

# ROLLER-COASTER WORD CHAINS

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In the Nov 1990 issue of **Word Ways**, Christopher McManus suggests finding ana-gram-mar chains in which word lengths increase and then decrease along the chain. Since jillions of ana-gram-mar chains are possible, this is a good way to provide limits, but his idea can be improved by a more restrictive rule: increase or decrease in word length must be without halts, i.e., without inclusion of chains of words of the same size. What is the longest chain with this new rule? Some fairly long ones are given below.

To develop chains, I used a computer distillation process: I ran it once, let the results lead me back to the dictionaries for new words, and then ran it again. Start with 28,700 seven-letter words. Collect all the four-letter endings. Sort and eliminate duplicates, ending up with 7,300 different ones. Continue as follows. Twelve-letter words with non-word frags were removed from the resultant.

	word length	8	9	10	11	12
number of words		34900	26900	18900	13400	9200
size of beginning frag		4	4	5	5	6
size of ending frag		4	5	5	6	6
words that match previous		11400	5300	1200	513	58
number of different ending frags		3200	2900	720	398	50

breathseller	chargehouses	hopperdozers	masterplates	stringboards
breath takers	cloverleaves	housedresses	masterprizes	stringhalted
breath taking	fellowcrafts	housesitting	mastersinger	stringhalter
buttonboards	fullerboards	marketplaces	masterstroke	stringhearth
buttonbushes	groundkeeper	marketsteads	motherfucker	stringpieces
buttonholing	groundsheets	masterminded	motherhouses	tongueflower
buttonmoulds	groundswells	masterpieces	sleeveboards	weightchaser

Here are chains leading up to some of the above twelve-letter words. To confirm starting the computer search with seven-letter words, note how easy it is was to add solfege beginnings or to take the chains down to one-letter words. On the other hand, I have only been able to identify two thirteen-letter words that continue upward from the twelves.

a-a-do-es-car-pal-mist-each-where-after-market-places  
i-o-re-el-der-mis-coin-here-under-belly-button-holing  
mi-lo-bar-fly-over-head-light-house-master-singer  
fa-de-lay-out-grew-some-where-under-ground-swells  
so-ur-ban-dog-wood-wind-break-water-clover-leaves  
la-de-lay-out-play-back-flash-light-weight-chaser

ti-en-joy-pop-pied-fort-night-shirt-sleeve-boards  
do-pe-can-non-slip-shoe-black-heart-string-hearth-warming  
or-gy-psy-che-ster-nine-penny-earth-tongue-flower-peckers

A second distillation process, also starting with seven-letter words. but working in the other direction, produced the following twelve-letter words with different six-letter beginnings. All of these can be chained down to seven-letter words. Three (FELLOW-CRAFTS, STRINGHALTER, STRINGHEARTH) are found in both lists. Here are chains that use them to climb up from seven-letter words and back down again. And, since we can choose six-letter word extensions almost at will, let's join them in roller-coaster fashion.

battleground cradlefellow schoolmaster springfinger thermostable  
bridgemaster fellowcrafts sledgehammer stringhalter trenchmaster  
cnadlebranch morrowspeech speechcrafts stringhearth withercrafts  
contrastable schoolfellow

top-kick-back-stage-coach-fellow-crafts-woman-power-boat-head-way-lay-  
over-shoe-black-heart-string-hearth-stone-mason-work-hand-out-fox-  
tail-bone-black-heart-string-halter-break-front-line-side-car-man-  
like-some-where-under-string-hearth-penny-cress-wort-hing-les-son

Let's now look at chains climbing up from seven-letter words using irregular sequences of word length. As before, word size increases along the chains, but in some cases nine-letter words are skipped, and in other cases eleven-letter words are skipped. Although a fairly large list (not included in this article) of twelve-letter words was found, I have been only able to identify the few continuations shown below. Skipping a step allowed the chains to build up to fourteen- and fifteen-letter words, but it did not provide a gain in chain length.

hot-foot-step-mother-house-husband-fields  
mis-coin-here-after-night-clothes-baskets  
ass-like-some-where-after-market-ability  
way-side-slip-halter-break-through-gangings  
roe-buck-cart-wheel-chair-person-ableness  
jay-bird-life-blood-stock-jobber-nowlisms

What is the longest roller coaster ana-gram-mar chain anyone can find under the following rules: (1) trough words must be six or seven letters, (2) peak words must be at least 11 letters, (3) word length must continuously increase or decrease along each slope. and (4) no frag may be used more than once in the entire chain (not true in the roller coaster given above). Allowing shorter words in the troughs would allow longer chains, but trivialize the game. It is doubtful that there will be many words of twelve or more letters for the peaks, but there should be plenty of eleven-letter words. Have fun!