 55, 132-143.

Correspondence	Phoneme, example word, and percent of reliability in common words
a_e	/A/ (<i>cake</i>) 78%
ai	/A/ (<i>rain</i>) 75%
ay	/A/ (<i>play</i>) 96%
e_e	/E/ (<i>these</i>) 17%
ee	/E/ (<i>feet</i>) 96%
ea	/E/ (<i>seat</i>) 64%; /e/ (<i>head</i>) 17%
ei	/A/ (<i>rein</i>) 50%; /E/ (<i>either</i>) 25%
ey	/E/ (<i>monkey</i>) 77%
ie	/E/ (<i>field</i>) 49%; /I/ (<i>tied</i>) 27%
i_e	/I/ (<i>five</i>) 74%
o_e	/O/ (<i>stove</i>) 58%
oa	/O/ (<i>coat</i>) 95%
ow	/O/ (<i>snow</i>) 68%; /ow/ (<i>how</i>) 32%
oe	/O/ (<i>toe</i>) 44%; /OO/ (<i>shoe</i>) 33%; /u/ (<i>does</i>) 22% [only 9 words in sample]
ou	/ow/ (<i>out</i>) 43%; /u/ (<i>touch</i>) 18%; /U/ (<i>your</i>) 7%
u_e	/OO/ or /U/ (<i>rule, refuse</i>) 77%
oo	/OO/ (<i>boot</i>) 50%; /oo/ (<i>book</i>) 40%
ew	/OO/ (<i>blew</i>) 88%; /U/ (<i>few</i>) 19% [some overlap, e.g., <i>new</i>]
ui	/i/ (<i>build</i>) 53%; /U/ (<i>fruit</i>) 24%
au	/aw/ (<i>cause</i>) 79%
aw	/aw/ (<i>saw</i>) 100%
oi	/oy/ (<i>join</i>) 100%
oy	/oy/ (<i>boy</i>) 100%
ia	/E/a/ (<i>piano</i>) 54%; /u/ (<i>Asia</i>) 46%
y (unaccented syllable)	/E/ (<i>lucky</i>) 100%