# WORDS WITH ELEMENT SYMBOLS 

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There are 118 chemical elements, and each one has a name, an atomic number, and a symbol. The symbols are composed of one or two letters. I wondered how easy it would be to find uncapitalized dictionary words containing each of the symbols. After some initial thoughts, I decided it would be helpful to split the symbols into seven groups, probably reflecting the ease or difficulty of finding appropriate words.

Here are the 118 symbols, listed in alphabetic order:
Ac Ag Al Am Ar As At Au B Ba Be Bh Bi Bk Br C Ca Cd Ce Cf Cl Cm Cn Co Cr Cs Cu Db Ds Dy Er Es Eu F Fe Fl Fm Fr Ga Gd Ge H He Hf Hg Ho Hs I In Ir K Kr La Li Lr Lu Lv Mc Md Mg Mn Mo Mt N Na Nb Nd Ne Nh Ni No Np O Og Os Pr Pa Pb Pd Pm Po Pr Pt Pu Ra Rb Re Rf Rg Rh Rn Ru S Sb Sc Se Sg Si Sm Sn Sr Ta Tb Tc Te Th Ti Tl Tm Ts U V W Xe Y Yb Zn Zr

The seven groups of symbols I decided on are these:

1. a single letter: B C F H I K N O P S U V W Y
2. a consonant followed by a vowel: Ba Be Bi Ca Ce Co Cu Dy Fe Ga Ge He Ho La Li Lu Mo Na Ne Ni No Pa Po Pu Ra Re Ru Se Si Ta Te Ti Xe
3. a vowel followed by a consonant: Ac Ag Al Am Ar As At Er Es In Ir Og Os Yb
4. two vowels: Au Eu
5. two consonants, but looking easy to tackle: Br Cl Cr Cs Ds Fl Fr $\mathrm{Hs} \mathbf{K r} \mathbf{L v} \mathbf{N d}$ $\mathbf{P t} \mathbf{R b} \mathbf{R f} \mathbf{R g} \mathbf{R h} \mathbf{R n} \mathbf{S c} \mathbf{S m} \mathbf{S n} \mathbf{T c}$ Th $\mathbf{T l} \mathbf{T s}$
6. two consonants, but initially looking more challenging: Bh Bk Cd Cm Cn Db Fm Gd Hf Hg Lr Md Mg Mn Mt Nb Nh Np Pb Pd Pm Sb Sg Sr Tb Tm
7. two consonants, but definitely more challenging: $\mathbf{C f} \mathbf{Z n} \mathbf{Z r}$

You might disagree with whether particular symbols should be in group 5, 6 or 7 as my choices are purely subjective on first consideration of the individual symbols. But the choice doesn't really matter.

Group 1: Finding words containing each of these symbols is trivial. Perhaps a more interesting diversion is to find the longest word containing any of these symbols just once (CHIBOUKS and CUSHIONY) or containing repeats of these symbols (INCONSPICUOUS and PSYCHOPHYSICS are a couple of 13-letter examples). Another diversion is to find the smallest set of words which contains all these symbols, but no other letters (COP FUNK VIBS WHY fits the bill nicely).

Group 2: It's pretty easy finding words containing these symbols. Common words can be found beginning with each of the symbols, thus: Bad Beg Bin Cat Cede Cog Dye Fed

# Gap Gem Her Hot Lap Lid Lug Mob Nap New Nib Now Pat Pot Put Raw Red Run Set Sin Tan Ten Tip Xenophobia 

Group 3: As with group 2, words can be found beginning with all these symbols, thus: Ace Age Ale Amp Ark Ash Ate Era Espy Inn Irk Ogle Ostrich Ybrent. The last of these is an obsolete word, and could be replaced by maYbe, although this doesn't begin with the $\mathbf{Y b}$ symbol.

Group 4: It isn't difficult to find words beginning with these two-vowel symbols, thus: Aunt Eunuch

Group 5: The symbols in this group all look like common enough digrams for words containing them to be easily findable, thus: Brag Clap Cry tiCs biDs Fly Fry sigHs oKra haLve aNd Pry aPt baRb suRf uRge peRhaps eaRn Scan Smog Snip eTch They title Tsar

Group 6: At first sight, the digrams of these symbols mostly look awkward, but it's not too difficult to identify words containing these symbols, thus: aBhor lamBkin aneCdote aCme aCne beDbug leaFmold kinGdom busHfire churchgoer waLrus guMdrop filMgoer hyMn dreaMt iNbred iNhale iNput cuPboard uPdate chiPmunk diSband diSguise diSrupt ouTbid liTmus
(As I write this article in January 2020, busHfires are raging in parts of Australia.)

Group 7: These three symbols ( $\mathbf{C f} \mathbf{Z n} \mathbf{Z r}$ ) look particularly challenging, and are worthy of a more in-depth discussion. There are no common, familiar words that satisfy these symbols. Let's look at each of the three symbols in turn. There are several capitalised words - proper names and geographical names - with these symbols, but l've chosen to ignore these and just concentrate on dictionary-listed words spelled with a lowercase initial letter.

Cf: fliCflac (a step in ballet; W3) froliCful (full of fun; W2 \& OED) maCfarlane (a type of overcoat; W3) paniCful (fearful; W2 \& OED) traffiCful (fully occupied with traffic; OED)

Zn: baetZner (a 16th century silver coin of Strasbourg; W2) biZnaga (a thorny cactus; W3) haZnadar (W2) kibbutZnik (a member of a collective farm in Israel; W3) kolkhoZnik (a member of a collective farm in Russia; W3) kolkhoZniki (a plural of kolkhoZnik; W3) viZnaga (a thorny cactus; W3)

Zr: arZrunite (W3) miZrach/ miZrah (the eastern wall of a synagogue; W3) naZrana (a present or tribute given to a superior; OED) viZrea/viZree/viZrey/viZroy (old spellings of viceroy; OED)

Footnote: words used in the above article have been restricted to uncapitalized words listed in the familiar dictionaries - Webster's Second and Third Editions, and the Oxford English Dictionary. But it's interesting to note that the online dictionary Wiktionary lists attiCful, magiCful and musiCful. Are there other words in online dictionaries containing the $\mathbf{C f}, \mathbf{Z n}$ and $\mathbf{Z r}$ digrams?

