

## A Super Score in SuperScrabble

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Most readers will be familiar with Scrabble. Key points of the equipment and board are:

- the board size (15 squares x 15 squares)
- the arrangement of the premium squares on the board (double letter, triple letter, double word, and triple word),
- distribution of the 100 letter tiles, and
- the point values of the different letters

Readers may not be aware that there is a version of the game called SuperScrabble. The game's tagline says "More spaces, more tiles, more points—add to your fun!" The board is larger, with 21×21 or 441 squares; there are more premium squares, going up to quadruple letter and quadruple word score squares; and there are 200 tiles, twice as many as in a normal Scrabble set. The middle 15×15 squares are identical to a standard Scrabble board, so standard Scrabble may be played on a SuperScrabble board. All the high-scoring quadruple premiums lie near the outside of the board, with the quadruple word squares at the four corners of the board.

Other than the differences in the board and the number of tiles, game-play is similar to Scrabble. Each player has seven tiles in their rack as normal, scoring is the same, and the same word lists are used. However, the differences are enough to upset normal Scrabble strategies. For example, the 50 points earned from using all seven tiles is not nearly as significant when compared to the high final scores. For a two-player game, it has been reported that individual scores over 800 points are not uncommon.

While SuperScrabble has twice as many tiles as Scrabble, the distribution of letters is not simply the original distribution doubled. The distribution is:

- 0 points: **blank** x4
- 1 point: **E** x24, **A** x16, **O** x15, **T** x15, **I** x13, **N** x13, **R** x13, **S** x10, **L** x7, **U** x7
- 2 points: **D** x8, **G** x5
- 3 points: **C** x6, **M** x6, **B** x4, **P** x4
- 4 points: **H** x5, **F** x4, **W** x4, **Y** x4, **V** x3
- 5 points: **K** x2
- 8 points: **J** x2, **X** x2
- 10 points: **Q** x2, **Z** x2

The layout of premium squares on the SuperScrabble board is shown below, where 2L = double letter, 3L = triple letter, 4L = quadruple letter, 2W = double word, 3W = triple word, and 4W = quadruple word:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	4W			2L				3W			2L			3W				2L			4W
2		2W			3L				2W				2W				3L				2W
3			2W			4L				2W		2W				4L			2W		
4	2L			3W			2L				3W				2L			3W			2L
5		3L			2W				3L				3L				2W				3L
6			4L			2W				2L		2L				2W				4L	
7				2L			2W				2L				2W			2L			
8	3W							2W						2W							3W
9		2W			3L				3L				3L				3L				2W
10			2W			2L				2L		2L				2L				2W	
11	2L			3W			2L				2W				2L			3W			2L
12			2W			2L				2L		2L				2L				2W	
13		2W			3L				3L				3L				3L				2W
14	3W							2W						2W							3W
15				2L			2W				2L				2W			2L			
16			4L			2W				2L		2L				2W				4L	
17		3L			2W				3L				3L				2W				3L
18	2L			3W			2L				3W				2L			3W			2L
19			2W			4L				2W		2W				4L				2W	
20		2W			3L				2W				2W				3L				2W
21	4W			2L				3W			2L			3W				2L			4W

Examination of the SuperScrabble board reveals that it is theoretically possible to play two 144-timers (playing a 21-letter word with 14 tiles already on the board and 7 tiles played through them covering two quadruple word squares and two triple word squares), two 36-timers (similar to the 144-timer but covering two triple word squares and two double word squares), and two 27-timers (a 15-letter word covering three triple word squares, something that can be done on a standard Scrabble board).

A good Scrabble friend of mine – Chris Hawkins, of Eye, Cambridgeshire, England – has recently managed to devise a legal board position using the 200 tiles in a

SuperScrabble set, and which contains the above-mentioned six high-scoring bonuses. There are 58 moves in total. The 58 moves could be construed as the moves in a single-player patience version of the game, or could be split between two players, one with the odd-numbered moves and the other with the even-numbered moves. To quote Chris: "I think I am more proud of this than of anything I've ever done."

The final board layout and the 58 individual moves are shown below. The total score for all the moves is 17965.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	P	S	Y	C	H	O	P	H	A	R	M	A	C	O	L	O	G	I	C	A	L
2		T	E	E	3L				2W	E			O				R			2W	
3			2W	E	D	4L				F		2W	U			4L	E		2W		
4	2L			S	U	B	C	A	T	E	G	O	R	I	Z	I	N	G			2L
5		3L			K				3L	R			A	T	E	S	2W			3L	
6			4L		E	2W				R		2L	N		X	2W			4L		
7				2L	R		2W		J	A	2L		T		2W			J			
8	A	C	E	T	Y	L	C	H	O	L	I	N	E	S	T	E	R	A	S	E	S
9		2W			3L	E			3L			O	3L				3L	M		2W	
10			2W			V				2L		V				2L		B	2W		
11	2L	T		Q	U	A	R	T	E	R	B	A	C*	K	I	N	G	S			2L
12		O	V	U	M	2L			D	E	E	2L				I			2W		
13		F		O	3L				3L		T		3L			D	3L			2W	
14	Q	U	A	D	R	A	G	I	N	T	A	C*	E	N	T	I	L	L	I	O	N
15				2L			2W		E		2L			U	2W			E		W	
16			4L			2W	D	E	W	2L		2L		M		2W		W	Y	N	
17		3L		D	2W	D	E		S				W	E			2W			3L	
18	2L			U	N	E	X	C*	E	P*	T	I	O	N	A	B	L	Y			2L
19			2W	N		F			D	2W		2W	R			I			2W		
20		2W		S	3L	F			2W				T			M	3L			2W	
21	A	N	T	H	R	O	P	O	M	O	R	P	H	I	Z	A	T	I	O	N	S

Move #	Start position of main word played	Word(s) played	Tile(s) played	Points
1	K11	BAcKING	BA*KING	78
2	I12	DEE	DEE	9
3	I11	ED	E	3
4	D11	QUARTERBAcKINGS / RE	QUARTRS	331
5	K11	BETA	TA	6
6	J14	TAcE	T*E	3
7	D11	QUOD	UOD	14
8	C12	VUM / UM	VM	20
9	B11	TOFU / OVUM	TOFU	23
10	D14	DRAG	RAG	6
11	P11	NIDI	IDI	4
12	O14	TILL	TLL	4
13	R14	LEW	EW	7
14	R16	WYN	YN	21
15	T14	OWN	OW	6
16	A14	QUADRAGINTAcENTILLION (31*36+50)	QAINNIN	1166
17	F8	LEVA	LEV	11
18	B8	CETYL	CETY	10
19	L8	NOVA	NOV	11
20	J8	LINE	LIE	4
21	R7	JAMBS	JAMB	24
22	P8	ERASE	ERSE	5
23	A8	ACETYLCHOLINESTERASES (31*36+50)	ACHOSTS	1166
24	M1	COURANTE	COURANT	74
25	J1	REFERRAL	REFERRA	74
26	I7	JA / JO	J	18
27	H4	ATE	AT	3
28	L4	OR	O	2
29	E3	DUKERY	DUKER	28
30	M5	ATES	TES	4
31	O5	EX	X	9
32	P4	IN / IS	IN	4
33	D4	SUBCATEGORIZING / IT / ZEX (43*27+50+2+29)	SBCGIZG	1242
34	N14	NUMEN	UMEN	7
35	I14	NEWSED	EWSED	12
36	G16	DEW	DE	7
37	L18	ION	IO	3
38	F17	DE / DE	DE	6
39	E18	NE / DE	NE	5
40	H18	cEp	**	1
41	D18	UNEXcEpTIONABLY / DEX (34*27+50+19)	UXTABLY	987

42	D17	DUNS	DNS	5
43	B21	NTH / DUNSH	NTH	23
44	D17	DEFFO	FFO	24
45	M17	WORTH / WE	WRTH	51
46	P18	BIMA	IMA	11
47	I21	MORPH	MORP	13
48	F21	OP	P	4
49	O21	ZATI	ZTI	14
50	A21	ANTHROPOMORPHIZATIONS (42*144+50)	AROIONS	6098
51	Q1	GREN	GRE	7
52	O1	LOGIC	LOIC	9
53	I1	ARM	AM	8
54	D1	CEES / ED	CEE	12
55	B2	TEE	TE	6
56	B1	ST	S	2
57	D1	CHOP	HOP	11
58	A1	PSYCHOPHARMACOLOGICAL / YE (43*144+50+5)	PYHAOAL	6247
			<b>Total score =</b>	<b>17965</b>

Apart from the four 21-letter words, all the words played are allowed by *Collins Official Scrabble Words* – and that includes the three 15-letter specimens QUARTERBACKINGS, SUBCATEGORIZING and UNEXCEPTIONABLY. However, no standard Scrabble word authority lists words longer than 15 letters, so, by necessity, Chris had to use non-standard Scrabble sources for the remaining 21-letter words. A quick check of the *Oxford English Dictionary (OED)* reveals that three of these are in that august work: ACETYLCHOLINESTERASES, PSYCHOPHARMACOLOGICAL and ANTHROPOMORPHIZATIONS.

That leaves a single 21-letter word requiring confirmation from elsewhere – QUADRAGINTACENTILLION. This can be found on various websites which list the names of large powers of 10. QUADRAGINTACENTILLION is the name given to 10 raised to the power of 423 (that is,  $10^{423}$ , or 1 followed by 423 zeroes). One of our favourite websites which lists the names of large numbers, up to  $10^{3012}$ , is [www.olsenhome.com/bignumbers/](http://www.olsenhome.com/bignumbers/)

So there you have a SuperScrabble full board solution fully documented. But further questions come to mind, and perhaps readers might like to investigate possible solutions:

- Is there a solution which improves on the 17237 score using the seven ‘big’ bonus positions?
- How much higher can the total score go? Over 18000? There are solutions which improve on the 17965 total score by building up some of the shorter words in more than just one move – for example, on move 35, NEWSSED could be built up as NE, NEW, NEWS and NEWSSED, instead of just NEWSSED.

- Are there solutions using 21-letter words which use words from standard dictionaries (such as *Webster's Second and Third Editions*, the *OED*), avoiding the need to consult specialist websites? If only QUADRAGINTACENTILLION could be found in a standard dictionary, or replaced entirely....

