

HOW TO PACK MONTHS, PRESIDENTS AND STATES

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In the May 2001 issue of *Word Ways*, Ross Eckler showed how one could exhibit the names of the nine planets, each one in order, in only 26 letters: MNVESARCPJLUPITHURYOANUSER. In the August issue, Darryl Francis followed this up with letter chains of 19 and 23, respectively, containing the days of the week and the colors of the rainbow.

Over a decade ago, I entertained myself during my lunch hour by trying for the ideal arrangement of letters to spell, in order, all the words in various lists. This challenge had the benefit of not requiring endless research, or possession of a massive library of general or specific reference works. When I retired I brought home the folder with the results of my efforts, labeled "Word Ways Article", and mostly forgot about it. Occasionally I would come across it, resolve to do something about it, and return it to my perfect filing system, where it would disappear again.

The lists I worked on most often were the 12 months, the 41 presidential surnames, the 50 states and the 109 chemical elements. For the 12 months of the year, a list of at least 27 letters is needed, the 16 letters occurring at most once in each name, plus two apiece of A, R, U and O, and three of E. I was able to do it with 30: DFJSAEOCPUTNOVEGMBRIUSTLAERYCH. This list can be started with the common endings BER and ARY. Throw in JU(LY/NE) and MA(RCH/Y) and there you go.

The presidential surnames conveniently have duplicates of Adams, Harrison, Johnson, Bush and Roosevelt. SON is common and should be toward the end. FILLMONROE and CLINTCOLN fit nicely together, as do BUSCHANAN and Garfield/Grant/McKinley/Taft/Kennedy. It is helpful to start with such combinations. My solution used 58 letters:

PJCHWMGAROTSBUEFFNILOCKXERSHDAIYEVENULCGMSIAFTOLNHOWERDGEY

Finally, we have the 50 states. There aren't too many obvious combinations here except NEW, (N/S)O(R/U)TH(C/D)A(R/K)O(LIN/T)A, and O(KLA)H(I)OMA. Don't forget (AR)KANSAS which could also incorporate Alaska. My solution uses 78 letters:

TGMPVWEICLONSOUANELWJRIFSTHODAKEISYLBVRA
WCHAOMINSEXTURZOGLIPPCKYSHNUIRETTDASON

I leave the 109 chemical elements to the reader. I achieved it in 77 letters, including both names for Tungsten-Wolfram, Columbium-Niobium and Dubnium-Hahnium. I looked for endings such as IUM, INE, GEN and ON. Ytterbium is unusual in that it contains three other elements, Yttrium, Terbium and Erbium.

To improve a solution, it helps to look for a letter within five or so spaces of a repetition of that letter. Maybe one of them can be removed with a little shuffling. For anyone that can program a computer and has the BASIC or QBASIC or more sophisticated programs, these can be used to check the correctness or completeness of your solution.