

International Year of the Periodic Table

The Periodic Table - a fun fusion of science, music, art and history

Royal Society of Edinburgh
10am to 4.30pm, 23rd November 2019

On display in the Wellcome Gallery

- **The oldest known printed periodic table wall chart** (facsimile) published in 1885 and brought to St Andrews in 1888. Found in the University 6 years ago, the Table has recently been conserved and displayed at the Royal Society of Chemistry.
- **The world's only periodic table made by the ancient craft of macramé.** Created by Jane Stewart, it consists of 200,000 knots and took 350 hours to complete.
- **A new version of the periodic table** released by the European Chemical Society highlighting element scarcity and vulnerability.
- **Schools' Poster competition display.** A periodic table made from posters of the individual elements by local primary school children in a competition.
- **A unique collection of stamps featuring famous scientists.** Stamps from the collection of Richard Squires, a retired former science teacher at Trinity High School in Edinburgh featuring 270 named scientists from many different countries.

Plus an array of table top chemistry experiments and activities (suitable for all ages)

Periodische Gesetzmässigkeit der Elemente nach Mendelejeff.

Reihen	Gruppe I R ² O	Gruppe II RO	Gruppe III R ² O ³	Gruppe IV RH ⁴ RO ²	Gruppe V RH ³ R ² O ⁵	Gruppe VI RH ² RO ³	Gruppe VII RH R ² O ⁷	Gruppe VIII RO ⁴
1	H=1							
2	Li=7	Be=9,4	B=11	C=12	N=14	O=16	F=19	
3	Na=23	Mg=24	Al=27,3	Si=28	P=31	S=32	Cl=35,5	
4	K=39	Ca=40	Sc=44	Ti=48	V=51	Cr=52	Mn=55	Fe=56, Co=59 Ni=59, Cu=63
5	(Cu=63)	Zn=65	Ga=68	--=72	As=75	Se=79	Br=80	
6	Rb=85	Sr=87	Yt=88	Zr=90	Nb=94	Mo=96	--=100	Ru=104, Rh=104 Pd=106, Ag=108
7	(Ag=108)	Cd=112	In=113	Sn=118	Sb=122	Te=125	J=127	
8	Cs=133	Ba=137	Ce=137	La=139	--	Di=145?	--	
9	(-)	--	--	--	--	--	--	
10	-- 165	-- 169	Er=170	--173	Ta=182	W=184	--	Pt=194, Os=195(?) Ir=193, Au=196
11	(Au=196)	Hg=200	Tl=204	Pb=206	Bi=210	--	--	
12	--	--	--	Th=231	--	U=240	--	

Programme notes

Borodin String Quartet No 2 (Nocturne, film)

Violin – Corin Whitmarsh, Violin – Martha Prindl, Viola – Neil Coe, Cello – Jenny Park

Alexander Borodin was a chemist and friend of Dmitri Mendeleev, whose announcement of the Periodic Law we celebrate today, 150 years later.

Borodin wrote two string quartets in the last fifteen years of his life; the second quartet was premiered in 1882. The Nocturne is the third movement of the second quartet and has become well known as a standalone piece due to it being used as the basis of the song *And this is my beloved* in the 1953 musical *Kismet*. Borodin was a cellist and his love for the instrument is obvious in the way he writes for the cello throughout.

Robin Haigh *Hydrogen, helium etcetera*

Flute – Eva Wardlow, Violin – Corin Whitmarsh, Bassoon – Campbell Lang

This music highlights the messages of the EuChemS Periodic Table, such as elemental dispersion and the ethical implications of using minerals that are imported from conflict zones.

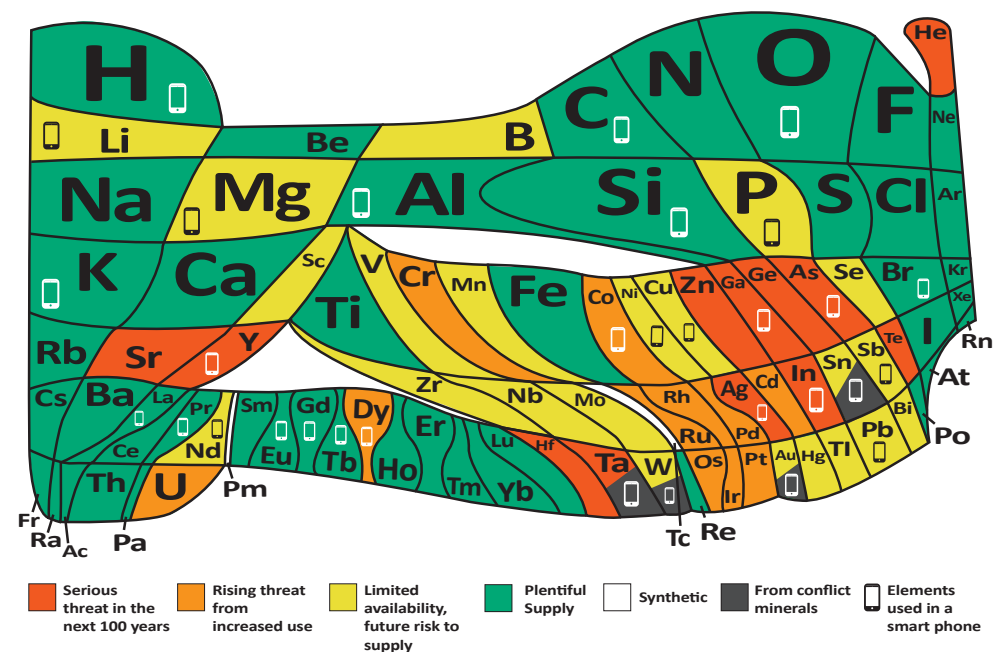
Hydrogen, Helium, Etcetera, uses an unconventional trio of flute, violin and bassoon in addition to a part for pre-recorded electronic playback. Influences on the piece include Tom Lehrer's song 'The Elements' and video game soundtracks from the 1980s. Despite featuring no singers, *Hydrogen Helium Etcetera* is essentially a song consisting of five repetitions of the same material with different accompaniments and short interludes between each iteration.

Nicole Murphy *Surface Bound*

Flute – Eva Wardlow, Bassoon – Campbell Lang, Trumpet – Bede Williams, Horn – Billy Rooke

Surface-bound reflects this course of developing awareness, reflecting and celebrating the pathways towards the future outlined in the talk by David Cole-Hamilton.

The opening of the work reflects the diversity and richness of our current world, created by the interactions of the ninety elements of the periodic table. In this section, active musical gestures combine, fragment, interact and are recycled in new forms. Gradually these gestures become more sustained and the vibrancy of the opening section gives way to more introspective material, providing a moment to reflect and contemplate the implications of inaction. The final section of the work presents a new reality. One that is as rich and diverse as the world we know, but different. The musical material is treated differently, leading to a new sonic landscape. The final gesture of the work is unresolved and questioning, inviting the listener to imagine the possibilities of the future.



Programme – Lecture Theatre

All FREE but you must pick up a ticket

10.45am and again at 2pm (suitable for 9 yrs +)

Covered by Dirt and Dust: the story of the oldest published periodic table wallchart, Dr M. Pilar Gil

Music: Alexander Borodin 2nd String Quartet (Nocturne, film)

11.30am and again at 3pm (suitable for 9 yrs +)

Music: Robin Haigh Hydrogen, helium etcetera

Talk: Nurturing the World's building blocks, Professor David Cole-Hamilton

Music: Nicole Murphy Surface Bound

Both pieces commissioned through an international competition.

12:30pm (suitable for 14+)

Talk: Dr Stephen Mansell, A Periodic Tale: 150 years and still up to date

Music: The New Periodic Table Song (2017) performed by St Columba's High, Dunfermline, S3 pupil, Rhiannon Gulliford

1.30pm and again at 4pm (suitable for all ages)

The Elements by Tom Lehrer performed by Sixth Former, Kit McCarthy, St Leonards School St Andrews, accompanied by Rebecca Clulow

1.45pm (suitable for all ages)

Awards Ceremony

Prizes will be presented to winners of the primary school poster competition.

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