# Full list of all the articles published in Volumes 1-29 of Chemistry Review, arranged by issue

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Title of article** | **Key topics covered** | | **Type of article** | | **Author** | | **Vol.** | | **No.** | |
| Welcome to Chemistry Review |  | | Editorial | | John Garratt | | 1 | | 1 | |
| How old is Pharaoh’s coffin? | Mass spectrometry , archaeological remains, radioactive decay and half-lives, isotopic fractionation, radiocarbon | |  | | Robert Hedges | | 1 | | 1 | |
| Ultrasound in chemistry | Sonochemistry, cavitation, homogeneous reactions | |  | | Timothy Mason | | 1 | | 1 | |
| Bonded! How paints stick to surfaces | Paints, polymers, intermolecular forces, adhesion, surface tension of liquids | |  | | Tony Turner | | 1 | | 1 | |
| Bonding between molecules | Covalent bonds | | Revision note | | Tony Turner | | 1 | | 1 | |
| The structure of insulin | Crystals, amino acids, models of insulin | | In pictures | |  | | 1 | | 1 | |
| The atomic spectrum of hydrogen | Ionisation energy of a hydrogen atom, atomic spectrum of hydrogen | | Answer back | | David Edwards | | 1 | | 1 | |
| Buckminsterfullerene, Model of |  | | Making and doing | |  | | 1 | | 1 | |
| Michael Faraday | Michael Faraday | | Famous names | |  | | 1 | | 1 | |
| The structure of benzene | X-ray crystallography, Kekulé | | How do we know? | | Richard Norman | | 1 | | 1 | |
| Why is DNA helical? | Molecule of DNA, sugar phosphate chain, hydrogen bonding | |  | | Rod Hubbard and John Garratt | | 1 | | 1 | |
| A new form of carbon to kick around | Buckminsterfullerene | | Make your own | | George Burton | | 1 | | 1 | |
| Unboiling an egg | Ovalbumin | | Democritus replies | |  | | 1 | | 1 | |
| Joint Matriculation Board | Atomic spectrum of hydrogen | | Answer back | | David Edwards | | 1 | | 1 | |
| From the classroom to industry and from industry to the classroom | Industry | | Just chatting | | Miranda Mapletoft | | 1 | | 1 | |
| On being one's own rabbit | Haldane | | Worth reading | |  | | 1 | | 1 | |
| Editorial |  | | Editorial | | John Garratt | | 1 | | 2 | |
| Humphry Davy |  | | Famous names | | Nigel Freestone | | 1 | | 2 | |
| Allied Colloids | Chemical manufacturing | | Just chatting | | Miranda Mapletoft | | 1 | | 2 | |
| Spectroscopy |  | | Revision note | |  | | 1 | | 2 | |
| A closer look at clay |  | | In pictures | |  | | 1 | | 2 | |
| A question of organic reactions |  | | Answer back | | Graham Moyce | | 1 | | 2 | |
| Getting fired up about clay |  | | Make your own | |  | | 1 | | 2 | |
| Low fat margarine | Polyunsaturates | | Democritus replies | |  | | 1 | | 2 | |
| Origins and Miracles | The Blind Watchmaker | | Worth reading | | Richard Dawkins | | 1 | | 2 | |
| What on Earth is the Greenhouse effect? | Concepts of greenhouse effect and role of carbon dioxide | |  | | Ian Campbell | | 1 | | 2 | |
| What the Solar System is made of | Chemical composition of sun using physical and chemical techniques, chemical condensation of elements | | How do we know? | | Tony Cox | | 1 | | 2 | |
| Materials in the mouth | Stainless steel and sapphires, dentine and enamel, plaque/dental decay, calcium phosphate and the apatite minerals | |  | | David Brown | | 1 | | 2 | |
| Autoxidation, antioxidants and ageing | free radicals, oxygen | |  | | Bruce Gilbert | | 1 | | 2 | |
| Editorial |  | | Editorial | | John Garratt | | 1 | | 3 | |
| What are old masters made of? | Research and chemical analysis on paint layers, flame ionisation detector, gas chromatography, radical reactions | |  | | Jennifer Pilc | | 1 | | 3 | |
| Making hydrogen | Hydrogen manufacture on a large scale | |  | | Reiko Isuyama and John Garratt | | 1 | | 3 | |
| How a catalyst works | Catalysts | | How do we know? | | Roger Mawby | | 1 | | 3 | |
| Sun, stars and spectra | Structure and temperature of the sun | |  | | Charlie Harding | | 1 | | 3 | |
| Electrolysis |  | | Revision note | |  | | 1 | | 3 | |
| Salt mines |  | | Just chatting | | Miranda Mapletoft | | 1 | | 3 | |
| What's bred in the bone |  | | Worth reading | | Robertson Davies | | 1 | | 3 | |
| A hydrogen plant |  | | In pictures | |  | |  | |  | |
| Surface tension explained |  | | Democritus replies | |  | | 1 | | 3 | |
| Elementary crossword |  | | Making and doing | | Derek Gray | | 1 | | 3 | |
| Chemistry from group V | Periodic Table | | Answer back | | Frank Harris | | 1 | | 3 | |
| Judith Hart |  | | People | | Judith Hart | | 1 | | 3 | |
| Search for insulin | Banting, Best, Macleod, Collip | | Famous names | |  | | 1 | | 3 | |
| Editorial |  | | Editorial | | John Garratt | | 1 | | 4 | |
| Indigo - putting the blue in blue jeans | Indigo, coal tar hydrocarbons | |  | | Tony Travis | | 1 | | 4 | |
| New materials for the mouth | Dental cements, amalgam fillings, polymers | |  | | David Brown | | 1 | | 4 | |
| The chemical basis of global warming | Greenhouse effect, greenhouse gases | |  | | Ian Campbell | | 1 | | 4 | |
| Accidental discoveries in science | Louis Pasteur, Royston M. Roberts | | Worth reading | |  | | 1 | | 4 | |
| Barry Knight |  | | People | | Judith Ramsden | |  | |  | |
| The work of a conservator |  | | In pictures | |  | | 1 | | 4 | |
| Shapes of molecules and electron pair repulsion (EPR) theory |  | | Revision note | |  | | 1 | | 4 | |
| Neil Bartlett |  | | Famous names | |  | | 1 | | 4 | |
| Optical isomerism |  | | Making and doing | |  | | 1 | | 4 | |
| Alcohol | Ethanol | | Just chatting | |  | | 1 | | 4 | |
| Noble Gas Chemistry | Noble gasses | |  | | Ted Lister | | 1 | | 4 | |
| Dyes and fabrics, |  | | Democritus replies | |  | | 1 | | 4 | |
| A question of ideality |  | | Answer back | | David Edwards | | 1 | | 4 | |
| Alcohol |  | | Just chatting | | Richard Pardy | | 1 | | 4 | |
| Editorial |  | | Editorial | | John Garratt | | 1 | | 5 | |
| How do we know what an atom is like? |  | |  | | Vanessa Barker | | 1 | | 5 | |
| Mass Spectrometry of Peptides and Proteins | Amino acids, fast atom bombardment FAB, fragmentation, electrospray | |  | | Neville Haskins | | 1 | | 5 | |
| Choosing a degree course |  | | Special feature | | John Holder & Janet Cook | | 1 | | 5 | |
| The Spider's Secret |  | | Worth reading | | Primo Levi | | 1 | | 5 | |
| Interpreting mass spectra |  | | Revision note | | Peter Nicolson | | 1 | | 5 | |
| Models of atoms |  | | In pictures | |  | | 1 | | 5 | |
| A.W. Hofmann |  | | Famous names | | Tony Travis | | 1 | | 5 | |
| Chemistry teacher |  | | Just chatting | | Colin Chambers | | 1 | | 5 | |
| Rates and Orders of Reaction |  | | Answer back | | Geoff Mines | | 1 | | 5 | |
| Taking the sweat out of calculations |  | | Making and doing | | Tim Brosnan | | 1 | | 5 | |
| How aspirin works |  | | Democritus replies | |  | | 1 | | 5 | |
| Alchemy |  | | Past and present | | John Holman | | 1 | | 5 | |
| Editorial |  | | Editorial | | John Garratt | | 2 | | 1 | |
| The accidental discovery of Buckminsterfullerene |  | |  | | Jim Baggott | | 2 | | 1 | |
| How to get the right formula |  | | How do we know? | | John Garratt | | 2 | | 1 | |
| Catalysts can do wonderful things |  | |  | | Colin White | | 2 | | 1 | |
| The Greenhouse Effect: can we keep our cool? |  | |  | | Ian Campbell | | 2 | | 1 | |
| The ghost disease |  | | Worth reading | | Michael Howell & Peter Ford | | 2 | | 1 | |
| Gas testing crossword |  | | Making and doing | |  | | 2 | | 1 | |
| Different forms of carbon |  | | In pictures | |  | | 2 | | 1 | |
| What makes a reaction go? |  | | Revision note | |  | | 2 | | 1 | |
| Structural isomers, geometrical isomers |  | | Democritus replies | |  | | 2 | | 1 | |
| Acids and equilibria |  | | Answer back | | David Edwards | | 2 | | 1 | |
| Tropical rain forests |  | | Just chatting | | Gordon Fettis | | 2 | | 1 | |
| Gen on -gens |  | |  | | Gordon Woods | | 2 | | 1 | |
| Editorial |  | | Editorial | | John Garratt | | 2 | | 2 | |
| Fireworks |  | |  | | Ron Lancaster | | 2 | | 2 | |
| A laboratory on wheels: the ‘ins and outs’ of motor oil | Motor oil | |  | | Bill Fox | | 2 | | 2 | |
| How oxgen binds to haemoglobin |  | | How do we know? | | Jeremy Tame | | 2 | | 2 | |
| Redox (and oxidation numbers) |  | | Revision note | |  | | 2 | | 2 | |
| Bonfire Night brain wave |  | | Just chatting | | Maria Cavanna | | 2 | | 2 | |
| The Periodic Table |  | | In pictures | |  | | 2 | | 2 | |
| Chemical reactions, phase transitions |  | | Democritus replies | |  | | 2 | | 2 | |
| Zeolites: from strange rocks to cunning catalysts |  | |  | | Alan Comyns | | 2 | | 2 | |
| Models of zeolites |  | | Making and doing | |  | | 2 | | 2 | |
| Testing and estimating ions |  | | Answer back | | David Edwards | | 2 | | 2 | |
| Editorial |  | | Editorial | | John Garratt | | 2 | | 3 | |
| Colour changes in artists' Pigments |  | |  | | David Saunders | | 2 | | 3 | |
| How to think about electrons in atoms |  | | How do we know? | | Steve Smith | | 2 | | 3 | |
| The social connections of the Bunsen Burner |  | |  | | Michael Barnett | | 2 | | 3 | |
| Markovnikoff and all that |  | |  | | John Tucker | | 2 | | 3 | |
| Energy profiles |  | | Revision note | |  | | 2 | | 3 | |
| Robert Boyle |  | | Famous names | | Paul Philips | | 2 | | 3 | |
| Alternative fuels |  | | Answer back | | Frank Harriss | | 2 | | 3 | |
| Wordsearch |  | | Making and doing | |  | | 2 | | 3 | |
| What happens in a Bunsen Flame? |  | | In pictures | |  | | 2 | | 3 | |
| Peter Gregory |  | | People | |  | | 2 | | 3 | |
| Alchemy | Lewis Thomas | | Worth reading | |  | | 2 | | 3 | |
|  | Benzene rings | | Democritus replies | |  | | 2 | | 3 | |
| Editorial |  | | Editorial | | John Garratt | | 2 | | 4 | |
| Do CFCs destroy the Ozone Layer? |  | |  | | Gwen & Mike Pilling | | 2 | | 4 | |
| The compound that never was | Hexaphenylethane | |  | | Norman Greenwood | | 2 | | 4 | |
| Cold Light | Chemiluminescence | |  | | John Sleigh | | 2 | | 4 | |
| Organic reaction mechanisms and curly arrows |  | |  | | Geoff Hallas | | 2 | | 4 | |
| Has it been irradiated? |  | |  | | Hilary Stevenson & Richard Gray | | 2 | | 4 | |
| Have you got Redox potential? |  | | Answer back | | David Edwards | | 2 | | 4 | |
| Bread of Life |  | | Making and doing | |  | | 2 | | 4 | |
| Fast and Fresh |  | | In pictures | |  | | 2 | | 4 | |
| An overview of organic reactions |  | | Revision note | |  | | 2 | | 4 | |
| Fluorescent highlighting pens |  | | Democritus replies | |  | | 2 | | 4 | |
| Editorial |  | | Editorial | | John Garratt | | 2 | | 5 | |
| Crowning glory | Hair, hair care | |  | | Joanne de Groot | | 2 | | 5 | |
| Liquid crystals at work |  | |  | | George Gray | | 2 | | 5 | |
| Environmentally friendly catalysis |  | |  | | James Clark | | 2 | | 5 | |
| Taking a year out |  | | Just chatting | | Justin Guest | | 2 | | 5 | |
| From dolomite to magnesium oxide |  | | In pictures | |  | | 2 | | 5 | |
| Christ, Clausius and Corrosion | Harold Morowitz | | Worth reading | |  | | 2 | | 5 | |
| Recrystallisation – purification of solids | Purification of solids | | Lab page | |  | | 2 | | 5 | |
| Acids |  | | Revision note | |  | | 2 | | 5 | |
| Osmium | Element 76 | | Democritus replies | |  | | 2 | | 5 | |
| A question of applying knowledge |  | | Answer back | | Margaret Ferguson | | 2 | | 5 | |
| Pam Hammer |  | | People | |  | | 2 | | 5 | |
| Editorial |  | | Editorial | | John Garratt | | 3 | | 1 | |
| Flavour in low-alcohol beers |  | |  | | Robert Muller | | 3 | | 1 | |
| Electrons transfer chemist to the top |  | |  | | Jim Baggott | | 3 | | 1 | |
| A perfect finish | Chemistry of car painting | |  | | Gus Palluel | | 3 | | 1 | |
| Ammonia production |  | |  | | John McIntyre | | 3 | | 1 | |
| Why does beer froth, but cider not? |  | | Democritus replies | |  | | 3 | | 1 | |
| The periodic table |  | | Revision note | |  | | 3 | | 1 | |
| Thin-layer chromatography | TLC | | Lab page | |  | | 3 | | 1 | |
| Versatile silicones |  | | In pictures | |  | | 3 | | 1 | |
| Silicones – the versatile polymers | silicone polymers | | Answer back | | Alastair Fleming | | 3 | | 1 | |
| Hydrolysis | Silicone tetrachloride, hydrolysis | | Just chatting | |  | | 3 | | 1 | |
| The Grotta del Cane | Famous Caverns and Grottoes, W.H. Davenport Adams | | Worth reading | | W.H. Davenport Adams | | 3 | | 1 | |
| Crossword |  | | Making and doing | |  | | 3 | | 1 | |
| Editorial |  | | Editorial | | John Garratt | | 3 | | 2 | |
| Rummaging in the human dustbin | Metabolism | |  | | Malcolm Rose | | 3 | | 2 | |
| The explosive stuff of life | Ammonium nitrate | | Just chatting | | John Emsley | | 3 | | 2 | |
| Making standard solutions |  | | Lab page | | Margaret Ferguson | | 3 | | 2 | |
| Vinegar and salt for cleaning copper-bottomed saucepans |  | | Democritus replies | |  | | 3 | | 2 | |
| Surely You're Joking Mr Feynman! | Richard Feynman | | Worth reading | |  | | 3 | | 2 | |
| Infrared spectrometry |  | | In pictures | |  | | 3 | | 2 | |
| Operation clean-up | Iron sulphate | |  | | Don Ainley | | 3 | | 2 | |
| Pairs of organic compounds |  | | Answer back | | Corinne Slater | | 3 | | 2 | |
| The arrangement of atoms in a molecule | X-ray diffraction. Crystallography. Crystal structure | | How do we know? | | Madeleine Moore | | 3 | | 2 | |
| Testing for functional groups |  | | Revision note | |  | | 3 | | 2 | |
| Puzzle page |  | | Making and doing | |  | | 3 | | 2 | |
| Editorial |  | | Editorial | | John Garratt | | 3 | | 3 | |
| Poisons, potions and pharmacy |  | |  | | John Mann | | 3 | | 3 | |
| The chemistry of life | Lipids | | Answer back | | Max Perrin | | 3 | | 3 | |
| Exposing the Piltdown Man | The Piltdown Forgery, J.S. Weiner | | Worth reading | | J.S. Weiner | | 3 | | 3 | |
| A new angle on bonding |  | | Revision note | |  | | 3 | | 3 | |
| Gold, frankincense and myrrh |  | | In pictures | |  | | 3 | | 3 | |
| Protein science in chemical design |  | |  | | Mike Bushell and Robin Taylor | | 3 | | 3 | |
| Using a separating funnel |  | | Lab page | |  | | 3 | | 3 | |
| Precious medicine |  | |  | | Chris Barnard | | 3 | | 3 | |
| Examiner speak |  | | Just chatting | | David Nicholls | | 3 | | 3 | |
| Group 4 halides |  | | Democritus replies | |  | | 3 | | 3 | |
| Editorial |  | | Editorial | | John Garratt | | 3 | | 4 | |
| A taste for chemistry |  | |  | | Tom Coultate | | 3 | | 4 | |
| Supercritical fluids |  | |  | | Tony Clifford and Keith Bartle | | 3 | | 4 | |
| Distillation |  | | Lab page | | Margaret Ferguson | | 3 | | 4 | |
| Clare Senior |  | | People | |  | | 3 | | 4 | |
| Food | The Problems of Chemistry, W. Graham Richards | | Worth reading | | W. Graham Richards | | 3 | | 4 | |
| History of the atmosphere |  | | In pictures | |  | | 3 | | 4 | |
| SOCEET (social, economic, environmental, technological) | Ozone, chlorofluorocarbons, chloroalkanes, chlorine, halogenated hydrocarbons | | Answer back | | Robert Tims | | 3 | | 4 | |
| Solid liquid |  | | Making and doing | | Robert Matthews | | 3 | | 4 | |
| Designing the right dye for the job | Applied organic chemistry, colour chemistry | |  | | Nigel Hughes | | 3 | | 4 | |
| Fish-liver oils, vitamins and bioassays |  | | Food for thought | | Joan Mattingley-Cameron | | 3 | | 4 | |
| Mr Muscle - Gungebuster |  | | Product profile | | David Edwards | | 3 | | 4 | |
| Will-o-the-wisps and hot compost |  | | Just chatting | | John Garratt | | 3 | | 4 | |
| Solidification of solutions |  | | Revision note | | Derek Denby | | 3 | | 4 | |
| Catalyst paradox |  | | Democritus replies | |  | | 3 | | 4 | |
| Editorial |  | | Editorial | | John Garratt | | 3 | | 5 | |
| Sulphur, climate and the dinosaurs | Climatic change, sulfur dioxide, structure of the Earth, isotopes | |  | | Simon Watts | | 3 | | 5 | |
| Born-Haber cycle and lattice energies |  | | Answer back | | Derek Jones | | 3 | | 5 | |
| Water – structure/property at their clearest |  | | Revision note | |  | | 3 | | 5 | |
| Assault by salts – the decay of historic stonework | Decay of historic stonework, corrosion | |  | | Clifford Price | | 3 | | 5 | |
| The double helix | James D. Watson, DNA | | Worth reading | | James D. Watson | | 3 | | 5 | |
| Chemistry can detect faulty genes | DNA | | In pictures | |  | | 3 | | 5 | |
| Make your own DNA molecule |  | | Making and doing | |  | | 3 | | 5 | |
| Losing the lead | Leaded petrol, unleaded petrol | |  | | John Ramsden | | 3 | | 5 | |
| Melting point determination |  | | Lab page | |  | | 3 | | 5 | |
| Treating heart disease – the discovery and development of a new medicine |  | |  | | Peter Cross | | 3 | | 5 | |
| Editorial |  | | Editorial | | John Garratt | | 4 | | 1 | |
| Mineral sculptures in biology |  | |  | | Trevor Douglas and Jon Didymus | | 4 | | 1 | |
| Transition metals |  | | Revision note | | Derek Denby | | 4 | | 1 | |
| Handed molecules | Helices | |  | | Charles Stirling | | 4 | | 1 | |
| A prize collection | Stamps with a chemical theme | | In pictures | | John Sleigh | | 4 | | 1 | |
| Tin and lead |  | | Substances | | Gordon Woods | | 4 | | 1 | |
| Nitric acid acts upon copper | The Life of Ira Remsen, Frederick H. Getman | | Worth reading | | Frederick H. Getman | | 4 | | 1 | |
| In the money: Analysis of coins from antiquity |  | |  | | Mike Cowell | | 4 | | 1 | |
| A balancing act |  | | Answer back | | Sue Howes | | 4 | | 1 | |
| A year in France | Spending a year abroad on a chemistry course | | Just chatting | | Julie Tucker | | 4 | | 1 | |
| Measuring pH |  | | Lab page | |  | | 4 | | 1 | |
| Ethanol/phenol |  | | Democritus replies | |  | | 4 | | 1 | |
| Elementary spelling |  | | Making and doing | | John Emsley | | 4 | | 1 | |
| Crystal gardens |  | | Back page | |  | | 4 | | 1 | |
| Editorial |  | | Editorial | | John Garratt | | 4 | | 2 | |
| Swimming pool chemistry |  | |  | | Jennifer Harding | | 4 | | 2 | |
| Drugs in sport |  | |  | | Alan George | | 4 | | 2 | |
| Designer polymers | polyurethanes | |  | | Peter Galloway | | 4 | | 2 | |
| What exactly is a molecule? |  | | Democritus replies | |  | | 4 | | 2 | |
| Extracting and studying enzymes |  | | Lab page | |  | | 4 | | 2 | |
| Gas chromatography |  | | In pictures | |  | | 4 | | 2 | |
| Hydrogen | The Periodic Table, Primo Levi | | Worth reading | | Primo Levi | | 4 | | 2 | |
| Naming aliphatic organic compounds |  | | Revision note | | Peter Hanson | | 4 | | 2 | |
| Ethene and ripe bananas |  | | Food for thought | | John Holman | | 4 | | 2 | |
| Petroleum technology |  | | Answer back | | Mike Shipton | | 4 | | 2 | |
| Iodine |  | | Substances | | John Emsley | | 4 | | 2 | |
| Horse doping |  | | Back page | |  | | 4 | | 2 | |
| Editorial |  | | Editorial | | John Garratt | | 4 | | 3 | |
| Buckyballs bounce into action |  | |  | | Jonathan Crane | | 4 | | 3 | |
| Some thoughts about gases |  | |  | | Roger Partington | | 4 | | 3 | |
| Organic conductors |  | |  | | Martin R. Bryce | | 4 | | 3 | |
| Circles, hexagons and aromaticity |  | |  | | Geoff Hallas | | 4 | | 3 | |
| The importance of revision |  | | Answer back | | Geoff Lloyd | | 4 | | 3 | |
| Water |  | | In pictures | |  | | 4 | | 3 | |
| Cyanide bonds to metal ions |  | | Democritus replies | |  | | 4 | | 3 | |
| Pharmacy |  | | Past and present | |  | | 4 | | 3 | |
| Frank Crawley |  | | People | |  | | 4 | | 3 | |
| The history of the Bunsen burner |  | | Making and doing | |  | | 4 | | 3 | |
| Measuring volume |  | | Lab page | |  | | 4 | | 3 | |
| Methyl mercaptan |  | | Substances | | John Emsley | | 4 | | 3 | |
| Watercycle |  | | Back page | | Glynn Gorick | | 4 | | 3 | |
| Rehumanising Chemistry |  | | Editorial | | John Garratt | | 4 | | 4 | |
| Photodynamic therapy |  | |  | | John Griffiths and Jack schofield | | 4 | | 4 | |
| Molecular Olympics: Going for gold |  | |  | | David Amabilino and Fraser Stoddart | | 4 | | 4 | |
| The paradoxical Dr Priestly and his discovery of dephlogisticated air |  | |  | | Truman Schwartz | | 4 | | 4 | |
| Discoverer of the atomic nucleus | Rutherford | | Worth reading | | Max Perutz | | 4 | | 4 | |
| Molecular fossils |  | | In pictures | |  | | 4 | | 4 | |
| Solvent extraction |  | | Lab Page | | Mike Shipton | | 4 | | 4 | |
| Natalia Tarasova |  | | People | |  | | 4 | | 4 | |
| Sodium carbonate |  | | Substances | | Gordon Woods | | 4 | | 4 | |
| Directing aromatic substitution |  | | Answer back | | Sue Howes | | 4 | | 4 | |
| Column chromatography |  | | Back page | |  | | 4 | | 4 | |
| What is the colour of a bromine free radical? |  | | Democritus replies | |  | | 4 | | 4 | |
| Powering the planet: the chemistry of oxidation and combustion | Oxidation, combustion | |  | | Bill Fox | | 4 | | 5 | |
| Keeping track of energy changes |  | | Revision note | |  | | 4 | | 5 | |
| Chemistry in pictures | Photography | |  | | Dave Clark | | 4 | | 5 | |
| The Diamond Maker | The Stolen Bacillus and other Incidents, H.G. Wells | | Worth reading | | H.G. Wells | | 4 | | 5 | |
| Dirt into Diamonds | Harold Zaugg | | Worth reading | | Viven Gupta | | 4 | | 5 | |
| Making your own C60 |  | | Readers write | | Heather Jones | | 4 | | 5 | |
| The rocagalmide story: organic synthesis in action |  | | In pictures | |  | | 4 | | 5 | |
| Polymer design by computer |  | |  | | Chris Howick | | 4 | | 5 | |
| Colorimeters |  | | Lab page | |  | | 4 | | 5 | |
| Mr Midgeley's discovery |  | | Answer back | | Frank Harriss | | 4 | | 5 | |
| What use is a chemistry degree? |  | | Just chatting | | Brian Joice | | 4 | | 5 | |
| Using natural dyes |  | | Making and doing | | Enid Parker | | 4 | | 5 | |
| Argon – in the spotlight |  | | Substances | | Gordon Woods | | 4 | | 5 | |
| Mixing colours |  | | Back page | |  | | 4 | | 5 | |
| From black sheep to creative genius |  | | Editorial | | John Garratt | | 5 | | 1 | |
| Oiling the wheels of progress | Lubricants, fractional distillation, synthetic lubricants | |  | | Michells Simmonds | | 5 | | 1 | |
| Helium |  | | Substances | | Gordon Woods | | 5 | | 1 | |
| The case for and against organophosphorus compounds |  | | Poisons | | Tony Wellington | | 5 | | 1 | |
| Paper – read all about it | Hydrogen bonding, papermaking process, waterproofing paper | |  | | Mark Watson | | 5 | | 1 | |
| Chemical definitions (tongue-in-cheek) |  | | Making and doing | | David Jones | | 5 | | 1 | |
| Getting your pinta from the cow |  | | In pictures | |  | | 5 | | 1 | |
| Plastic light |  | | Daedalus | |  | | 5 | | 1 | |
| Growing crystals |  | | Lab page | |  | | 5 | | 1 | |
| Who discovered the structure of benzene? | Josef Loschmidt, Kekulé | |  | | Jim Baggott | | 5 | | 1 | |
| Drawing organic compounds |  | | Revision note | | Andrew Parsons | | 5 | | 1 | |
| Ann Hutchinson – process chemist | Process chemist | | People | |  | | 5 | | 1 | |
| Ethanoic acid (acetic acid / Essigsäure / vinegar) | Acetic acid, vinegar | | Focus on industry | | Bill Fox | | 5 | | 1 | |
| Decomposing hydrogen peroxide | Using an enzyme catalyst, monitoring the decomposition, contact lens chemistry | | Project page | | Derek Denby | | 5 | | 1 | |
| Tackling calculations |  | | Answer back | | Alastair Fleming | | 5 | | 1 | |
| The flame test |  | | Back page | |  | | 5 | | 1 | |
| Absolutely O K |  | | Editorial | | John Garratt | | 5 | | 2 | |
| Why aren't all crystals spherical? | Forming crystals, the growth of crystals, true crystal spheres | |  | | Gordon Van Praagh | | 5 | | 2 | |
| Platinum | Catalyst, uses, platinum compounds, manufacturing fibres | | Substances | | Gordon Woods | | 5 | | 2 | |
| What's in water? | pH value, conductivity, nitrate ion concentration, phosphate ion concentration, hardness of water, permanganate value | | Project page | | Derek Denby | | 5 | | 2 | |
| George Olah | Chemistry of carbocations | |  | | Barry Thomas | | 5 | | 2 | |
| How to make a zombie | Puffer fish, tetrodotoxin | | Poisons | | Tony Wellington | | 5 | | 2 | |
| Salt of the earth |  | | In pictures | |  | | 5 | | 2 | |
| The Gold Makers | Fritz Haber | | Worth reading | | J.B.S. Haldane | | 5 | | 2 | |
| Antidotes to wear |  | | Daedalus | |  | | 5 | | 2 | |
| Safe heating |  | | Lab page | |  | | 5 | | 2 | |
| X-rays | X-ray diffraction, looking at simple molecules, Dorothy Hodgkin | |  | | Peter Ellis | | 5 | | 2 | |
| Forensic analysis of a deer |  | | Answer back | | Geoff Lloyd and Frank Harris | | 5 | | 2 | |
| Born-Haber cycles and lattice energies |  | | Revision note | | Peter Nicolson | | 5 | | 2 | |
| Jane Sutton - press and publicity officer | Press and publicity officer | | People | |  | | 5 | | 2 | |
| -273.15oC is OK - OK? |  | | Just chatting | | John Garratt | | 5 | | 2 | |
| The crystal growing challenge |  | | Making and doing | |  | | 5 | | 2 | |
| Growing a crystal tree |  | | Back page | |  | | 5 | | 2 | |
| Relatively speaking |  | | Editorial | | John Garratt | | 5 | | 3 | |
| Light messages from molecules |  | |  | | Amilra de Silva | | 5 | | 3 | |
| Observing |  | | Lab page | | Margaret Ferguson | | 5 | | 3 | |
| ‘Environmentally friendly’ chemicals | Development of hydrogen peroxide, peroxygens, halogens, new polymers, effluent treatment, peroxygen analysis, reduction of gaseous emissions | |  | | Ken Rowbottom | | 5 | | 3 | |
| The reactions of metals with acids | Calcium, magnesium, zinc | | Project page | | Derek Denby | | 5 | | 3 | |
| Nitric acid | Modern manufacture, nature's acid rain, nitration mixture, dissolving copper | | Substances | | Gordon Woods | | 5 | | 3 | |
| Fractional distillation |  | | In pictures | |  | | 5 | | 3 | |
| Web of scent | Detection of scents, gas chromatography, pheromones | |  | | Eric Albone | | 5 | | 3 | |
| Facets of ammonia chemistry |  | | Answer back | | Richard Gilbert | | 5 | | 3 | |
| Odour of celibacy |  | | Daedalus | |  | | 5 | | 3 | |
| The sweet smell of danger |  | | Making and doing | |  | | 5 | | 3 | |
| Robert Osman – plant manager | Plant manager | | People | |  | | 5 | | 3 | |
| Melting and boiling points |  | | Revision note | | John Skinner | | 5 | | 3 | |
| Chemiluminescence |  | | Back page | |  | | 5 | | 3 | |
| Lay your cards on the table |  | | Editorial | | John Garratt | | 5 | | 4 | |
| Electrochemical cells | Electrochemical reactions, galvanic cells, Daniel cell, electroplating cell, cell reactions for the corrosion of copper via oxygen reduction | |  | | Gerry Ottewill and Frank Walsh | | 5 | | 4 | |
| Oxidation, hydrolysis |  | | Democritus replies | |  | | 5 | | 4 | |
| Creative problem solving |  | | Making and doing | |  | | 5 | | 4 | |
| Using electrochemical cells |  | | Lab page | | Margaret Ferguson | | 5 | | 4 | |
| Sir Humphrey Davy and the safety lamp | Electrochemistry | |  | | A Truman Schwartz | | 5 | | 4 | |
| Keeping things short |  | | Revision note | |  | | 5 | | 4 | |
| Alfred Nobel (1833-96) |  | | In pictures | | Peter Ellis | | 5 | | 4 | |
| Nick Owen - innovations marketing manager | Innovations marketing manager | | People | |  | | 5 | | 4 | |
| The pyrrole pigments | Haem compounds, oxygen binding to haemoglobin, bile pigments, Vitamin B12 | |  | | Mervyn Hudson | | 5 | | 4 | |
| Transition metals |  | | Answer back | | David Nicholls | | 5 | | 4 | |
| Making light of project work | Chemiluminescence, luminol | | Project page | | John Sleigh | | 5 | | 4 | |
| Dyed in the woolly |  | | Daedalus | |  | | 5 | | 4 | |
| Propanone | Manufacture, solvent properties | | Substances | | Gordon Woods | | 5 | | 4 | |
| The colours of pyrrole pigments |  | | Back page | |  | | 5 | | 4 | |
| Boyle – a good egg |  | | Editorial | | John Garratt | | 5 | | 5 | |
| Trade roots - locating the sources of ancient artefacts | Ancient artefacts, flint, pottery, neutron activation, lead isotope analysis | |  | | Mike Cowell | | 5 | | 5 | |
| Chemical dingbats |  | | Making and doing | | Terry Threlfall and Paul Harrison | | 5 | | 5 | |
| Iodine |  | | Substances | | Gordon Woods | | 5 | | 5 | |
| Steam distillation |  | | Lab page | | Margaret Ferguson | | 5 | | 5 | |
| Colour – a chemical overview | Chlorophyll, energy and colour, woad, tyrian purple, inorganic pigments, stained glass and gemstones, colours in inorganic compounds | |  | | Ken Kite | | 5 | | 5 | |
| Nuclear magnetic resonance | NMR | | In pictures | | Simon Duckett | | 5 | | 5 | |
| Acids and bases | Strong and weak acids, salts of weak acids, self-ionisation of water | | Revision note | | Rod Beavon | | 5 | | 5 | |
| Chris Hewitt | Brand manager | | People | | Chris Hewitt | | 5 | | 5 | |
| What is photochemical smog? | Oxides of nitrogen, radicals, ozone | |  | | Mike Pilling | | 5 | | 5 | |
| There’s more to vitamin C than Brussel sprouts | Brussels sprouts, sources and stability of Vitamin C | | Project page | | Derek Denby | | 5 | | 5 | |
| A most unusual beetle! | Bombardier beetle | | Answer back | | Frank Harris | | 5 | | 5 | |
| Gilbert Lewis and the chemical bond |  | | Fifty years ago | | Peter Ellis | | 5 | | 5 | |
| Stained glass |  | | Back page | | Penelope Winton | | 5 | | 5 | |
| A colour change! |  | | Editorial | | John Garratt | | 6 | | 1 | |
| Stick with it | Adhesives, how they work, polymers for glues, polyurethanes, acrylic glues, epoxy resins | |  | | Gill Thomas | | 6 | | 1 | |
| Polymer wordsearch |  | | Making and doing | |  | | 6 | | 1 | |
| Sir William Grove (1811-1896) |  | | 100 years ago | | Peter Ellis | | 6 | | 1 | |
| WebElements |  | | Chemistry on the web | | Anne Hodgson | | 6 | | 1 | |
| Doll disease | Cellulose acetate, raman spectroscopy | |  | | Howell Edwards | | 6 | | 1 | |
| Volumetric analysis |  | | Lab page | | Margaret Ferguson | | 6 | | 1 | |
| First-class organic chemistry | Stamps with a chemical theme | | In pictures | |  | | 6 | | 1 | |
| Rise and fall of CFCs | CFCs, early refrigerants, HCFCs, global warming | |  | | Dick Powell | | 6 | | 1 | |
| Hydrogen peroxide |  | | Substances | | Gordon Woods | | 6 | | 1 | |
| Reactions that don't seem to add up | Copper(II) sulfate, sodium hydroxide reaction | | Project page | | Derek Denby | | 6 | | 1 | |
| Plant location | Benzene, dyestuffs | | Our essential chemical industry | | Gill Thomas | | 6 | | 1 | |
| Nick Hazel | Issues Manager, BP Chemicals | | People | | Nick Hazel | | 6 | | 1 | |
| Acid-base indicators and buffer solutions |  | | Revision note | | Rod Beavon | | 6 | | 1 | |
| Reactions of halogenoalkanes with potassium hydroxide |  | | Answer back | | Geoff Hallas | | 6 | | 1 | |
| Winning crystals | Large crystals grown by readers | | Back page | |  | | 6 | | 1 | |
| Fire your imagination |  | | Editorial | | John Garratt | | 6 | | 2 | |
| Proteins | Isotopes, chemical reactivity, solutions and crystals | |  | | John Garratt | | 6 | | 2 | |
| Anagrams |  | | Making and doing | |  | | 6 | | 2 | |
| Testing for metal ions |  | | Lab page | | Margaret Ferguson | | 6 | | 2 | |
| Becquerel | Luminescence, radioactivity | |  | | Peter Ellis | | 6 | | 2 | |
| Alumina | Bauxite, occurrence in nature, precious stones, anodised aluminium | | Substances | | Gordon Woods | | 6 | | 2 | |
| Clock reactions |  | | Project page | | Derek Denby | | 6 | | 2 | |
| Ways of representing proteins |  | | In pictures | |  | | 6 | | 2 | |
| Salt |  | | Focus on industry | | Bill Fox | | 6 | | 2 | |
| Ultraviolet and visible spectra | Explaining emission spectra, flame tests, hydrogen spectrum, experimental set-up | | Revision note | |  | | 6 | | 2 | |
| Raw materials | Water, air, earth | | Our essential chemical industry | | Gill Thomas and John Garratt | | 6 | | 2 | |
| The inside of a cat | Transition metals as catalysts, death of a catalyst, air/fuel management catalytic convertor | |  | | Graham Mills and Gerry Ottewill | | 6 | | 2 | |
| A potentially dangersous fertiliser! | Ammonium nitrate | | Answer back | | Frank Harris | | 6 | | 2 | |
| Finding information about degree courses |  | | Chemistry on the web | | John Garratt | | 6 | | 2 | |
| Acid-base equilibria | Concept map | |  | |  | | 6 | | 2 | |
| Salt mining |  | | Back page | |  | | 6 | | 2 | |
| Taking chemistry to its limits |  | | Editorial | | John Garratt | |  | |  | |
| Sex and scents in the natural world | Insect attractants, making chemical attractants | |  | | David Kelly | | 6 | | 3 | |
| A bird's-eye view | Defining chemical industry, industry's customers, chemical companies | | Our essential chemical industry | | Gill Thomas | | 6 | | 3 | |
| Dragons blood and celluloid | Chemical conundrums for museums, gums, resins and waxes, plastics made from cellulose, GLC, infrared and raman spectroscopy | |  | | Anita Quye | | 6 | | 3 | |
| Chemistry in the open air |  | | In pictures | |  | | 6 | | 3 | |
| How pure is your aspirin? | Aspirin, thin layer chromatography | | Project page | | Derek Denby | | 6 | | 3 | |
| Silica | Sand, carbon dioxide and silicon dioxide, glasses, glass fibre, quartz | | Substances | | Gordon Woods | | 6 | | 3 | |
| Coppergate helmet | Conservation, corrosion of buried iron, chemical analysis | |  | | Sonia O'Connor | | 6 | | 3 | |
| Molecule of the month |  | | Chemistry on the web | | John Garratt | | 6 | | 3 | |
| Knocking your organic chemistry into shape |  | | Answer back | | Peter Simpson | | 6 | | 3 | |
| Anne Hodgson | Chemistry Department, University of York | | People | | Anne Hodgson | | 6 | | 3 | |
| The island that time forgot… | Frankincense, dragon's blood trees | | Back page | |  | | 6 | | 3 | |
| Spy versus spy | Molecular sensors are molecules designed to recognise and signal the presence of specific species | |  | | Jonathan Steed | | 6 | | 4 | |
| Nitric oxide | Free radicals, atmospheric NO, tropospheric, stratospheric NO, NO in the body, decomposition of ozone | | Substances | | Gordon Woods | | 6 | | 4 | |
| Capillary electrophoresis | Forensic scientists and art historians are amongst those using this revolutionary technique for analysing tiny samples, methods of detection, sample injection | |  | | Anne Hodgson | | 6 | | 4 | |
| Separating solids from liquids |  | | Lab page | | Margaret Ferguson | | 6 | | 4 | |
| Mass spectrometry | MS | | In pictures | |  | | 6 | | 4 | |
| Kinetics – facts and theory | Rate of reaction, order, chain reactions, rate constants, rate-determining steps, collision theory | | Revision note | | Michael Lewis | | 6 | | 4 | |
| CHEMystery |  | | Chemistry on the web | | Jason Lynam | | 6 | | 4 | |
| Dingbats |  | |  | |  | | 6 | | 4 | |
| Atmospheric inputs to the oceans | Finding out how much of the pollution in the oceans comes from the atmosphere | |  | | Tim Jickells | | 6 | | 4 | |
| Essential energy |  | | Our essential chemical industry | | Gill Thomas | | 6 | | 4 | |
| An organic ‘Whodunit?’ | Interconversion of organic functional groups, tests for functional groups | | Answer back | | Peter Blake and Keith Warren | | 6 | | 4 | |
| Investigating enzymes | Browning bananas, hydrolysing oils | | Project page | | Derek Denby | | 6 | | 4 | |
| Rock `n` roll eggs | Rocks and minerals | | Back page | |  | | 6 | | 4 | |
| Lessons learned |  | | Editorial | | John Garratt | | 6 | | 4 | |
| Analysing food flavours | Analysis of flavours in food using chromatography and electronic noses | |  | | Zulfiqur Ali and Liam O’Hare | | 6 | | 5 | |
| Coffee, tea and chemistry | Chemistry of making roast coffee and black tea and processes of brewing | |  | | Michael Spiro | | 6 | | 5 | |
| Take that! | How medicines get to work, formulating a drug molecule into an effective medicine | |  | | Amanda King | | 6 | | 5 | |
| Keeping the costs down | Fixed and variable costs, reducing costs of production | | Our essential chemical industry | | John Garratt & Gill Thomas | | 6 | | 5 | |
| MathMol |  | | Chemistry on the web | | Jason Lynam | | 6 | | 5 | |
| Dr Beaker | Some puzzles/logic problems | | Making and doing | | Tina Overton | | 6 | | 5 | |
| Melissa Levitt | Chemistry Commissioning Editor for OUP | | People | |  | | 6 | | 5 | |
| Water treatment |  | | In pictures | |  | | 6 | | 5 | |
| Handling gases |  | | Lab page | | Margaret Ferguson | | 6 | | 5 | |
| Mixed oxides |  | | Substances | | Gordon Woods | | 6 | | 5 | |
| Copper chemistry | Salters, minerals to elements | | Answer back | | Frank Harriss | | 6 | | 5 | |
| Group 4 |  | | Revision note | | Ray Vincent | | 6 | | 5 | |
| Virtual reality in molecular modelling |  | | Back page | |  | | 6 | | 5 | |
| Chemistry in the mould |  | | Editorial | | Anne Hodgson | | 7 | | 1 | |
| As Mad as a Hatter | Mercury | |  | | Gerry Ottewill and Graham Mills | | 7 | | 1 | |
| Buckminsterfullerenes |  | | Chemistry on the web | | Jason Lynam | | 7 | | 1 | |
| Chlorides | Bonding and structure, melting and boiling points, electrical conductivity | | Substances | | Gordon Woods | | 7 | | 1 | |
| How accurate are Titrations? | Language of analysis | | Project page | | Derek Denby | | 7 | | 1 | |
| Testing for gases |  | | Lab page | | Ray Vincent | | 7 | | 1 | |
| Lunch with Sir Harry | Sir Harry Kroto, Buckyballs | | Encounter | | Richard Beatty, Simon Evans, Cher Thornhill | | 7 | | 1 | |
| University research | Mobile atmospheric monitoring lab | | All in a day’s work | | Alastair Lewis | | 7 | | 1 | |
| Breath of fresh air | Atmospheric chemistry - field campaign at Mace Head (hydroxyl radicals and organic compounds) | | In pictures | |  | | 7 | | 1 | |
| Identifying gases |  | | Revision note | | Ray Vincent | | 7 | | 1 | |
| Foiling the food fraudsters | Wide range of analytical approaches used by chemists in detection of adulteration of foodstuffs, enzymatic methods, HPLC, isotopic methods | |  | | Reg Wilson | | 7 | | 1 | |
| Element search |  | | Making and doing | |  | | 7 | | 1 | |
| Getting the language right | Chlorine molecule, ions | | Top tips | | Margaret Ferguson | | 7 | | 1 | |
| An open invitation | Introduction | | Research team | | Eric Albone | | 7 | | 1 | |
| Structures, equations and mechanisms | NEAB | | Answer back | | Graham Curtis | | 7 | | 1 | |
| Nitrogen and phosphorus in estuaries | Removal of DIP in estuaries, quantifying removal processes, nitrogen | | Chemistry and the environment | | Tim Jickells | | 7 | | 1 | |
| Oceans of mercury | In China - emperor | | Back page | |  | | 7 | | 1 | |
| Keep it simple |  | | Editorial | | Anne Hodgson | | 7 | | 2 | |
| The curious life of nitric oxide | Nitric oxide is not just a pollutant gas, it is vital to the health of our bodies, oxides of nitrogen, macrophages | |  | | Anthony Butler and Douglas Short | | 7 | | 2 | |
| Chemistry is fun! | Be safe, colourful chemistry, iodine clock | | Making and doing | | Anne Hubbard | | 7 | | 2 | |
| Kinetics |  | | Answer back | | Andrew Bethell | | 7 | | 2 | |
| Fantastic plastics | Alkenes polymers | | Focus on industry | | Bill Fox | | 7 | | 2 | |
| Chocolate - the inside story | Ingredients, MRI, lipids, cocoa, fatty acids | | In pictures | | Thierry Guiheneuf | | 7 | | 2 | |
| Carbon monoxide - more than just a deadly gas | Atomic efficiency of reactions, carbon monoxide and catalysis, catalysts | |  | | John Evans | | 7 | | 2 | |
| Intermolecular bonds | Polar molecule | | Revision note | | Cathy Sparrow | | 7 | | 2 | |
| Oxidation States (or oxidation numbers) | Oxidation numbers, working out oxidation states | | Top tips | | Margaret Ferguson | | 7 | | 2 | |
| Mountains of waste | Waste, disposal, landfill | | Chemistry and the environment | | Paul Phillips | | 7 | | 2 | |
| Research & development | Croda Universal Ltd | | All in a day’s work | | Colin Newbould | | 7 | | 2 | |
| Green pages |  | | Chemistry on the web | | Jason Lynam | | 7 | | 2 | |
| Potassium chloride | Lattice, salt bridges, manufacture of potassium compounds | | Substances | | Gordon Woods | | 7 | | 2 | |
| Up in smoke | Polycyclic aromatic hydrocarbons in the atmosphere | | Back page | |  | | 7 | | 2 | |
| Nano-architecture |  | | Editorial | | Anne Hodgson | | 7 | | 3 | |
| The shapes of molecules | Osmium, predicting shapes, ethane and ethanol | | Top tips | |  | | 7 | | 3 | |
| Investigating surface tension |  | | Making and doing | | Gerry Ottewill | | 7 | | 3 | |
| Aluminium chloride | Lewis acid, bases, organic catalyst | | Substances | | Gordon Woods | | 7 | | 3 | |
| Isomerism |  | | Revision note | | John Murray | | 7 | | 3 | |
| Iceman of the Alps – the mummy who came in from the cold | Spectroscopic techniques to analyse human skin, lipids, mummies, molecular vibration and raman spectroscopy | |  | | Howell Edwards | | 7 | | 3 | |
| SO2 and acid rain | Detection and determination, sampling | | Chemistry and the environment | | Tony Edmonds and John Lee | | 7 | | 3 | |
| Study chemistry and see the world! | 29th International Chemistry Olympiad | | Encounter | | Michael Pollitt | | 7 | | 3 | |
| Planning your Chemistry |  | | Answer back | | Alastair Fleming | | 7 | | 3 | |
| What’s in wine? | Organic acids found in wine | | Project page | | Derek Denby | | 7 | | 3 | |
| Challenge of materials |  | | In pictures | |  | | 7 | | 3 | |
| Ring the changes with *Chime* |  | | Chemistry on the web | | Jason Lynam | | 7 | | 3 | |
| Woman of achievement | Dorothy Hodgkin | | Back page | | Jean Whittingham | | 7 | | 3 | |
| Molecules in space – the chemical laboratory at the end of the universe | Radical reactions, thermodynamics, kinetics, spectroscopy, low temperature reactions kinetics, light and electromagnetic radiation, spectra, temperature | |  | | Ian Smith | | 7 | | 3 | |
| Head in the clouds |  | | Editorial | | Anne Hodgson | | 7 | | 4 | |
| Sulfur: Element of mystery | Sulfur can exist as rings and chains, these forms give rise to a range of colours, which have been observed on the Jovian moon, Io | |  | | Tony Semlyen | | 7 | | 4 | |
| Life, the universe and the electron |  | | Chemistry on the web | | Jason Lynam | | 7 | | 4 | |
| Gold’s fingerprint | From serious crime to ancient artefacts, elemental fingerprinting can reveal the secrets of gold | |  | | John Watling | | 7 | | 4 | |
| CCl4 and SiCl4 | As a solvent, toxicity of, reactions with water | | Substances | | Gordon Woods | | 7 | | 4 | |
| Ioning out the problems | The use of ion exchange to purify water, calculations in ion exchange chemistry, ion exchange systems in nature | |  | | Nick Womack | | 7 | | 4 | |
| Ion exchange resins | pKa values for some amino acids | | Project page | | Derek Denby | | 7 | | 4 | |
| Thermal analysis | Thermogravimetry (TG), differential thermal analysis (DTA), differential scanning calorimetry (DSC) | | In pictures | | Anne Hodgson | | 7 | | 4 | |
| Chemistry at work | Clay structure, electrochemical sensors, froth flotation | | Encounter | | King Edward VI College | | 7 | | 4 | |
| Climate Change and CO2 | Measuring temperatures of the past, molecular solution | | Chemistry and the environment | | Brendan Keely | | 7 | | 4 | |
| Periodic patterns | NEAB 1996 | | Answer back | | Peter Battye | | 7 | | 4 | |
| Black smokers | Hydrothermal activity beneath the sea | | Back page | | Brendan Keely | | 7 | | 4 | |
| Taking a closer look at chemistry |  | | Editorial | | Anne Hodgson | | 7 | | 5 | |
| Quantum mechanical magic in the scanning tunnelling miscroscope | Scanning tunnelling microscopy (STM) | |  | | Chris Ennis | | 7 | | 5 | |
| Tracing oil spills at sea | Crude oil, oil spills at sea, chemical analysis | | Chemistry and the environment | | Evin McGovern | | 7 | | 5 | |
| Aluminium – a paradoxical metal | A paradoxical metal, data table | | Focus on industry | | Peter Ellis | | 7 | | 5 | |
| The secret life of an organic reaction | Curly arrows, substitution reactions  addition reactions, elimination reactions | | Revision note | |  | | 7 | | 5 | |
| Seeing atoms | Reconstruction | | In pictures | | Tim Doust | | 7 | | 5 | |
| Patent agent | Trainee patent agent for Glaxo Wellcome | | All in a day's work | | Siân Hockley, | | 7 | | 5 | |
| IUPAC | Naming elements 101-109 | | Did you know | |  | | 7 | | 5 | |
| Illuminated letters | Phosphorescent inks, luminescence, | |  | | Dr A Lane | | 7 | | 5 | |
| Measuring the boiling point of a liquid | Vapour pressure and boiling point, simple distillation | | Lab page | |  | | 7 | | 5 | |
| PMD – a natural seed germination inhibitor | Stereoisomerism | | Research team | | Watford Grammar School | | 7 | | 5 | |
| HCl | Hydrogen chloride | | Substances | | Gordon Woods | | 7 | | 5 | |
| Chromatography and the structure of a dipeptide |  | | Answer back | | Robin Hillman | | 7 | | 5 | |
| Something lost in the translation? | Strontianite, strontium | | Back page | | Margaret Ferguson | | 7 | | 5 | |
| Konzo: a case of cyanide poisoning from food | Cassava, cyanide poisoning, thiocyanate | |  | | Angela Melamed | | 8 | | 1 | |
| Quinine – one of the great molecules | Cinchona bark and mosquito bites, natural and synthetic products, malaria, heterocyclic molecules, stereoisomers | | Chemistry and health | | Chris Ramsden | | 8 | | 1 | |
| Calculations involving amounts | Chemical formulae and equations, calculating moles | | Top tips | | Margaret Ferguson | | 8 | | 1 | |
| Poison! |  | | Chemistry on the web | | Doug Clow | | 8 | | 1 | |
| Are you part of a research team? |  | | Research team | |  | | 8 | | 1 | |
| Logical chemistry |  | | Making and doing | | Joe McGinnis | | 8 | | 1 | |
| pH: Who needs to know? |  | | In pictures | | Dave Lindsey | | 8 | | 1 | |
| Complex information | Transition metal elements and complex ions | | Answer back | | Brian Parker | | 8 | | 1 | |
| Make a note: The production of intaglio printing plates | nickel electroforming, silver spraying, chrome plating | |  | | David Stone | | 8 | | 1 | |
| Using mnemonic methods |  | | Remember, remember | | Tom Keogh | | 8 | | 1 | |
| Measuring pH | Acid base indicators, pH meters | | Lab page | | David Lindsey | | 8 | | 1 | |
| Halogens |  | | Revision note | | Cathy Sparrow | | 8 | | 1 | |
| The welding torch |  | | Back page | |  | | 8 | | 1 | |
| Grasping the nettle |  | | Editorial | | Anne Hodgson | | 8 | | 2 | |
| Alcohol and drink-driving: From consumption to conviction | Absorption of infrared radiation by molecules, breath testing, analysis of samples | |  | | Ben Faust | | 8 | | 2 | |
| Niels Bohr | A puzzle | | Making and doing | | Gerry Ottewill | | 8 | | 2 | |
| Fire! | Bangs and smells | | Chemistry on the web | | Doug Clow | | 8 | | 2 | |
| Napthazarin, PDT and the fight against cancer | Photodynamic therapy, raman spectroscopy | | Research team | | Erlick Pereira | | 8 | | 2 | |
| The story system | Mnemonics | | Remember, remember | | Tom Keogh | | 8 | | 2 | |
| Medicines in the garden | Medicinal plants | | In pictures | | Anne Hodgson | | 8 | | 2 | |
| Metals in medicine | Inorganic drugs, *Cis* explained, cisplatin, DNA, technetium | | Chemistry and health | | Spencer Harben and Jon Freeman | | 8 | | 2 | |
| Spider diagrams |  | | Revision note | | Peter Battye | | 8 | | 2 | |
| What is chromatography? | TLC, thin-layer chromatography | | Lab page | | Dave Lindsey | | 8 | | 2 | |
| Drugs in the hay | Sweet clover, mould, anticoagulant, dicoumarol | | Back page | | Anne Hodgson | | 8 | | 2 | |
| Does faster mean further? | Kinetics, equilibria | | Answer back | | Peter Blake and Keith Warren | | 8 | | 2 | |
| Making models | Molecular modelling, molecular mechanics and energy minimisation, predicting shapes, drug design | |  | | Paul Cox, Graham Mills and Gerry Ottewill | | 8 | | 2 | |
| Marie Curie |  | | Did you know? | | Peter Ellis | | 8 | | 2 | |
| How do we do it? |  | | Editorial | | Anne Hodgson | | 8 | | 3 | |
| Protecting timber naturally | Chemicals to prevent wood from rotting, CCA | |  | | Ed Suttie | | 8 | | 3 | |
| Body parts from the polymer lab | Poly(methylmethacrylate) PMMA bone cement, tissue engineering, degradable polymers, polymers for the eye | | Chemistry and health | | Chris Ansell | | 8 | | 3 | |
| Organic chemistry | Infrared absorption data | | Answer back | | Peter Battye | | 8 | | 3 | |
| The loci system |  | | Remember, remember | | Tom Keogh | | 8 | | 3 | |
| Robert Wilhelm Bunsen (1811-1899) | The Bunsen Cell, measuring relative atomic mass | | 100 years ago | | Peter Ellis | | 8 | | 3 | |
| Prehistoric gums and glues | Gas chromatography, mass spectrometry, turpenes, trimethylsilyation, chewing gum, adhesive, GC-MS (Box on p. 19) | |  | | Liz Aveling and Carl Heron | | 8 | | 3 | |
| Chemistry under the microscope | crystals in polarised light | | In pictures | | Dr Harold Rose | | 8 | | 3 | |
| The alkanes | Reaction of methane with chlorine, isomers of alkanes | | Revision note | | Peter Battye | | 8 | | 3 | |
| Antarctic research | Ice | | All in a day’s work | | Julie Hall | | 8 | | 3 | |
| Oscillating reactions | Briggs-Rauscher reaction, Belousov-Zhabotinsky reaction | | Project page | | Derek Denby | | 8 | | 3 | |
| Butane |  | | Substances | | Gordon Woods | | 8 | | 3 | |
| The Meissner effect |  | | Back page | | Tom Halstead | | 8 | | 3 | |
| Warning, hazardous chemicals! |  | | Editorial | | Anne Hodgson | | 8 | | 4 | |
| That’s the spirit! Production authenticity in scotch whisky industry | Scotch whisky industry, analytical chemistry, malting, detection in HPLC | |  | | Ross Aylott | | 8 | | 4 | |
| The discovery of Ventolin | Asthma, drug development, organic synthesis, salbutamol, adrenaline | | Chemistry and health | | Peter O'Brien | | 8 | | 4 | |
| Adsorption and inclusion | Methods of analysis, adsorbing molecules, including molecules | | Project page | | Derek Denby | | 8 | | 4 | |
| Molecules at an Exhibition | by John Emsley | | Worth reading | | John Garratt | | 8 | | 4 | |
| The peg method |  | | Remember, remember | | Tom Keogh | | 8 | | 4 | |
| Chemistry on track | Thermit Welding | | In pictures | | Anne Hodgson | | 8 | | 4 | |
| Ethanoic acid | Vinegar, formulae, weak acid | | Substances | | Gordon Woods | | 8 | | 4 | |
| Ever increasing circles: a look at cyclic polymers | Cyclic polymers, cyclic silicones have some remarkable properties and a range of useful applications, gel permeation chromatography, neutron scattering, glass transition temperature | |  | | Tony Semlyen | | 8 | | 4 | |
| Identifying reactions (I) | Acid base reactions, redox reactions | | Top tips | | Margaret Ferguson | | 8 | | 4 | |
| Recrystallisation |  | | Lab Page | | Dave Lindsey | | 8 | | 4 | |
| Energy, bonding and haloalkanes |  | | Answer back | | Robin Hillman | | 8 | | 4 | |
| The problem with PET | Rates and mechanisms | | Research team | | Tynemouth College | | 8 | | 4 | |
| Wobbly chemistry – a look at collagen and gelatin | Collagen and gelatin | | Back page | | Anne Hodgson | | 8 | | 4 | |
| Are you a winner? |  | | Editorial | | Anne Hodgson | | 8 | | 5 | |
| Lighter flints and luminescence: some chemistry of the rare earth elements | Rare earth elements, lanthanides, Carl Auer von Welsbach, MRI, contrast agent | |  | | Helen Aspinall | | 8 | | 5 | |
| Phenol | Manufacture, bulk uses of, preparation of nylon | | Substances | | Gordon Woods | | 8 | | 5 | |
| Chemicals in foods and drinks | Assessing the risks, water | | Chemistry and health | | Norman Greenwood | | 8 | | 5 | |
| Identifying reactions (II) | Ionic precipitation, complex formation | | Top tips | | Margaret Ferguson | | 8 | | 5 | |
| The brewer's art | Chemistry of beer making | | In pictures | | Nigel Lowe | | 8 | | 5 | |
| Granular detergent technology development | Procter & Gamble | | All in a day's work | | Louise Scarry | | 8 | | 5 | |
| Chemistry at university | Courses, counting the cost, entry requirements | | Encounter | | Roger Mawby | | 8 | | 5 | |
| Phonetic system |  | | Remember, remember | | Tom Keogh | | 8 | | 5 | |
| ‘In-the-dark yellowing’ of alkyd-based paints | Conjugated systems | | Research team | | Robert Carney | | 8 | | 5 | |
| Simply red, naturally | Cochineal, kermes, madder, lac, analysis, liquid chromatography, dyes | |  | | Anita Quye | | 8 | | 5 | |
| Obtaining marks from obtaining metals |  | | Answer back | | Andy Bethell | | 8 | | 5 | |
| Lac - resin and dye producer |  | | Back page | | Anita Quye | | 8 | | 5 | |
| We’re turning green (and red and blue and yellow…) |  | | Editorial | | Anne Hodgson | | 9 | | 1 | |
| The new alchemists | Heavy ion research, GSI | |  | | Robert Matthews | | 9 | | 1 | |
| Joseph Black (1728-1799) | Latent heat, distillation | | 200 years ago | | Peter Ellis | | 9 | | 1 | |
| Changing state | Forces between particles, states of matter, changing state of water, evaporation versus boiling | | Revision note | | Peter Battye | | 9 | | 1 | |
| Concentration of copper ions |  | | Project page | | Derek Denby | | 9 | | 1 | |
| The invisible architecture of gemstones and minerals | Crystallography | |  | | John Meurig Thomas | | 9 | | 1 | |
| Gakistuf! | Making “silly putty” | | Making and doing | | Chris Ennis | | 9 | | 1 | |
| Catalysts |  | | Green chemistry | | Stewart Tavener & Dave Adams | | 9 | | 1 | |
| Are you part of a Research Team? |  | | Research team | | Anne Hodgson | | 9 | | 1 | |
| Egyptian Blue and Nefertiti |  | | Back page | | Sir John Meurig Thomas | | 9 | | 1 | |
| Green sites |  | | Chemistry on the web | | Chris Ennis | | 9 | | 1 | |
| Ethanol as a fuel |  | | Answer back | | Frank Harris | | 9 | | 1 | |
| Gemstones | gems and minerals | | In pictures | | Brendan Keely & John Meurig Thomas | | 9 | | 1 | |
| Please to remember the fifth of November… |  | | Editorial | | Anne Hodgson | | 9 | | 2 | |
| Really wild dyes | Dyes, colour, natural plants | |  | | Anita Quye | | 9 | | 2 | |
| Refluxing and distillation |  | | Lab page | | David Lindsey | | 9 | | 2 | |
| Calculating yields in chemical reactions |  | | Top tips | | Alasdair Thorpe | | 9 | | 2 | |
| The Nobel prize |  | | Chemistry on the web | | Chris Ennis | | 9 | | 2 | |
| Dr Beaker | Logic problem | | Making and doing | | Tina Overton | | 9 | | 2 | |
| Aluminium | Metal/non-metal, amphoteric oxide and hydroxide, aluminium chloride, reactions | | Substances | | Gordon Woods | | 9 | | 2 | |
| Fireworks! | Flame tests for metal salts | | In pictures | | Anne Hodgson | | 9 | | 2 | |
| Green beans? | tin plate production, scanning electron microscopy, electrolytes | | Green chemistry | | Mike Lancaster | | 9 | | 2 | |
| Edward Frankland  (1825-1899) | Structural formulae | | 100 years ago | | Peter Ellis | | 9 | | 2 | |
| The natural solution: Future technologies research at BT Labs | Future technologies research at BT Lab | |  | | Glenn Proctor | | 9 | | 2 | |
| Solving a chemical jigsaw puzzle | Deducing the identity of organic compounds | | Answer back | | Andy Bethell | | 9 | | 2 | |
| Nitroglycerine | From the book *The Big Bang*, dynamite, TNT | | Worth reading | | G I Brown | | 9 | | 2 | |
| Exam tactics | Organising revision, time management reading questions, avoiding mistakes | | Revision note | | Peter Battye | | 9 | | 2 | |
| The spider’s superfibre | Protein structure of spider silk | | Back page | | Sara Sleigh | | 9 | | 2 | |
| The dawning of a new era? |  | | Editorial | | Anne Hodgson | | 9 | | 3 | |
| Positively plastic | Polyethylene, synthetic polymers, polymer architectures, stereolithography or rapid prototyping, molecular bar codes | |  | | Julia Higgins | | 9 | | 3 | |
| Molecules of the Millennium | DNA, water, aspirin, penicillin, oxygen | | In pictures | |  | | 9 | | 3 | |
| Structure and bonding | Bonding, intramolecular forces | | Answer back | | Peter Battye | | 9 | | 3 | |
| Environmental Solutions | Solvent usage, greening solvents, natural alternatives | | Green chemistry | | Nick Hazel | | 9 | | 3 | |
| Chemical landmarks of the twentieth century | Synthetic polymers, Teflon, lysozyme, fluorine | | Encounter | | Julia Higgins, John Emsley, John Garratt, John Holloway | | 9 | | 3 | |
| Bringing chemistry to life | Catalysis in cells, hard mineral compounds, inorganic medicines | |  | | Robert Williams | | 9 | | 3 | |
| A world of virtual chemistry |  | | Chemistry on the web | | Chris Ennis | | 9 | | 3 | |
| Transition metal complexes I | Ligands | | Revision note | | Peter Battye | | 9 | | 3 | |
| Caesium | Discovery, isolation, chemical and physical properties, isotopes | | Substances | | Gordon Woods | | 9 | | 3 | |
| Architecture with molecules | ATP synthase, metalloporphyrins, long linear carbon chains, C60, the buckytubes and DNA | |  | | Harry Kroto | | 9 | | 3 | |
| University lecturer |  | | All in a day's work | | Peter O'Brien | | 9 | | 3 | |
| The Dome | Polytetrafluoroethene (PTFE) | | Back page | | Anne Hodgson | | 9 | | 3 | |
| Natural born chemist? |  | | Editorial | | Anne Hodgson | | 9 | | 4 | |
| Environmental pressure | Electricity, SOx emissions, coal-fired stations, NOx emissions | |  | | Donald Miller | | 9 | | 4 | |
| Sulfur | Sulfur, sulphur, Frasch process | | Substances | | Gordon Woods | | 9 | | 4 | |
| Transition metal complexes II | Ligand exchange, Redox, Bidentate ligands, | | Revision note | | Peter Battye | | 9 | | 4 | |
| Plants of the future | Genetically modified organisms | | Green chemistry | | Nigel Oliver | | 9 | | 4 | |
| A site for you | A-level chemistry | | Chemistry on the web | | Chris Ennis | | 9 | | 4 | |
| Generating electricity | Energy, electricity, fuel | | In pictures | | John Vernon | | 9 | | 4 | |
| Taking the pain out of plasters | Glass transition temperatures, acrylic copolymers, light-switchable PSA | |  | | Iain Webster | | 9 | | 4 | |
| Making inks stick | Adhesion promoters, new product development, titanium and its compounds, ink | | Focus on industry | | Martin Partridge | | 9 | | 4 | |
| Drawing enthalpy cycles | Enthalpy cycles | | Top tips | | Alasdair Thorpe | | 9 | | 4 | |
| Dr Beaker | logic problem | | Making and doing | | Tina Overton | | 9 | | 4 | |
| Phosphorus and friends | Inorganic chemistry, phosphorus, silicon | | Answer back | | Maurice Carmody | | 9 | | 4 | |
| Calorimetry | Measuring enthalpies of combustion, the bomb calorimeter | | Lab page | | Alasdair Thorpe | | 9 | | 4 | |
| The Galileo thermometer | Archimedes principle, density changes with temperature, buoyancy | | Back page | | Anne Hodgson | | 9 | | 4 | |
| Eureka! |  | | Editorial | | Anne Hodgson | | 9 | | 5 | |
| Nanotechnology | STM, looking at atoms, writing with atoms, the C60 amplifier | |  | | Chris Ennis | | 9 | | 5 | |
| Surf n learn | Internet learning | | Chemistry on the web | | Chris Ennis | | 9 | | 5 | |
| Atom efficiency and catalysis | The E factor, atom efficiency/low salt technologies  Atom efficiencies of stoichiometric vs catalytic oxidation, ibuprofen manufacture | | Green chemistry | | Roger Sheldon | | 9 | | 5 | |
| Testing halide ions | Inorganic chemistry, focusing on Group 7 of the periodic table | | Answer back | | Helen Neal | | 9 | | 5 | |
| Monitoring local air quality | Pollution, air quality | | In pictures | | Elizabeth Bates | | 9 | | 5 | |
| An ion brew for cleaner chemistry | Catalysis in ionic liquids | |  | | Paul Dyson | | 9 | | 5 | |
| Organic synthetic pathways | Organic synthetic pathways, organic reactions | | Revision note | | Peter Battye | | 9 | | 5 | |
| Nitric oxide as a synthetic reagent | Reactions of nitric oxide as a free radical | | Research team | | Kings School | | 9 | | 5 | |
| Agrochemical Registration Specialist | Agrochemical product registration | | All in a day’s work | | Karen Walker | | 9 | | 5 | |
| Chemistry in slow motion | Ahmed Zewail Nobel Prize, femtochemistry, studying reactions as they happen | | Encounter | | Nobel Foundation | | 9 | | 5 | |
| The hydrogen car: vehicle of the future | fuel cells | | Back page | | Anne Hodgson | | 9 | | 5 | |
| Watch this space… |  | | Editorial | | Anne Hodgson | | 10 | | 1 | |
| Riches from the seas | Alkalis, leblanc process, solvay process, carbonates, iodine, fertilisers, polysaccharides, alginates, kelp, seaweed | |  | | Margaret Ferguson | | 10 | | 1 | |
| Testing much more than fertilisers | Fertilisers, acids and bases, moles, volumes and concentrations, redox, equilibrium | | Answer back | | Maurice Carmody | | 10 | | 1 | |
| To boldly go… | Ozone layer, water cycle, astrobiology, global warming, chemistry in space | | Chemistry on the web | | Chris Ennis | | 10 | | 1 | |
| Cyanides | Dot and cross diagrams, acids and bases, complex formation, oxidation numbers, equilibrium, Le Chatelier's principle, nucleophilic substitution reactions in halogenoalkanes, organic syntheses | | Substances | | Peter Battye | | 10 | | 1 | |
| Pushing back the frontiers… |  | | Research team | | Anne Hodgson | | 10 | | 1 | |
| Interpreting mass spectra | Mass spectroscometry, molecular ions, fragmentation, isotopes | | Top tips | | Alasdair Thorpe | | 10 | | 1 | |
| Visual elements | art inspired by the periodic table | | In pictures | | Anne Hodgson | | 10 | | 1 | |
| Pottery: art meets science | Giant covalent structures, equilibrium, acids and alkalis, thermal decomposition, transition-metal chemistry (redox, complex formation, coloured compounds), phase diagrams, eutectic mixtures, moles | |  | | Stephen Rogers | | 10 | | 1 | |
| Name that element competition | Competition | | Making and doing | | Anne Hodgson | | 10 | | 1 | |
| Assessing the risks in practical work | Hazards, risks, safety, risk assessment | | Lab page | | Alasdair Thorpe | | 10 | | 1 | |
| Dyes and dyeing | Azo dyes, intermolecular forces, colorimetry, acid-base indicator | | Project page | | Derek Denby | | 10 | | 1 | |
| DIBs: a great unsolved mystery | Absorption and emission spectroscopy, polycyclic aromatic hydrocarbons | | Chemistry in space | | Andrew Shaw | | 10 | | 1 | |
| Reaching for the Sky | Redox reactions, combustion | |  | | Gerry Ottewill | | 10 | | 1 | |
| It’s how big? |  | | Editorial | | Anne Hodgson | | 10 | | 2 | |
| Hydrogels - very versatile materials | Medical implants, polymer networks, super-absorbent materials, hydrogels, hydrophilic compounds, polymers | |  | | Kevin Yeomans | | 10 | | 2 | |
| Knowledge and how to apply it | Acids and bases, transition-metal chemistry, factors determining the reactions used in industrial processes | | Answer back | | Peter Battye | | 10 | | 2 | |
| Chemistry in the shed! | Experimental chemistry, crystal growing, chemical misconceptions, science jokes | | Chemistry on the web | | Chris Ennis | | 10 | | 2 | |
| Interpreting NMR spectra | Proton NMR spectroscopy, chemical shift, peak splitting | | Top tips | | Alasdair Thorpe | | 10 | | 2 | |
| Chlorine: the poison we cannot do without | The electrolysis of brine, redox reactions, oxidation states, uses of chlorine, manufacture and uses of chlorine compounds | | Substances | | Gordon Woods | | 10 | | 2 | |
| Phosphorus | Phosphorus | | In pictures | | Brendan Keely | | 10 | | 2 | |
| Conkering cordite | Combustion, propanone (ketone) polymerisation, cellulose, propanone, gunpowder | |  | | Wilson Flood | | 10 | | 2 | |
| The Shocking History of Phosphorus: a biography of the Devil’s element | Phosphorus, luminescence | | Worth reading | | John Emsley | | 10 | | 2 | |
| Fun with hydrogels | Hydrogels | | Making and doing | | Kevin Yeomans | | 10 | | 2 | |
| A date with the high and mighty of Science | British Youth Science Fair 2000, Sir Aaron Klug | | Encounter | | Kings School | | 10 | | 2 | |
| What a dusty universe! | Spectroscopy, formation of molecules, adsorption onto surfaces, astrochemistry, simple chemical reactions | | Chemistry in space | | Serena Vita | | 10 | | 2 | |
| Fire-blocking gel | hydrogel polymer | | Back page | | Anne Hodgson | | 10 | | 2 | |
| Isomers |  | | Editorial | | Anne Hodgson | | 10 | | 3 | |
| What is isomerism? | Structural isomers, chain isomerism, position isomerism, function group isomerism, stereoisomers, geometric isomerism, enantiomers, optical isomerism (Chirality), stereoisomerism in organic compounds | | Revision note | | Gwen Pilling | | 10 | | 3 | |
| Virtually isomeric | isomerism | | Chemistry on the web | | Chris Ennis | | 10 | | 3 | |
| Looking in the mirror | Chirality, optical isomerism, enantiomers, chiral drugs, asymmetric synthesis, biological properties of chiral molecules, asymmetric catalysis and enzymes, use of skeletal (stick) formulae | |  | | Adam Nelson | | 10 | | 3 | |
| Writing structural isomers using stick formulae | Structural isomers, stick formulae, skeletal structures | | Top tips | | Peter Battye | | 10 | | 3 | |
| It’s a chiral world! | Chirality | | In pictures | | Matt Brown | | 10 | | 3 | |
| A bitter isomerisation | Functional group isomers, alcohols and ketones, fermentation | | Substances | | Peter Battye | | 10 | | 3 | |
| Assorted alcohols | Primary, secondary and tertiary alcohols, oxidation reactions of alcohols | | Answer back | | Andy Bethell | | 10 | | 3 | |
| 3D models | Building models of molecules, computer-aided modelling | | Making and doing | | Chris Ennis | | 10 | | 3 | |
| What’s in a mixture? | Positional isomers, synthesis, amines, 1H NMR spectroscopy, oxidation, reduction | |  | | Peter O'Brien | | 10 | | 3 | |
| Space: the first and last great brewery | Interstellar medium, ethanol in space, radio astronomy, radical chemistry, molecular synthesis in space, cosmic rays, gas-phase interstellar chemistry, theory of the possible biological role of organic molecules from space, ion-molecule reactions | | Chemistry in space | | Chris Mayhew & Richard Kennedy | | 10 | | 3 | |
| A different slant on DNA |  | | Back page | | Lorraine Hewitt | | 10 | | 3 | |
| As old as time itself |  | | Editorial | | Anne Hodgson | | 10 | | 4 | |
| Armour: King Henry VIII and solid-state steel making | Microscopic analysis of suits of armour, extraction of iron, steel production, redox reactions, properties of metals | |  | | Alan Williams | | 10 | | 4 | |
| Correcting fluid correct? | Stereoisomerism, geometrical isomerism, optical isomerism, reactions of alkenes, isotopic abundance, reactions of aromatic compounds, reaction mechanisms, mass spectroscopy | | Answer back | | Peter Battye | | 10 | | 4 | |
| Tackling chemical calculations | Balanced equations, moles, concentrations | | Top tips | | Alasdair Thorpe | | 10 | | 4 | |
| Malcolm Cunnington: The man in the white coat! | developmental research chemist, BP Amoco | | Encounter | | Lisa Cox | | 10 | | 4 | |
| Oxidation of alcohols: isomers reacting differently | Primary, secondary and tertiary alcohols, oxidation/reduction, tests for alcohols, ketones, carboxylic acids, aldehydes | | Lab page | | Alasdair Thorpe | | 10 | | 4 | |
| Carbon monoxide | Bonding, combustion, redox reactions, extraction of metals, dot and cross diagrams, electrochemical cells, enthalpy, entropy and Gibbs free energy changes | | Substances | | Peter Battye | | 10 | | 4 | |
| Chemistry, colour and light | dyes, fluorescence, flame tests, chemiluminescence | | In pictures | | Anne Hodgson | | 10 | | 4 | |
| Colour in diamonds | Electron orbitals, structure of diamond, atomic absorption spectroscopy, colour, crystal defects, electromagnetic spectrum | |  | | Rosslyn Nicholson | | 10 | | 4 | |
| Name that element competition: the winners! |  | | Making and doing | |  | | 10 | | 4 | |
| No worries! |  | | Chemistry on the web | | Chris Ennis | | 10 | | 4 | |
| Amines | Amines, reaction mechanisms, bases, reduction, shapes of molecules, nucleophiles | | Revision note | | Peter Battye | | 10 | | 4 | |
| Beagle 2: looking to explore a blurred vision of life on Mars | Isotopes, spectroscopic analysis, combustion, carbon cycle | | Chemistry in space | | Colin Pillinger | | 10 | | 4 | |
| A close encounter | Near Earth Asteroid Rendezvous, (NEAR) of Shoemaker spacecraft with asteroid Eros, X-ray fluorescence | | Back page | | Anne Hodgson | | 10 | | 4 | |
| The sweet smell of success |  | | Editorial | | Anne Hodgson | | 11 | | 1 | |
| Strike a light! | Oxidation, initiator, allotropes of phosphorus, extraction of phosphorus, chemical reactions in matches | |  | | John Emsley | | 11 | | 1 | |
| Gasses, Part 1 | Molecular collisions of gases, ideal gas equation, calculations of reacting quantities of gases | | Revision note | | Peter Battye | | 11 | | 1 | |
| Fizz! Making sherbet | Acid-base hydrogen-carbonate chemistry | | Making and doing | | John Holman | | 11 | | 1 | |
| Liquid breathing | Halogenoalkanes | | Wonders of chemistry | | Stephanie Makins | | 11 | | 1 | |
| Strontium | Group 2 Chemistry, Uses of strontium compound | | Substances | | Gordon Woods | | 11 | | 1 | |
| Chocolate gingers | Websites relating to food and drink | | Chemistry on the web | | Chris Ennis | | 11 | | 1 | |
| Food to dye for | Colourings found in foods | | In pictures | | Jane Spare | | 11 | | 1 | |
| A tough mistake | Chemistry of limestone and lime | | Chemical heroes | | Adam Hart-Davis | | 11 | | 1 | |
| The sweet smell of chemistry: designing new fragrance ingredients | Chromatography, fractional distillation, functional group, alcohols, aromatic compound, ketones, perfume | |  | | Amaëlle Cabannes | | 11 | | 1 | |
| The X-ray detective | From *The Periodic Table* | | Worth reading | | Primo Levi | | 11 | | 1 | |
| Redox rights and wrongs | Disproportionation, redox reactions, ionic half-equations, oxidation states, volumetric analysis | | Answer back | | Maurice Carmody | | 11 | | 1 | |
| Cool chemistry: what’s in an ice cream? | Colloids, depression of freezing point, phase separation, properties of amino acids, structure of sucrose, detergents | | A taste for chemistry | | Danny Keenan | | 11 | | 1 | |
| Thread of science | Famous Quaker scientists | | Back page | | Annie Hodgson | | 11 | | 1 | |
| So you want to be a chemist |  | | Editorial | | Anne Hodgson | | 11 | | 2 | |
| A paint under pressure | Methods for measuring pressure, transition-metal complexes, luminescence | |  | | Andy Shaw | | 11 | | 2 | |
| Calculations involving masses | Balanced equations, empirical formulae, the mole, Avogadro's constant | | Revision note | | Peter Battye | | 11 | | 2 | |
| Gallium | Periodicity, amphoteric, properties of group 3 elements, atomic weight/relative atomic mass, Mendeleev, periodic table | | Substances | | Gordon Woods | | 11 | | 2 | |
| The virtual library | Useful chemistry websites | | Chemistry on the web | | Chris Ennis | | 11 | | 2 | |
| Sniffing for extra marks | Reactions of alkenes, isometric - optical and geometrical | | Answer back | | Phil Barratt and David Ballard | | 11 | | 2 | |
| Antioxidants | Vitamins C and E | | In pictures | | Andy parsons | | 11 | | 2 | |
| It’s a radical world | Free Radical, Homolytic fission, cracking, chain reaction, ozone depletion, addition reaction, polymers | |  | | Andy Parsons | | 11 | | 2 | |
| Paved with titanium | Free radicals, catalysis, oxides of nitrogen in atmospheric pollution | | Wonders of chemistry | | Stephanie Makins | | 11 | | 2 | |
| Experimental error and error analysis: just how good are those results? | Experimental uncertainty, combining uncertainties | | Lab page | | Alasdair Thorpe | | 11 | | 2 | |
| Calculating carbon dioxide (CO2) | The greenhouse effect, calculations involving masses, moles and volumes of gases | | Making and doing | | Wilson Flood | | 11 | | 2 | |
| Cooked to a turn! Non-enzymic browning in food | Sugar chemistry, maillard reaction, kinetics of consecutive reactions, amino acids | | A taste for chemistry | | Bronek Wedzicha | | 11 | | 2 | |
| Glowing fireflies! Catalytic oxidation of ammonia | Catalytic oxidation of ammonia | | Back page | | David Griffiths | | 11 | | 2 | |
| 1% inspiration |  | | Editorial | | Anne Hodgson | | 11 | | 3 | |
| Get real! Chemistry’s in fashion | Intermolecular forces, Azo dyes, mordants, fast dyes vat dyes, fibre reactive dyes, useful substances from nature. Alizarin.Tyrian purple. Perkin’s mauve. | |  | | Vanessa Barker | | 11 | | 3 | |
| A reaction that speeds itself up | Catalyst, ether, ligand, raction rates, autocatalysis, catalysis, crown ethers | | Project page | | Derek Denby | | 11 | | 3 | |
| Selenium | Group trends/Group 6 chemistry, allotropes, metalloids, conductivity, photovoltaic effect, photoconductive effect, cofactor, amino acid | | Substances | | Gordon Woods | | 11 | | 3 | |
| Patterns in the periodic table | Group and periodic trends | | Answer back | | Norman Conquest | | 11 | | 3 | |
| Biodiesel | Triglycerides, esters, transesterification reactions | | In pictures | | Chris Ennis | | 11 | | 3 | |
| Fireworks, stink-bombs and magic bullet medicines | Radical, diatomic, cation, oxidation, polymers, drugs, UV, IR and NMR spectroscopy, electromagnetic spectrum, three-dimensional shape of molecules | |  | | Patrick Bailey | | 11 | | 3 | |
| Gases, part 2 | Real and ideal gases, partial pressure, mole fraction, gaseous equilibria Kp, Maxwell-Boltzmann distribution, activation energy | | Revision note | | Peter Battye | | 11 | | 3 | |
| A root to white sugar: how to turn a plant into something sweet | Hydrolysis, coagulation, sucrose, crystallisation, saccharides, invert sugar | | A taste for chemistry | | Graham Wright | | 11 | | 3 | |
| Saving reefs from grief | Electrolysis, calcium carbonate chemistry | | Wonders of chemistry | | Stephanie Smith | | 11 | | 3 | |
| Where there’s smoke there’s gravity | Combustion, diffusion, convection, gravity | | Back page | | Andrew Shaw | | 11 | | 3 | |
| Pretty poly! |  | | Editorial | | Anne Hodgson | | 11 | | 4 | |
| Getting tyred with chemistry! | Rubber, sulfur, *cis/trans*, polymer, alkenes, copolymer, colloids, polymerisation, tyres | |  | | Chris Ferguston | | 11 | | 4 | |
| Anyone for spaghetti and peas? | Polymers – crystalline and amorphous, relationship between structure and properties, metal structure, alloys | | Making and doing | | Gwen Pilling | | 11 | | 4 | |
| Understanding cocoa flavour | Peptide bonds, phenolic compounds, mucilaginous pulp, hydrolysis, fermentation, triglycerides, polyphenols, enzyme-catalysed reactions. Chocolate. | | A Taste for chemistry | | Elif Buyukpamukcu | | 11 | | 4 | |
| Know your Ks |  | | Top tips | | John Holman | | 11 | | 4 | |
| Oxidation and reduction at AS and A2 | Oxidation numbers, ion-electron equations, ionic equations, redox, electrode potential, disproportionation, half equations | | Answer back | | Graham Curtis | | 11 | | 4 | |
| Polymer protected professionals | Relationship between structure and properties in polymers | | In pictures | | Graham Dykes | | 11 | | 4 | |
| Plastics that conduct electricity | Polymers, oxidising agents, reducing agents, amorphous, delocalisation of electrons, conjugation, relationship between structure and properties in polymers | |  | | Peter Wright | | 11 | | 4 | |
| Confectionery product developer |  | | All in a day’s works | | Suzanne Tinkler | | 11 | | 4 | |
| Trends in period 3 elements | Periodicity, electronegativity, atomic radii, melting/boiling points, structure and properties, ionisation energy | | Revision note | | Peter Battye | | 11 | | 4 | |
| Self-healing plastics | Polymer composites, catalysed polymerisation reactions | | Wonders of chemistry | | Stephanie Smith | | 11 | | 4 | |
| Plastastic! | Websites relating to plastics and other polymers | | Chemistry on the web | | Chris Ennis | | 11 | | 4 | |
| Displaying vision: LEP | Delocalised electrons, conjugation, polymers | | Back page | | Valerie Grand | | 11 | | 4 | |
| What has chemistry ever done for us? |  | | Editorial | | Anne Hodgson | | 12 | | 1 | |
| Genetic chess by the light of a jellyfish | GFP, fluorescence, chemiluminescence and bioluminescence, excitation, electronic spectroscopy, proteins, genetic engineering | |  | | Andrew Shaw | | 12 | | 1 | |
| Hydrogen | Relative atomic mass, isotopes, pH, oxidation state, periodic table, electrode potentials | | Substances | | Gordon Woods | | 12 | | 1 | |
| Electronic structure and chemical bonding | Electronic structure, ionic bonding, covalent bonding, hydrogen bonding, dot-and-cross diagrams, intermolecular forces, bond angles, delocalisation | | Answer back | | Alastair Fleming | | 12 | | 1 | |
| How snails could help repair broken bones | Liquid crystals, calcium carbonate, microscopy | | Encounter | | Mairi Struthers | | 12 | | 1 | |
| Curly locks | Amino acids, protein structure, intermolecular forces, intramolecular forces, hydrogen bonds, disulfide bonds, hair | | Chemistry everywhere | | Gerri Ottewill | | 12 | | 1 | |
| Dyeing hair | Chemistry of temporary, semi-permanent and permanent hair dyes | | In pictures | | Gerri Ottewill | | 12 | | 1 | |
| Understanding electrode potentials | Electrode potential, dynamic equilibrium, redox reaction | | Top tips | | David Billett | | 12 | | 1 | |
| Infernal chemistry | Energy sources and sinks, radical chemistry, sulfur, sublimation, allotrope, homolytic fission, ultraviolet spectroscopy, infrared spectroscopy, equilibrium, geochemical cycles, photochemistry, electron bombardment | |  | | Edwin Kite | | 12 | | 1 | |
| Popcorn explosions | What makes corn pop? | | Making and doing | | Jo Belsten | | 12 | | 1 | |
| Beyond the molecule… | Intermolecular forces | | Back page | | Graham Dykes | | 12 | | 1 | |
| Into tomorrow’s world |  | | Editorial | | Anne Hodgson | | 12 | | 2 | |
| Silicon-based life! | Tetrahedral, activation energy, Group 4 chemistry, hydrolysis, semiconductors, kinetic and thermodynamic stability, lewis bases, nucleophines | |  | | Chris Ennis | | 12 | | 2 | |
| Roast beef and ashes to vegetarian shampoo | Hydrolysis, lipophile, hydrophile, esters, hydrolysis, saponification, trigylycerides, detergents, surface tension, surfactants | | Chemistry everywhere | | Tony Hargreaves | | 12 | | 2 | |
| Familiar and less familiar acids | Reaction mechanisms, carbonium ions, enthalpy change, buffers, electrophilic addition, strong and weak acids, acid-base titrations, acid-base indicators, pH | | Answer back | | Philip Barratt | | 12 | | 2 | |
| Using electrode potentials | Redox, oxidation states, standard redox potentials, half-equations, Nernst equation, complex formulation, equilibrium | | Top tips | | David Billett | | 12 | | 2 | |
| Black Magic?...High-value products from scrap tyres | Hydrocarbon, aromatic compounds, copolymer, catalysis, alkenes, pyrolysis, alkanes, industrial chemical feedstocks | |  | | Paul Williams | | 12 | | 2 | |
| The elements in group 2 | Electronic configurations, group trends, redox and ionic precipitation reactions | | Revision note | | Peter Battye | | 12 | | 2 | |
| Find you way with the web index | General chemistry websites | | Chemistry on the web | | Chris Ennis | | 12 | | 2 | |
| The barking dog | Reaction between nitric acid and carbon disulfide | | In pictures | | Paul Walton | | 12 | | 2 | |
| Making a standard solution | Moles, titration, primary standard | | Lab page | | Alasdair Thorpe | | 12 | | 2 | |
| Windows that clean themselves | Free radicals, catalysis, photcatalysis, hydrogen bonding | | Wonders of chemistry | | Stephanie Smith | | 12 | | 2 | |
| Microdiamonds | Bonding, structure and properties of diamond | | Back page | |  | | 12 | | 2 | |
| What’s in a name? It’s all Greek to me! |  | | Editorial | | Anne Hodgson | | 12 | | 3 | |
| New tricks for stacking bricks: modern approaches to organic synthesis | Oxidation and reduction, peptides, polymer, proteins, organic synthesis, thin-layer chromatography | |  | | Andrew Parsons | | 12 | | 3 | |
| Balancing equations | Law of conservation of mass, chemical formulae, balance equations, state symbols | | Top tips | | Gwen Pilling | | 12 | | 3 | |
| Fuelling the fire | Bond enthalpy, enthalpy change, combustion | | Answer back | | Maurice Carmody | | 12 | | 3 | |
| Titrations | Amount of substance, moles, molarity, volumetric technique, mole calculations | | Revision note | | Peter Battye | | 12 | | 3 | |
| Chromium | Transition metal, double salt, steroisomerism, redox, complex salt, primary standard, equilibrium | | Substances | | Gordon Woods | | 12 | | 3 | |
| Bubbles | Structure of a bubble, creating novel bubble shapes | | Making and doing | | Anne Hodgson | | 12 | | 3 | |
| Around the world with chemistry | Ideal gas law, exothermic reactions, enthalpy changes, polymers – Kevlar, nylon | | In pictures | | Scott Anstey | | 12 | | 3 | |
| Chemistry in the remotest corner of the solar system: the *Rosetta* mission | Beta decay, half-life, mass spectroscopy, radioactive decay, isotope abundance, gas chromatography, space | |  | | Andrew Shaw and Ian Wright | | 12 | | 3 | |
| Catalysis for success! | Catalysts, enzymes, activation enthalpy, chirality | | Chemistry on the web | | Chris Ennis | | 12 | | 3 | |
| All you should know about dough | Aerobic, anaerobic, yeast, amino acids, proteins, enzymes, hydrogen bonds | | Chemistry everywhere | | Sue Parsons | | 12 | | 3 | |
| Colorimetry | Absorbance, transmission, complementary colours, calibration curve, serial dilution | | Lab page | | Alasdair Thorpe | | 12 | | 3 | |
| Sniffing for trouble | Ion mobility spectrometer, walk through explosives detection portal | | Back page | | Jon Trux and Anne Hodgson | | 12 | | 3 | |
| Happy birthday DNA! |  | | Editorial | | Anne Hodgson | | 12 | | 4 | |
| The ultra blue: the story of ultramarine | Minerals, silicates, industrial flow charts, why substances are coloured, filtration, solubility of sodium salts, industrial chemistry | | Chemistry everywhere | | Don Ainley | | 12 | | 4 | |
| Particles, bonding and shapes | Van der Waals forces, dipoles, states of matter, molecular shapes, lone-pairs, bond angles, changes of state | | Answer back | | Peter Battye | | 12 | | 4 | |
| Microscopic toffee apples to build a brave new world | Oxidation state, oxidation, reduction, disproportionation, structure of metals, oxidation states, covalent bonding | |  | | Jason Lynam | | 12 | | 4 | |
| Modelling the double helix | DNA | | In pictures | | Anne Hodgson | | 12 | | 4 | |
| Bromine | Electrode potentials, alkanes and alkenes, energetic, redox, displacement, inter- and intramolecular forces, Hess’s Law | | Substances | | Gordon Woods | | 12 | | 4 | |
| Using oxidation states | Redox reactions, oxidation, reduction, disproportionation | | Top tips | | Chris Prior | | 12 | | 4 | |
| Mass spectrometry gets massive: Nobel prize for chemistry 2002 | Mass analyser, desorption, Dalton, fragmentation, electrospray, matrix assisted laser desorption ionisation, soft laser desorption, time of flight | |  | | Brendan Keely | | 12 | | 4 | |
| Nucleophiles | Nucleophilic substitution reactions, nucleophilic addition reactions, nucleophilic addition-elimination reactions | | Revision note | | Peter Battye | | 12 | | 4 | |
| DIY DNA | Nucleic acids, enzymes, extracting DNA | | Making and doing | | Joanne Ladds | | 12 | | 4 | |
| Twenty-first century batteries | Cells, electrodes, electrolyte | | Wonders of chemistry | | Stephanie Smith | | 12 | | 4 | |
| The double helix 50 years on | DNA, Evolution, Human Genome Project, hydrogen bonding, genetic fingerprinting | | Chemistry on the web | | Chris Ennis | | 12 | | 4 | |
| Airbags | Exothermic reactions, energetic and kinetic stability | | Back page | | John Holman | | 12 | | 4 | |
| Chemistry the super sleuth |  | | Editorial | | Anne Hodgson | | 13 | | 1 | |
| Sparkling cyanide | Oxidation, complexes, enzymes, haemoglobin | |  | | Bob Flanagan | | 13 | | 1 | |
| The chemistry of fingerprints | Conjugation, delocalisation, π-orbitals, fluorescence, polymerisation, amino acids, complex formation | | Forensic science | | James Wickens | | 13 | | 1 | |
| Get in the right group | Periodicity, atomic structure, relative atomic mass, isotopes | | Answer back | | Maurice Carmody | | 13 | | 1 | |
| What are van der Waals forces? | Intermolecular forces, electronegativity, dipoles | | Top tips | | Chris Prior | | 13 | | 1 | |
| Moles – the basics | Moles, Avogadro constant, Avogadro’s number | | Revision note | | Peter Battye | | 13 | | 1 | |
| Mendeleev, creator of the chemists’ logo | Atomic mass, atomic number, valency, amphoteric, periodic table | | Scientists of substance | | Gordon Woods | | 13 | | 1 | |
| Analyse this! | Websites relating to analytical chemistry | | Chemistry on the web | | Chris Ennis | | 13 | | 1 | |
| Mighty atoms! | Atomic theory, sub-atomic particles, atomic structure, isotopes, atomic mass, atomic number, valence, John Dalton | |  | | Anne Hodgson | | 13 | | 1 | |
| What is machair? | Acid-base chemistry, pH | | In pictures | | Margaret Ferguson | | 13 | | 1 | |
| Hydrogen sulfide | Periodic trends, molecular shape, intermolecular forces, redox reactions, weak acids | | Substances | | Peter Battye | | 13 | | 1 | |
| Observing and recording | Heating solids, solubility, making solutions, describing substances | | Lab page | | Alasdair Thorpe | | 13 | | 1 | |
| Graphite polyhedral crystals |  | | Back page | | Brandon Broll | | 13 | | 1 | |
| Would you like ice with that? |  | | Editorial | | Anne Hodgson | | 13 | | 2 | |
| Sense and sensor ability | Anion, cation, fluorescence, non-covalent interactions | |  | | David Smith | | 13 | | 2 | |
| Antarctic atmospheric chemistry | Gas chromatography-mass spectrometry (GC-MS), atmospheric chemistry | | All in a day’s work | | Dave Wevill | | 13 | | 2 | |
| Classifying organic reactions | Addition reactions, elimination reactions, substitution reactions, saturated and unsaturated compounds, alkenes, alcohols, aldehydes and ketones, reactions of benzene | | Top tips | | Andrew Parsons | | 13 | | 2 | |
| Organic synthesis | Organic mechanisms, nucleophiles, oxidation, curly arrows, electrophiles | | Answer back | | Graham Curtis | | 13 | | 2 | |
| John Newlands | Periodic table, atomic mass, atomic number | | Scientists of substance | | Gordon Woods | | 13 | | 2 | |
| Calculating pH | Dissociation, pH, acids and alkalis, logs | | Revision note | | Peter Battye | | 13 | | 2 | |
| Seeing with selenium | Radical, thiol, radicals, redox reactions, superoxides | | Wonders of chemistry | | Stephanie Smith | | 13 | | 2 | |
| Resurrecting the past | Atomic absorption spectroscopy (AAS), exogenous, hydrophobic, stable isotope, trace element, mass spectrometry, chromatography, archaeology | | Forensic chemistry | | Stephen Buckley | | 13 | | 2 | |
| British Antarctic Survey | Ozone layer, climate change, greenhouse gases | | Chemistry on the web | | Chris Ennis | | 13 | | 2 | |
| The formula for speed | Enthalpy of combustion, stoichiometric, oxidation, hydrocarbons, combustion, energy | |  | | Tony Hargreaves | | 13 | | 2 | |
| Life under ice | Density | | Back page | | Andrew Shaw | | 13 | | 2 | |
| The right chemistry |  | | Editorial | | Anne Hodgson | | 13 | | 3 | |
| Unravelling the secrets of palladium | Group 10 elements, catalysis, ligands, electron configuration, covalent bonds, ionic bonds, complexes | |  | | Ian Fairlamb | | 13 | | 3 | |
| Carboxylic acids | Le Chatelier’s principle, strong and weak acids, carboxylic acid formation, pH, dissociation, equilibria, equilibrium/dissociation constants, oxidation, aldehyde formation, reactions of carboxylic acids, esterification | | Revision note | | Peter Battye | | 13 | | 3 | |
| The heat is on | History of heating substances in the chemistry lab | | In pictures | | Anne Hodgson | | 13 | | 3 | |
| Titanium | Ligand, opacity, refractive index, refractory, sequesters, oxidation, reduction, metal extraction, electronic structure, catalysis, polymerisation | | Substances | | Chris Ennis | | 13 | | 3 | |
| Synoptic papers and synoptic questions | Organic synthesis, stereoisomerism, catalysis, polymers | | Answer back | | Alastair Fleming | | 13 | | 3 | |
| Electrochemically activated water | Corrosion, heavy metal, oxidising agents, pH, electrochemistry | |  | | Andrew Scott | | 13 | | 3 | |
| Behind the scenes at the National Gallery | Esters, gas chromatography, infrared spectroscopy, mass spectrometry, art, fakes, oil paintings, Energy-dispersive X-ray analysis, X-rays | | Forensic chemistry | | Catherine Higgitt | | 13 | | 3 | |
| Solution to a Sticky Problem: non-drip ice lollies | Cellulose, electrolyte, gel, intermolecular, polysaccaride, synergistic, viscoelasticity, viscosity, carbohydrates, gels, polymers | | Wonders of chemistry | | Stephanie Smith | | 13 | | 3 | |
| Harry Moseley | Periodic table, atomic mass (weight), atomic number, X-ray crystallography | | Scientists of substance | | Gordon Woods | | 13 | | 3 | |
| Molecules that grow on trees! | Buds that look like molecules | | Back page | | Anne Hodgson | | 13 | | 3 | |
| The Bunsen branches out |  | | Editorial | | Anne Hodgson | | 13 | | 4 | |
| Smelly Chemistry: aromas, odours, stenches and miasmas | Fatty acids, pheromone, thiol, vapour pressure, chirality, enantiomers, Graham’s law of diffusion | |  | | Tony Hargreaves | | 13 | | 4 | |
| Well here it is! How can I purify it? | Recrystallisation, solubility, purification | | Lab page | | Maurice Carmody | | 13 | | 4 | |
| Molecules in a virtual world | Cyclodextrins, twisted aromatics, porphyrins, painkillers | | In pictures | | Adrian Whitwood | | 13 | | 4 | |
| Iron | Hysteresis, magnesian, malleable, rust, steel making, electromagnets, magnetic liquids, magnetism | | Substances | | Chris Ennis | | 13 | | 4 | |
| Fritz Haber | Kieselguhr, Haber process for ammonia production, nitrogen fixation | | Scientists of substances | | Gordon Woods | | 13 | | 4 | |
| Longer responses | Epoxyethane, polymerisation, hazards | | Answer back | | Andy Bethell | | 13 | | 4 | |
| How to use curly arrows | Carbocation, curly arrows, radical, polar, non-polar, reaction mechanism, reaction intermediate, reaction mechanisms | | Top tips | | Gwen Pilling | | 13 | | 4 | |
| Drugs on money | Mass spectrometry, gas chromatography-mass spectrometry (GC-MS) | | Forensic chemistry | | Brenadan Keely | | 13 | | 4 | |
| Life history of an atmospheric particle | Crustal elements, rayleigh scattering, trophosphere, acid rain, atmospheric chemistry, catalysis, ozone layer | |  | | Jonathan Reid | | 13 | | 4 | |
| Tougher than a speeding bullet | Polymers | | Wonders of chemistry | | Stephanie Smith | | 13 | | 4 | |
| Transition metals in organic chemistry | Catalysis, transition metals, synthetic reactions | | Chemistry on the web | | Ian Fairlamb | | 13 | | 4 | |
| Three forms of elemental carbon | Allotropes – diamond, graphite, buckminsterfullerene | | Back page | | Adrian Whitwood | | 13 | | 4 | |
| Fuelling the future |  | | Editorial | | Anne Hodgson | | 14 | | 1 | |
| Biomineralisation: from materials to molluscs! | Bond length, crystallisation, enzyme catalysis, inorganic salts, precipitates | |  | | Jason Lynam | | 14 | | 1 | |
| Nitrogen oxides | Oxidation and reduction, oxidation states, equilibria, atmospheric pollution, radicals | | Substances | | Chris Ennis | | 14 | | 1 | |
| Electricity generation | Atmospheric emissions, enthalpy of combustion, energy, efficiency, coal, oil, gas, nuclear | | Fuelling the future | | John Vernon | | 14 | | 1 | |
| The Magnificent Seven: magic bullets of the twenty-first century | Magic bullets | | In pictures | | Andy Parsons | | 14 | | 1 | |
| Science, not art: ten scientists’ diaries | Diary of a physical chemist | | Worth reading | | Caroline Dessent | | 14 | | 1 | |
| Light: the fuel of life | Photosynthesis, electron transfer, energy, ATP, redox | | Chemistry on the web | | James Hobson | | 14 | | 1 | |
| Medicines: molecules for healing | Drug design, equilibrium, kinetics | | Medicines | | Tony Hargreaves | | 14 | | 1 | |
| Halons and the demise of the ozone | Homolytic fission, radicals, chain reactions, halogenoalkanes, nucleophilic substitution, rates of reaction, enthalpy changes | | Answer back | | Tony Lewis | | 14 | | 1 | |
| Chemical dingbats |  | | Making and doing | |  | | 14 | | 1 | |
| Joseph Priestley | Gases, properties of oxygen | | Scientists of substance | | Gordon Woods | | 14 | | 1 | |
| Measuring the rate of a chemical reaction | gas evolution, colorimetry, clock reactions, sampling methods | | Top tips | | Alasdair Thorpe | | 14 | | 1 | |
| Distillation | Purifying liquids, fractional distillation, vacuum distillation, bumping, simple distillation, steam distillation | | Lab page | | Maurice Carmody | | 14 | | 1 | |
| …like a diamond in the sky | A diamond at the core of a dwarf star | | Back page | | Anne Hodgson | | 14 | | 1 | |
| Teaching your grandmother |  | | Editorial | | Anne Hodgson | | 14 | | 2 | |
| Ageing gracefully: preserving images of the past | Radicals, polymerisation, GC-MS, paint, pigments | |  | | Catherine Higgitt | | 14 | | 2 | |
| Not all indicators are equal | Indicators, neutralisation, weak acids, pH, equilibria | | Lab page | | Chris Otter | | 14 | | 2 | |
| Sir William Ramsay | Noble gasses, periodicity, radioactive decay, spectroscopy | | Scientists of substance | | Gordon Woods | | 14 | | 2 | |
| Science in art | Paintings of scientists and experiments | | In pictures | | Anne Hodgson | | 14 | | 2 | |
| Tales of the unexpected | Electrophilic substitution, conjugation, nitration of benzene, absorption spectra, hydrogenation of alkenes, infrared spectroscopy | | Answer back | | Philip Barratt | | 14 | | 2 | |
| Ozone | Bond length, oxidation, electromagnetic radiation, molecular shape, thermodynamics, atmospheric chemistry | | Substances | | Chris Ennis | | 14 | | 2 | |
| Electricity, the next generation | Renewable fuel sources, fuel cells, environmental impact, shift reaction, waste, biomass, hydro, solar, wind, waves, tides, hydrogen | | Fuelling the future | | John Vernon | | 14 | | 2 | |
| Establishing a rate equation | Order of reaction, rate equations, rate constant, concentration-time graphs, rate-concentration graphs | | Revision note | | Alasdair Thorpe | | 14 | | 2 | |
| Chemistry by numbers | Precision, accuracy, units, orders of magnitude, orbitals | | Chemistry on the web | | Nick Wood | | 14 | | 2 | |
| Microwaves and their application to chemical synthesis | Energy, electromagnetic radiation, microwaves, polar molecules, reaction kinetics | |  | | Richard Douthwaite | | 14 | | 2 | |
| The future’s bright, the future’s…tritium | Radioactivity, isotopes, phosphorescence | | Wonders of chemistry | | Stephanie Smith | | 14 | | 2 | |
| Geothermal energy | Heat from the Earth’s core | | Back page | | John Vernon | | 14 | | 2 | |
| Chemistry past, present and future |  | | Editorial | | Anne Hodgson | | 14 | | 3 | |
| Ink: from quill to inkjet | Oxidation, polymers, environmental impact | |  | | Tony Hargreaves | | 14 | | 3 | |
| Acids, bases, pH and buffers | pH, acids and bases, buffers, indicators | | Answer back | | Graham Curtis | | 14 | | 3 | |
| Driving towards a cleaner future | Fuels, greenhouse gases, combustion, fuel cells | | Fuelling the future | | Catherine Macve | | 14 | | 3 | |
| Carbohydrates | Stereochemistry, hemiacetals, chirality, diastereoisomers, aldehydes, nucleophilic addition reactions, polysaccarides, polymers, sugars, alcohols | | Substances | | Chris Ennis | | 14 | | 3 | |
| Chemistry washes whiter than white | Polymers, hydrolysis, ion exchange, surfactants, zeolites, fluorescence | |  | | Tony Hargreaves | | 14 | | 3 | |
| Magnetic resonance imaging | NMR MRI | | In pictures | | John Lowe | | 14 | | 3 | |
| Luminol: shedding the light on ‘hidden’ evidence | Chemiluminescence, oxidation | | Wonders of chemistry | | Stephanie Smith | | 14 | | 3 | |
| Forensic scientist | Forensic science | | All in a day’s work | | Rachel Barnham | | 14 | | 3 | |
| A greener industry | Green chemistry, atom economy, catalysis, renewable resources, biomass, chemical manufacture, recycling | | Chemistry on the web | | Louise Summerton | | 14 | | 3 | |
| Thin layer chromatography | Chromatography, purity Rf values | | Lab page | | Maurice Carmody | | 14 | | 3 | |
| Brightening the future | Chemical physics, lasers, protein folding, amino acids | | Back page | | Nicola Tonge | | 14 | | 3 | |
| Sunlit chemistry |  | | Editorial | | Anne Hodgson | | 14 | | 4 | |
| Colourful nanoparticles | Nanotechnology, balancing equations, catalysis, oxidation states, properties of metals | |  | | Victor Chechik | | 14 | | 4 | |
| Any old ion? | Hydrated ions, charge density, pH | | Answer back | | Maurice Carmody | | 14 | | 4 | |
| Antifreeze | Depression of freezing point, proteins | | In pictures | | Lorna Dougan | | 14 | | 4 | |
| Melting points and boiling points | Determination of melting point, boiling point and purity | | Lab page | | Maurice Carmody | | 14 | | 4 | |
| Potty power: microbial fuel cells | Redox reactions, fuel cells, renewable resources | | Wonders of chemistry | | Stephanie Smith | | 14 | | 4 | |
| More chemical dingbats |  | | Making and doing | |  | | 14 | | 4 | |
| Born-Haber cycles | Enthalpy cycles, lattice enthalpies, enthalpy of formation, ionisation, born-haber cycles, electron affinity, Hess’s Law | | Top tips | | Chris Otter | | 14 | | 4 | |
| Go with the flow | Electrostatic attraction, catalysis, nitration of benzene | |  | | Andy Extance | | 14 | | 4 | |
| Uncle Tungsten | Periodicity | | Worth reading | | Oliver Sacks, Jason Lynam | | 14 | | 4 | |
| Global impact of fuels | Greenhouse gases, ozone, climate change, ozone, oxides of nitrogen, radicals, atmospheric chemistry, carbon dioxide CO2 | | Fuelling the future | | Alastair Lewis | | 14 | | 4 | |
| Sir Humphry Davy | Alkali metals, electrolysis, group 2 metals, chlorine, Davy lamps | | Scientists of substance | | Gordon Woods | | 14 | | 4 | |
| Swimming in a nano Sea | Nanoparticles | | Back page | | Adrian Whitwood | | 14 | | 4 | |
| Chemistry in the freezer |  | | Editorial | | Anne Hodgson | | 15 | | 1 | |
| Frozen in time | Atmospheric chemistry, mass spectrometry, chromatography, isotopes, infrared spectroscopy. Ice cores. ICP-MS. | |  | | Eric Wolff | | 15 | | 1 | |
| Equilibrium, enthalpy, entropy … and extras | Atmospheric pollution, partial pressures, periodic trends, reaction rates, pH, equilibria, entropy, oxidation states, strong/weak acids | | Answer back | | Maurice Carmody | | 15 | | 1 | |
| What’s in a word? | units, atomic mass, formula mass, homolytic and heterolytic fission, group, period, polarity, dipoles, molecular shape | | Top tips | | Chris Otter | | 15 | | 1 | |
| Performance fuel for people | Conservation of energy, carbohydrate energy stores, concentration of solutions, diffusion and osmosis, first law of thermodynamics | | Sporting chemistry | | Andy Extance | | 15 | | 1 | |
| Linus Pauling: controversial chemist | Electronegativity, protein structure, X-ray crystallography, bonding | | Scientists of substance | | Gordon Woods | | 15 | | 1 | |
| Cool chemistry: the search for the weakest chemical bond | Ionic and covalent bonding, diffraction, effects of temperature, bond energy, van der Waals interactions, first law of thermodynamics | |  | | Martin Cockett | | 15 | | 1 | |
| Chemical role models | Mendeleev, Dalton | | Chemistry on the web | | James Hobson | | 15 | | 1 | |
| Summary of reactions for aliphatic organic compounds | Organic reactions | | Revision note | | Alasdair Thorpe | | 15 | | 1 | |
| Carboxylic acids | Carboxylic acids, acidity, hydrolysis, diet and health, *cis-trans* isomerisation, fatty acids, saponification, esters, lubrication | | Substances | | Chris Ennis | | 15 | | 1 | |
| Inkvestigation | making iron gall ink | | Making and doing | | Sarah Beard | | 15 | | 1 | |
| The world’s smallest test tube | carbon nanotubes | | Back page | | Anne Hodgson | | 15 | | 1 | |
| Chemical record breakers |  | | Editorial | | Anne Hodgson | | 15 | | 2 | |
| Bioprospecting: an extracting science | Distillation, enzymes, medicinal chemistry, chromatography, natural products | |  | | Andy Extance | | 15 | | 2 | |
| Photochemical smog | Hydrocarbons, ismomerism, enthalpy change of combustion, catalytic converters | | Answer back | | Tony Lewis | | 15 | | 2 | |
| Chemistry has the right fibre for sporting glory | Hydrogen bonding, polymers, structure-related properties | | Sporting chemistry | | Geoff Parsons | | 15 | | 2 | |
| The science of surfing | websites relating to the science behind sports | | Chemistry on the web | | Carl Palmer | | 15 | | 2 | |
| Summary of reactions for benzene/aromatic compounds |  | | Revision note | | Alasdair Thorpe | | 15 | | 2 | |
| Chemical crossword |  | | Making and doing: | | Sarah beard & Anne Hodgson | | 15 | | 2 | |
| Chemistry of death and decay | ATP, amino acids, carbohydrates, lipids, nucleic acids | |  | | Tony Hargreaves | | 15 | | 2 | |
| Thomas Midgley: From problems with petrol to CFCs | Destruction of ozone layer, chlorofluorocarbons (CFCs), leaded fuels, tetraethyllead, halogenoalkanes (haloalkanes), greenhouse effect, radicals, refrigeration | | Scientists of substance | | Gordon Woods | | 15 | | 2 | |
| Probably the most important reactions in the world | Aldol reaction, Friedel-Crafts acylation, radical polymerisation, Claisen condensation, esterification | | In pictures | | Andrew Parsons | | 15 | | 2 | |
| Hydrogen: alkali metal or halogen? | Periodicity, ionisation energy, radicals, electronic structure, oxidation state/oxidation number | | Substances | | Peter Stanley | | 15 | | 2 | |
| Watch your language! | Endothermic and exothermic reactions, isomerism, covalent molecular structures, covalent giant structures, polymerisation, naming ions and elements, absorption adsorption | | Top tips | | Chris Otter | | 15 | | 2 | |
| Showcase Science 2005 |  | | Encounter | |  | |  | |  | |
| Little Dragon | Exothermic reactions | | Back page | | Anne Hodgson | | 15 | | 2 | |
| Exploring with chemistry |  | | Editorial | | Anne Hodgson | | 15 | | 3 | |
| Alumentary, my dear Watson | Dyeing, crystallisation, oxidation, location of chemical industry | |  | | Adam Hart-Davis | | 15 | | 3 | |
| Gilbert N. Lewis: his acids and bases | Lewis acids and bases, covalent bonding, electronic structure, dot-cross diagrams, Brønsted-Lowry theory of acids and bases | | Scientists of substance | | Gordon Woods | | 15 | | 3 | |
| Designer magic sponges | Evaporation, non-steroidal anti-inflammatory drugs (NSAIDs), painkillers, polymer | | Sporting chemistry | | Andrew Parsons | | 15 | | 3 | |
| Keep in Contact | Contact process, yield, equilibrium, uses of sulfuric acid | | Answer back | | Maurice Carmody | | 15 | | 3 | |
| Chemical sudoku |  | | Making and doing | | Anne Hodgson | | 15 | | 3 | |
| From creaking joints to saving a steamship…how rusty is your chemistry? | Oxidation and reduction, electrochemical cells, reactivity of metals | | Revision note | | Chris Otter | | 15 | | 3 | |
| Spectroscopy, mechanisms and calculations online | Infrared spectroscopy, curly arrows, organic mechanisms, molecular mass, nucleophilic substitution, electrophilic substitution | | Chemistry on the web | | Adam Bridgeman | | 15 | | 3 | |
| Lithium | Alkynes, electrochemical cells, adsorption of carbon dioxide, organometallic chemistry, formation of elements (nucleogenesis), reduction, deuteration, extending carbon chains | | Substances | | Chris Ennis | | 15 | | 3 | |
| Electrode potentials | Setting up electrochemical cells, measuring cell emfs, identifying positive and negative electrodes | | Lab page | | Alasdair Thorpe | | 15 | | 3 | |
| Detecting CO2 the hunt for greenhouse-gas emissions | infrared (IR) spectroscopy, greenhouse gases, Beer-Lambert Law, atmospheric pollution, carbon dioxide | |  | | Timothy Harrison,  Dudley Shallcross & Stephen Henshaw | | 15 | | 3 | |
| Camping with chemistry | polymers, insect repellents, alkanes | | In pictures | | Anne Hodgson | | 15 | | 3 | |
| Iron meteorites on Mars |  | | Back page | | Andrew M Shaw | | 15 | | 3 | |
| The philosopher’s stone and the elixir of life |  | | Editorial | | Anne Hodgson | | 15 | | 4 | |
| Bread-and-butter issues: the chemistry of margarine | Carboxylic fatty acids, emulsions, esters | |  | | Simon Rees | | 15 | | 4 | |
| Glenn T. Seaborg: creator of elements | Periodic table, nuclear reactions, heavy elements, isotopes | | Scientists of substance | | Gordon Woods | | 15 | | 4 | |
| Elemental sudoku |  | | Making and doing | | Tim Joliff | | 15 | | 4 | |
| Why do endothermic reactions happen? | Enthalpy, entropy, laws of thermodynamics, Hess’s law, Gibbs free energy | | Answer back | | Graham Curtis | | 15 | | 4 | |
| A world of science just a click away | Atmospheric chemistry, gas chromatography, Beer-Lambert law, Ozone levels | | Chemistry on the web | | Carl Palmer | | 15 | | 4 | |
| What’s in a bone? | Polymers, hydrogels, composite materials, tissue engineering | |  | | Zoë Schnepp | | 15 | | 4 | |
| Tracking your degree application |  | | Encounter | | Andrew Parsons | | 15 | | 4 | |
| Catching the cheats: detecting drugs in sport | Polymerisation, biosensors, gas chromatography, mass spectrometry, GC-MS | | Sporting chemistry | | Carl Percival, Tim Harrison & Dudley Shallcross | | 15 | | 4 | |
| Rocks that glow in the dark | minerals | | In pictures | | Monica Price | | 15 | | 4 | |
| Hess’s law | Enthalpy, enthalpy cycles, endothermic and exothermic reactions | | Top tips | | Rachael Dumbill | | 15 | | 4 | |
| I’m forever blowing colourful bubbles | Structure of a bubble, dyes, surfactants | | Back page | | Anne Hodgson | | 15 | | 4 | |
| Nanotechnology |  | | Editorial | | Anne Hodgson | | 16 | | 1 | |
| Waste not, want not! | Green chemistry, clean technology, extraction of chemicals, antioxidants, renewable resources | |  | | Louise Summerton | | 16 | | 1 | |
| Nanochemistry, delivering new medicines? | Polymers, medicinal chemistry, lock-and-key hypothesis, gene therapy | | Nanotechnology | | David K Smith | | 16 | | 1 | |
| Lise Meitner, radiochemist, physicist and co-discoverer of nuclear fission | α-decay, β-decay nuclear fission, radioactivity | | Scientists of substance | | Gordon Woods | | 16 | | 1 | |
| The nano-world wide web | nanotechnology | | Chemistry on the web | | Carl Palmer | | 16 | | 1 | |
| Fusion, powering the future? | Nuclear fusion, materials chemistry, nuclear fission | |  | | Chris Warrick | | 16 | | 1 | |
| Stimulating chemistry | menthol, vanillin, caffeine, limonene, pinene | | In pictures | | Adrian Whitwood | | 16 | | 1 | |
| Guidelines for drawing organic structures |  | | Top tips | | Andrew Parsons | | 16 | | 1 | |
| Bonding, sticking atoms together | Ionic bonding, covalent bonding, dative covalent or coordinate bonds, metallic bonding | | Revision note | | Adapted from Student Unit Guides published by Philip Allan Updates | | 16 | | 1 | |
| Poetic chemistry |  | | Making and doing | | Anne Hodgson | | 16 | | 1 | |
| Driven by enthalpy | Hydrocarbons, fuels, enthalpy change of combustion | | Answer back | | Maurice Carmody | | 16 | | 1 | |
| How to be a lab success, using QuickFit apparatus | clamps and bosses, attaching rubber tubing, using a separating funnel | | Lab page | | Zahoor Ul-Haq | | 16 | | 1 | |
| DNA origami | Nanotechnology | | Back page | | Anne Hodgson | | 16 | | 1 | |
| From quackery to medical science |  | | Editorial | | Anne Hodgson | | 16 | | 2 | |
| Chemistry that gets right up your nose | Distillation, functional groups extraction of natural products, chirality, intermolecular interactions, fragrance, perfume | |  | | Tim Harrison | | 16 | | 2 | |
| Ida Tacke-Noddack, co-discoverer of rhenium and nuclear fission | Periodic table, nuclear fission, spectroscopy | | Scientists of substance | | Gordon Woods | | 16 | | 2 | |
| Copper on tap? | Copper chemistry, minerals, metal extraction | | In pictures | | Monica Price | | 16 | | 2 | |
| Practical internet | websites showing practical chemistry | | Chemistry on the web | | Carl Palmer | | 16 | | 2 | |
| Ironing out the problem | Transition metals, complex ions, catalysis, redox reactions, electrode potential, electron configuration | | Answer back | | Maurice Carmody | | 16 | | 2 | |
| Cement, from cowpats and mud to Le Chatelier | Acid-base reactions, acidic and basic oxides, exothermic reactions, greenhouse gases, tests for metal and non-metal ions | |  | | Tony Hargreaves | | 16 | | 2 | |
| Shapes in inorganic chemistry | Bond angles, chirality, isomerism, coordination number | | Top tips | | Jason Lynam | | 16 | | 2 | |
| Interpreting infrared spectra | Electromagnetic spectrum, molecular vibrations, glossary of functional groups | | Revision note | | Alisdair Thorpe | | 16 | | 2 | |
| Nanotechnologists inspired by nature: building new model enzymes | Enzymes, coordination compounds, spectroscopy infrared (IR) spectroscopy, X-ray crystallograhy, mass spectrometry, nuclear magnetic resonance (NMR) | | Nanotechnology | | Kathryn Harkup | | 16 | | 2 | |
| A trip to the apothecary’s | pharmacy jars | | Back page | | Anne Hodgson | | 16 | | 2 | |
| Dr Jekyll and Dr Who |  | | Editorial | | Anne Hodgson | | 16 | | 3 | |
| How green is my company? | Environmental chemistry, Titrations, Redox reactions, Atomic absorption spectroscopy, Mass spectrometry, Green chemistry, inductively coupled plasma (ICP) in environmental analysis, atomic emission spectroscopy (AES). | |  | | Andy Extance | | 16 | | 3 | |
| Classifying Organic Reactions | Addition reactions, Substitution reactions, Electrophilic reactions, Elimination reactions, Nucleophilic reactions | | Revision note | | Alasdair Thorpe | | 16 | | 3 | |
| Extreme internet |  | | Chemistry on the web | | Carl Palmer | | 16 | | 3 | |
| How quickly does bleach deteriorate? | Oxidation, Thermochemical titration, Titrations | | Project page | | Derek Denby | | 16 | | 3 | |
| Supercritical Carbon Dioxide | Sublimation, Green chemistry, Decaffeination, nucleophilic addition, Phase diagrams, Industrial processes, Hydrogenation | | Substances | | Catherine Smith | | 16 | | 3 | |
| Rosalind Franklin: physical chemist, X-ray crystallographer and DNA pioneer | X-ray crystallography, Diffraction, Structure of DNA | | Scientists of substance | | Gordon Woods | | 16 | | 3 | |
| A synoptic organic question | Reaction mechanisms, Nucleophilic addition reactions, Electrophilic addition reactions, Optical isomers, Elimination reactions, Geometrical isomerism | | Answer back | | Graham Curtis | | 16 | | 3 | |
| Fruity electricity: Grätzel solar cells | Grätzel solar cells, light energy | | Encounter | | Roger J. Mortimer, David R. Worrall and Dimple Patel | | 16 | | 3 | |
| Water and Life | Hydrogen bonding, protein structure, Entropy | |  | | Seishi Shimizu | | 16 | | 3 | |
| Liquid Crystals: The fourth state of matter | Liquid crystals, Polarised light, States of matter, Chirality | | Nanotechnology | | Avtar Matharu and Paul Watson | | 16 | | 3 | |
| Sniffer bees | pheromones, detecting drugs and explosives | | Back page | | Anne Hodgson | | 16 | | 3 | |
| The distaff side of chemistry |  | | Editorial | | Anne Hodgson | | 16 | | 4 | |
| The forgotten elements: the lanthanide series | heavy elements, periodic table, electron configurations, alkylation reactions, actinides, oxidation states, catalysis, chelating ligands, ion exchange chromatography, noble metals, rare earths, orbitals, paramagnetism, stoichiometry | |  | | Nigel Lowe | | 16 | | 4 | |
| Extremophiles in New York | Catalysis, enzymes, osmosis, sugars, metabolism | | Encounter | | Lorna Dougan | | 16 | | 4 | |
| Marguerite Perey: discoverer of francium | Periodic table, alkali metals, radioactivity | | Scientists of substance | | Gordon Woods | | 16 | | 4 | |
| How to be a lab success: titrations, crystals, separating and mixing | Using a burette, separating fractions | | Lab page | | Zahoor Ul-Haq | | 16 | | 4 | |
| Drawing lab diagrams | Drawing apparatus | | Top tips | | Chris Otter | | 16 | | 4 | |
| When superconductors get crabby | Structure of metals, magnetism, crystal structure, superconductors, ceramics | | Nanotechnology | | Zoë Schnepp | | 16 | | 4 | |
| Bright sites: in search of the most useful chemistry websites | units, periodic table, general chemistry sites | | Chemistry on the web | | Carl Palmer | | 16 | | 4 | |
| Silicones and Silanes | polymers, adhesion, Group 14 chemistry, nucleophilic displacement, catalysis, electronegativity, silica, Grignard reagent | | Substances | | Andy Extance | | 16 | | 4 | |
| Extracting chemistry with a metal | metal extraction | | Answer back | | David Billett | | 16 | | 4 | |
| Kill or cure? Carbon monoxide as a therapeutic agent | Protein structure, enzymes, combustion, drug development, metabolism, NADPH | |  | | Ian Fairlamb & Jason Lynam | | 16 | | 4 | |
| Raindrops on Titan | photochemistry, atmospheric chemsitry | | Back page | | Andrew Shaw | | 16 | | 4 | |
| Together we can save the world |  | | Editorial | | Anne Hodgson | | 17 | | 1 | |
| From gaslight to nuclear power: chemistry of the actinides | f-block chemistry, Radioactive decay, Nuclear fission, Gamma radiation, Alpha radiation, Beta decay | |  | | Nigel Lowe | | 17 | | 1 | |
| Representing chemical reactions | Curly arrows, Transition states, Haber process, Reaction intermediates, Organic reactions | | Top tips | | Andrew Parsons | | 17 | | 1 | |
| Elementary crossword |  | | Making and doing | | Graham Quartly | | 17 | | 1 | |
| Natural climate variability | Ketones, Lipids, Gas chromatography, Mass Spectrometry, Isotopes, Climate change | | Chemistry and climate | | Brendan Keely | | 17 | | 1 | |
| Modelling the atom | Atomic structure, Alpha decay | | How chemistry works | | Chris Otter | | 17 | | 1 | |
| Polyesters: plastics of the future | Polymers, Nucleophiles, Metal complexes, Sustainability, Stereochemistry, Catalysis, Chirality, Gel-permeation chromatography | |  | | Ruth Howard | | 17 | | 1 | |
| Two pyrones and beyond… | Esters, Natural products, Medicinal chemistry | | Encounter | | Gerard McGlacken | | 17 | | 1 | |
| A weighty problem? | Organic groups, Chirality, Analytical techniques, Paper chromatography, NMR, Infrared spectroscopy (IR) | | Answer back | | Maurice Carmody | | 17 | | 1 | |
| Organic growth from Deutsche Chemiker | Classification of compounds, Functional group, Periodic table, Spectroscopy | | Scientists of substance | | Gordon Woods | | 17 | | 1 | |
| Molecule of the month | Free Energy, Redox chemistry, Chirality | | Chemistry on the web | | Carl Palmer | | 17 | | 1 | |
| Dragon’s breath | Flame tests for metal ions | | Back page | | Anne Hodgson | | 17 | | 1 | |
| All in the genes? |  | | Editorial | | Anne Hodgson | | 17 | | 2 | |
| Chips in everything | Chemical bonding, Electron energy levels, Semiconductors, Metallic structure, Industrial inorganic chemistry | |  | | Andy Extance | | 17 | | 2 | |
| Seeing the Nanoworld: atomic structures and reaction dynamics | Electron microscopy, Nanomaterials, Nanoparticles | | In pictures | | Professor Pratibha L. Gai | | 17 | | 2 | |
| The great communicator | Climate change, Carbon-neutral, Renewable energy, Global warming, Greenhouse effect, Solar power, CO2 emissions | | Chemistry on the web | | Carl Palmer | | 17 | | 2 | |
| Trace elements (puzzle) |  | | Making and doing | |  | | 17 | | 2 | |
| The perfect solution: taking catalyst recycling to a new level | Catalysis, Complexes, Phases | | Focus on industry | | Harriet Naylor | | 17 | | 2 | |
| Better Looking, Better Living, Better Loving: how chemistry can help you achieve life’s goals | Nail varnish, Spices, Capsaicin, Chillies | | Worth reading | | Anne Hodgson | | 17 | | 2 | |
| Big smile! Toothpaste chemistry | Calcium chemistry, Toothpaste formulation, pH, Industrial applications | |  | | Linda Sellou & Tim Harrison | | 17 | | 2 | |
| The Antarctic ozone hole | Radical reactions, Climate change, Ozone destruction | | Chemistry and climate | | Anna Jones | | 17 | | 2 | |
| Genning up on nitrogen | Nucleophile, Amines, Organic mechanisms, Bases, Electrophilic substitution, Amino acids, Peptides | | Answer back | | Graham Curtis | | 17 | | 2 | |
| More organic growth from Deutsche Chemiker: Liebig and Wőhler | Alkyl/aryl radicals, Isomerism, Functional groups, Metal halides | | Scientists of substance | | Gordon Woods | | 17 | | 2 | |
| Fireflies: a postcard from Sri Lanka | Chemiluminescence | | Back page | | Chris Ennis | | 17 | | 2 | |
| Chemistry, friend or foe? |  | | Editorial | | Anne Hodgson | | 17 | | 3 | |
| Green hydrogen from black diamonds | Climate change, Acid rain, Fuels, Combustion, Haber process | |  | | Stuart Walker | | 17 | | 3 | |
| Oxytocin: the molecule of love? | Amino acids, Condensation reaction, Neurotransmitter, Peptides, Proteins, Receptor, Resonance | | Substances | | Andrew Parsons | | 17 | | 3 | |
| The noble gases: not so unreactive after all | Periodic table, Radioactive decay, Electron configuration, reduction/oxidation (redox) reactions | | How chemistry works | | Jason Lynam | | 17 | | 3 | |
| Radioactive Sudoku |  | | Making and doing | |  | | 17 | | 3 | |
| Internet dating | Radiocarbon dating, Climate change, Solid-state chemistry, Isotopes, Minerals | | Chemistry on the web | | Carl Palmer | | 17 | | 3 | |
| The benefits of bracing sea air | Global warming, Atmospheric chemistry, Greenhouse gases, Halogen chemistry, Ozone destruction, radicals | | Chemistry and climate | | Lucy Carpenter | | 17 | | 3 | |
| Let chemists do the washing-up | Surfactants, Green chemistry, Carbohydrates | |  | | John Emsley | | 17 | | 3 | |
| Seeds of structural organic chemistry: August Kekulé | Valency, Bonding, Molecular structure | | Scientists of substance | | Gordon Woods | | 17 | | 3 | |
| Identifying an unknown organic compound | Alkenes, Aldehydes, Ketones, Halogenoalkanes, Alcohols, Carboxylic acids | | Lab page | | Alasdair Thorpe | | 17 | | 3 | |
| Changing gear to AS | Intermolecular forces, Bonding, Isomers, Rates of reaction, Catalysts, Radicals, Equilibrium | | Answer back | | David Billett | | 17 | | 3 | |
| Trends in ionisation energy | Periodicity, Hund’s rule, Electronic configuration | | Revision note | | Rachael Dumbill | | 17 | | 3 | |
| …and then the heav’n espy | Stained glass, Coloured glass | | Back page | | Anne Hodgson | | 17 | | 3 | |
| Hold the front page! |  | | Editorial | | Anne Hodgson | | 17 | | 4 | |
| Life in a different solvent: astrobiology on Titan | Micelles, Origins of life, Hydrocarbons, Liposomes, Membranes | |  | | Andrew Shaw | | 17 | | 4 | |
| Getting plastered | Gypsum, Hydrated calcium sulfate, Plaster of Paris | | In pictures | | Monica Price | | 17 | | 4 | |
| The chemistry of indoor air | Reactions of ozone, Sick building syndrome, Terpenes, Radical chemistry, Indoor air quality | | Chemistry and climate | | Nicola Carslaw | | 17 | | 4 | |
| Chemistry in car engines | Combustion, Alkanes, Atmospheric chemistry, Oxides of nitrogen, Hydrocarbon fuels | | Chemistry on the web | | Julian Wilkinson | | 17 | | 4 | |
| Glorious glycerol | Percentage yields, Esterification, Oils, Carboxylic acids, Hydrogen bonding, Classifying reactions | | Answer back | | Maurice Carmody | | 17 | | 4 | |
| Can biomass save the planet? | Renewable resources, Clean technology, Biomass, Polymers | |  | | Fabian Deswarte | | 17 | | 4 | |
| How the periodic table was born | Periodicity, Horizontal periods, Vertical groups, Chemical trends | | How chemistry works | | Sue Parsons | | 17 | | 4 | |
| Adolf von Baeyer and Victor Meyer | Empirical, molecular and structural formulae, Stereochemistry, Ideal gas law, Isomerism | | Scientists of substance | | Gordon Woods | | 17 | | 4 | |
| Platinum: not just for jewellery | Catalysis, Fuel cells, catalytic converter | | Substances | | Philip Hughes | | 17 | | 4 | |
| Wonderful woad and incredible indigo | Natural dyes | | Back page | | Anne Hodgson | | 17 | | 4 | |
| From pills to plasters |  | | Editorial | | Anne Hodgson | | 18 | | 1 | |
| Alien amino acids | Chirality, Polarised radiation, Amino acids, Electromagnetic radiation | |  | | Christina Line | | 18 | | 1 | |
| The fight against bacteria: every cloud has a silver lining | Colloidal silver, Antimicrobial agents, MRSA, Antibiotics, Nanoparticles, Water purification, Wound dressings | | Substances | | Joanna Buckley | | 18 | | 1 | |
| Getting into shape with isomers | Position isomers, Naming ketones, Stereoisomerism, Alkene | | Answer back | | Maurice Carmody | | 18 | | 1 | |
| Drawing reaction mechanisms | Acids and bases, Nucleophile, Curly arrows, Polarity, Electrophile | | Top tips | | Andrew Parsons | | 18 | | 1 | |
| Precious Medicines | Oxidation states, Stereochemistry (*cis-trans* isomerism), Metal complexes | | Medicinal chemistry | | Holly Douglas | | 18 | | 1 | |
| Avogadro: count and counting chemist | Mole, Avogadro’s law, Avogadro constant, Law of combining volumes, Avogadro number, Ideal gas law | | Scientists of substance | | Gordon Woods | | 18 | | 1 | |
| iExperiment | iPod, MP3 players, Chemistry podcasts, Periodic table, Algorithms | | Chemistry on the web | | Carl Palmer | | 18 | | 1 | |
| Chemistry of slimming | Energy, Carbohydrates, Fats, Proteins | |  | | Tony Hargreaves | | 18 | | 1 | |
| The disguises of carbon | Allotropes, Fullerenes, Bonding | | In pictures | | Laura Stanhope | | 18 | | 1 | |
| The case of the missing scientist: part 1 | NMR | | Chemystery | | Mary Wood | | 18 | | 1 | |
| Chemistry detectives | Infrared spectroscopy, Pigments, Analysing paintings, Art conservation | | Back page | | Mary Wood | | 18 | | 1 | |
| Dishing the dirt |  | | Editorial | | Anne Hodgson | | 18 | | 2 | |
| The beginnings of a discovery | Surfactants, Liquid crystals, Porous materials, Micelles, Materials chemistry | |  | | Philip Hughes and Richard Ward | | 18 | | 2 | |
| Communicating chemistry | Smelting and analysing ores, Oxidation states, Radicals, Classifying reactions, Half-equations, Acid-base reactions, *d*-block elements, Balancing equations, Hydrolysis, Electrolysis, Redox reactions | | Answer back | | David Billett | | 18 | | 2 | |
| Acids and bases: a whistle-stop tour | Log scales, Acid dissociation constants Ka, pH, Equilibrium constants Kc, Strong and weak acids | | Revision note | | Rachael Dumbill | | 18 | | 2 | |
| Don’t hold your breath: the diagnostic potential of breath analysis | Mass spectrometry, Protonation | | Medicinal chemistry | | Margaret O’Hara and Christopher Mayhew | | 18 | | 2 | |
| Drawing radical reaction mechanisms | Abstraction, Bond enthalpy, Initiation, Propagation, Single-headed curly arrows, Termination, addition, Chain reaction, Initiator, Radical, Substitution | | Top tips | | Andrew Parsons | | 18 | | 2 | |
| A magic mushroom | Catalysis, Oxidation, Transition metals, Metal complexes | |  | | Emma Dux | | 18 | | 2 | |
| Call to A-level students: preparations begin for Showcase Science 2009 | Sixth form conference | | Encounter | | Mo Afzal | | 18 | | 2 | |
| John Dalton: Quaker scientist and law maker | Atomic theory, Atomic mass, Gas laws | | Scientists of substance | | Gordon Woods | | 18 | | 2 | |
| The case of the missing scientist: part 2 | Infrared spectroscopy (IR) | | Chemystery | | Mary Wood | | 18 | | 2 | |
| Why do onions make you cry? | Sulfur compounds, Allinase enzyme | | Back page | | Mary Wood | | 18 | | 2 | |
| Duck! Chemistry at work |  | | Editorial | | Anne Hodgson | | 18 | | 3 | |
| Modelling the cell: investigating new medicines | Polymers, Medicinal chemistry, Langmuir films, Phospholipids | |  | | Joshua Howgego | | 18 | | 3 | |
| Watch your language | Giant covalent/macromolecular structures, Crystal structure, Ionic structures, Metals, Salts, Group VII (Group 17) elements (halogens), Trends, Reactivity | | Answer back | | Graham Curtis | | 18 | | 3 | |
| Acids and bases: developing ideas further | pH, pH curves, Buffers, Indicators, Dissociation constants, Equilibrium constants | | Revision note | | Rachael Dumbill | | 18 | | 3 | |
| Eurekas and Euphorias: the Oxford Book of Scientific Anecdotes | Kekulé, Benzene, Saccharin, Cyclamate sweeteners, Nitrocellulose (gun cotton) | | Worth reading | | Emma Dux | | 18 | | 3 | |
| Deadly beauty | Alkaloids, Drug development | | Substances | | Trevor Critchley | | 18 | | 3 | |
| Curing cancer with chemistry | Enzymes, Cellular chemistry, Cisplatin | | Medicinal chemistry | | Emma Welsh | | 18 | | 3 | |
| Life in extreme environments | Gas chromatography, Proteins, DNA | |  | | Preeti Kaur, Tim Harrison | | 18 | | 3 | |
| Van der Waals: famous for recognising feeble forces | Ideal gas law, Intermolecular forces | | Scientists of substance | | Gordon Woods | | 18 | | 3 | |
| The case of the missing scientist: part 3 | Mass spectrometry | | Chemystery | | Mary Wood | | 18 | | 3 | |
| What is everything made from? | Particulate nature of matter, Brownian motion, Atoms, Diffusion | | How chemistry works | | Sue Parsons | | 18 | | 3 | |
| Dinosaur mummy | Fossils, Siderite (iron (II) carbonate), DNA, Peptides, Amino acids, Oxidation state, Analytical techniques | | Back page | | Anne Hodgson | | 18 | | 3 | |
| Chemistry can raise a smile |  | | Editorial | | Anne Hodgson | | 18 | | 4 | |
| Ricin and the rolled umbrella | Carboxylic acids, Polypeptides, Condensation reaction, Proteins | |  | | John Emsley | | 18 | | 4 | |
| Hydrogen bonds: holding the world together | Intermolecular forces, Structure and properties of water, DNA, Protein structure | | In pictures | | William Attwood | | 18 | | 4 | |
| Hydrogen bonds: experiments to try at home | Density, Hydrogen bonding, Specific heat capacity, Enthalpy change of vaporisation, Periodic trends, Surface tension | | Making and doing | | Lorelly Wilson | | 18 | | 4 | |
| Sulfuric acid | Enthalpy, Equilibria, Collision theory, Hess’s Law, Catalysis | | Answer back | | Maurice Carmody | | 18 | | 4 | |
| Biomedical researcher:  Anthony Macdonald | Drug discovery, Organic synthesis, Pharmaceutical chemistry | | All in a day’s work | | Anne Hodgson | | 18 | | 4 | |
| Thermochemistry | Combustion, Fire triangle, Enthalpy changes, Polymers | |  | | Tony Hargreaves | | 18 | | 4 | |
| Salbutamol: saving your breath | Drug discovery, Organic synthesis, Molecular structure | | Medicinal chemistry | | Isaac Bruce | | 18 | | 4 | |
| Max Perutz and the secret of life | Structure of haemoglobin, Molecular biology | | Worth reading | | Robin Perutz | | 18 | | 4 | |
| The case of the missing scientist: part 4 | ICP-AES (Inductively coupled plasma atomic emission spectroscopy) | | Chemystery | | Mary Wood | | 18 | | 4 | |
| Michael Faraday | Anion, Anode, Capacitance, Cathode, Cation, Electrode, Electrolysis, Electrolyte, Ion, Liquefaction of chlorine, Benzene | | Scientists of substance | | Gordon Woods | | 18 | | 4 | |
| Periodic Table | Atomic number, Mass number, Relative atomic mass, Isotopes | | Back page | | Anne Hodgson | | 18 | | 4 | |
|  | New website | | Editorial | | Anne Hodgson | | 19 | | 1 | |
| Chemiluminescence | Atomic energy levels, bonding, catalysis, curly arrows, exothermic reactions, forensic analysis, rates of reaction, redox reactions | |  | | Emma Welsh | | 19 | | 1 | |
| Boyle’s and Charles’ laws: A load of hot air? | Gas laws, ideal gas | | How chemistry works | | Mary Wood | | 19 | | 1 | |
| Finding a fix | Equilibria, Haber process, Le Chatelier’s principle, nitrogen fixation, oxidation, reduction | | Substances | | Emma Dux | | 19 | | 1 | |
| The Martian Poles | Carbon dioxide, atmospheric chemistry, spectroscopy, solids, gases, hydrogen bonds, water molecules, ice crystals, hexagonal structures | | In pictures | | Andrew Shaw | | 19 | | 1 | |
| Natural products: Chemistry and medicinal drugs | How science works, natural products, solvent extraction, synthesis | |  | | Zeinab Mosadeghzad & Tim Harrison | | 19 | | 1 | |
| The polymer predicament-Making plastics from plants | Chirality, climate change, sustainability, esters, polymers | | Design for the future | | Louise Dommett | | 19 | | 1 | |
| Vitamin C | Acidity, colour chemistry, dot and cross diagrams, radicals, calculations involving weak acids, delocalisation of electrons, molecular formulae, redox reactions | | Answer back | | Maurice Carmody | | 19 | | 1 | |
| Face the truth | Free radicals, UV, nitric oxide, hydroxyl radicals, antioxidants | | Back page | | Alan Reay | | 19 | | 1 | |
| Copernicium | Heavy elements, fusion, periodic table | | Editorial | | Anne Hodgson | | 19 | | 2 | |
| Hydrogen in the Earth’s atmosphere | Combustion, Isotopes, Reduction | |  | | Dudley Shallcross & Tim Harrison | | 19 | | 2 | |
| Atom economy | Addition reactions, elimination reactions, percentage yield, substitution reactions, condensation reactions, green chemistry, polymerisation | | Top tips | | Chris Ennis | | 19 | | 2 | |
| Graphene | Carbon and its forms (allotropes), van der Waals forces, electrical conduction | | Substances | | Andy Extance | | 19 | | 2 | |
| Chemistry3 | Empirical, molecular and structured formulae | | Worth reading | | Andrew Parsons | | 19 | | 2 | |
| Wonder in carbon land: build your own bucky balls | Allotropes, bucky ball, fullerene | | Making and doing | | Annie Hodgson | | 19 | | 2 | |
| Lichen, drugs and butterflies: Tales of discovery from Sri Lanka | Drug discovery, nuclear magnetic resonance (NMR), X-ray crystallography | |  | | Veranja Karunaratne, Udeni Jayalal, Susanthi Jayasinghe, Siril Wijesundara | | 19 | | 2 | |
| Peer Review-Avoiding media scare stories | How peer review works | | How chemistry works | | Emma Welsh | | 19 | | 2 | |
| Biocatalysis | Amino acids, catalysis, chirality, enzymes, proteins, synthetic chemistry, green chemistry, chemoselectivity, regioselectivity, enantioselectivity | | Design for the future | | Gideon Grogan | | 19 | | 2 | |
| Atoms to patterns | X-ray crystallography | | In Pictures | | Mary Wood | | 19 | | 2 | |
| Viral DNA packaging | Genetic, protein, virus, bacteriophage | | Back age | | Fred Antson | | 19 | | 2 | |
| Twitter | Revision | | Editorial | | Anne Hodgson | | 19 | | 3 | |
| Fighting Flu | Carbohydrates, organic chemistry, DNA and RNA, proteins, Tamiflu | |  | | Andy Extance | | 19 | | 3 | |
| Chemistry and fireworks | Electrolysis and electrode equations, giant ionic lattices, ionic precipitation, rates of reaction, redox reactions and oxidation states, writing and balancing equations | | Answer back | | Maurice Carmody | | 19 | | 3 | |
| Naming esters | Condensation reaction, esterification, polyesters, | | Top tips | | Andrew Utting | | 19 | | 3 | |
| Rainforest chemistry: investigating the atmosphere | Atmospheric chemistry, volatile organic compounds | | Encounter | | Charlotte Jones | | 19 | | 3 | |
| Chemistry in the atmosphere | Analytical chemistry, atmospheric chemistry, gas chromatography, halocarbons, mass spectrometry, nitrogen oxides, volatile organic compounds | | In pictures | | Charlotte Jones | | 19 | | 3 | |
| Science of sunscreen | Electromagnetic (EM) radiation, electron energy levels, oxides, ozone | |  | | Rachel Baines and Rob Sayer | | 19 | | 3 | |
| Lab on a chip | Environmental monitoring, gas chromatography, lab-on-a-chip technology, Peltier effect, volatile organic compounds | | Design for the future | | Chris Rhodes | | 19 | | 3 | |
| Planning your own experiment | Accuracy, experimental design, precision, enthalpy, mole calculations, taking measurements | | Lab page | | Alasdair Thorpe | | 19 | | 3 | |
| Phenol | Catalysis, industrial production, polymers | | Focus on industry | | Allan Clements et al (CIEC) | | 19 | | 3 | |
| Quinine | Malaria, Perkin’s mauve, synthetic dyes, fluorescence | | Back page | | Emma Dux | | 19 | | 3 | |
| Cleaning up explosives from the environment | Explosives, RDX, bacteria, enzymes | | Editorial | | Anne Hodgson | | 19 | | 4 | |
| Silicon and silicones | Materials, polymers, silicon compounds | |  | | Ben Cheesman and Tim Harrison | | 19 | | 4 | |
| LEDs: Light fantastic | MOCVD, ionic bond, organometallic, dopant, precursor, doping, electronic shell filling, gallium semiconductor, bonding band gap | | Design for the future | | Andy Extance | | 19 | | 4 | |
| Rates and catalysis | Calculations, rates of reaction, rate equations | | Answer back | | Graham Curtis | | 19 | | 4 | |
| Tracking your degree application | UCAS, chemistry courses | | Top tips | | Andrew Parsons & Katrina Sayer | | 19 | | 4 | |
| A Trojan horse in the fight against bacteria | Antibiotics, complexes, coordinate (semipolar or dative) bonds, DNA, drug design, proteins, siderophores | |  | | Catherine Rushworth | | 19 | | 4 | |
| Vanadium | Alloys, oxidation states, transition metals (d-block elements) | | Substances | | Alan Reay | | 19 | | 4 | |
| Dorothy Crowfoot Hodgkin: Great discoveries in X-ray crystallography | Insulin, x-ray crystallography, penicillin, X-ray diffraction, vitamin B12 | | Scientists of substance | | Robin Perutz and Richard Lindup | | 19 | | 4 | |
| From nuclear power to green energy | Green chemistry, British nuclear fuels, UKERC, RSC | | All in a day’s work | | Anne Hodgson  Jeff Hardy | | 19 | | 4 | |
| PET imaging of tumours | Positron emission, tomography, radiotracer, cancer, tumour | | Back page | | Emma Dux | | 19 | | 4 | |
| The Cape Verde atmospheric observatory | Halogenated organic compounds, nitrogen oxides pollutants of nitrogen, ozone, photolysis, volatile organic compounds | |  | | James Lee | | 20 | | 1 | |
| Fun with phenylethene | Polymerisation, testing for alkenes, reaction mechanisms & intermediates, electrophiles, secondary alcohols, interpretation of infrared spectra, drawing chemical structures | | Answer back | | Maurice Carmody | | 20 | | 1 | |
| Time of flight mass spectrometry | Ionisation, MALDI, mass to charge ratio (m/z) | |  | | Jane Thomas-Oates, Ed Bergström, Kriangsak Songsrirote, Salina Abdul Rahman | | 20 | | 1 | |
| Numbercross | Calculations | | Making and doing | |  | | 20 | | 1 | |
| From volcanoes to sea salt: Atmospheric sulfur | Oxidation states, sulfur compounds, atmospheric chemistry | | Out of thin air | | Tim Harrison and Dudley Shallcross | | 20 | | 1 | |
| Oxides of carbon | Coordinate (dative) bond, covalent bond, dipole, electronegativity, photosynthesis, dot-cross diagrams, bond polarity, greenhouse effect, electron configuration | | Revision note | | Rachael Dumbill | | 20 | | 1 | |
| Carothers: Inventor of nylon | Addition polymer, aliphatic, aromatic, condensation reaction, equilibrium, molecular mass, monomer, peptide, peptide bond, polyamide, polymer, polyesters | | Scientists of substance | | Gill Wroe | | 20 | | 1 | |
| Polyamides | Aliphatic, DNA, isomerisation, oxime, secondary alcohol, zeolite, polymers, nylon | | Focus on industry | | Allan Clements et al (CIEC) | | 20 | | 1 | |
| Professor Dave: YouTube Chemist | Revision, tutorials, videos | | Chemistry on the web | | James Cooper | | 20 | | 1 | |
| The PET that got away | Polymer, macromolecules, polyester, carboxylic acid diol, condensation reaction, poly (ethylene terephthalate), isomer | | Back page | | Gill Wroe | | 20 | | 1 | |
| Falling in love | Aminoethanes, catecholamines, enzymes, hormone, natural stimulant, neurotransmitter, Parkinson’s disease, peptide, tyrosine, chirality, R/S nomenclature, isomerism, oxytocin, phenylethylamine dopamine, adrenaline, L-DOPA | |  | | Joanna Buckley | | 20 | | 2 | |
| Atmospheric nitrogen | Dry deposition, stratosphere, three-way catalyst, troposphere, wet deposition, nitrogen compounds, atmospheric chemistry NOx, oxides of nitrogen, ozone | | Out of thin air | | Tim Harrison and Dudley Shallcross | | 20 | | 2 | |
| Using nature to preserve fish oil | Antioxidant, confocal microcopy, electron microscope, enzymes, EPA, ester, hydrolysis, lipophilic, microencapsulation, rancidity, carboxylic acid, oxidation, free radicals, pollen, fats and oils | |  | | Stephen Beckett & Grahame Mackenzie | | 20 | | 2 | |
| Heating under reflux | Quick fit apparatus | | Lab page | | Maria Turkenburg & Isaac Bruce | | 20 | | 2 | |
| Magnetic Marvel | Nuclear magnetic resonance (NMR), magnetic resonance imaging (MRI), body scanning, spin states, protons | | In pictures | | Ross Jaggers | | 20 | | 2 | |
| Kwolek: Creator of Kevlar | Condensation reactions, polymerisation, hydrogen bonding, functional groups, polyamide, aramid cis-trans-isomerism | | Scientists of substances | | Gill Wroe | | 20 | | 2 | |
| Kevlar and composites | Polymers, hydrogen bonds, fibre reinforced polymer composites, carbon fibres, thermoplastic, thermosetting, aramid, resins, glass fibre, injection moulding, vacuum farming | | Focus on industry | | Gill Wroe and CIEC team | | 20 | | 2 | |
| Calculations | Mole concept, rates of reactions, equations, volumetric analysis, enthalpy changes, pH, bond enthalpy, weak acids, radiation energy, solubility product, Born-Haber cycles | | Answer back | | David Billett | | 20 | | 2 | |
| Science beats food fraud | Forensic techniques, istopic ratio, isotypes | | Back page | | Michael Morgan-Williams | | 20 | | 2 | |
| Self-healing polymers | Polymers, composite materials, alkene, diene, monomer, equilibrium resin, polymer matrix, Diels-Alder reaction, thermoset polymer | |  | | Elliot Fleet | | 20 | | 3 | |
| Calcium carbonate | Polymorphic material, minerals, equilibrium, solubility, Le Chatelier’s principle, metamorphic rock, sedimentary rock, igneous rock, water hardness, travertine, tufa, carbonatites, limestone, chalk, dolomite, marble | | Substances | | Gill Wroe | | 20 | | 3 | |
| Benerito: The chemist who banished ironing | Polymer, hydrogen bonds, cellulose, cotton, triglycerides, amines, Lewis acid, mercerisation | | Scientists of substance | | Gill Wroe | | 20 | | 3 | |
| Poison in the air: atmospheric carbon monoxide | Free radical, oxidative capacity, atmospheric chemistry, photochemistry, gas chromatography, atomic absorption | | Out of thin air | | Aoife Grant & Tim Harrison | | 20 | | 3 | |
| Cutting-edge chemistry | Metals, polymers, tollens, reagent, printed circuit boards, silver mirror, photoelectric effect, L-DOPA aldehydes, infrared spectroscopy, X-ray photoelectron spectroscopy (XPS), van der Waals forces, addition reactions, dative bonds, nucleophiles, dopamine | | Encounter | | Megan Bowdrey | | 20 | | 3 | |
| Catalysis: getting chemistry going | Activation enthalpy (activation energy), homogeneous and heterogeneous catalysts, equilibrium, enzymes, green chemistry, Monsanto process, industrial processes, catalytic converters, supported catalysts | |  | | James Naughton | | 20 | | 3 | |
| Transition metal riddles | Transition metals | | Making and doing | | Alan Reay | | 20 | | 3 | |
| Feeling the heat | Cool packs, heat packs, cryotherapy, enthalpy changes, ionic solid, endothermic & exothermic processes, solvation | | Back page | | Ross Jaggers | | 20 | | 3 | |
| The chemistry of hangovers | Ethanol, neurotransmitters, hormones, electrolytes, enzymes, metabolism, ATP & ADP, pyruvate, oxidation & reduction, NADH | |  | | Pavel Guzanov | | 20 | | 4 | |
| What comes out of your kettle | Intermolecular forces, covalent bonding, physical and chemical changes, melting, boiling & sublimation, separation of oil fractions, periodicity, electronegativity, molecules and macromolecular structures, van der Waals forces, ionic compounds | | Answer back | | Graham Curtis | | 20 | | 4 | |
| Bleaching and dyeing: Chemical change in hair fibres | Redox reactions, polymers, melanin, hair dyes, nucleophilic & condensation reactions, hair structure, keratin, radicals | |  | | Kazim Raza Naqvi | | 20 | | 4 | |
| Do ants destroy the ozone layer? | Halogenoalkanes, free radicals, catalysis, gas chromatography, mass spectrometry, halocarbons, atmospheric chemistry, leaf cutter ants, photolabile | | Out of thin air | | Tim Harrison, Anwar Khan & Dudley Shallcross | | 20 | | 4 | |
| Water water everywhere | Molecular structure/shape electronegativity, polarity, hydrogen bonding, density, viscosity, surface tension, buffer, photosynthesis, temperature regulation | | Substances | | Nicola Davis | | 20 | | 4 | |
| To err is scientific | Errors, units, measurement, mass probability, confidence intervals, standards | | How science works | | Mary Wood | | 20 | | 4 | |
| ChemSpider | Enantiomer, chirality, infrared spectroscopy, NMR, structure, synthetic chemistry, RSC | | Chemistry on the web | | Mary Wood | | 20 | | 4 | |
| A Healthy, Wealthy, Sustainable World-John Emsley | Organic farming, chemistry food and medicine, swimming pools, zolpidem, organochlorines, cholera | | Worth reading | | Emma Dux | | 20 | | 4 | |
| Polymers, plastics and superglue | Adhesive, monomer, activation, initiator, living polymerisation, termination | | Back page | | Ross Jaggers | | 20 | | 4 | |
| Body oddities: the chemical reactions of eating | Onions, allinases, asparagus, sulfur compounds, spinach, potatoes, solanine, gas chromatography-mass spectrometry | |  | | Joanna Buckley | | 21 | | 1 | |
| Polymers and tulips: a year in industry | Student, year in industry, chemistry degree, polymers, Ziegler-Natta catalysis | | Encounter | | Mary Wood | | 21 | | 1 | |
| Cuppa chemistry | Tea, aromatic compounds, polyphenols, free radicals, caffeine | | What’s your poison? | | Emma Dux | | 21 | | 1 | |
| Cracking concrete heals itself | Concrete, greenhouse gas | | Wonders of chemistry | | Gill Wroe | | 21 | | 1 | |
| Lasers in chemistry | Lasers, absorption of light, global warming | | Stretch and challenge | | Mike Ashfold, Andrew Orr-Ewing & Tim Harrison | | 21 | | 1 | |
| It ain’t what you do (it’s the way you do it) | Organic reaction mechanisms, reaction conditions | | Answer back | | Graham Curtis | | 21 | | 1 | |
| Calcium carbonate (CaCO3) | Calcium carbonate, limestone, lime, construction industry, cement, environment, pollution, agriculture, quicklime, hydrated lime | | Focus on industry | | Allan Clements, CIEC team | | 21 | | 1 | |
| The Elements – A Very Short Introduction | Philip Ball, periodic table, gold | | Worth reading | | Anne Hodgson | | 21 | | 1 | |
| Gecko glue | Adhesion, van der Waals forces, electrostatic bonds, intermolecular interaction | | Back page | | Alex Pashley | | 21 | | 1 | |
| Good vibrations: infrared spectroscopy | Infrared spectroscopy, analytical techniques, light | | Stretch and challenge | | James Naughton | | 21 | | 2 | |
| Marie Curie: probing the atom | Marie Curie, radioactivity, radiation | | Scientists of substance | | Mary Wood | | 21 | | 2 | |
| Infrared spectrometers | Infrared spectrometer, spectra | | Lab page | | James Naughton | | 21 | | 2 | |
| Structure and spectroscopy | Infrared spectroscopy, NMR spectroscopy, structure, isomerism | | Answer back | | David Billett | | 21 | | 2 | |
| Nature’s Building Blocks (2nd edition) | John Emsley | | Worth reading | | Anne Hodgson | | 21 | | 2 | |
| AAAS Conference | American Association for the Advancement of Science conference, AAAS | | Encounter | | Samuel Andrew | | 21 | | 2 | |
| Iridium: life-saving transition element | Iridium, transition metal, Smithson Tennant, phosphorescence, pH changes | | Substances | | David Lewis | | 21 | | 2 | |
| Chemistry of wine | Wine, esters, polymerisation, grape juice, *cis/trans* isomerisation of alkenes, flavonols | | What’s your poison? | | Emma Dux | | 21 | | 2 | |
| Arsenic poisoning | Arsenic, toxicity, carcinogen | |  | | Magdalena Wajrak | | 21 | | 2 | |
| Chemistree: food dyes | Food dyes, aromatic rings, conjugated systems | | Back page | | Emma Dux & Julia Walton | | 21 | | 2 | |
| Would aliens need water? | Free radicals, hydrothermal vents, hydrocarbons, methanogens, photosynthesis, Titan | |  | | Daniel Went | | 21 | | 3 | |
| Cocaine: atoms of addiction | Cocaine, tertiary amine | | Substances | | Amelia Dearman | | 21 | | 3 | |
| Biochemistry, brewing and beery scientists | Beer, brewing, fermentation, saccharification, titrations, enzymes, thermodynamics, isomerism, biochemical processes, pasteurisation | | What’s your poison? | | Nigel Lowe | | 21 | | 3 | |
| Solid foundations: part 1 | Atomic orbital arrangements, covalent bonding, covalent network structures, hydrogen bonding, molecular shape | | Revision note | | Nicola Davis | | 21 | | 3 | |
| Chemistry of the cosmos | Space, cosmos, interstellar medium, Saturn, Titan, Venus, asteroids | | In pictures | | Alex Pashley | | 21 | | 3 | |
| Beads of time: analysing our past | Glass beads, archaeology, Iron Age, laser ablation, stratigraphic dating, quadrupole mass analyser, mass spectrometry | |  | | Martina Bertini | | 21 | | 3 | |
| Folic acid | Folic acid, acidity, pH calculations, buffers, conjugate acids and bases, hydration of ions, intermolecular forces, skeletal formulae, optical isomerism, enthalpy cycles | | Answer back | | Maurice Carmody | | 21 | | 3 | |
| Biotechnology | Fermentation, biotechnology, citric acid, lactic acid, propane-1,3-diol, amino acids. L-glutamic acid, L-lysine | | Focus on industry | | Allan Clements, CIEC team | | 21 | | 3 | |
| Perilous poisons | Poison, ricin, Georgi Markov, Alexander Litvinenko, polonium | | Back page | | Ross Jaggers | | 21 | | 3 | |
| Drugs in sport: how chemistry can beat the cheats | Drugs, sport, detection, anabolic steroids, testosterone, gas chromatography, mass spectrometry, liquid chromatography, GC-MS, erythropoietin, Olympics | |  | | John Emsley | | 21 | | 4 | |
| Flame tests and emission spectra | Flame test, emission and absorption spectra, atomic structure, spectroscope | | Lab page | | Kristie Pickersgill | | 21 | | 4 | |
| Cisplatin: from accidental discovery to wonder drug | Cis-trans isomerism, ligands, oxidation states, DNA structure, cisplatin | |  | | Emma Dux | | 21 | | 4 | |
| Build your own spectroscope | Spectroscope, emission spectra | | Making and doing | | Kristie Pickersgill | | 21 | | 4 | |
| A mug of coffee and chemistry | Coffee, aromatic compounds, zwitterions, trionelline | | What’s your poison? | | Emma Dux | | 21 | | 4 | |
| Solid foundations: part 2 | Ionic bonding, giant ion lattices, electron configuration, metallic bonding, metallic lattices | | Revision note | | Nicola Davis & Gill Wroe | | 21 | | 4 | |
| Aerogel: ‘frozen smoke’ | Phase diagrams, supercritical fluids, super-insulators | | Substances | | Michael Nolan | | 21 | | 4 | |
| Molecules with Silly or Unusual Names | Paul W. May, Olympiadane, performic acid, periodic acid, megaphone, moronic acid, curious and titanic chloride, windowpane, angelic acid, warfarin | | Worth reading | | Anne Hodgson | | 21 | | 4 | |
| The smell of success | Robotic smell. Electronic nose | | Back page | | Ross Jaggers | | 21 | | 4 | |
| In search of the perfect chocolate bar | Chocolate, cocoa butter, triglycerides, synchrotron X-ray diffraction, flavour, phenylethylamine | |  | | Mary Wood | | 22 | | 1 | |
| Controversial chlorine | Chlorine, halogens, oxidation number, formulae, half-equations, mole calculations, electron configurations | | Answer back | | Maurice Carmody | | 22 | | 1 | |
| Applications in agriculture: fertilisers | Fertilisers, agriculture, nutrients, nitrogen, phosphorous, potassium, sulphur | | Focus on industry | | Allan Clements, CIEC team | | 22 | | 1 | |
| Decoding skeletal secrets | Isotopic analysis, mass spectrometry, bones, collagen, Tutankhamun, Ötzi | | In pictures | | Phillip Chivers | | 22 | | 1 | |
| Summing up fertilisers | Relative atomic mass, relative formula mass | | Making and doing | | Gill Wroe & Anne Hodgson | | 22 | | 1 | |
| Chemistry’s calling: mobile phones and touchscreen technology | Mobile phones, touchscreen technology lithium ion cells. LCDs, aluminosilicate glass screens, oleophobic coatings | | Lifestyle chemistry | | Alex Pashley & Nicholas Bissett | | 22 | | 1 | |
| A different type of drug | Proteins, pharmaceutical chemistry, Andy Hamilton, patents | |  | | Martin Christlieb | | 22 | | 1 | |
| The fascinating Fenton reaction | Henry Fenton, waste-water treatment, oxidation reactions, reduction reactions, radicals, catalysis, transition metal oxidation states | | Scientists of substance | | Kazim Raza Naqvi | | 22 | | 1 | |
| How hot is your chemistry? | Capsaicin, chilli peppers, Scoville scale | | Back page | | Alyssia Kaczmarczyk | | 22 | | 1 | |
| The sky’s no limit: polymers, planes and solar sails | Polymers, covalent bonds, polymerisation, thermosetting, aviation industry, composite materials, fibreglass | |  | | Alex Pashley | | 22 | | 2 | |
| Chemistry from a natural product | Organic reactions, mechanisms, formulae, structure, isomerism, nomenclature, polymerisation, hydrogen bonding, solubility | | Answer back | | David Billett | | 22 | | 2 | |
| Breakthroughs in green chemistry: magnetic detergents and supercritical CO2 | Soap, magnetic detergents, supercritical CO2, solvent, dry-cleaning | |  | | Tim Harrison & Julian Eastoe | | 22 | | 2 | |
| Tetrodotoxin: famously deadly poison | Tetrodotoxin, pufferfish, fugu | | Substances | | Emma Dux | | 22 | | 2 | |
| Recrystallisation | Recrystallisation, Buchner filtration | | Lab page | | Emma Dux | | 22 | | 2 | |
| Applications in agriculture: fungicides | Fungicides, agriculture, Strobilurins, carboxamides, downy mildews | | Focus on industry | | Allan Clements, CIEC team | | 22 | | 2 | |
| Breverton’s Encyclopedia of Inventions | Terry Breverton, inventions | | Worth reading | | Anne Hodgson | | 22 | | 2 | |
| Curried chemistry | Curry, chillies, capsaicinoids, ginger, turmeric, garlic, onion | | Lifestyle chemistry | | Emma Dux & David Smith | | 22 | | 2 | |
| Molybdenite Valley? | Semiconductors, molybdenite, silicon | | Wonders of chemistry | | Sergio Saris | | 22 | | 2 | |
| Rat wars | Rodenticides, rats, anticoagulants, superwarfarins, brodifacoum, metal phosphides, calciferols | | Back page | | Gill Wroe | | 22 | | 2 | |
| Traditional Chinese medicine: what can we learn from it? | TCM, medicine, aspirin, esterification, artemisinin, placebo effect | |  | | Michael Nolan | | 22 | | 3 | |
| Two in one: the chemistry of shampoo and conditioner | Hair, shampoo, conditioner, soap, surfactants, cations, anions, polymers, silicones | | Lifestyle chemistry | | Emma Dux | | 22 | | 3 | |
| All things ice | Water, ice, hydrogen bond, phase diagram, polymorphism, triple point | | Substances | | Alex Pashley | | 22 | | 3 | |
| Determining the yield of a reaction | Synthetic reaction yield | | Lab page | | Emma Dux | | 22 | | 3 | |
| A bright future for MRI | MRI spectroscopy, parahydrogen, hyperpolarisation, Signal Amplification By Reversible Exchange, SABRE, purines, pyrimidines, dynamic nuclear polarisation, DNP | |  | | Louise Highton | | 22 | | 3 | |
| Tricky transition metals | Electron configurations, transition metals, complexes, ligands, Lewis acids and bases, catalysis, entropy | | Answer back | | Mary Hoyle | | 22 | | 3 | |
| Applications in agriculture: herbicides | Herbicides, agriculture, bipyridyliums, auxins, glycines, sulfonylureas, triketones, inhibitors of acetyl-CoA carboxylase | | Focus on industry | | Allan Clements, CIEC team | | 22 | | 3 | |
| Making use of electrode potentials | Electrode potentials, reactivity series, redox reactions, oxidation number, oxidising agents | | Top tips | | Andrew Crookell | | 22 | | 3 | |
| You can’t beat beetroot | Beetroot, diet, nitrate, nitric oxide | | Back page | | Laura Turkenburg | | 22 | | 3 | |
| Buried with their bones | Chromatography, lipids, triacylglycerols, biomarkers, grave goods, micromorphology, burial, pig burial | |  | | Kimberley Green | | 22 | | 4 | |
| Applications in agriculture: insecticides | Functional groups, pests, insecticides, agriculture, organophosphorous compounds, methyl carbamates, macrocyclic lactones, phenylpyrazoles, nereistoxin, neonicotinoids, diamides, pyrethroids, benzoylureas, ketoenols | | Focus on industry | | Allan Clements, CIEC team | | 22 | | 4 | |
| Shades of chemistry | UV radiation, radicals, electromagnetic spectrum, polymers, sunglasses, photochemical reaction, photoisomerism | | Lifestyle chemistry | | Alex Pashley | | 22 | | 4 | |
| Kevlar: miracle material | Kevlar, polymers, hydrogen bonding | | In pictures | | Heather Powell | | 22 | | 4 | |
| Fragments: the future of pharmaceuticals | Drug design, pharmaceutical chemistry, fragments, X-ray crystallography | |  | | Sean McKenna | | 22 | | 4 | |
| Tackling stretch and challenge questions | Interpretation of data, organic reactions | | Revision note | | Maurice Carmody | | 22 | | 4 | |
| Patents: protecting your ideas | Patents, drugs, blockbusters | | How science works | | Tony McStea | | 22 | | 4 | |
| SeXeY chemistry | Elements, periodic table, atomic number, electron configuration, allotropes, isotopes, selenium, xenon, yttrium | | Encounter | | Gill Wroe | | 22 | | 4 | |
| Celebrating the double helix | DNA, James Watson, Francis Crick, hydrogen bonds, mutations | | Back page | | Anne Hodgson | | 22 | | 4 | |
| Flying sources bring transition metals | Transition metals, periodic table, resources, oxidation state, electronic transitions, asteroids, hall electrolysis process, hydrothermal vents, nodules, panning, spectroscopy | |  | | Tony Hargreaves | | 23 | | 1 | |
| Artificial photosynthesis: putting sunshine in the tank | Catalysis, climate change, fuels, oxides of carbon, energy, reduction, biofuels, solar fuel, artificial photosynthesis, Monsanto process, porphyrin | | Greener and cleaner | | Christopher Windle | | 23 | | 1 | |
| Planning for success in extended-answer questions | Bonding, structure, physical properties, intermolecular forces, alkanes, alkenes, stereoisomerism, analysis of data | | Answer back | | Mike Wooster | | 23 | | 1 | |
| Iodine in medicine | Iodine, halogen, thyroid hormones, beta decay, glycogen, half-life, iodometry, isotope, metastases, oxidising agent, goitre | | Substances | | Laura Turkenburg | | 23 | | 1 | |
| Hair-raising chemistry | Hair, colour, pigments, eumelanin, pheomelanin, melanin | | In pictures | | Elizabeth Brookes | | 23 | | 1 | |
| Chemical conundrum |  | | Making and doing | | Anne Hodgson | | 23 | | 1 | |
| Cracking the egg timer: Dating ancient eggshells with amino acids | Liquid chromatography, mass spectrometry, amino acid racemisation, chirality, enantiomers, optical isomers, ostrich eggshells, biominerals, geochronology, hydrolysis, radiocarbon dating, sub-fossils, thermal age, archaeology | |  | | Molly Crisp | | 23 | | 1 | |
| Catalysis: heterogeneous catalysis | Catalysts, activation energy, industrial chemistry, heterogeneous catalysis, homogeneous catalysis, ters | | Focus on industry | | Allan Clements, CIEC team | | 23 | | 1 | |
| Henry Moseley: understanding atomic numbers | Henry Moseley, atomic number, atomic structure, periodicity, periodic table | | 100 years ago… | | Bruce Gilbert | | 23 | | 1 | |
| Hydrogen fuel cells: harnessing explosive energy | Hydrogen fuel cell, HFC | | Back page | | Mark Dowsett | | 23 | | 1 | |
| pH goes viral | Virus, pH, protein formation, amino acid, hydrolysis, condensation reaction, endocytosis, enzyme, endosome proton pump | |  | | Lucy Robinson | | 23 | | 2 | |
| Reclaiming plastic waste | Polymers, recycling, plastic, PET, depolymerisation | | Greener and cleaner | | Emma Dux | | 23 | | 2 | |
| Performing the perfect titration | Titration, titrant | | Lab page | | Lee McManus | | 23 | | 2 | |
| Won’t you step into my parlour…spider silk | Polymers, materials chemistry, hydrogen bonding, spider silk | | Wonders of chemistry | | Sam Black | | 23 | | 2 | |
| Atropine: a bitter pill to swallow | Atropine, chirality, enantiomers, racemisation, poison, castor oil plant, ricin, deadly nightshade | |  | | Joanna Buckley | | 23 | | 2 | |
| Applications of heterogeneous catalyts | Heterogeneous catalysts, reaction mechanisms, molecular structure, isomers, zeolites, contact process, sulfuric acid, aluminium oxide, aluminosilicates, activation energy | | Focus on industry | | Allan Clements, CIEC team | | 23 | | 2 | |
| Niels Bohr and atomic structure | Niels Bohr, atomic structure | | 100 years ago… | | Alyssia Kaczmarczyk | | 23 | | 2 | |
| Making alkenes: the Wittig reaction | Alkenes, *E/Z* stereoisomerism, reaction mechanisms, curly arrows, nucleophilic substitution reaction | | How science works | | Alex Pashley | | 23 | | 2 | |
| Burning blue | Pyrotechnics, fireworks, blue flame | | Back page | | Alex Pagett | | 23 | | 2 | |
| Extremophiles: surviving salt and space | Extremophile, amino acids, proteins, concentration, molarity, pH, halophile, osmosis, atomic force microscopy, biotechnology | |  | | Danielle Walsh, Lorna Dougan | | 23 | | 3 | |
| What can we make from carbon dioxide? | Carbon dioxide, catalysis, enzymes, nucleophilic reactions, polymer production, aspirin, Gibbs free energy of reaction, Calvin cycle | | Greener and cleaner | | Emma Dux | | 23 | | 3 | |
| Absinthe: lessons from the green fairy | Formulae, geometric isomerism, functional groups, electrophilic addition, polymerisation | | Answer back | | David Billett | | 23 | | 3 | |
| Red dread: the chemistry of a clean-up | Oxidation states, aluminium extraction, pH, minerals and ores, amphoteric oxide, pollution, Hall-Héroult process, red mud | |  | | Mark Hodson | | 23 | | 3 | |
| Catalysis: homogeneous catalysts | Homogeneous catalysis, reaction mechanisms, polymerisation, molecular structure, stereochemistry, Ziegler-Natta catalyst, metallocene catalyst | | Focus on industry | | Allan Clements, CIEC team | | 23 | | 3 | |
| Magnesium | Magnesium, group 2, organic synthesis, enzymes, reactivity series, chlorophyll, Calvin cycle, Grignard reagent, ATP, cytochrome, NADPH | | Substances | | Emma Dux | | 23 | | 3 | |
| 30-Second Elements | Eric Scerri, polonium, silver, sulfur, arsenic | | Worth reading | | Anne Hodgson | | 23 | | 3 | |
| Steam distillation | Steam distillation, ideal gas equation, vapour pressure | | Lab page | | Ingo Fengler | | 23 | | 3 | |
| Feeling blue: lobster rarities | Lobster, astaxanthin, conjugated bonds, genetic mutation, alpha-crustacyanin | | Back page | | Mark Dowsett | | 23 | | 3 | |
| Sniffing out carbonyl compounds | Aldehydes, ketones, Tollens’ reagent, addition reactions. Silver mirror test. | |  | | Simon Cotton | | 23 | | 4 | |
| Copper sulfate and ammonia:  stretch and challenge question | Mole calculations, acid–base titrations, acid–base indicators, titration curves, complex ions, practical quantitative chemistry | | Revision note | | Maurice Carmody | | 23 | | 4 | |
| Molecules of revision | Neurotransmitters, hormones, dopamine, serotonin, epinephrine, adrenaline, norepinephrine, endorphins, oxytocin | | Wonders of chemistry | | Mark Dowsett | | 23 | | 4 | |
| How can a chemistry degree  prepare you for a job? | University, employability skills, transferable skills | | Careers in chemistry | | Andrew Parsons and Katrina Sayer | | 23 | | 4 | |
| Careers for chemists | Chemistry careers | | Careers in chemistry | | Andrew Parsons and Katrina Sayer | | 23 | | 4 | |
| Fighting forgery with forensics | Paper, ink, chromatography, spectroscopy, dyes and pigments, Harold Shipman, Hitler diaries | |  | | Tony Hargreaves | | 23 | | 4 | |
| Food waste: beyond the bin | Green chemistry, sustainability, EUBIS, orange peel, limonene, pectin, bioethanol | | Encounter | | Katie Privett | | 23 | | 4 | |
| Biocatalysis in biosolvents | Catalysis, enzymes, green chemistry, industrial chemistry, solvents, industrial waste disposal, hydrolysis, condensation reaction, ester formation, Le Chatelier’s principle, biofuel, biomass | | Greener and cleaner | | Giulia Paggiola | | 23 | | 4 | |
| Looking into glass | Glass, salt structure, giant ionic lattice, giant covalent structure, crystal structures and shapes | | Substances | | Andy Connelly | | 23 | | 4 | |
| Envirocrew.org: sustainability works | Sustainability | | Chemistry online | | Sorina Antonescu | | 23 | | 4 | |
| Super foods | Antioxidants, free radicals | | Back page | | Taylor Harrison | | 23 | | 4 | |
| Living on Mars | Electrolysis, polymers, plastics, catalysis, space, Mars, Sabatier reaction | |  | | Christina Briggs | | 24 | | 1 | |
| Graphene and carbon nanotubes | Graphene, caron nanotubes, bucky tubes, nonotechnology | | Wonders of chemistry | | Emma Kastrisianaki-Guyton | | 24 | | 1 | |
| Elementary clues | Puzzle | | Making and doing | | Annie Hodgson | | 24 | | 1 | |
| Dealing with CO2: from carbon sinks to sequestration | Fossil fuels, atmospheric chemistry, greenhouse gases, carbon dioxide, CO2, carbon sink, carbon source, photosynthesis, carbon capture, carbon sequestration | |  | | Sorina Antonescu | | 24 | | 1 | |
| The life of a first-year chemistry student | University, studying chemistry | | Encounter | | Sam Edwards | | 24 | | 1 | |
| Developing and delivering drugs | Medicines, drug development, drug delivery, penicillin, antibiotic resistance, antiviral drugs, anti-cancer drugs | | Chemistry in medicine | | Emma Dux | | 24 | | 1 | |
| Biotechnology in the chemical industry: biodegradable polymers | Biodegradable polymers, green chemistry, fossil fuels, PHA, PHB, PLA, starch | | Focus on industry | | Allan Clements, CIEC team | | 24 | | 1 | |
| Alkenes and clean screens | Organic nomenclature, alkenes, alcohols, E/Z isomerism, skeletal formulae | | Answer back | | Maurice Carmody | | 24 | | 1 | |
| Follicle forensics | Analytical chemistry, forensics, hair, chromatography, spectrometry | | Back page | | Hannah Felstead | | 24 | | 1 | |
| Spotlight on mercury | Mercry, d block, gold mining, poisoning, acids and bases | |  | | Simon Cotton | | 24 | | 2 | |
| The jeans that eat pollution | Pollution, jeans, catalysis, atmospheric chemistry, acid rain, laundry | | Wonders of chemistry | | Katy Hollies | | 24 | | 2 | |
| Biotechnology in the chemical industry: biofuels | Biofuels, biodiesel, esters, fermentation | | Focus on industry | | Allan Clements, CIEC team | | 24 | | 2 | |
| Getting drugs to where they’re needed | Cancer, drug delivery, chemotherapy, polymers, proteins | |  | | Gemma Lambert | | 24 | | 2 | |
| Hess cycles and the MASK check | Hess’ law, Hess cycles, enthalpy, | | Top tips | | Andrew Crookell | | 24 | | 2 | |
| Mind-numbing drugs | General anaesthetics, local anaesthetics, nitrous oxide, ether, chloroform, halothane, cocaine, procaine, lidocaine, curare, tubocurarine, gallimine | | Chemistry in medicine | | Emma Dux | | 24 | | 2 | |
| Chemword | Crossword puzzle | | Making and doing | | Anne Hodgson | | 24 | | 2 | |
| Every Molecule Tells a Story | Simon Cotton, morphine, heroin, endorphin, opium poppy, codeine | | Worth reading | | Anne Hodgson | | 24 | | 2 | |
| Cracking down on chemical weapons | Chemical weapons, sarin | | Back page | | Sam Edwards | | 24 | | 2 | |
| Earth’s solar potential | Solar power, green chemistry, photovoltaic effect, polymers, graphene | |  | | Chris Unsworth | | 24 | | 3 | |
| Lyotropic liquid crystals: essential for life | Surfactants, micelles, lyotropic liquid crystals, washing up, Kevlar | | Wonders of chemistry | | Saleesh Kumar Nambalan Sivaraman | | 24 | | 3 | |
| Fighting mental illness | Mental illness, depression, antidepressants, iproniazid, tricyclics, SSRI, SNRI, Prozac | | Chemistry in medicine | | Emma Dux | | 24 | | 3 | |
| Chromatography | Paper chromatography, TLC, HPLC, GC | | Lab page | | Anne Hodgson | | 24 | | 3 | |
| Examining equilibrium | Equilibrium, calculations | | Answer back | | David Billett | | 24 | | 3 | |
| Preserving the past | Conservation, acids, carbonates, erosion, pollution, acid rain, stone, limestone, fatty acids | |  | | Mark Hodson | | 24 | | 3 | |
| Recent advances in biofuel production | Biofuel, green chemistry, industrial chemistry | | Focus on industry | | Allan Clements, CIEC team | | 24 | | 3 | |
| Three years or four? Completing a chemistry degree | University, studying chemistry, | | Encounter | | Alex Pashley | | 24 | | 3 | |
| Wake up and smell the coffee | Coffee, adenosine, caffeine, decaffeination | | Back page | | Sam Edwards | | 24 | | 3 | |
| Photoactivated platinum compounds for cancer therapy | Platinum, cancer therapy, cisplatin, tumours, clinical trials | |  | | Louise Tear | | 24 | | 4 | |
| Biorefineries | Biorefineries, fermentation, thermochemical processing, gasification, pyrolysis, isomerisation, reforming | | Focus on industry | | Allan Clements, CIEC team | | 24 | | 4 | |
| Improving natural medicines | Aspirin, penicillin, semisynthesis, tetracyclines, antibiotics, artemisinin, taxol | |  | | Simon Cotton | | 24 | | 4 | |
| Picture it…Chemistry | Plants, capsaicin, vanillin, raspberry ketone | | Chemistry online | | Natalie Fey and Jenny Slaughter | | 24 | | 4 | |
| Nuclear Magnetic Resonance | NMR, spectroscopy, emission and absorption spectra, nuclear spin | | How science works | | Kate Appleby | | 24 | | 4 | |
| Understanding NMR spectra | NMR spectra, integral ratios, splitting peaks | | Revision note | | Kate Appleby | | 24 | | 4 | |
| Indications of change | pH calculations, enthalpy changes, buffers, indicators, equilibrium | | Answer back | | Mary Hoyle | | 24 | | 4 | |
| Viral chemistry | Antiviral drugs, influenza nomenclature, Relenza, Tamiflu, HIV, Azidothymidine, Ebola | | Chemistry in medicine | | Emma Dux | | 24 | | 4 | |
| Can we grow gold on plants? | Hyperaccumulation, phytoremediation, phytomining | | Back page | | Natalie Fey | | 24 | | 4 | |
| Lasers, sunscreens and free radicals | UV radiation, photo-damage, wavenumber and frequency, lasers, sunscreens | |  | | Mike Ashfold, Andrew Orr-Ewing, Daniel Murdock, Gareth Roberts, Michael Grubb | | 25 | | 1 | |
| Revising 25 years of chemistry | 25 year anniversary of Chemistry Review | | Encounter | | Anne Hodgson | | 25 | | 1 | |
| Gel chemistry: From jellies to 3D printing | Collagen, gelatin, polymer gels, supramolecular gels, redox gels | | 25 years of... | | Emma Dux | | 25 | | 1 | |
| X-ray eyes on a molecular world | X-ray diffraction, DNA, protein crystals, ribosomes | | In pictures | | Jean Whittingham | | 25 | | 1 | |
| Extracting caffeine from tea leaves | Tea, caffeine, tannic acids, Büchner filtration, IR spectroscopy | | Lab page | | Tim Harrison | | 25 | | 1 | |
| Isomagram | Anagrams | | Making and doing | | Anne Hodgson | | 25 | | 1 | |
| Super silver | Silver, extraction, purification | |  | | Joanna Buckley | | 25 | | 1 | |
| Reflecting the future | Silver, mirrors, solar cells, window glass | |  | | Joanna Buckley | | 25 | | 1 | |
| Copper | Uses, manufacture, purification, electrolysis, alloys, recycling | | Focus on industry | | Allan Clements, CIEC team | | 25 | | 1 | |
| 3, 2, 1, liftoff! | Spacecraft, fuel | | Back page | | Polly Lang | | 25 | | 1 | |
| Global warming: Reconstructing the past | Global warming, climate change, ocean temperatures, corals, isotopes, radioactive decay, synchrotrons, calcium carbonate | |  | | Mark Hodson | | 25 | | 2 | |
| How to make skin cream | Aqueous cream, IR spectroscopy | | Lab page | | Lynda Dunlop | | 25 | | 2 | |
| Hydrogen cyanide: Poison and precursor | Complex ions, DNA, astrobiology | | Substances | | Andrew Shaw, Oliver Knight | | 25 | | 2 | |
| X-rays reveal a lost treasure | X-ray fluorescence spectroscopy, *Life with Meadow Flowers and Roses*, Vincent Van Gogh, art, painting | | Wonders of chemistry | | Polly Lang | | 25 | | 2 | |
| Amino acids in chemistry | Alpha-amino acids, protein formation | | Top tips | | Tim Harrison | | 25 | | 2 | |
| Elemental acrostic | Acrostic | | Making and doing | | Anne Hodgson | | 25 | | 2 | |
| Investigating with isotopes | Isotopes, relative molecular mass, mass spectrometry, isomerism, IR spectroscopy, NMR, food, epimers, testosterone, cocaine, Richard III | |  | | Simon Cotton | | 25 | | 2 | |
| Silver: Printing the past | Photography | |  | | Joanna Buckley | | 25 | | 2 | |
| Titanium | Uses, manufacture, alloys, electrolysis, oxidation states | | Focus on industry | | Allan Clements, CIEC team | | 25 | | 2 | |
| Preventing catastrophic climate change | Climate change, greenhouse gases, alternative energy, atmospheric chemistry, carbon capture, carbon sequestration, hydrogen, biofuels | | Encounter | | Sam Edwards | | 25 | | 2 | |
| Retrosynthesis | Organic synthesis, functional groups, chirality, retrosynthesis | | 25 years of... | | Emma Dux | | 25 | | 2 | |
| Chemistry Week | RSC, ChemNet | |  | | Anne Hodgson | | 25 | | 2 | |
| Spectroscopy: At the heart of art | Art forgery, painting, IR spectroscopy, Raman spectroscopy, X-rays, Chagall's *Nude* | | Back page | | Polly Lang | | 25 | | 2 | |
| Preserving paintings: Gels, micelles and microemulsions | Micelles, surfactants, emulsions, gels, art restoration, murals, frescos | |  | | Michael Nolan | | 25 | | 3 | |
| Esterification | Esters, reflux, recrystallisation, vacuum filtration, melting point determination, yield calculations, IR spectroscopy | | Lab page | | Tim Harrison | | 25 | | 3 | |
| Who said that? |  | | Making and doing | | Anne Hodgson | | 25 | | 3 | |
| Carbene chemistry | Nitrogen-heterocyclic carbene, alkenes, catalysis, molecular orbitals, complexes and ligands, organic synthesis, oxidation state | | 25 years of... | | Emma Dux | | 25 | | 3 | |
| Molecules That Amaze Us | Simon Cotton, Paul May, Paracetamol / acetaminophen, monosodium glutamate | | Worth reading | | Anne Hodgson | | 25 | | 3 | |
| Medicinal or murderous: Analysing a Victorian medicine cabinet | Tyntesfield House, Victorian medicines, GC-MS | | In pictures | | Jenny Slaughter, Tony Rogers, Isabel Wiltshire, Dominic Palubiski | | 25 | | 3 | |
| Nitro: Not just for blowing things up | Gunpowder, nitroglycerine, dynamite, TNT, nitromusks, perfume, organic synthesis, | |  | | Simon Cotton | | 25 | | 3 | |
| Silver: A versatile element | Silver uses | |  | | Joanna Buckley | | 25 | | 3 | |
| All hail the halogens | Oxidation state, balancing equations, redox reaction, half equations, disproportionation | | Answer back | | Maurice Carmody | | 25 | | 3 | |
| Treating the AIDS epidemic | HIV, AIDS, DNA, antiretrovirals, highly active antiretroviral treatment (HAART) | | Encounter | | Polly Lang | | 25 | | 3 | |
| Zinc | Alloys, batteries, electrolysis, redox reactions | | Focus on industry | | Allan Clements, CIEC team | | 25 | | 3 | |
| Colouring in the dinosaurs | Melanosomes, time-of-flight secondary ion mass spectrometry, IR and reflectance spectroscopy | | Back page | | Polly Lang | | 25 | | 3 | |
| Archaeological chemistry: Analysing ancient alcohol | Alcohol, pulque, mezcal, tequila, fermentation, diagenesis, hopanoids, biomarkers | |  | | Marisol Correa Ascencio, Tim Harrison | | 25 | | 4 | |
| A complex way to find nickel compounds | Electron arrangements, complex ions, mole calculations, acid-base reactions | | Answer back | | Maurice Carmody | | 25 | | 4 | |
| Succeeding in chemistry without A-level maths | Maths, university | | Top tips | | Marnie Grant | | 25 | | 4 | |
| FT-NMR | Fourier transform nuclear magnetic resonance spectroscopy | | 25 years of... | | Emma Dux | | 25 | | 4 | |
| Iron in the blood | Iron, transition metals, ligands, equilibrium constant, solubility product, stability constant, *fac* and *mer* isomers, myoglobin, haemoglobin, carbon monoxide | |  | | Simon Cotton | | 25 | | 4 | |
| Magnesium | Magnesium, thermal reduction process, electrolysis | | Focus on industry | | Allan Clements, CIEC team | | 25 | | 4 | |
| Feeding the world with chemistry | Green chemistry, agriculture, environment, herbicides, insecticides, food fraud | | Encounter | | Sam Edwards | | 25 | | 4 | |
| Silver: Hallmark of quality | Silver alloy, sterling silver | |  | | Joanna Buckley | | 25 | | 4 | |
| Barium | Heavy metal, alkaline earths, environment, electrochemistry | | Substances | | Magdalena Wajrak | | 25 | | 4 | |
| Isoprene: structural motif of organic chemistry | Colour, smell, terpenes, terpenoids, ozone, rubber, steroids | |  | | Simon Cotton | | 26 | | 1 | |
| Synthesising aspirin | Esterification reaction, phenolic compounds | | Lab page | | Saskia O’Sullivan, Tim Harrison | | 26 | | 1 | |
| The chemistry of LEDs | Light emitting diodes, semiconductors, conductors, insulators, white light | | Energy and efficiency | | Emma Dux | | 26 | | 1 | |
| Periodic table updated | Superheavy elements | | In pictures | | Anne Hodgson | | 26 | | 1 | |
| Volatile organic compounds: where do smells go? | VOCs, atmospheric chemistry, ozone, free radical reactions, CFCs, Criegee biradicals | |  | | Tim Harrison, Dudley Shallcross | | 26 | | 1 | |
| Molecular crossword | Crossword | | Making and doing | | Anne Hodgson | | 26 | | 1 | |
| Focus on the basics | Bonding and structure, naming compounds, constructing formulae, balanced equations, equilibrium, benzene reactions, rates of reaction, atom recovery, polymerisation, intermolecular bonding and solubility | | Answer back | | David Billett | | 26 | | 1 | |
| Dealing with significant figures | Calculations | | Top tips | | Tim Harrison | | 26 | | 1 | |
| Colourants: Where does colour come from? | Pigments, textile fibres, azo dyes, tautomerism, anthraquinone dyes, phthalocyanines, isomerism, conjugation, energy states, polymers, bonding | | Focus on industry | | Allan Clements, CIEC team | | 26 | | 1 | |
| Seeing with chemistry | Retinol (vitamin A), terpenoid alcohol, trans-retinal, cis-retinal, isomerisation reaction, opsin, rhodopsin, condensation reaction | | Back page | | Simon Cotton | | 26 | | 1 | |
| Cold plasma | Spectroscopy, free radicals, states of matter, low-temperature atmospheric pressure plasma, biomedical applications, reactive oxygen and nitrogen species, spectrophotometry | |  | | Yury Gorbanev | | 26 | | 2 | |
| Shining a light on solar energy | Electrical conductivity, energy levels, crystal structure, silicon solar cells, dye-sensitised solar cells, perovskite, organic photovoltaic cells | | Energy and efficiency | | Emma Dux | | 26 | | 2 | |
| Nitration of an arene | Nitration of methyl benzoate, electrophilic substitution, aromatic chemistry, practical techniques, vacuum filtration, thin layer chromatography, recrystallisation, solubility | | Lab page | | Tim Harrison | | 26 | | 2 | |
| Is every snowflake unique? | Snow crystals, hydrogen bonding | | In pictures | | Alice Smallwood | | 26 | | 2 | |
| Roses: The chemistry of our favourite flower | Enzymes, stereochemistry, chirality, organic reactions, functional groups, gas chromatography- mass spectrometry (GC-MS), fragrance molecules, odour units | |  | | Simon Cotton | | 26 | | 2 | |
| Chemword | Crossword | | Making and doing | | Anne Hodgson | | 26 | | 2 | |
| Wrack your brains | Iodine, seaweed, oxidation state, half equations, oxidation and reduction, halogens, electron configuration, titrations, mole calculations | | Answer back | | Maurice Carmody | | 26 | | 2 | |
| Classifying colourants by method of application | Applications of chemistry, bonding, fibres and polymers, aromatic structures, acid dyes, metal-complex dyes, basic dyes, disperse dyes, reactive dyes, vat dyes, sulphur dyes | | Focus on industry | | Allan Clements, CIEC team | | 26 | | 2 | |
| Back to Sherlock’s crime scene | Catalase, hydrogen peroxide, forensic chemistry, luminol test, chemiluminescence | | Back page | | Dominika Pasternak | | 26 | | 2 | |
| Reconstructing past climates using molecular fossils | Climate change, extraction techniques, fossil fuels, microorganisms, analytical techniques, Eocene epoch, biomarkers, sedimentary record, GDGT | |  | | Gordon Inglis, Richard Pancost, Tim Harrison | | 26 | | 3 | |
| Nucleophilic substitution | Nucleophiles, substitution reactions, curly arrow mechanisms, halogenoalkanes, dot-and-cross diagrams, Sn2 mechanism, electronegativity | | Revision note | | William Stockburn | | 26 | | 3 | |
| Not-so stainless steel | Green rust, oxidation and reduction, mole calculations, half equations, oxidation states, complex ions, ligands | | Answer back | | Maurice Carmody | | 26 | | 3 | |
| Pigments and high-tech colourants: What are the technical applications of colour? | Dyes, pigments, hydrogen bonding, molecular structure, polymers, solubility, liquid crystal displays, laser dyes, ink jet printing, photodynamic therapy, cancer treatment | | Focus on industry | | Allan Clements, CIEC team | | 26 | | 3 | |
| Mass, moles and gas equations | Calculations | | In pictures | | Anne Hodgson | | 26 | | 3 | |
| Batteries required: Advances in energy storage | Electrochemistry, oxidation and reduction, electrolytic cell, rechargeable batteries, lithium ion batteries, flow batteries, flow lithium batteries | | Energy and efficiency | | Emma Dux | | 26 | | 3 | |
| Make your own dye | Diazo dyestuff, orange azo dye, diazonium compounds, practical techniques, vacuum filtration, solubility, methyl orange indicator | | Lab page | | Tim Harrison, Nick Barker | | 26 | | 3 | |
| Flavour chemistry: Changing the taste of tomatoes | Isomerism, stereoisomers, E/Z (cis/trans) isomerism, epimers, enzymes, conjugation, spectroscopy, energy levels, colour chemistry, double bond equivalents, odour units | |  | | Simon Cotton | | 26 | | 3 | |
| Life in undergraduate labs | Practicals, university, safety | | Encounter | | Jessica Entwistle | | 26 | | 3 | |
| Life-saving viper | Snake venom, fer-de-lance viper, hypertension, captopril | | Back page | | Anne Hodgson | | 26 | | 3 | |
| Chiral chemistry: where does enantiomerically pure material come from? | Chirality, racemic/non-racemic mixtures, plane-polarised light, enantiomers, amino acids | |  | | Russell Banta, Shane Daly | | 26 | | 4 | |
| Electrophilic substitution of aromatic rings | Aromatic compounds, benzene rings, nitration of benzene, halogenation of benzene, acylation of benzene | | Revision note | | William Stockburn | | 26 | | 4 | |
| The many aromas of dimethyl sulfide | Molecular shapes, oxidation state, oxidation numbers, boiling points, intermolecular forces, hydrogen bonding | |  | | Simon Cotton | | 26 | | 4 | |
| Know your glassware | Practical chemistry | | In pictures | | Anne Hodgson | | 26 | | 4 | |
| Concentrate for first-rate answers | Kinetics, reaction rate, reaction mechanism, rate equation, rate constant | | Answer back | | Maurice Carmody | | 26 | | 4 | |
| Fuel from sunshine | Enthalpy, entropy, Gibbs free energy, semiconductors, oxidation and reduction, redox reactions, artificial photosynthesis, thermodynamics | | Energy and efficiency | | Emma Dux | | 26 | | 4 | |
| Atmospheric camp at York | Atmospheric monitoring, ozone, air quality and health, atmospheric layers, temperature inversion, urban pollution levels | | Encounter | | Josie Lewis, Lorien Birch, Freya Brown | | 26 | | 4 | |
| Making paint | Solvents, applications of chemistry, organic reactions, esterification, pigments, acrylic polymers, alkyd polymers, epoxy polymers | | Focus on industry | | Allan Clements, CIEC team | | 26 | | 4 | |
| The two sides of thalidomide | Chirality, enantiomers | | Back page | | Jessica Entwistle | | 26 | | 4 | |
| Galactic chemistry | Amino acids, proteins, enzymes, isomers, chirality, alkynes, mass spectrometry, astrochemistry | |  | | Simon Cotton | | 27 | | 1 | |
| Optical isomers and penicillin | Chirality, amino acids, antibiotics | | Did you know? | | Simon Cotton | | 27 | | 1 | |
| Jet fumes in the cabin: The aviation industry’s dirty secret? | Organophosphates, isomers, enzymes, aircraft engine, fume event, aerotoxic syndrome, jet fuel, tricresyl phosphate (TCP) | |  | | Stefan Swift | | 27 | | 1 | |
| Massive open online courses (Moocs) | FutureLearn, Exploring Everyday Chemistry Mooc | | Chemistry online | | Andy Parsons | | 27 | | 1 | |
| The chemistry behind baking | Reactions of carbonates, hydrogen bonding, sugars, proteins, fats, flour, butter, egg, baking powder | | In pictures | | Jessica Entwistle | | 27 | | 1 | |
| Landmine-detecting bacteria | Analytical chemistry, nitro compounds, proteins, DNA, RNA, bioreporting, bioluminescence, TNT | | Wonder bugs | | Emma Dux | | 27 | | 1 | |
| Acids, alkalis and pH | Weak acids, neutralisation reactions, pH calculations, ionic product of water, equilibrium calculations, concentration calculations, significant figures and logs, buffer solutions and approximations in related calculations, inorganic formulae | | Answer back | | Maurice Carmody | | 27 | | 1 | |
| Analgesics | Medicinal chemistry, chirality, R/S enantiomers, paracetamol, NSAIDs, aspirin, ibuprofen, opioids, compound analgesics, conotoxins, morphine, codeine | | Substances | | Alice Smallwood | | 27 | | 1 | |
| The Sun and moons | How Many Moons Does the Earth Have?, What Colour is the Sun?, Brian Clegg | | Worth reading | | Anne Hodgson | | 27 | | 1 | |
| Fuelling Formula 1 | Fuel combustion, motor sport | | Back page | | Sam Daly | | 27 | | 1 | |
| The coke in Coca-Cola | Medicinal chemistry, chemical extraction methods, neurotransmitters, coca leaves, kola nut, extracting cocaine, norepinephrine (noradrenaline), epinephrine (adrenaline) | |  | | Jessica Pound | | 27 | | 2 | |
| Science Down Under | 2017 International Science School, materials chemistry, time of flight mass spectrometry, industrial chemistry, sodium hydroxide production, electrolysis, redox reaction, determining water hardness, titrations, chelating ligands/complexes, 3D atom probe microscopy | | Encounter | | Anne Hodgson | | 27 | | 2 | |
| Holy smoke | Frankincense, reactions of alcohols, reactions of carbonyl compounds, uses of IR spectroscopy, carbon-13 NMR spectroscopy, mass spectrometry, chirality, isomers, redox reactions, hybrid orbitals | |  | | Simon Cotton | | 27 | | 2 | |
| Volumetric analysis | Laboratory skills, mole calculations | | Lab page | | Sam Daly | | 27 | | 2 | |
| Plastic-eating bacteria | Polymer applications, polymer synthesis, polymer recycling, enzymes, PET, PETase, MHET, MHET hydrolase | | Wonder bugs | | Emma Dux | | 27 | | 2 | |
| Rachel Louise Carson: Environmental champion | Organochlorides, environmental chemistry, pesticides, DDT, Silent Spring | | Scientists of substance | | Dimitrina Trendafilova | | 27 | | 2 | |
| Chemical vocabulary | Crossword | | Making and doing | | Anne Hodgson | | 27 | | 2 | |
| Squeaky clean with surfactants | Applications of chemistry, saponification, catalysis, anionic surfactants, alkylbenzene sulfonates, alkyl sulfates, alkyl ether sulfates, soaps | | Focus on industry | | Allan Clements, CIEC team | | 27 | | 2 | |
| Botulinum toxin: Killer or cure? | Botox, botulism | | Back page | | Alex Bytheway | | 27 | | 2 | |
| Apocalypse chemistry | Filtration, flocculation, pH, chelating agents, ligands, surface area, disproportionation, water treatment, activated charcoal, chlorination | |  | | Omar Shah | | 27 | | 3 | |
| Acetals and hemiacetals | Carbonyls, nucleophilic addition reactions, curly arrow mechanisms, optical isomerism, chirality, equilibrium calculations | | Answer back | | Maurice Carmody | | 27 | | 3 | |
| Interview with Nobel prizewinner Bernard Feringa | Molecular machines, 2016 Nobel prize in chemistry | | Encounter | | Sam Daly | | 27 | | 3 | |
| Does warm water freeze faster than cold water? | Experimental design, physical chemistry, changes of state | | Making and doing | | Anne Hodgson | | 27 | | 3 | |
| Know your units | Base units, derived units, multiplication factors | | Revision note | | Alexander Bytheway | | 27 | | 3 | |
| Raku pottery: Redox in action | Oxidation, reduction, glazes | | In pictures | | Anne Hodgson | | 27 | | 3 | |
| Soap and other surfactants | Applications of chemistry, saponification, hydrogen bonding, soap manufacture, cationic surfactants, mono alkyl quaternary systems, esterquats, nonionic surfactants, amphoteric surfactants | | Focus on industry | | Allan Clements, CIEC team | | 27 | | 3 | |
| Microbial medicine factories | Medicinal chemistry, aspirin, malaria, antimalarial drugs, quinine, mefloquine, artemisinin, bioengineering, yeast, hydrocodone | | Wonder bugs | | Emma Dux | | 27 | | 3 | |
| Fruity esters | Chirality, esterification, functional groups, isomerism, NMR spectroscopy, amino acids, lactones, propyl ethanoate, propan-2-yl ethanoate, proton NMR signals, Coenzyme A (CoA) | |  | | Simon Cotton | | 27 | | 3 | |
| Esterification mechanisms | Esters, reaction mechanisms, curly arrows | | Top tips | | Simon Cotton | | 27 | | 3 | |
| Molecular cars | Molecular motors, rotary motor | | Back page | | Sam Daly | | 27 | | 3 | |
| Candy-coated chemistry | Acid-base reactions, crystallisation, enzymes, carbohydrate chemistry, sugars, sweets, fudge, sherbet, popping candy, chocolate mints | |  | | Sam Daly | | 27 | | 4 | |
| Chemical conundrum | Puzzle | | Making and doing | | Anne Hodgson | | 27 | | 4 | |
| Solving climate change in a week | Green chemistry, oils, lubricants, biodiesel, IR spectroscopy, gas chromatography, oxidation, carbonyl chemistry, work experience | | Encounter | | Jess Smith, Tom Owens, Jonny Ruffell | | 27 | | 4 | |
| Turmeric: Medicinal applications | Metal complexes, oxidation, acids and bases, radicals, medicinal chemistry, curcumin, turmerone, Alzheimer’s disease, antioxidants | | Substances | | Yrina Ghrabigi | | 27 | | 4 | |
| Chemicals in cleaning | Applications of chemistry, surfactants, bleaching/oxidising agents, environmental chemistry, laundry detergents, dishwasher tablets, washing-up liquid, shampoo, shower gel, hair conditioner, fabric softener | | Focus on industry | | Allan Clements, CIEC team | | 27 | | 4 | |
| Saving SS *Great Britain*: Redox in action | Iron, corrosion, rust, conservation | | In pictures | | Anne Hodgson | | 27 | | 4 | |
| Cancer, catalysts and square planar coordination | Transition metals, d-block elements, catalysis, coordination chemistry, oxidation states, redox reactions, addition reactions, *cis*- and *trans*-isomers, cisplatin, Vaska’s compound, Wilkinson’s catalyst | |  | | Simon Cotton | | 27 | | 4 | |
| Testing turmeric | Colour chemistry, tautomers/isomers, pH, fluorescence, dye | | Lab page | | Yrina Ghrabigi | | 27 | | 4 | |
| New fuels from nature | Chirality, enzymes, sugars, polysaccharides, green chemistry, polymers, biofuels, cellulose, wood | | Wonder bugs | | Emma Dux | | 27 | | 4 | |
| Sunshine and vitamin D | UV light, vitamin D | | Back page | | Emma Dux | | 27 | | 4 | |
| Breath of life | VOCs, volatile organic compounds, GC-MS, biomarkers, breathalysers, breathomics | |  | | Andrew Parsons | | 28 | | 1 | |
| Bees, honey and venom | Bees, honey, venom, apitoxin, honeycomb, propolis, beeswax, royal jelly, royalactin | | Animal chemistry | | Emma Dux | | 28 | | 1 | |
| Drugs and dyes | Medicinal chemistry, aniline, phenylamine, acetanilide, phenacetin, paracetamol, acylation reactions, diazotisation, azo dyes, curry arrow mechanisms | |  | | Simon Cotton | | 28 | | 1 | |
| Elements of smartphones | Lithium-ion battery, touchscreen, LCD, liquid crystal display, camera, system-on-a-chip | | In pictures | | Maria Turkenburg | | 28 | | 1 | |
| Polymers and azo dyes | Polymer, azo dyes, amines, amides, carboxylic acids, acyl chlorides, aryl amines, diazonium salts, nitration, mechanism of electrophilic substitution of benzene rings, percentage yield calculations | | Answer back | | Maurice Carmody | | 28 | | 1 | |
| The continuum of bonding | Covalent bonding, ionic bonding, electronic configuration, Hess’s law | | Revision note | | Lynden Astill | | 28 | | 1 | |
| The Disappearing Spoon | Periodic table, properties of elements, Sam Kean | | Worth reading | | Sofia Helin | | 28 | | 1 | |
| Extracting oil and gas | Industrial chemistry, hydrocarbons, alkanes, oil, gas, drilling | | Focus on industry | | Allan Clements, CIEC team | | 28 | | 1 | |
| Solar power: Nature does it better | Renewable energy, biophotovoltaics, photosynthesis, chlorophyll | | Wonders of chemistry | | Mary Wood | | 28 | | 1 | |
| Conservation and cyclododecane | Conservation, CDD, cyclododecane | | Back page | | Lukas Geciauskas | | 28 | | 1 | |
| How clean is our air? | Atmospheric chemistry, pollution, photochemical smog, tropospheric chemistry, particulate matter, nitrogen oxides, NOx, VOCs, volatile organic compounds, ozone, chain radical reactions, universal gas law | |  | | Silvia Pugliese, Matthew Johnson | | 28 | | 2 | |
| Disentangling polarity | Ionic polarity, bond polarity, molecular polarity, dipoles, electronegativity, bonding, *E*/*Z* isomerism | | Revision note | | Lynden Astill | | 28 | | 2 | |
| Frogs and toads | Frogs, toads, medicinal chemistry, poisons, batrachotoxin, epibatidine, bufotenin, hibernation | | Animal chemistry | | Emma Dux | | 28 | | 2 | |
| Flying over fires | Atmospheric chemistry, moorland fires, pollution | | In pictures | | Dominika Pasternak | | 28 | | 2 | |
| What’s your poison? | Arsenic, wallpaper, copper arsenite, Scheele’s Green, March’s test, molecular shapes | |  | | Simon Cotton | | 28 | | 2 | |
| Photochemistry and drug synthesis | Medicinal chemistry, drug synthesis, retrosynthesis, anhydride formation, ring formation, photochemistry, photocycloaddition | | Chemistry in medicine | | Bethan Donnelly, Tim Harrison | | 28 | | 2 | |
| What happens in an oil refinery? | Industrial chemisty, fractional distillation, hydrocarbons, oil, gas, fractionating towers | | Focus on industry | | Allan Clements, CIEC team | | 28 | | 2 | |
| Investigating the structure of nucleic acids | Nucleic acids, radicals, analytical techniques, DNA, RNA, hydroxyl radical probing, DMS, CMCT, kethoxal, SHAPE, LASER | | How science works | | Ross Ward | | 28 | | 2 | |
| Spectroscopy of space | Excitation of atoms, absorption spectra, stars | | Back page | | Nicholas Lau | | 28 | | 2 | |
| Are vehicle exhaust fumes damaging our health? | Atmospheric chemistry, air quality, vehicle pollution, greenhouse gases, nitrogen oxides, NOx, exothermic combustion reactions, hydrocarbons, petrol, diesel, fuel efficiency automobile testing (FEAT), IR spectroscopy, UV-vis spectroscopy | |  | | Naomi Farren | | 28 | | 3 | |
| Synthesis and analysis | Practical techniques, displayed formulae, skeletal formulae, molecular formulae, oxidation of alcohols, acid/base reactions, balanced equations, mole calculations, theoretical yields, percentage yields, IR spectroscopy, interpreting mass spectra | | Answer back | | Maurice Carmody | | 28 | | 3 | |
| Cats and dogs | VOCs, volatile organic compounds, smell, catnip, nepetalactone, cat litter, bentonite, felinine, milk plastic, galalith, | | Animal chemistry | | Emma Dux | | 28 | | 3 | |
| Periodic table completed? | Periodic table, superheavy elements | | In pictures | | Anne Hodgson | | 28 | | 3 | |
| Elements old and new | Periodic table, atomic number, heavy elements, superheavy elements, relative atomic mass, radioactive decay, isotopes, moscovium, nihonium, oganesson, tennessine, IUPAC | | Wonders of chemistry | | Sofia Helin | | 28 | | 3 | |
| Periodic Tales: the CuriousLives of the Elements | Periodic table, noble gases, metals, alloys, Hugh Aldersey-Williams | | Worth Reading | | Anne Hodgson | | 28 | | 3 | |
| Valuable vanilla | Vanilla, vanillin, enzymes, isomerism, isotopes, NMR spectroscopy, food fraud | |  | | Simon Cotton | | 28 | | 3 | |
| Cracking and related refinery processes | Industrial chemistry, hydrocarbons, steam cracking, catalytic cracking, isomerisation, reforming, alkylation, dealkylation, disproportionation | | Focus on industry | | Allan Clements, CIEC team | | 28 | | 3 | |
| Knock, knock… | Industrial chemistry, petrol, gasoline, hydrocarbons, car engines, octane rating | | Did you know? | | Allan Clements, CIEC team | | 28 | | 3 | |
| Valentine chemistry | Flavones, flavonols, antioxidants, pigments, flower petals, quercetin, fisetin | | Back page | | Sofia Helin | | 28 | | 3 | |
| Organic nitrogen: the secret killer in Chinese megacities | Atmospheric chemistry, particulate matter, air pollution, photochemical smog, organic nitrogen species, nitroaromatic compounds, animal testing, toxicology, DNA, | |  | | Stefan Swift | | 28 | | 4 | |
| Fracking | Hydraulic fracking, shale rock, fracturing, methane, ethene, propane | | Focus on industry | | Allan Clements, CIEC team | | 28 | | 4 | |
| Chemistry with altitude | Atmospheric chemistry, analytical chemistry, GC-MS, | | Encounter | | Dominika Pasternak | | 28 | | 4 | |
| Reactions: the Private Life of Atoms | Peter Atkins | | Worth Reading | | Anne Hodgson | | 28 | | 4 | |
| What shape is my molecule? | Molecular shapes | | In pictures | | Emma Dux | | 28 | | 4 | |
| Phosphorus: the essential element | Phosphorus, phosphane, ammonia, molecular shapes, trihalides, acids, basicity, pentahalides, nucleic acids, DNA, RNA, ATP | |  | | Simon Cotton | | 28 | | 4 | |
| The future of the periodic table | Periodic table, atomic number, electron configuration, Charles Janet, left-step periodic table, Otto Theodor Benfey, spiral periodic table, Tim Stowe, physicist;s periodic table | | How science works | | Chris Coates | | 28 | | 4 | |
| Spiders | Spiders, spider venom, amino acids, cysteine knot, spider silks, spidroins, | | Animal chemistry | | Emma Dux | | 28 | | 4 | |
| Constructing an electrochemical cell | Electrochemical cells, laboratory skills, electrochemistry, | | Lab page | | Sam Daly | | 28 | | 4 | |
| The chemistry of coral bleaching | Coral, phytoplankton, zooxanthellae, coral bleaching | | Back page | | Lily Pople | | 28 | | 4 | |
| Is vaping really safer than smoking? | | Vaping, smoking, e-cigarettes, nicotine, tobacco, carcinogens | |  | | Simon Cotton | | 29 | | 1 | |
| Energy | | Forms of energy, energy levels, quantised energy, microwave radiation, spin states | | How science works | | Alex Bytheway | | 29 | | 1 | |
| Atomic structure: part 1 | | Atomic structure, atomic theory, model of the atom | | A brief history of… | | Emma Dux | | 29 | | 1 | |
| Scrambled scientists | | Puzzle | | Making and doing | | Anne Hodgson | | 29 | | 1 | |
| Cave chemistry | | Caves, limestone, calcium carbonate, speleothems | | In pictures | | Stephanie Batten | | 29 | | 1 | |
| Cantharidin: From aphrodisiac to cancer cure | | Cantharidin, Spanish fly, blister beetles, toxicity, antidotes, Diels-Alder reaction | |  | | Andrew Parsons | | 29 | | 1 | |
| Concentrate on sulfuric acid | | Reaction mechanisms, reactions of alkenes, geometric and structural isomerism, oxidation of alcohols, reactions of halides with concentrated sulfuric acid | | Answer back | | Maurice Carmody | | 29 | | 1 | |
| Chemistry in knots | | Macramé, periodic table | | Making and doing | | Anne Hodgson and Jane Stewart | | 29 | | 1 | |
| Scrambled scientists | | Hennig Brand, Humphry Davy, Marie Curie, Glenn Seaborg, Dmitri Mendeleev, Ernest Rutherford, Albert Einstein, Niels Bohr, Isaac Newton, Anders Celsius, Charles-Augustin de Coulomb, John Dalton, Robert Bunsen, Emil Erlenmeyer, Johan Kjeldahl, Julius Petri | | Did you know? | | Anne Hodgson | | 29 | | 1 | |
| Aluminium | | Aluminium production, bauxite, aluminium oxide, cryolite, aluminium fluoride, electrolysis | | Focus on industry | | Allan Clements, CIEC team | | 29 | | 1 | |
| Radical clean-up | | Pollution, hydroxyl radical, climate change | | Back page | | Stephanie Batten | | 29 | | 1 | |
| Partitioning proteins | | Amino acids, proteins, DNA, X-ray crystallography, diffraction, Bergmann-Niemann hypothesis, wool fibres, partitioning chromatography | |  | | Kersten Hall | | 29 | | 2 | |
| Chameleon colour changes | | Chameleons, structural colours, superficial iridiphores, lattice/crystalline structures, osmosis | | Wonders of chemistry | | Stephanie Batten | | 29 | | 2 | |
| Where would we be without chlorine? | | Chlorine, silicon(IV) chloride, titanium(IV) chloride, sodium chloride, oxidation state, bleach, potassium chlorate, matches, fireworks, metal chlorides | |  | | Simon Cotton | | 29 | | 2 | |
| The elephant in the lab | | School science club, decomposition of hydrogen peroxide, elephant’s toothpaste experiment, catalysis, molecular orbital diagram | | Encounter | | Nicholas Lau | | 29 | | 2 | |
| The elephant’s toothpaste experiment | | Decomposition of hydrogen peroxide, elephant’s toothpaste experiment | | In pictures | | Nicholas Lau | | 29 | | 2 | |
| Analysing limescale remover by acid-base titration | | Acid-base titration, limescale remover, hardness of water, calcium carbonate | | Lab page | | John McCullagh | | 29 | | 2 | |
| Atomic structure: part 2 | | Atomic structure, quantum physics, electromagnetic radiation, blackbody radiation, the photoelectric effect, photons, Planck’s constant, atomic emission line spectra, electron orbital filling, shapes of orbitals, quantum mechanical model, quantum theory, Heisenberg’s uncertainty principle, the Schrödinger equation, neutrons | | A brief history of… | | Emma Dux | | 29 | | 2 | |
| Iron | | Metal extraction, redox reactions, cast iron, wrought iron, steel, iron ore, coke, blast furnace | | Focus on industry | | Allan Clements, CIEC team | | 29 | | 2 | |
| Cosmetic scientist | | Cosmetic industry, process chemist | | Careers in chemistry | | Rachael Davison | | 29 | | 2 | |
| Endangered elements | | Periodic table | | Back page | | Anne Hodgson | | 29 | | 2 | |
| The chemical weaponry of plants | | Pollination, natural pigments, conjugated systems, carotenoids, flavonoids, isoprene, visible light, pH, bees, terpenes, terpenoids, primary and secondary metabolites | |  | | Bridget O’Boyle | | 29 | | 3 | |
| The f block elements | | Periodic table, f block elements, electron configuration, lanthanides, actinides, Aufbau principle, atomic orbitals, radioactivity, oxidation states, magnetic resonance imaging (MRI), reducing agents, contrast agents, gadolinium | | How science works | | Sam Daly | | 29 | | 3 | |
| Mystery metal | | Puzzle | | Making and doing | | Anne Hodgson | | 29 | | 3 | |
| Naming (*R*/*S*) isomers | | Chirality, (*R*/*S*) isomers | | Top tips | | Anne Hodgson | | 29 | | 3 | |
| Fighting fallacies in chemistry communications | | Fallacies, argumentum as hominem, appeal to authority | | How science works | | Lynda Dunlop, Joshua Stubbs | | 29 | | 3 | |
| Do you know your functional groups? | | Alkenes, alcohols, halogenoalkanes, halogenoalkenes, amines, amides, carboxylic acids, ethers, esters, aldehydes, ketones | | In pictures | | Alex Bytheway, Connor Rutter | | 29 | | 3 | |
| Why do we smell? | | Chiral molecules, (*E*/*Z*) and *cis*/*trans* isomerism, aliphatic and aromatic hydrocarbons, sweat, death, dogs, forensics, esters, thiols | |  | | Simon Cotton | | 29 | | 3 | |
| Recharging the batteries | | Electrochemistry, lead-acid batteries, lithium batteries, Nobel prize, bioengineering, potato batteries, | | Wonders of chemistry | | Sofia Helin | | 29 | | 3 | |
| Steel | | Steel production, basic oxygen steelmaking process, electric arc furnace process, secondary steelmaking, casting, recycling | | Focus on industry | | Allan Clements, CIEC team | | 29 | | 3 | |
| Red cabbage indicators | | Red cabbage, pH, anthocyanins | | Making and doing | | Anne Hodgson | | 29 | | 3 | |
| Highlighting hair dye | | Dyes, pigments, hair, cuticle, cortex, medulla, bleaching, | |  | | Ross Ward | | 29 | | 4 | |
| The chemistry of nuclear energy | | Nuclear energy, atomic structure, nuclear fission, radioactivity, enrichment, uranium | |  | | Emma Dux | | 29 | | 4 | |
| Maxwell-Boltzmann distribution curves | | Maxwell-Boltzmann distribution curves, reaction rates | | Revision note | | Anne Hodgson | | 29 | | 4 | |
| Myth busting | | Logical fallacies, false dilemma, false dichotomy, post hoc ergo propter hoc, spurious correlations | | How science works | | Lynda Dunlop, Joshua Stubbs | | 29 | | 4 | |
| Acids and their uses | | Mineral acids, hydrochloric acid, hydrofluoric acid, nitric acid, phosphoric acid, sulfuric acid, organic acids, citric acid, lactic acid, carbonic acid, ethanoic acid | | In pictures | | Alex Bytheway, Connor Rutter | | 29 | | 4 | |
| Lead’s poisonous legacy | | Lead, paint, pipes, petrol, gasoline, tetraethyllead, catalytic converters, complexing agent, complexes, ligands, stability constant *K* | |  | | Simon Cotton | | 29 | | 4 | |
| Sugar: A bittersweet tale? | | Sugar, carbohydrates, monosaccharides, disaccharides, human nutrition, diabetes, sucrose, corn syrup | | Substances | | Jeffrey Deakin | | 29 | | 4 | |
| Chemical crossword | | Crossword | | Making and doing | | Peter Wade-Wright | | 29 | | 4 | |
| Lead | | Lead production, redox reactions, smelting, recycling, alloys | | Focus on industry | | Allan Clements, CIEC team | | 29 | | 4 | |
| Chemistry in China | | Sichuan University, supramolecular chemistry, DNA analysis, G-quadruplexes | | Encounter | | Lawrence Henry | | 29 | | 4 | |
| Creating the lunar seas | | Moon, maria, terrae, KREEP, thorium | | Back page | | Stephanie Batten | | 29 | | 4 | |