

March 2018 wordoku

					S	A				
	S			M	N		U			
U	M					N				
					H	E			L	
	E		U		M		S			
H		S	A							
		L					H	E		
	N		T	H			A			
		E	S							

A
E
H
L
M
N
S
T
U

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 chemical element.

March 2018 word grid

Rb	O	S
O	At	I
N	C	Ca

Prize entry: Using each element symbol in the grid only once, combine them together to make a single word of 12 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

Entry form

There are four prize puzzles on this page: crossword (cryptic answers only); wordoku; molecule search; 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 March 2018**. The winners of this month's puzzles will be published in the April 2018 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

Email

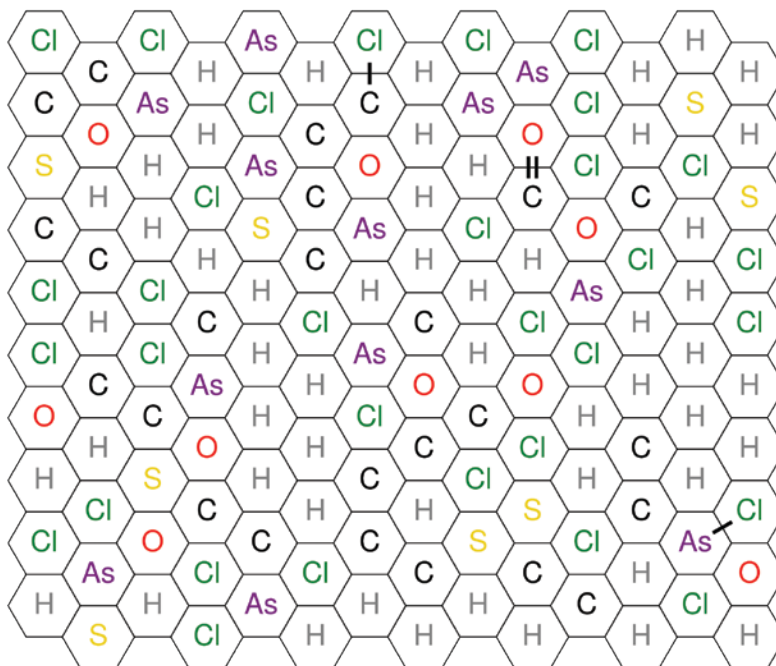
Tel

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).

March 2018 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					

March 2018 molecule search



Connect atoms in adjacent cells using single or multiple bonds to reveal the hidden molecules. Each atom can only be used for one molecule. The hexagonal grid necessitates some minor distortion of bond angles, for example in five membered or saturated rings.

Find these seven molecules. We've already started three of them for you.



There are also several chlorine molecules hidden in the grid - find them all!

Clue: Exactly 100 years ago, these molecules were giving chemistry a bad name.

Cryptic (prize entry)

Across

- 1, 29 Across I leave Ernie stubborn about German chemist (6, 6)
 4 Elements with different masses confused spies too (8)
 10 Wobbly walls obey this rule? Not really! (6, 3)
 11 Ian is returning to desert (5)
 12 Hardwearing blade cutting upper extremities (7)
 14 Unarm uneven unit transmuted heavy metal (7)
 15 Wild teen transmuted - no exaggeration! (14)
 18 Flowers around oldish grammars (5, 9)
 22 Yemeni science involving curved surfaces (7)
 24 Musical passage can daze on rearrangement (7)
 25 Right rude about painter (5)
 26 Ask seamen about persons sounding like others (9)
 28 Hides sheets shaken left and right (8)
 29 See 1 Across (6)

Quick (just for fun)

Across

- 1 Native American people of the US (6)
 4 *Abies concolor* (5, 3)
 10 Fleeting (9)
 11 Stimulate (5)
 12 Rhinoplasty (4, 3)
 14 See 9 Down (7)
 15 Carborundum (7, 7)
 18 Combined producer of electricity (14)
 22 Humorous (7)
 24 Foot-operated lever (7)
 25 Male voice (5)
 26 Tearful (music) (9)
 28 Bacteria named after a pioneer of sterile surgery (8)
 29 Digressions (6)

Down

- 1 Metal drum I ordered in Beirut oddly (8)
 2 Youngster in Bombay lacking qualification (3)
 3 Surprisingly rid breeds of warblers? (4, 5)
 5 Reportedly spied dirt in the woodwork room? (7)
 6 Tales about electric car (5)
 7 New pals open inn to provide for retirement? (7, 4)
 8 Mixed-up magistrate shedding tear? Shame! (6)
 9 Proficient playing flute composition finally (6)
 13 Rave around Ireland which gets the arms going? (6, 5)
 16 I gush about mad love? Capital! (9)
 17 Executioner - class as sinful? Not entirely! (8)
 19 Physicist resets neon timer (7)
 20 Trace metals including optically inactive compound (6)
 21 Strangely made silicon compounds (6)
 23 Traps pickled fish (5)
 27 Island part is OK on reflection (3)

Down

- 1 Lack of feeling (8)
 2 Vitality (3)
 3, 16 Down Swedish chemist (4, 5, 9)
 5 Ukrainian currency (7)
 6 Finnish city (5)
 7 With halide added (as in water supply) to prevent caries (11)
 8 Titanium dioxide mineral (6)
 9, 14 Across Having a net zero footprint of the element (6, 7)
 13 Sources of brimstone (6, 5)
 16 See 3 Down (9)
 17 The G in GBH (8)
 19 Galileo's surname (7)
 20 Sign (6)
 21 Functional group with formula $R_2C(OR)_2$ (6)
 23 Pioneer of radiochemistry (5)
 27 Strange (3)

February 2018 solutions and winners

Cryptic (prize entry)

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

Quick (just for fun)

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

Wordoku

The Australian-born Nobel laureate was Elizabeth BLACKBURN

Word grid

The nine-symbol word was FLIRTATIOUSSNESS

February winners

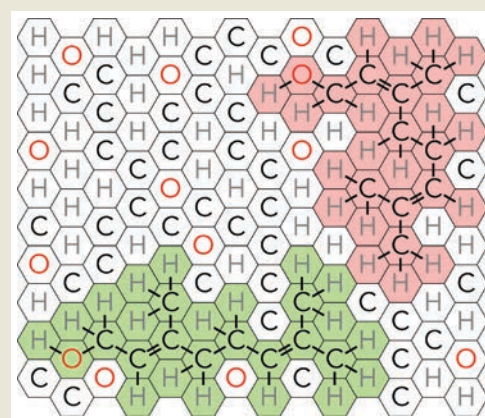
Molecule search
Michael Rabjohns, Leeds, UK

Wordoku
Sue Howarth, Droitwich, UK

Word grid
Alistair Raffel, Warrington, UK

Crossword
Peter Mckerchar, Haywards Heath, UK

Molecule search



February's rose-scented molecules are isomers of the same structure: geraniol (E isomer) and nerol (Z isomer). They are major components of rose oil.

Methanol burns with an almost invisible flame, which can be monitored using a thermal imaging camera. The risk of extinguishing the fire is that there will be vapours of methanol coming from the puddle and likely the top-hatch. These vapours could potentially reignite from a distance and cause a flashback or uncontained vapour cloud explosion. If there are no licks at risk, strong consideration should be given to allowing the fire coming from the tank to continue to burn while deploying ground monitors (unmanned, fixed position hoses) to spray cooling water on the tank's exterior. This would reduce the tank's temperature and lower the vapour pressure inside, in turn decreasing the risk of mechanical failure. Using monitors enables evacuation of all personnel to a safe location.

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

Answer to On the spot

On the spot

METHANOL TANK

A 3000 LITRE TANK CONTAINING METHANOL HAS BEGUN TO LEAK.

THE METHANOL PUDDLE HAS IGNITED AND THERE SEEMS TO BE A FLARE AT THE TOP HATCH OF THE TANK AS WELL.

FIRE TEAMS WANT TO KNOW WHETHER OR NOT TO EXTINGUISH THE FLAMES.

WHAT DO YOU THINK?