

### May 2019 wordoku

|   |   |   |   |   |   |  |   |   |   |
|---|---|---|---|---|---|--|---|---|---|
|   |   |   | M | H |   |  |   | I |   |
|   | M |   |   |   |   |  |   | N |   |
|   |   |   |   | R |   |  |   |   | E |
| E |   |   |   | M | U |  |   | S |   |
| T |   | M | I |   |   |  |   |   | U |
|   |   |   | H |   | R |  |   |   |   |
|   |   |   |   |   |   |  |   |   | H |
|   | U |   | T |   |   |  |   |   | N |
| R |   | H |   | S |   |  | I | M |   |

|   |
|---|
| E |
| H |
| I |
| M |
| N |
| R |
| 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 transition metal.

### May 2019 word grid

|    |    |   |
|----|----|---|
| S  | O  | B |
| N  | Er | O |
| At | V  | I |

**Prize entry:** Using each element symbol in the grid only once, combine them together to make a single word of 11 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

### May 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 |   |    |    |   |   |

### May 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 May 2019**. The winners of this month's puzzles will be published in the June 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](http://www.chemistryworld.com/privacy)).

1 \_\_\_\_\_

Insane (3)

2 \_\_\_\_\_

Measure (4)

3 \_\_\_\_\_

Day in Paris (5)

4 \_\_\_\_\_

Element discovered by 6 (6)

5 \_\_\_\_\_

Membrane enclosing the heart (11)

6 \_\_\_\_\_

Pioneers of radiochemistry (6, 3, 5, 5)

**Cryptic (prize entry)**

- Across**
- Gene hops around chemical weapon (8)
  - See 15 Down
  - Weight of cornet you played? Not likely! (4, 5)
  - Tour around last market for fish (5)
  - Neurotoxin in prepared raisins is lost (5)
  - Insect an amazingly mean flier (4, 5)
  - Dogged physiologist? (4, 6)
  - Bug right inside gem (4)
  - Particle originally made understandably outstanding news (4)
  - Strangely anchored to geometric solid (10)
  - Odd moaner mixes 21 Down for another compound (9)
  - Author makes edits to fool with leading writer (5)
  - I box around first Rangers' stadium (5)
  - Astrophysicist not entirely shedding tons (9)
  - Dyes in Cleo's inscription (6)
  - Shows gifts (8)

- Down**
- Salt found in skin? (9, 6)
  - Stink about our do? (5)
  - Adults sup wrong concoction (8)
  - Radical nylon style (5)
  - Happy moment when working? (6)
  - Barber now restyles wild animal (5, 4)
  - Mum initially surfed internet to sort pensions (10, 5)
  - Man developed a mole tumour (8)
  - 5 Across Constant bravado around more guns? (9, 6)
  - Can vices be turned into useful things? (8)
  - Last minute somehow rings extremely wild birds (8)
  - Cross about endless iodine turning into poison (6)
  - Duck ride around Edinburgh at first (5)
  - Playwright is in for tonight (5)

**Quick (just for fun)**

- Across**
- See 23 Down
  - Bobble (3-3)
  - Foreigner (9)
  - Incrimination by false evidence (3-2)
  - Japanese physicist who shared the Nobel prize for the discovery of electron tunnelling (5)
  - Ancient Egyptian queen (9)
  - Fruit (10)
  - 20 fluid ounces (4)
  - Doubtful (4)
  - Position held by Adam Brownsell for this magazine (10)
  - Fictional intelligent horse described in Jonathan Swift's *Gulliver's Travels* (9)
  - Disney character (5)
  - Item of cutlery (5)
  - Photograph made on an iron plate coated with a light-sensitive film (9)
  - British biochemist who won the chemistry Nobel prize twice (6)
  - Anticoagulant (8)
- Down**
- Vegetables (5, 10)
  - Additional (5)
  - Precious metal (8)
  - Radioactive noble gas (5)
  - Alma mater of crystallographer Dorothy Hodgkin (6)
  - Piece of lab glassware (or plastic) used for cultures, named after a German bacteriologist (5, 4)
  - Diabolical (15)
  - Commercial fishing technique (9)
  - Movement of molecules from a region of higher concentration to a region of lower concentration (9)
  - Increase in wavelength (8)
  - Compromise (5-3)
  - Satellite of Saturn (6)
  - 23, 1 Across, 25 Down Second woman to win a physics Nobel prize (5, 8, 5)
  - See 23 Down

**April 2019 solutions and winners**

**Cryptic (prize entry)**

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

**Quick (just for fun)**

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

**Wordoku**

The chemist associated with superheavy elements was Ken GREGORICH

**Word grid**

The nine-symbol word was PERFECTIONISTS

**Science scramble**

- End
- Mend
- Mendel
- Mile End
- Dmitri Mendeleev

**April winners**

**Science scramble**  
Nigel Cooper, Huddersfield, UK

**Wordoku**  
Glyn Thomas, Newport, UK

**Word grid**  
Robin Price, Cowes, UK

**Crossword**  
Neil Adams, Taunton, UK

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

Bitumen burns are different from most other chemical burns. The initial inclination might be to remove the bitumen as soon as possible, but this can cause more damage to the skin and increase the risk of infection and other complications. First aid guidance recommends that the bitumen be cooled for around 15 minutes with cold water and then referred to a doctor. If the bitumen has fully enveloped a limb, it can act as a tourniquet due to the limb swelling and restrict blood flow - this would need to be addressed by a doctor.

**On the spot**

**Answer to On the spot**



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