

REARRANGEMENTS

Darryl Francis
Brampton, Cumbria, England
darryl.francis@yahoo.co.uk

We love rearranging the letters in a logical set of words to make a different group of words, preferably with fewer words in the rearranged group than in the original set – the fewer the better. We can rearrange **WORD WAYS** into **AW DROWSY** (2 words into 2 words) and **THE NEW YORK TIMES** into **MONKEYISH WETTER** (4 words into 2 words). We decided to identify some different logical sets of words, then to reorganise each set's letters into as few words as possible. We present some of our best findings so far below, but it is possible that the number of words in some groups could be rearranged into fewer words. It just requires a bit of letter juggling and word searching.

Starting with a US theme, here are some fairly easy rearrangements, with the rightmost column showing the numbers of words in the original set and the rearranged group:

STARS AND STRIPES	>	SPARTAN DISTRESS	3 to 2
RED WHITE AND BLUE	>	BEWILDERED HAUNT	4 to 2
US HOUSE OF REPRESENTATIVES	>	FORTUITOUSNESS HEAVER SEEP	4 to 3

Switching to seasons, we played with those of the US and Britain, thus:

SPRING SUMMER FALL WINTER	>	WILLINGNESS FARMER TRUMP	4 to 3
SPRING SUMMER AUTUMN WINTER	>	INTERMENSTRUUM UPSWARMING	4 to 2

It seems slightly surprising that the US seasons with fewer letters can only be reduced to 3 words, while the British set with more letters can be reduced to 2 words. This is because **FALL** has only a single vowel, while the three vowels of **AUTUMN** provide more flexibility. The closest we could get to 2 words for the US seasons was this, with a single letter unused:

SPRING SUMMER FALL WINTER	>	PRELAWFULNESS TRIMMING R
----------------------------------	---	---------------------------------

In several instances that we shall see later, a solution with a single letter unused usually implies that an improved rearrangement of all the letters is possible, doing away with the single letter.

Let's look at some geographical sets of words and see how they can be rearranged. Starting simply with the points of the compass, we see that:

NORTH SOUTH EAST WEST	>	TOOTHWASHES NUTTERS	4 to 2
------------------------------	---	----------------------------	--------

And how about the USA?

UNITED STATES OF AMERICA	>	DEFECATION TRAUMATISES	4 to 2
---------------------------------	---	-------------------------------	--------

Staying with the USA, here's a rearrangement of the names of the Great Lakes:

ERIE HURON MICHIGAN ONTARIO SUPERIOR	>	HISTORIOGRAPHER IMINOUREA NEURONIC	5 to 3
---	---	---	--------

And how about these transformations of the boroughs of New York City?

BROOKLYN MANHATTAN QUEENS STATENISLAND THEBRONX	>	ANTHRAHYDROQUINONE BASKETBALLS ANNEXMENTS NOTT	5 to 4
BROOKLYN MANHATTAN QUEENS STATENISLAND THEBRONX	>	NONANNEXATIONS TALKATHONS REMBRANDTESQUE BLYTH	5 to 4

Notice how we have removed the spaces from **STATEN ISLAND** and **THE BRONX** in order to emphasise that we're treating each of these as one name rather than two words. This space removal will feature elsewhere as this article continues.

Our first attempt at a transformation of the names of the six New England states gave us this imperfect solution, because of the single unused letter:

MAINE NEWHAMPSHIRE VERMONT MASSACHUSETTS RHODEISLAND CONNECTICUT	>	COUNTERREVOLUTIONARIES IMPEACHMENTS WITHSTAND CHESSMAN CHASMED N
---	---	---

But we soon managed to improve it thus:

MAINE NEWHAMPSHIRE VERMONT MASSACHUSETTS RHODEISLAND CONNECTICUT	>	CHEMOTHERAPEUTICS MENUS CONTRADISTINCTIONS HELMSMAN HEAVENWARDS	6 to 5
---	---	--	--------

And we managed further still to improve it to give this superior solution:

MAINE NEWHAMPSHIRE VERMONT MASSACHUSETTS RHODEISLAND CONNECTICUT	>	COUNTERPRODUCTIVENESSES NEMATHELMINTHIC WHATSHISNAME CARDAMONS	6 to 4
---	---	---	--------

However, there is a problem with this last solution. The only dictionary source we can find for **COUNTERPRODUCTIVENESS** is Wiktionary, and Wiktionary specifically says "uncountable", implying that the plural form isn't valid. However, *Webster's Third* has an entry for the suffix **-NESS**, and specifically shows a plural form **-NESSES**, clearly implying that any noun ending in **-NESS** can be pluralized. On this basis, we're claiming that the 6-to-4 arrangement above is acceptable. However, if readers can find another 6-to-4 solution without any caveating, we'd be grateful.

Our next challenge was to tackle the 13 original states of the USA. How far could we take the reduction down from 13? Here's an early solution we came up with, but we suspect further reductions are possible:

CONNECTICUT DELAWARE GEORGIA MARYLAND MASSACHUSETTS NEWHAMPSHIRE NEWJERSEY NEWYORK NORTHCAROLINA PENNSYLVANIA RHODEISLAND SOUTHCAROLINA VIRGINIA	>	ELECTROCARDIOGRAPHY UNWHOLESOMENESS UNCONVENTIONALLY DARWINIAN PRAISEWORTHINESS NARAYAN MACRAUCHENIIDAE NASARD OVERWHELMINGLY STRAIGHTJACKETS	13 to 10
---	---	--	-------------

As yet, we haven't tackled Canada's provinces and territories, so please feel free to see what you can do with this collection of 13 names:

ALBERTA BRITISHCOLUMBIA MANITOBA NEWBRUNSWICK NEWFOUNDLANDANLABRADOR NORTHWESTTERRITORIES NOVASCOTIA NUNAVUT ONTARIO PRINCEEDWARDISLAND QUEBEC SASKATCHEWAN YUKON	>	???	???
--	---	-----	-----

We also tackled the names of the four countries of the United Kingdom:

ENGLAND SCOTLAND WALES NORTHERNIRELAND	>	TRANSCENDENTAL WONDERLANDISH GALLONER	4 to 3
---	---	--	--------

And here's what we managed with the four main islands of Japan, no reduction at all! The presence of 5 K's and 4 U's probably means that a 4-to-3 solution isn't possible, but readers are encouraged to prove that wrong.

HOKKAIDO HONSHU SHIKOKU KYUSHU	>	DOOHINKUS KHUSKHUS HAIKU HOOKY	4 to 4
---	---	---	--------

We also had a stab at transforming the names of the seven continents. Our early attempts ended up with this:

NORTHAMERICA SOUTHAMERICA ANTARCTICA AUSTRALASIA AFRICA ASIA EUROPE	>	INTRAFOLIACEOUS AUTO CHARACTERISTIC AMPHETAMINE ARAUCARIA SASARARA	7 to 6
--	---	---	--------

But we managed to improve on this, and our best solution so far is the one below. We think further improvement is unlikely because of the excessive number of vowels, but a 7-to-4 solution may just be possible:

NORTHAMERICA SOUTHAMERICA ANTARCTICA AUSTRALASIA AFRICA ASIA EUROPE	>	COMPARTMENTALISATION ARAUCARIACEAE ARAUCARIA AUTARCHIST OARFISHES	7 to 5
--	---	--	--------

Beyond the Earth, we went on to tackle the names of planets in the Solar System. Once upon a time (1930-2006), Pluto was considered a planet; but the International Astronomical Union downgraded it to a dwarf planet in 2006. From our point of view, we can simply treat this as two different groups, one with 8 members (excluding Pluto), and the other with 9 members (including Pluto). We think the 8-to-4 solution is the best reduction which can be achieved, but suspect that the 9-to-5 reduction may be improvable to 9-to-4. Anyone care to tackle that?

MERCURY VENUS EARTH MARS JUPITER SATURN URANUS NEPTUNE	>	ANTEJURAMENTUM SUPERSTRUCTURE UNIVERSARY NENUPHARS	8 to 4
MERCURY VENUS EARTH MARS JUPITER SATURN URANUS NEPTUNE PLUTO	>	ANTEJURAMENTUM REPRESENTATIVES UTURUNCU SULPHURY SPORRAN	9 to 5

Okay, enough of geography and the Solar System. How about we tackle some maths/science sets of words? The first one we tackled was the four classical elements. Here's an early 4-to-3 solution:

EARTH WATER AIR FIRE	>	RATIFIER WEATHER AR	4 to 3
-----------------------------	---	----------------------------	--------

Since this solution uses a two-letter word, we felt that a 4-to-2 solution would also be possible with some further letter juggling. It was:

EARTH WATER AIR FIRE	>	FAIRWEATHER ARTIER	4 to 2
-----------------------------	---	---------------------------	--------

The four mathematical operators (addition, subtraction, division, multiplication) form a logical set, and this is where we probably spent the most effort in seeking an optimal rearrangement solution. Here are three of our early 4-to-4 solutions – that is, with no reduction in each initial set and its rearranged group.

ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	CONTRADISTINCTIONS TIBIAD ILLUVIATION PODIUM	4 to 4
ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	ANTICONSTITUTIONAL DIM INDIVIDUAL PROBIOTICS	4 to 4
ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	ANTICONSTITUTIONAL OP INDIVIDUALIST BROMIDIC	4 to 4

The fact that the last of these rearrangements involved a two-letter word suggested to us that a 4-to-3 solution could be a possibility. We found many imperfect solutions where there was just a single unused letter – here are just three of them, although we unearthed many others:

ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	NONINDIVIDUALISTIC PROSTITUTION CALAMITOID B
ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	PROCONSTITUTIONALISM INDIVIDUATION ALBITIC D

ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	NONINDIVIDUALISTIC ATTRIBUTIONS DIPLOMATIC O
---	---	---

Eventually we found a genuine 4-to-3 solution. This was also discovered independently by our good Scrabble friend Allan Simmons (from Coldingham, Scotland). The fact that we both ended up with this solution after many hours of letter-juggling suggests this is probably the only solution using words from dictionaries such as *Webster's Third*, *Webster's Second*, *the Oxford English Dictionary*, and *the Random House Unabridged*:

ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	NONINDIVIDUALISTIC MISATTRIBUTION OCTAPLOID	4 to 3
---	---	--	--------

However, we suspected there might be other 4-to-3 solutions if we used words from outside our regular dictionaries. We managed to find just one more solution, this one using a word from Wikipedia (**PROTOBALISTIUM** = an extinct genus of prehistoric bony fish). If anyone can create additional 4-to-3 solutions, please let us know.

ADDITION SUBTRACTION DIVISION MULTIPLICATION	>	NONINDIVIDUALISTIC DICTATION PROTOBALISTIUM	4 to 3
---	---	--	--------

The periodic table of the chemical elements seemed like an interesting area to tackle, not all 118 of the elements we should hasten to add. That would be too much of an undertaking (but we will return to this later). Our first area of investigation was the so-called halogens, the six elements which sit towards the right-hand side of the periodic table (in group 17)

FLUORINE CHLORINE BROMINE IODINE ASTATINE TENNESSINE	>	INTERDENOMINATIONAL HIRE NONLICENTIOUSNESS BEEFIER	6 to 4
---	---	---	--------

We then went on to investigate the inert gases, the seven elements which sit on the far right-hand side of the periodic table (in group 18). The presence of 9 N's dismayed us at first, but we did manage this impressive rearrangement:

HELIUM NEON ARGON KRYPTON XENON RADON OGANESSON	>	PENTAGONOHEDRON NEARLY AXONEURONS NONSMOKING	7 to 4
--	---	---	--------

Turning now to something a bit more mundane – the seven colours of the rainbow. We found several 7-to-4 rearrangements which used two-letter words. Here are three of them:

RED ORANGE YELLOW GREEN BLUE INDIGO VIOLET	>	REVOLUTIONEERING BRIDEWELLED GEOLOGY AN	7 to 4
RED ORANGE YELLOW GREEN BLUE INDIGO VIOLET	>	NEURODEGENERATIVE BRIDEWELL LOGOLOGY IN	7 to 4
RED ORANGE YELLOW GREEN BLUE INDIGO VIOLET	>	GEOENGINEERING OVERLIBERALLY GLOWED OU	7 to 4

The number of 7-to-4 arrangements involving a two-letter word led us to suspect that a

7-to-3 rearrangement should be possible. However, so far, our best 7-to-3 effort uses a word outside of our regular dictionaries, in this case using **NEURODEGENERATIVELY** from Wiktionary:

RED ORANGE YELLOW GREEN BLUE INDIGO VIOLET	>	NEURODEGENERATIVELY WILLIER BOONDOGGLE	7 to 3
---	---	---	--------

Staying in the scientific world, what could we achieve with the eight taxonomic ranks which are used to classify all living organisms? We think this 8-to-4 rearrangement would be hard to beat:

DOMAIN KINGDOM PHYLUM CLASS ORDER FAMILY GENUS SPECIES	>	PARAPSYCHOLOGICALLY KINDS GEMMIFEROUSNESS UNDIMMED	8 to 4
---	---	---	--------

Sort of scientific in as far as they are mathematical, what's the best that could be achieved with the names of the numbers 1 through 10? One of our first solutions was this 10-to-6 effort:

ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN	>	INTERVENTIONISTS OVERWEIGHT XENON FEE HUE FE	10 to 6
---	---	---	------------

But our Scrabble and maths puzzling friend Chris Hawkins (from Cambridgeshire, England) offered us three 10-to-5 solutions, thus:

ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN	>	HETEROGENEITIES WHIFF NUN OVEREXTENSION VET	10 to 5
ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN	>	INVENTIVENESS EXEGETE NONFORFEITURE HOH WIT	10 to 5
ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN	>	NONINTERVENTION GHEE VEXT HOUSEWIFERIES FET	10 to 5

Another Scrabble-playing friend Nathan Benedict (from Phoenix, Arizona) then piled in to the problem and managed the first of several 10-to-4 rearrangements:

ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN	>	NONEXISTENT OVEREFFUSIVE HEIGHTENER TOWNIE	10 to 4
---	---	---	---------

Not wishing to be outdone, we returned to the search and came up with a further 10-to-4 rearrangement:

ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE TEN	>	NONEXTENSIVE HOUSEWIFE INVERTING FORETEETH	10 to 4
---	---	---	---------

Days of the week and months of the year proved an interesting area for exploration. We thought that days of the week might be a struggle as all seven days contained the letters DAY. Respectively, Allan Simmons and we managed these very different 7-to-6 rearrangements:

SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY	>	INFATUATED RUDDERHEAD DRYASDUST SYNONYMY AWAYDAYS YAUDS	7 to 6
SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY	>	YESTERYEARS THYSANURAN FUDDYDUDS AWAYDAYS MANITOU DADDY	7 to 6

Months of the year proved more amenable to a significant reduction in the rearrangement size, 12-to-7. We think a 12-to-6 rearrangement may be possible, but meanwhile, here's one of our several 12-to-7 ones:

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER	>	CHLAMYDOBACTERIACEOUS ANTEJURAMENTUM BEJABBERS EVERGREENERY FRUMP JUMBLY UPROAR	12 to 7
--	---	--	---------

Sticking with calendars, we also tackled the signs of the zodiac and the creatures associated with the months in the Chinese calendar. Here are our best solutions so far, but both may be improvable:

ARIES TAURUS GEMINI CANCER LEO VIRGO LIBRA SCORPIO SAGITTARIUS CAPRICORN AQUARIUS PISCES	>	PERSPICACIOUSNESS AURICULAR TERRITORIALISING PARAGRAM ACQUISITIVENESS CURIBOCA GOOR	12 to 7
OX HORSE GOAT ROOSTER PIG DOG RAT TIGER RABBIT DRAGON SNAKE MONKEY	>	MEDROXYPROGESTERONE BOOKBINDINGS GASTRORRHAGIA REGATTA TOOK	12 to 5

So far, we've not tackled any familiar sets of people. The very first group we tackled was the first names of the Beatles – John, Paul, George and Ringo. At the outset this looked like a straightforward set of names to be rearranged, but it threw up some interesting points. Our first 4-to-3 solution is shown here:

JOHN PAUL GEORGE RINGO	>	AEROPHONE JUGGLING OR	4 to 3
-------------------------------	---	------------------------------	--------

Several imperfect solutions were found which ended up with two words and a single unused letter. Here are four of these imperfect solutions, three of them discovered by Allan Simmons:

JOHN PAUL GEORGE RINGO	>	JARGOGLING HEREUPON O
JOHN PAUL GEORGE RINGO	>	JARGOGLING EUROPHEN O
JOHN PAUL GEORGE RINGO	>	JARGOGLING HONOREE P
JOHN PAUL GEORGE RINGO	>	GIGAJOULE PRONGHORN E

We note that **GIGAJOULE** is a Wiktionary word, defined as “one thousand million (10⁹) joules” – strange that it's not in our usual dictionaries. We felt that there really had to be a

4-to-2 rearrangement, but the best we could come up with resorted to using another word from Wiktionary (**EUROPHONE** = able to speak a European language):

JOHN PAUL GEORGE RINGO	>	JARGOGLING EUROPHONE	4 to 2
-------------------------------	---	-----------------------------	--------

Allan continued the search for a 4-to-2 rearrangement, and his best find was this one:

JOHN PAUL GEORGE RINGO	>	JOGOLOURE PREHANGING	4 to 2
-------------------------------	---	-----------------------------	--------

Both Allan’s words need further consideration. The printed copy of *the Oxford English Dictionary* contains the following entry between **JOG-JOG** and **JOG-TROT**:

JOG(O)LER(E), -OUR(E) obsolete forms of **JUGGLER**

Checking the entry for **JUGGLER** in both the printed and online versions of *the Oxford English Dictionary* reveals a multiplicity of carefully spelled-out obsolete spellings of **JUGGLER**, but none of which is **JOGOLOURE**. What about Allan’s **PREHANGING**? None of our regular dictionaries nor the online dictionaries we consulted list the word **PREHANGING**; however, it can be found on numerous websites, usually related to doors. For example, one of the doors-related websites explains “Prehanging is the process of assembling all the components for a doorway – door, hinges, jamb, and any hardware – so the doorway, as one unit, can be fitted on site into a preframed builders opening.”

We moved on to the Beatles’ surnames. Would this prove as problematic, or simply straightforward? Our best solution is this 4-to-3 rearrangement, but a 4-to-2 one might be achievable:

LENNON MCCARTNEY HARRISON STARR	>	CONTRAREMONSTRANCE HARRY LINNS	4 to 3
--	---	---------------------------------------	--------

Another group of four names which looked like it might be straightforward was the names of the four gospels of the New Testament – Matthew, Mark, Luke and John.

MATTHEW MARK LUKE JOHN	>	WEALTHMAKER JUNK MOTH	4 to 3
-------------------------------	---	------------------------------	--------

The first names of the Marx Brothers looked interesting to tackle – lots of O’s, a Z, and some clunky other letters. How far could we take this set?

GROUCHO CHICO GUMMO HARPO ZEPPO	>	ZOOGEOGRAPHIC CROUCH POMPOM UH	5 to 4
--	---	---------------------------------------	--------

The two-letter word and the relative shortness of **CROUCH** and **POMPOM** do tend to suggest a 5-to-3 solution might be possible, but the clunkiness of the letters suggests otherwise.

Moving from one comedic team to another – what could we do with the names of the seven dwarfs? We’ve used the names of the Walt Disney dwarfs, but there are multiple different names used for the seven dwarfs in different versions of the Snow White story. Readers

might like to investigate the rearrangement possibilities of the other dwarf names, listed extensively in Wikipedia.

BASHFUL GRUMPY SLEEPY SNEEZY DOPEY HAPPY DOC	>	PSYCHOANALYZE SYMPHYLOUS BEPEPPERED FUDGY	7 to 4
---	---	--	--------

As with the seven dwarfs, so too with Santa's reindeer – there are different spellings of some of the names. We've used Dasher, Prancer, Dancer, Vixen, Comet, Cupid, Donner and Blitzen. But Donner can also be rendered as Donder and Dunder, while Blitzen is occasionally rendered as Blixem and Blixen. Rudolph is excluded because he's a 20th century addition to the original eight reindeer. We are offering two very different 8-to-4 rearrangements:

DASHER PRANCER DANCER VIXEN COMET CUPID DONNER BLITZEN	>	OVERAPPREHENDED BRANDS NONEXTERNALIZED CIRCUMCINCT	8 to 4
DASHER PRANCER DANCER VIXEN COMET CUPID DONNER BLITZEN	>	COMPREHENSIVIZED BARNARD NONEXPECTANT UNDERCIRCLED	8 to 4

From animals, back to humans. Body parts, sins and virtues are all fertile hunting grounds for material. Here's a couple of simple rearrangements involving teeth types:

INCISORS CANINES PREMOLARS MOLARS	>	COMPROMISSORIAL CARNALNESS REINS	4 to 3
INCISORS CANINES PREMOLARS MOLARS	>	MICROPROCESSORS MAINSAILS LANNER	4 to 3

The human body has five vital organs essential for survival. Can their names be optimally rearranged? Here's a 5-to-3 rearrangement, and an imperfect arrangement with a single unused letter. Can the imperfect arrangement be improved to 5-to-2?

BRAIN HEART LIVER KIDNEYS LUNGS	>	VULNERABILITY GREENSHANKS RID	5 to 3
BRAIN HEART LIVER KIDNEYS LUNGS	>	DISVULNERABILITY GREENSHANK R	

Of course, there are plenty of other body parts and body systems that could be put into sets and for which rearrangements could be sought. Here's just one easily definable set, the major bones of the arms and legs:

HUMERUS RADIUS ULNA TIBIA FIBULA	>	UNBEAUTIFUL SUISIMILAR BAHADUR	5 to 3
---	---	---	--------

Here's a related set of words, simply the classical plurals of the arm and leg bones listed above. Not an additional S anywhere, but plenty of additional vowels – in total, 12 consonants and 17 vowels. We have lots of 5-to-4 solutions, but hadn't nailed a 5-to-3 one. Even though the five plurals are relatively short words, the excess of vowels made it unlikely a 5-to-3 solution exists. Or so we thought. Here are some of our 5-to-4 solutions:

HUMERI RADII ULNAE TIBIAE FIBULAE	>	ALBUMINATURIA AIRIFIED BELIE HUE	5 to 4
HUMERI RADII ULNAE TIBIAE FIBULAE	>	BILIRUBINURIA AETHALIUM AIDE FEE	5 to 4
HUMERI RADII ULNAE TIBIAE FIBULAE	>	IDENTIFIABLE MULIEBRIA AURAE HUI	5 to 4
HUMERI RADII ULNAE TIBIAE FIBULAE	>	ALBUMINURIA ELEUTHERIA ABIDI FIE	5 to 4

However, Allan Simmons managed to come up with not just one 5-to-3 solution but two such solutions below.

HUMERI RADII ULNAE TIBIAE FIBULAE	>	HUTUFEIDERIA BILIRUBINAEMIA ALE	5 to 3
HUMERI RADII ULNAE TIBIAE FIBULAE	>	HUREAULITE BILIRUBINAEMIA FEDIA	5 to 3

He discovered **HUTUFEIDERIA**, a genus of mites, in various online sources. The other words are all in *Webster's Second or Third Editions*.

And here's our take on the seven deadly sins and the seven contrary virtues. The 7-to-3 rearrangement for the deadly sins looks optimal, but there may be the possibility of a better than 7-to-5 rearrangement for the contrary virtues.

GLUTTONY GREED PRIDE SLOTH WRATH ENVY LUST	>	OVERDELIGHTEDLY SPANGLER UNTRUSTWORTHY	7 to 3
TEMPERANCE DILIGENCE CHASTITY HUMILITY KINDNESS PATIENCE CHARITY	>	UNSYMPATHETICALLY HYPERCRITICISING KITCHENETTES ACEDIAMINE DEN	7 to 5

How about some games – cards and chess? The four card suits, clubs, hearts, diamonds and spades makes for a nice set of four items. We can offer a 4-to-3 solution and an imperfect one with a single letter remaining:

CLUBS DIAMONDS HEARTS SPADES	>	AMBASSADORSHIPS CUDDLES NET	4 to 3
CLUBS DIAMONDS HEARTS SPADES	>	AMBASSADORSHIP DULCETNESS D	

The four top cards in a suit (jack, queen, king, ace) can be rearranged thus:

JACK QUEEN KING ACE	>	QUACKING AJEE NECK	4 to 3
----------------------------	---	---------------------------	--------

Or how about the six chess pieces?

PAWN BISHOP KNIGHT ROOK KING QUEEN	>	WORKSHOPPING BETHINKING QUOAKEN	6 to 3
---	---	--	--------

Although **CASTLE** is an informal, incorrect or old-fashioned name for the **ROOK**, it does provide us with an alternative set of names. Here is our optimal 6-to-4 solution:

PAWN BISHOP KNIGHT CASTLE KING QUEEN	>	QUENCHING BLOWPIPES SKANKING THETA	6 to 4
---	---	---	--------

But here are several near-misses, each fairly different, and each with a single unused letter. The variations here are sufficient to suggest that a genuine 6-to-3 solution should be achievable - can you find a proper 6-to-3 solution?

PAWN BISHOP KNIGHT CASTLE KING QUEEN	>	BEQUEATHING ANTIKNOCKS SHLEPPING W
PAWN BISHOP KNIGHT CASTLE KING QUEEN	>	PENTHIOPHENE SQUAWKINGS TACKLING B
PAWN BISHOP KNIGHT CASTLE KING QUEEN	>	PANTELEPHONE SQUAWKINGS BITCHING K
PAWN BISHOP KNIGHT CASTLE KING QUEEN	>	PINAKOTHEKS BANQUETING WELCHINGS P

After penning the previous paragraphs, our friend Allan Simmons managed the 6-to-3 solution shown below. Admittedly one of the words is from Wiktionary (**BEKNOWNST** = known, or in someone's awareness), but it's a great find.

PAWN BISHOP KNIGHT CASTLE KING QUEEN	>	PIPSQUEAKING BEKNOWNST HACHELING
---	---	---

Now for two dozen book titles – a few are probably improvable:

ON THE ROAD	>	ANOTHER DO	3 to 2
WAR AND PEACE	>	DREW PANACEA	3 to 2
OF MICE AND MEN	>	FINANCED MEMO	4 to 2
BRAVE NEW WORLD	>	OVERDREW BLAWN	3 to 2
LORD OF THE FLIES	>	FOOTHILLS FREED	4 to 2
THE SECRET GARDEN	>	REGATHERED CENTS	3 to 2
GONE WITH THE WIND	>	DOWNWEIGHT THINE	4 to 2
THE SCARLET LETTER	>	TRESTLETREE LATCH	3 to 2
A TALE OF TWO CITIES	>	LATTICEWISE AFOOT	5 to 2
THE GRAPES OF WRATH	>	AFTERGROWTH HEAPS	4 to 2
THE HANDMAIDS TALE	>	MISDATE HEATHLAND	3 to 2
THE LORD OF THE RINGS	>	HOTTER FINGERHOLDS	5 to 2
PRIDE AND PREJUDICE	>	JAUNDICED REDIPPER	3 to 2
ALICE IN WONDERLAND	>	LAWNED ACRINDOLINE	3 to 2
THE CATCHER IN THE RYE	>	THEE ARCHITECT HENRY	5 to 3
CRIME AND PUNISHMENT	>	INTERMUNDANE CHIMPS	3 to 2
TO KILL A MOCKINGBIRD	>	ROADBLOCK MILKING IT	4 to 3
THE COUNT OF MONTE CRISTO	>	CONFECTIONERS MOTTO HUT	5 to 3

THE CHRONICLES OF NARNIA	>	NONHIERARCHICAL SOFTEN	4 to 2
TINKER TAILOR SOLDIER SPY	>	REDISTILLATIONS PORKERY	4 to 2
ONE HUNDRED YEARS OF SOLITUDE	>	UNFORESHORTENED YOU LADDIES	5 to 3
CHARLIE AND THE CHOCOLATE FACTORY	>	TETRACHLOROETHANE CACODYLIC FAH	5 to 3
THE HITCHHIKERS GUIDE TO THE GALAXY	>	HIGHLIGHTERS THICKHEAD OUTEYE TAX	6 to 4
HARRY POTTER AND THE SORCERERS STONE	>	PERHYDROANTHRACENE TOTS RESTORERS	6 to 3

There are many more sets of words and names which we could have attempted to rearrange. But the two largest sets are the names of the 50 states of the USA (totalling 408 letters) and the names of the chemical elements (up to atomic number 118). While there are no variations on the USA statenames, there are variations in the spellings of the element names – for example, ALUMINIUM/ALUMINUM, CAESIUM/CESIUM, SULFUR/SULPHUR. It is suggested that anyone wishing to tackle rearrangement of the element names uses the nomenclature adopted by the International Union of Pure and Applied Chemistry (IUPAC). These are two very large groups, much larger than we have tackled so far, and may well be worthy of an article to themselves.

Footnote: except where noted, the words in the rearranged groups can be found in at least one of *Webster's Third Edition*, *Webster's Second Edition*, *the Oxford English Dictionary*, *The Random House Dictionary*, *Collins English Dictionary (2018 edition)*, and *Collins Scrabble Words (2019)*. Or are plurals of listed nouns, inflections of listed verbs, or -IS- variants of -IZ- words.