

September 2018 wordoku

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | M | E | | A | T | | A |
| | | | | | T | | | | M | E |
| | | | N | | | | R | | | M |
| R | | | E | T | X | | | | | N |
| | T | | | | | R | | | S | O |
| X | M | E | | | | | | | R | R |
| | | | | | | | N | | O | S |
| N | | | T | O | | | | | | T |
| | | M | | | | | | E | | X |

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, the overall diagonals can be rearranged into the name of a group of molecules recognised in a Nobel prize a few years ago.

September 2018 word grid

| | | |
|----|----|----|
| No | Al | Ge |
| C | H | I |
| S | N | Lu |

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

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 September 2018**. The winners of this month's puzzles will be published in the October 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

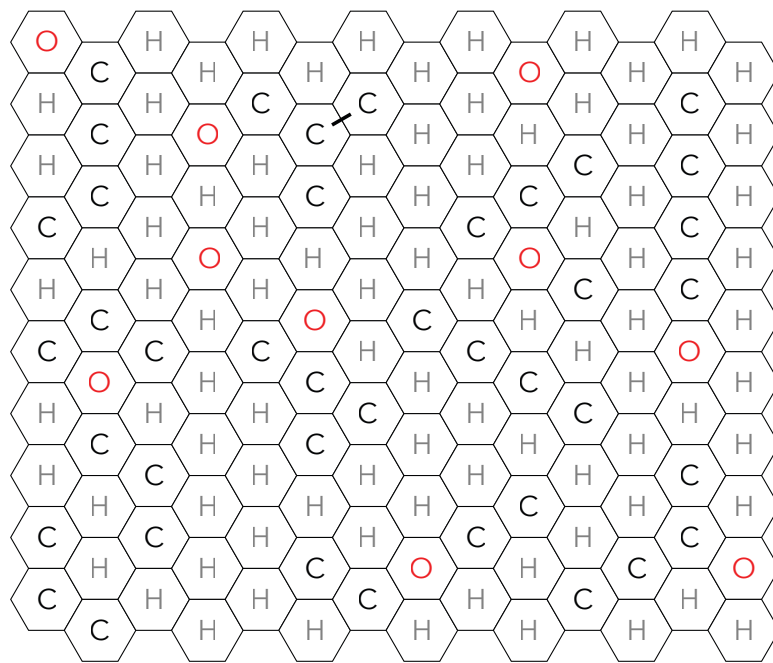
Address

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).

September 2018 crossword

| | | | | | | | | | | | | | | |
|----|----|--|---|--|---|--|---|--|---|--|----|--|---|----|
| 1 | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | |
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| 9 | | | | | | | | | | | 10 | | | |
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| | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | 12 | | | |
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| 13 | | | | | | | | | | | | | | 15 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 16 | 17 | | | | | | | | | | 18 | | | 19 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | |
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| 23 | | | | | | | | | | | | | | 24 |

September 2018 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.

Find the seven structural isomers of $C_4H_{10}O$.

Clues: No atoms are used more than once. One bond has been put in for you.

Cryptic (prize entry)**Across**

- 1 I left aspirin ordered for injury (6)
- 5 Crystallographer left son lead amalgam (8)
- 9 Announced more placid arrangement (10)
- 10 OK about extremely rustic music (4)
- 11 Relatives rang about drug deaths (14)
- 13 Not entirely sure no Irish made good impressions! (6)
- 14 Sort of pile Fred swiped (8)
- 16 Finally arrest Noah over endless arms race (8)
- 18 Some think jetsam holds printer (2)
- 20 Attend ultimate reprogramming of the mind? (6, 8)
- 21 Sounds like time for us! (4)
- 22 Primarily kindly pal upsets proper philosopher (4, 6)
- 23 I scream about first class pottery (8)
- 24 Kedgeree prepared without endless egg stank! (6)

Quick (just for fun)**Across**

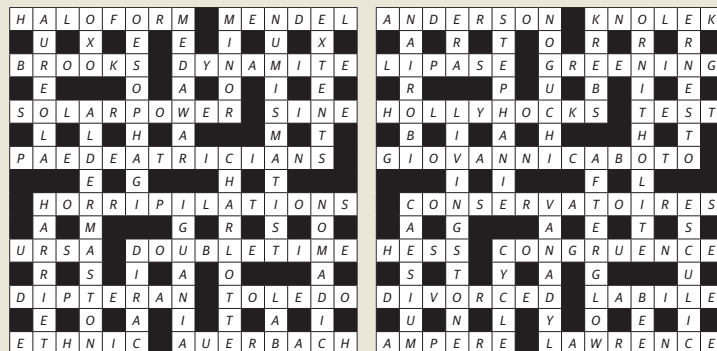
- 1 Blunders (6)
- 5 French artist and photography pioneer (1787-1851) (8)
- 9 Author of *Conversations on Chemistry* (1769-1858) (4, 6)
- 10 Animal fat found above the kidneys (4)
- 11 English scientist famous for work on electromagnetism and electrochemistry (7, 7)
- 13 Leader of the Indian independence movement (6)
- 14 Vomiting (8)
- 16 Parasite that can infect 6 Down (8)
- 18 American chemist linked with Charles Friedel in a named organic reaction (6)
- 20 Showing early stage of a medical condition (14)
- 21 Numerical book identifier (4)
- 22 Junior horse handlers (10)
- 23 Synthetic fibre also known as Lycra (8)
- 24 Delivery of feudal property in Scottish law (6)

Down

- 2 Gripe about heartless Eve? That's the point! (7)
- 3 Primitive life forms are scattered around Croatia beach (15)
- 4 Caveman cultivated earthen land (11)
- 5 Mr Rebus transformed punctual medical procedures (6, 9)
- 6 Approve initially dry old novel on reflection (3)
- 7 Somehow Trump leak hooked astronomer (8, 7)
- 8 Cruel about extremely nice Swiss city (7)
- 12 Mosquito peril paling perhaps (11)
- 13 Strange drink (3)
- 15 Don't miss final Latin period (3)
- 17 A little face toner compound (7)
- 19 Interpreter finds gutless guide in Exeter right away (7)
- 22 Carp about okapi losing parent? (3)

Down

- 2 Haemoglobin deficiency (7)
- 3 Vinaigrettes (6, 9)
- 4 Like a ladder (11)
- 5 CH₂Cl₂ (15)
- 6 Digestive system (3)
- 7 Links from the nasopharynx to the middle ear (10, 5)
- 8 German mathematician (1826-1866) (7)
- 12 Type of cloud (11)
- 13 Obtain (3)
- 15 State of matter (3)
- 17 A colloidal suspension of particles dispersed in air or gas (7)
- 19 Hypothetical particle that always moves faster than light (7)
- 22 Substance chemist Fritz Haber tried to extract gold from (3)

August 2018 solutions and winners**Wordoku**

The Swedish chemist was Anna **SUNDSTROM**

Word grid

The nine-symbol word was **INSTABILITIES**

August winners**Molecule search**

Craig Roberts, Macclesfield, UK

Wordoku

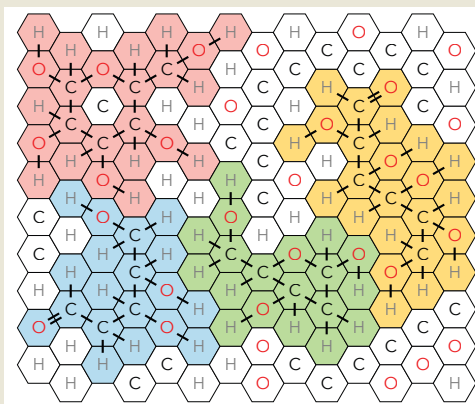
Gillian McKenna, Montarnaud, France

Word grid

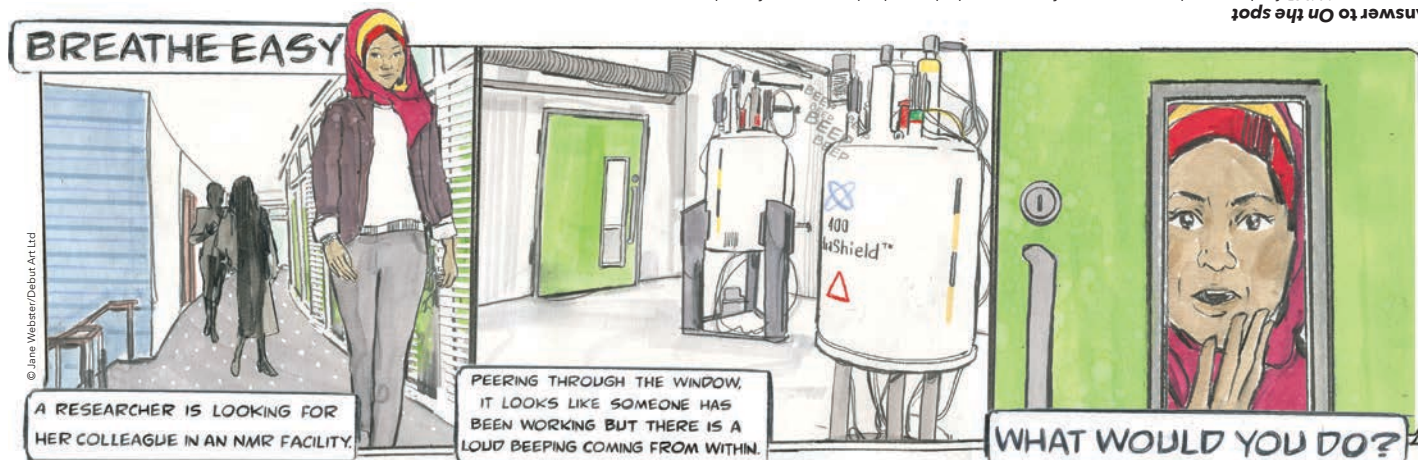
Daniel Norman, Edinburgh, UK

Crossword

Michael Parrish, Longhorsley, UK



The molecules are the cyclic and acyclic forms of the sugars glucose - or one of its 16 stereoisomers including mannose and galactose - and deoxyribose or its stereoisomers.

On the spot**Answer to On the spot**

Do not enter! NMR facilities use large amounts of cryogens which can displace oxygen from the air. If the beeping is an oxygen depletion alarm, you will be in immediate danger if you enter the room. Even if you suspect there is a casualty you should leave. It is always best to get someone and equipped to do so or you risk becoming a casualty yourself. It is always best to get someone familiar with the facility and to raise the alarm if necessary.

Charles Harrison is a safety advisor at a UK university.