Wordoku

B		U			N			
		R		S	U	C		
	R							S
					S		K	
		C	N		L	R		
N		A						
C						L		
	A	L	S		K			
		U			B			A

A
B
C
K
L
N
R
S
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 an Australian nobelist who worked on molecular biology.

Word grid

Sn	O	Ti
Ta	Fl	Es
Ir	U	S

Prize entry: Using each element symbol in the grid only once, combine them together to make a single word of 15 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 February 2018**. The winners of this month's puzzles will be published in the March 2018 issue, along with the solutions.

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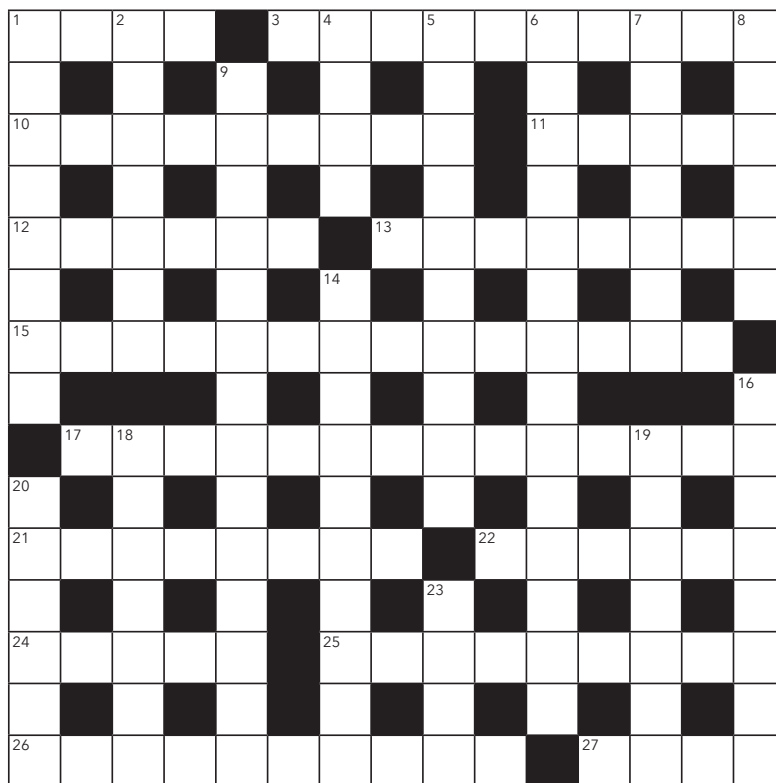Email: chemistryworld@rsc.org

Name ....

Email ....

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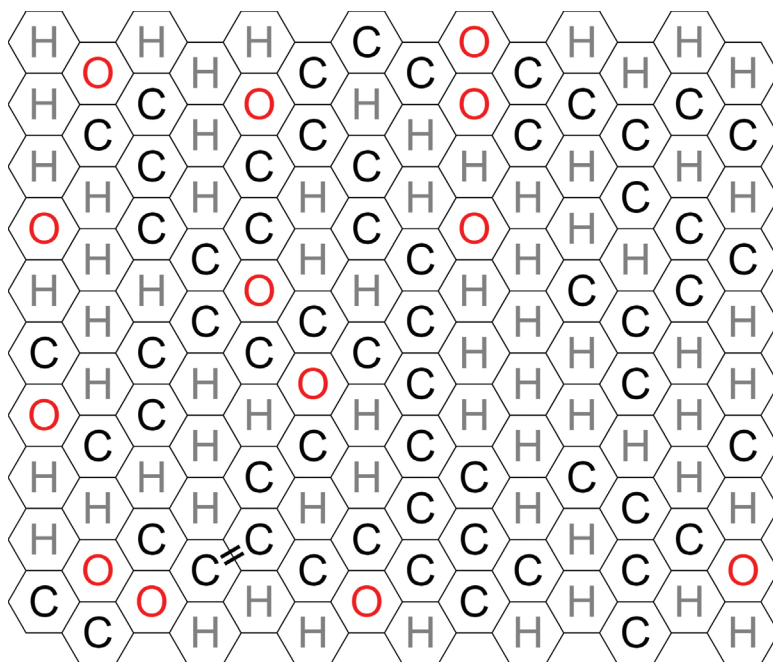
Participants are advised that any personal information supplied will be processed in connection with this competition and only in accordance with our privacy statement (www.chemistryworld.com/privacy).

Crossword

Molecule search

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

Find two molecules with the molecular formula $C_{10}H_{18}O$. We've already started one of them for you.

Clues: The two molecules are *E/Z* isomers. The isomerism is represented in the way the molecules are displayed in the grid.

Cryptic (prize entry)

Across

1 First Sally Ann shows her ribbon (4)
3 Their hawks disturbed large fish (5, 5)
10 Zorba initially really ill around bird (9)
11 Glib sentence containing playwright (5)
12 Psychotherapist contract? (6)
13 Africans a little smug and answerless (8)
15 Compromises upset a stoic commando (14)
17 Writer right cheat around Asia! (6, 8)
21 Lacking nerves, cease to upset Head Teacher (8)
22 Some Eurostar machinery used for the road (6)
24 Hot aircon? Broken timer! (5)
25 Liar came around to hard animal product (5, 4)
26 Study of young birds only about goose breeds finally? (10)
27 See 18 Down (4)

Down

1, 20 Down Physicist orders canaries in twos (3, 5, 6)
2 Craze about odd Slav cocktail (7)
4 Reportedly atmospheric beneficiary? (4)
5 Gel Therapy modified Marconi's invention (10)
6 Methodically cynical about its life (14)
7 Don't vote in a brat right away with some initial confusion (7)
8 Top endocrinologist endlessly asking about enzyme (6)
9 Changes sort of animator's stunt (14)
14 Clerical claimant so in turmoil (10)
16 Last July ox cruel around antelope (8)
18, 27 Across Old comic finding love between sourpuss and socialist? (7, 4)
19 May pant about drums (7)
20 See 1 Down (6)
23 Primarily simple measure of gross pollution (4)

Quick (just for fun)

Across

1 Uncommon (4)
3 Condiment (5, 5)
10 Small bird named after the sound of its song (9)
11 Conifer (5)
12 Sliding (6)
13 See 1 Down (8)
15 Radioactive decay process (7, 7)
17 Antiknock petrol additive, now banned in most countries (10, 4)
21 Magnetic appeal (8)
22 Medical drink made from barley (6)
24 Small person (informal) (5)
25 Type of tuna (9)
26 Puzzles (10)
27 Advantage (4)

Down

1,13 Across English chemist who contributed to the understanding of the DNA structure (8, 8)
2 Shaped like a diamond (7)
4 Largest urban area of Germany (4)
5 Impervious to H_2O (10)
6 Mixture of sodium chloride in water (6, 8)
7 French painter who specialised in cityscapes (7)
8 Alkane (6)
9 Cladonia rangiferina (8, 6)
14 German chemist who gave his name to a type of flask (10)
16 Nucleobases (8)
18 Protein in connective tissues allowing them to resume their shape after stretching or contracting (7)
19 Comfortable (7)
20 Type of organic acid (6)
23 Mollusc (4)

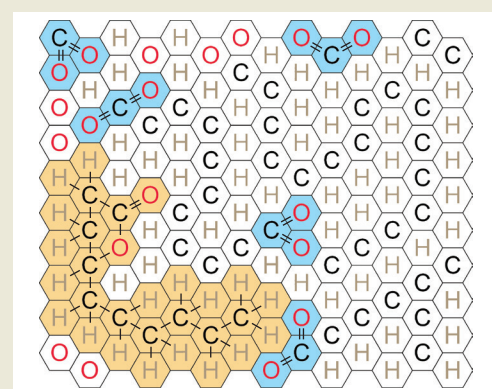## January 2018 solutions and winners

Cryptic (prize entry)

Quick (just for fun)

Wordoku
The chemotherapy drug was CISPLATIN

Word grid
The nine-symbol word was HOOTENANNIES

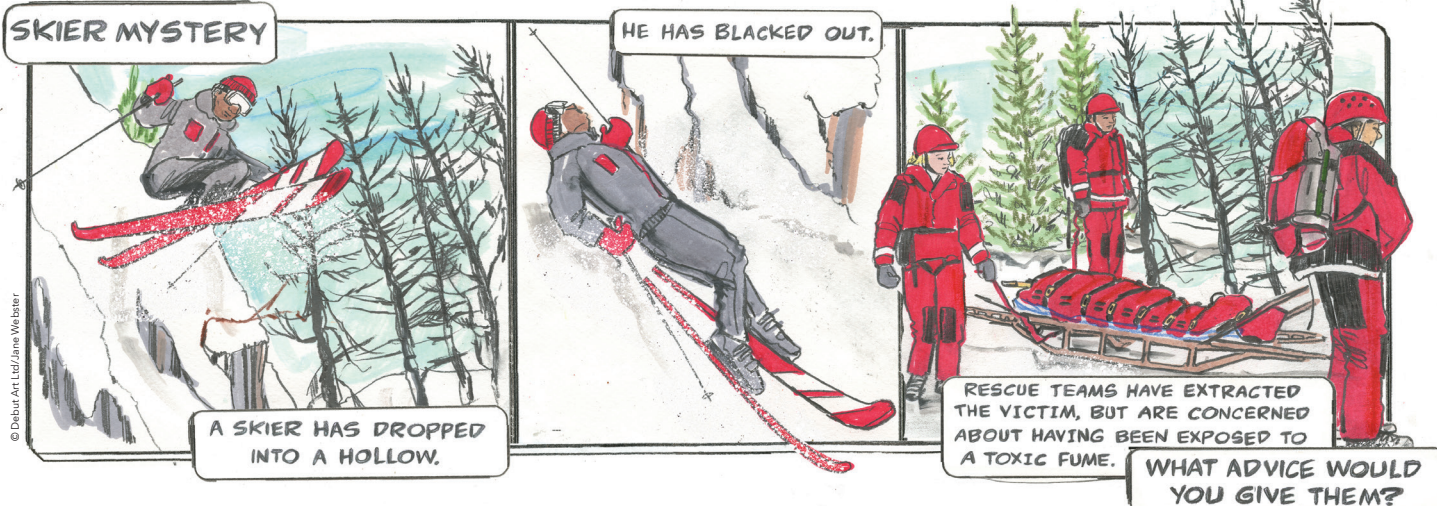### January winners

Molecule search
Jim Jamieson, Buckinghamshire, UK

Wordoku
Geoff Riley, Batley, UK

Word grid
John Stanger-Moore, Carlisle, UK

Crossword
Miriam Braham, Bushey Heath, UK

Molecule search

γ-decalactone gives champagne its fruity aromas. There were also five carbon dioxide molecules to be found. Unfortunately, an error in our grid made it impossible to complete the other molecule, palmitic acid, so we disregarded it when choosing a winner.

Answer to On the spot

This is based of a volcanic caldera in California: the area around Mammoth Mountain is part of Yosemite National Park and is still volcanically active. The area is also a popular ski resort. Areas which are volcanically active have been known to have areas of high CO_2 concentrations, typically due to faults which allow subterranean CO_2 to vent to the surface. These vents can be in low lying areas and beneath snow banks, the porous snow bank serves as a trap for the CO_2. Entering one of these areas of high CO_2 concentration can be immediately dangerous and only a few breaths may be enough to cause unconsciousness if there is more than 11% CO_2 in the air. Typically, park rangers are aware of risk areas and signpost them accordingly, but these may be missed or ignored. Crews could look out for dead trees, signposts or use a gas monitor to detect decreased O_2 levels (CO_2 levels can still be dangerous at normal O_2 levels).

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

On the spot

SKIER MYSTERY

A SKIER HAS DROPPED INTO A HOLLOW.

HE HAS BLACKED OUT.

RESCUE TEAMS HAVE EXTRACTED THE VICTIM, BUT ARE CONCERNED ABOUT HAVING BEEN EXPOSED TO A TOXIC FUME.

WHAT ADVICE WOULD YOU GIVE THEM?