

EDGE WORDS

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The letters of certain words can be arranged diagrammatically to make a variety of geometrical shapes, including triangles:

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      W
     E E
    D D D
  
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              R
             N N
            S S S
           E E E E
  
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WEDDED and SERENENESS are here arranged with like letters in the same rows to make triangle (pyramid) words. The fact that two other words, WED and its reversal DEW, can be read respectively downwards and upwards along the edges of the first triangle is a bonus. In "Geometrical Words: Part 1" in the August 1997 Word Ways, I introduced the concept of these (somewhat serendipitous) edge words. But a similar exercise can be approached from the opposite direction, deliberately setting out to find words which make edge words. And the like letters do not need to be in the same row. Rather, the letters of the word can be arranged in the order in which they occur in the word. With this arrangement, the letters of the word SERENENESS make SEEN along the left hand edge of the triangle:

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              S
             E R
            E N E
           N E S S
  
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However, we are more ambitious than that! The current search is for words whose letters, when arranged in the order in which they occur in the word, row by row, to make the following geometrical shapes, each form having two edge words (a left hand edge word and a right hand edge word), both of which read downwards:

6-triangle

10-triangle

8-pentagon

4-rhombus

9-rhombus

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      1          1          1          1          1
     2  3      2  3      2  3      2  3      2  3
    4  5  6    4  5  6    4  5  6    4  5  6    4  5  6
          7  8  9  0      7  8          7  8          7  8
                                9
  
```

In these shapes, the edge words are respectively 1 2 4 + 1 3 6, 1 2 4 7 + 1 3 6 0, 1 2 4 7 + 1 3 6 8, 1 2 4 + 1 3 4, and 1 2 4 7 9 + 1 3 6 8 9.

These shapes have a common feature regarding their edge words. The left and right hand edge words in each case share their first letter (number 1). This being the case, the aim is to discover, for each geometrical shape, a suitable word beginning with each letter of the alphabet.

The words and edge words below include a handful of personal names. Otherwise, sources are given at the end for words which are not in the OED, or inferred from words therein.

6-letter triangles

A D R O I T adroit	B E R T H A bertha	C U R T L Y curtly	D O U B L E double	E N R O B E enrobe
F L A Y E D flayed	G O E T H E Goethe	H I A T U S hiatus	I D A E A N Idaeon	J O O B E Y joobey
K E E N L Y keenly	L E E W A Y leeway	M E A N L Y meanly	N O U G H T nought	O R N A T E ornate
P A E L L A paella	Q U A I N T quaint	R E A G A N Reagan	S I E S T A siesta	T I E P I N tiepin
U N S A F E unsafe	V I A N D S viands	W O O D E N wooden	X O A N O N xoanon	Y E A S T S yeasts
Z A U G H T zaught				

10-letter triangles

A B L E G A T I O N ablegation	B I A T H L E T E S biathletes	C O H A B I T A N T cohabitant
--	--	--

D
E I
N T R
E L L E
deintrelle

E
L A
B O R
A T E R D
elaborated

F
E A
T U R
E T T R E
featurette

G
A L
I V A
N T E D
galivanted

H
E A
R T S S
E R A S E
heartsease

I
N S
C A L
A B L E
inscalable

J
I A
N G N
A N I A
Jiangnania

K
A L
I M A
N T A N
Kalimantan

L
E A
N W I
T T E D
leanwitted

M
A U
P A S
S A N T
Maupassant

N
E A
R A B
O U T S
nearabouts

O
B L
A T E S
N E S S
oblateness

P
A R
L I A
M E N T
parliament

Q
U A
I N T
N E S S
quaintness

R
O A
D S T
E A D S
roadsteads

S
E P
A R A
T I O N
separation

T
R O
U B L
E F U L
troublesful

U
N E
N T R
E
A N C E
unentrance

V
A I
N N E
S S E S
vainnesses

W
E A
L D S
T O N E
Wealdstone

Y
O T
I Z A
T I O N
yotization

Z
O O
N O G
E N U S
Zoonogenus

8-letter pentagons

A C R E L E S S acreless	B I O B L A S T bioblast	C O I N A G E S coinages	D I O C E S E S dioceses	E R A S U R E S erasures
F O U L A R D S foulards	G O O D N E S S goodness	H E A R T I E R heartier	I D L E N E S S idleness	J A U N E T T E jaunette
K A I N I T E S Kainites	L E A D E N E D leadened	M O O R A G E S moorages	N A I V E T E S naivetes	O U T S T E E R outsteer
P L E A S A N T pleasant	R O U T I N E S routines	S A L T W E E D salt-weed	T R O U B L E D troubled	U N S T R S S S unstress
V E I N L E T S veinlets	W A I N A G E S wainages	Y E A S T I E R yeastier	Z O O N O M I A zoonomia	

4-letter rhombuses

The left and right hand edge words of all rhombuses share their last letter as well as their first letter.

A C R E acre	B U O Y buoy	C O A T coat	D E A N dean	E R I N Erin	F O U R four	G A I T gait
H I E S hies	I R O N iron	J E A N Jean	K Y N E kyne	L A I D laid	M O A T moat	N E A T neat
O A S T oast	P O U T pout	Q U A M quam	R O U T rout	S T A Y stay	T O R Y tory	U L N A ulna

V	W	X	Y	Z
A I	A I	I A	E O	I O
N	N	N	S	N
vain	wain	xian	yeos	Zion

9-letter rhombuses

A	B	C	D	E
N D	O U	O U	E A	L L
I M I	R T R	R T L	N E R	E M E
L O	E E	E T	I E	L L
S	S	S	S	E
Andimilos	bourtrees	courtlets	deaneries	Ellemelle

F	G	H	I	J
A U	A U	O O	N A	U O
T E R	N T L	P T R	N I T	C I S
E R	E T	E E	I E	K E
S	S	S	S	S
fauterers	gauntlets	hoop-trees	inanityies	Juociskes

K	L	M	N	O
O O	A E	O I	A I	R D
K E R	T A T	R E T	V E T	E N O
E E	I O	T E	I E	U R
S	N	S	S	S
kookerees	laetation	moirettes	naiveties	ordenours

P	R	S	T	U
I A	E I	L O	H R	N S
N E T	N E T	E T R	I V I	C R E
T E	T E	E E	N G	E N
S	S	S	S	S
pianettes	reinettes	sloetrees	thrivings	unscreens

V	W	Y
E I	A I	E A
N E R	N T R	R B I
I E	E E	R D
S	S	S
veinerics	waintrees	yearbirds

Words with certain letter patterns, when configured into the various geometrical shapes under consideration, make left and right hand edge words which are identical.

6-letter triangle with the letter pattern 122343:

A	B	C	D	E
L L	O O	O O	E E	R R
E G E S	T S S	U S	D E D	A T A
allege	boosts	coosus?	deeded	errata

Also: feeded-fed, geeses-gos, hooded-hod, Innana-Ina, jeerer-jer, Keenan-ken, looses-los, mooded-mod, needed-Ned, ossene-ose, poorer-por, roosts-ros, saanen-san, teerer-ter, urraca-ura, veerer-ver, weeded-wed, yssewe-yse, zoosis-zos.

10-letter triangles with the letter pattern 1223435675:

A	E
R R	S S
I V I	E L E
S T E S	N I A N
arrivistes	Esselenian

8-letter pentagons with the letter pattern 12234355:

B
O O
R T R
E E
boortree

4-letter rhombuses with the letter pattern 1223:

A	B	C	D	E	F
L L	E E	A A	O O	L L	E E
Y	T	M	M	A	D
ally	beet	caam	doom	Ella	feed

Also: good-god, hoot-hot, ille-ile, jeer-jer, keen-ken, loot-lot, maad-mad, need-Ned, odds-ods, pooh-poh, queue-que, raan-ran, soon-son, teen-ten, urre-ure, veer-ver, wook-wok, Xiis-xis, yees-yes, zoom-zom.

Some 4-letter rhombuses which produce identical edge words are made from palindromes with the letter pattern 1221, in which case their double edge word is also a palindrome: abba-aba, boob-bob, deed-ded, esse-ese, foof-fof, goog-gog, heeh-heh, iddi-Idi, jaaj-jaj, keek-kek, leel-lel, maam-mam, nuun-nun, obbo-obo, peep-pep, qaa'q-qaq, reer-rer, sees-ses. toot-tot, ullu-ulu, vaav-vav, waaw-waw, yeey-yey, zeez-zez.

9-letter rhombuses with the letter pattern 122343556:

B O O R T R E E S boortrees	M O O R G R E E N Moorgreen	O R R E L E T T E orrelette
--	--	--

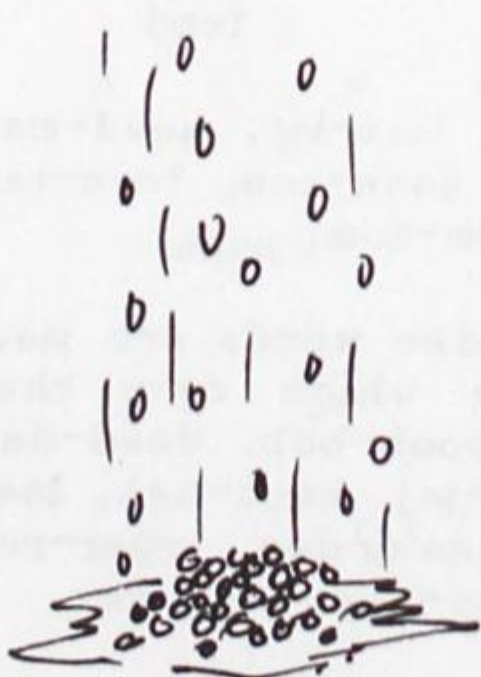
As with 4-letter rhombuses, some of the 9-letter rhombuses which produce identical edge words are made from palindromes. The palindrome Ellemelle (above) makes a locational rhombus, both Ellemelle and its double Elele edge word being place names. Here are two more palindromic examples:

A B B A D A B B A abba-dabba	A L L E N E L L A Allenella
---	--

Here are three rather special triangles. In each case the word from which the triangle is constructed, together with the two edge words, paint a picture. The first suggests a small child, whilst the second forms an intricate picture of Christian names:

T O O T H Y toothy tot + toy	E L V I R A Elvira Eli + Eva (plus Ira along the base)
--	--

The third is a 10-letter triangle made from a word whose action results in the right hand edge word which, in turn, results in the left hand edge word. Can you deduce it? (See Answers and Solutions.)



WORD



R. H. EDGE WORD



L. H. EDGE WORD

The above search was for edge words which read downwards. The observant reader will have noticed that some of the edge words happen to be reversals, enabling another edge word to be read upwards. The enterprising reader might like to repeat the exercise as a search for right and left hand edge words which read upwards rather than downwards. To set you on your way, here is one example for each of the five geometrical shapes:

M A U S E R	E R R A T I C I S M	D I N K I E S T	D O E R	S T E A M R O O M
Mauser	erraticism	dinkiest	doer	steam-room

SOURCES OF NON-OED WORDS

zoonomia (under 'zoonomy' in Webster's First Edition)
 aris, arrivistes, Esselenian, kookerees, ura, yearbirds, zin, zoosis
 (Webster's Second Edition)
 heeh, vaav, waaw (English Dialect Dictionary)
 abba-dabba, alela, jaaj, nuun, qaa'q, qaq, Zeez, zes (The Palindromicon
 by Jeff Grant)
 foof, peerer (Chambers Scots Dictionary)
 yos (Chambers English Dictionary)
 Andimilos, Elele, Ellemelle, Iates, Innis, Idi, Jaj, Jen, Juociskes, Keenan,
 Leton, Qam, Uere, Ula (The Times Index-Gazetteer of the World)
 Orete, Xiis, Xin (The Times Atlas of the World)
 Allenella, Jiangnania, Zoonogenus (Nomenclator Zoologicus)
 Xan (Encyclopedia Britannica)
 outsteer (Official Scrabble Players Dictionary)
 Innana (Everyman's Dictionary of Non-Classical Mythology)
 yeey (a wild dog, in Somali)
 Unna (Dorland's Medical Dictionary)
 Moorgreen (British Gazetteer)
 iddi (Quentin Crewe's International Pocket Food Book by Mitchell
 Beazley, 1988)
 fof (First Names First by Leslie Alan Dunkling)
 Xon (Telecommunications Dictionary by R Scott Perry, 1991)
 zos (Chambers Official Scrabble Words)