

June 2019 wordoku

U		S	T	M		B				
I				B				U		
	E	R			T				U	
	Y							I		
T			B			R	M			
	S			U					M	
		T		E	R	Y		S		

B
E
I
M
R
S
T
U
Y

Solve this wordoku in the same way as a sudoku with letters instead of numbers (each of the nine letters in each row, column and nine-square cell). Once solved, one of the overall diagonals can be rearranged into the name of a lanthanide.

June 2019 word grid

Lu	V	O
O	I	Se
Ti	Re	N

Prize entry: Using each element symbol in the grid only once, combine them together to make a single word of 13 letters.

Word.....

Just for fun: Construct as many other words as you can using a minimum of three symbols, and each symbol only once.
 6 words: OK
 9 words: Good
 12+ words: Excellent

June 2019 crossword

1		2		3			4	5		6		7		8
						9								
10										11				
12		13							14					
15										16				
														17
	18					19		20						
21														
22					23				24					
25							26						27	28
29										30				

June 2019 science scramble

Similar to a word ladder, each answer provides letters that must appear - including duplicates - in the answer immediately following it. The puzzle's final answer is a scientist or someone who contributed to science.

For example:

- 1 sail
- 2 snail
- 3 saline
- 4 minerals
- 5 Neil Armstrong

Entry form

There are four prize puzzles on this page: crossword (cryptic answers only); wordoku; science scramble; and word grid. For each puzzle, a winner will be selected from all the correct entries received and awarded a £25 book voucher.

You can enter any or all of the prize draws, but each entrant is only eligible to win one of the individual puzzle prizes each month.

Please enter your details below and either post or email this page with your completed entries to us by **20 June 2019**. The winners of this month's puzzles will be published in the July 2019 issue, along with the solutions.

Chemistry World puzzles, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK
 Email: chemistryworld@rsc.org

Name

Address

Participants are advised that any personal information supplied will be processed in connection with this competition and only in accordance with our privacy statement (www.chemistryworld.com/privacy).

1 _____

Part of a race (3)

2 _____

Mountain ranges (4)

3 _____

Judging groups (6)

4 _____

Heavenly bodies (7)

5 _____

Animals with four knees (9)

6 _____

US chemist, inventor of Kevlar (9, 6)

To celebrate the International Year of the Periodic Table's halfway point, a slight change from the usual. Each crossword square can have one or two letters, which must be element symbols, or the letters D or T (for deuterium or tritium). For example, *hexenes* could be written (He)(Xe)N(E)s.

Cryptic elements (prize entry)

- Across**
- Love preparing cashews exhibit (8)
 - Doesn't put so many in the back of the net but makes a point like this? (11)
 - Oddly stitch outfit I designed? Untrue! (10)
 - Person I contacted hiding hedgehog (5)
 - Pulls away from ducks with no style (7)
 - Plays ball with surprisingly sore toecap (10)
 - German chemist fashioned the first coronets (5, 4, 7)
 - Astronomer developed peculiar concussion (8, 10)
 - Talks about a saltier cut (11)
 - Mineral sort of secures it (9)
 - Optical measurement I reported differently without hesitation (7)
 - Good vibe with 27 Down a plus? (10)
 - Odd circus upsetting Sea Scout with a shell suit (11)
 - Ingredients for happy people? (8)

- Down**
- First 50% of freshers return a slave (4)
 - Part of notice concerning the ear (4)
 - I prepare cocoa crisp fantastically! (11)
 - Enlarges oddly ignored old horses (4)
 - 23 Down Carol's new entrée surprised American nuclear physicist (6, 1, 8)
 - Restrains receptionists from Eastern Europe by the sound of it (13)
 - Sticks around centre of Leeds, becoming most unwell (7)
 - Hotel post redirected to somewhere warm (7)
 - Sue's right about addicts (5)
 - Terrible tints in disco decorations (12)
 - Neat return of endless flack (4)
 - Nitrate upsets snout, sneezing (12)
 - Mineral chess set I fashioned without case oddly (7)
 - Reportedly gets pots (4)
 - Shorter cornices redesigned (8)
 - Farcical picador in a pickle (7)
 - See 6 Down

Quick (just for fun, no element symbols)

- Across**
- Physicist who worked with 13 Down (6)
 - 4, 23 Down American medical scientist, first woman to be elected to the National Academy of Sciences (8, 5)
 - Fictional character whose nose grew longer with lies (9)
 - Currency of Kuwait (5)
 - 12, 16 Down English scientists who discovered foxgloves' bioactivity (7, 9)
 - Light (7)
 - British nutritionist, co-creator of the state-recommended diet during the second world war (5, 9)
 - Increases (often in sound) (14)
 - Type of porcelain named after its German town of origin (7)
 - Consecrates (7)
 - Brightest star in the constellation of Cygnus (5)
 - English chemist and Nobel laureate who discovered the structure of ferrocene (9)
 - Danish chemist who introduced the concept of pH (8)
 - Set fire to (6)
- Down**
- Dandy (3)
 - Charged particle (3)
 - Food colouring made from crushed insects (9)
 - Star sign (3)
 - Noble gas (5)
 - Not poisonous, unlike 17 Down (11)
 - Mexican-born American theoretical chemist known for work on reaction rates (6)
 - Flat shapes with 4 equilateral sides (6)
 - Troglodytes troglodytes (4)
 - Austrian-Swedish physicist, discoverer of nuclear fission (4, 7)
 - Top (3)
 - See 12 Across
 - Snakes (4)
 - Wetland (3)
 - Element known for its blue pigments (6)
 - Chemical compounds with the functional group (R₂E(O), NR₂) (6)
 - See 4 Across
 - Sadness (3)
 - Piece of winter and water sports equipment (3)
 - Maiden name (3)

May 2019 solutions and winners

Cryptic (prize entry)

P	H	O	S	G	E	N	E	N	U	M	B	E	R
O	D	R	O	M	P	R	E						
T	R	O	Y	O	U	N	C	E	T	R	O	U	T
A	U	W	Y	L	I	W	I						
S	A	R	I	N	L	E	A	F	M	I	N	E	R
S		U			N	E	B	E					
I	V	A	N	P	A	V	L	O	V	G	E	R	M
U		V	S		A	M	R	A	E				
M	U	O	N	O	C	T	A	H	E	D	R	O	N
I	G	D	C				D						
O	X	A	M	I	D	I	N	E	W	O	O	L	F
D	D	O		N	I		R	U					
I	B	R	O	X	E	D	D	I	N	G	T	O	N
D		O	I		S	E	G	O	D				
E	O	S	I	N	S	P	R	E	S	E	N	T	S

Quick (just for fun)

G	O	E	P	P	E	R	T		P	O	M	P	O	M
L	X	L	A		D	X	E	E						
O	U	T	L	A	N	D	E	R	F	I	T	U	P	
B	R	T	O	I	O	R	H							
E	S	A	K	I	N	E	F	E	R	T	I	T	I	
A			N		T	D	D	S						
R	E	D	C	U	R	R	A	N	T	P	I	N	T	
T	I	M	E	E	T	S	O							
I	F	F	Y	E	D	I	T	O	R	S	H	I	P	
C	F	P	S		A		H							
H	O	U	Y	H	N	H	N	M	D	U	M	B	O	
O	S	O	I	A	E	A	L							
K	N	I	F	E	F	E	R	R	O	T	Y	P	E	
E	O	B	T	I	F	E	A							
S	A	N	G	E	R	W	A	R	F	A	R	I	N	

Wordoku

The name of the transition metal was RUTHENIUM

January winners

Science scramble
Andy Hard
Macclesfield, UK

Word grid

The nine-symbol word was OBSERVATION

Wordoku
Thomas Hamor
Sheffield, UK

Science scramble

- Mad
- Dram
- Radium
- Pericardium
- Pierre and Marie Curie

Word grid
Adrian Ford
London, UK
Crossword
Iain Challis
Cambridge, UK

Tom Johnson is an emergency responder at the National Chemical Emergency Centre

It is likely that she passed out due to silage gases. They are produced during the natural fermentation process that takes place after silage - grass-based animal fodder - is placed into a silo. In a sealed silo, carbon dioxide develops as the prominent gas. It can displace oxygen, leading to asphyxiation. If it is a conventional silo, the gas is most likely to be nitrogen dioxide. It also displaces oxygen and, in addition, can cause delayed effects like pulmonary oedema. In high concentrations, nitrogen dioxide appears as an orange-brown cloud.

Answer to On the spot

On the spot



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