

Contained within this folder are a series of periodic tables with various aspects of the elements highlighted (such as their presence in the body or mobile phones, how endangered the elements are, or how much the elements are recycled). These are designed to be printed out on A3 sized paper which can then be used in any 'sorting' activities you may wish to use with the samples from the element sets. Below are some further ideas you may want to highlight on periodic tables of your own – a blank A3 sized table is included in this folder.

Further Ideas for sorting templates for element sets

number of valence electrons = group number										number of valence electrons = group number - 10								
Group																		
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18																		
Period 1	H 1																	He 2
2	Li 3	Be 4											B 5	C 6	N 7	O 8	F 9	Ne 10
3	Na 11	Mg 12											Al 13	Si 14	P 15	S 16	Cl 17	Ar 18
4	K 19	Ca 20	Sc 21	Ti 22	V 23	Cr 24	Mn 25	Fe 26	Co 27	Ni 28	Cu 29	Zn 30	Ga 31	Ge 32	As 33	Se 34	Br 35	Kr 36
5	Rb 37	Sr 38	Y 39	Zr 40	Nb 41	Mo 42	Tc 43	Ru 44	Rh 45	Pd 46	Ag 47	Cd 48	In 49	Sn 50	Sb 51	Te 52	I 53	Xe 54
6	Cs 55	Ba 56	La 57	Hf 72	Ta 73	W 74	Re 75	Os 76	Ir 77	Pt 78	Au 79	Hg 80	Tl 81	Pb 82	Bi 83	Po 84	At 85	Rn 86
7	Fr 87	Ra 88	Ac 89	Rf 104	Db 105	Sg 106	Bh 107	Hs 108	Mt 109	Ds 110	Rg 111	Cn 112	Nh 113	Fl 114	Mc 115	Lv 116	Ts 117	Og 118

Ce 58	Pr 59	Nd 60	Pm 61	Sm 62	Eu 63	Gd 64	Tb 65	Dy 66	Ho 67	Er 68	Tm 69	Yb 70	Lu 71
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Th 90	Pa 91	U 92	Np 93	Pu 94	Am 95	Cm 96	Bk 97	Cf 98	Es 99	Fm 100	Md 101	No 102	Lr 103
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number of electron shells = period

main group elements

transition elements

FIGURE 2.4.2 The periodic table with some key features highlighted

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Period 1	H 1																	He 2
2	Li 3	Be 4											B 5	C 6	N 7	O 8	F 9	Ne 10
3	Na 11	Mg 12											Al 13	Si 14	P 15	S 16	Cl 17	Ar 18
4	K 19	Ca 20	Sc 21	Ti 22	V 23	Cr 24	Mn 25	Fe 26	Co 27	Ni 28	Cu 29	Zn 30	Ga 31	Ge 32	As 33	Se 34	Br 35	Kr 36
5	Rb 37	Sr 38	Y 39	Zr 40	Nb 41	Mo 42	Tc 43	Ru 44	Rh 45	Pd 46	Ag 47	Cd 48	In 49	Sn 50	Sb 51	Te 52	I 53	Xe 54
6	Cs 55	Ba 56	La 57	Hf 72	Ta 73	W 74	Re 75	Os 76	Ir 77	Pt 78	Au 79	Hg 80	Tl 81	Pb 82	Bi 83	Po 84	At 85	Rn 86
7	Fr 87	Ra 88	Ac 89	Rf 104	Db 105	Sg 106	Bh 107	Hs 108	Mt 109	Ds 110	Rg 111	Cn 112	Nh 113	Fl 114	Mc 115	Lv 116	Ts 117	Og 118

Ce 58	Pr 59	Nd 60	Pm 61	Sm 62	Eu 63	Gd 64	Tb 65	Dy 66	Ho 67	Er 68	Tm 69	Yb 70	Lu 71
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Th 90	Pa 91	U 92	Np 93	Pu 94	Am 95	Cm 96	Bk 97	Cf 98	Es 99	Fm 100	Md 101	No 102	Lr 103
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alkali metals
alkaline earth metals
halogens
noble gases
lanthanoids
actinoids

FIGURE 2.4.4 The periodic table, highlighting some special groups

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Period 1	H 1																	He 2
2	Li 3	Be 4											B 5	C 6	N 7	O 8	F 9	Ne 10
3	Na 11	Mg 12											Al 13	Si 14	P 15	S 16	Cl 17	Ar 18
4	K 19	Ca 20	Sc 21	Ti 22	V 23	Cr 24	Mn 25	Fe 26	Co 27	Ni 28	Cu 29	Zn 30	Ga 31	Ge 32	As 33	Se 34	Br 35	Kr 36
5	Rb 37	Sr 38	Y 39	Zr 40	Nb 41	Mo 42	Tc 43	Ru 44	Rh 45	Pd 46	Ag 47	Cd 48	In 49	Sn 50	Sb 51	Te 52	I 53	Xe 54
6	Cs 55	Ba 56	La 57	Hf 72	Ta 73	W 74	Re 75	Os 76	Ir 77	Pt 78	Au 79	Hg 80	Tl 81	Pb 82	Bi 83	Po 84	At 85	Rn 86
7	Fr 87	Ra 88	Ac 89	Rf 104	Db 105	Sg 106	Bh 107	Hs 108	Mt 109	Ds 110	Rg 111	Cn 112	Nh 113	Fl 114	Mc 115	Lv 116	Ts 117	Og 118

Ce 58	Pr 59	Nd 60	Pm 61	Sm 62	Eu 63	Gd 64	Tb 65	Dy 66	Ho 67	Er 68	Tm 69	Yb 70	Lu 71
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Th 90	Pa 91	U 92	Np 93	Pu 94	Am 95	Cm 96	Bk 97	Cf 98	Es 99	Fm 100	Md 101	No 102	Lr 103
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s-block
p-block
d-block
f-block
Lanthanoids
Actinoids

FIGURE 2.4.5 Colour is used to distinguish between the s, p, d and f-blocks of elements.

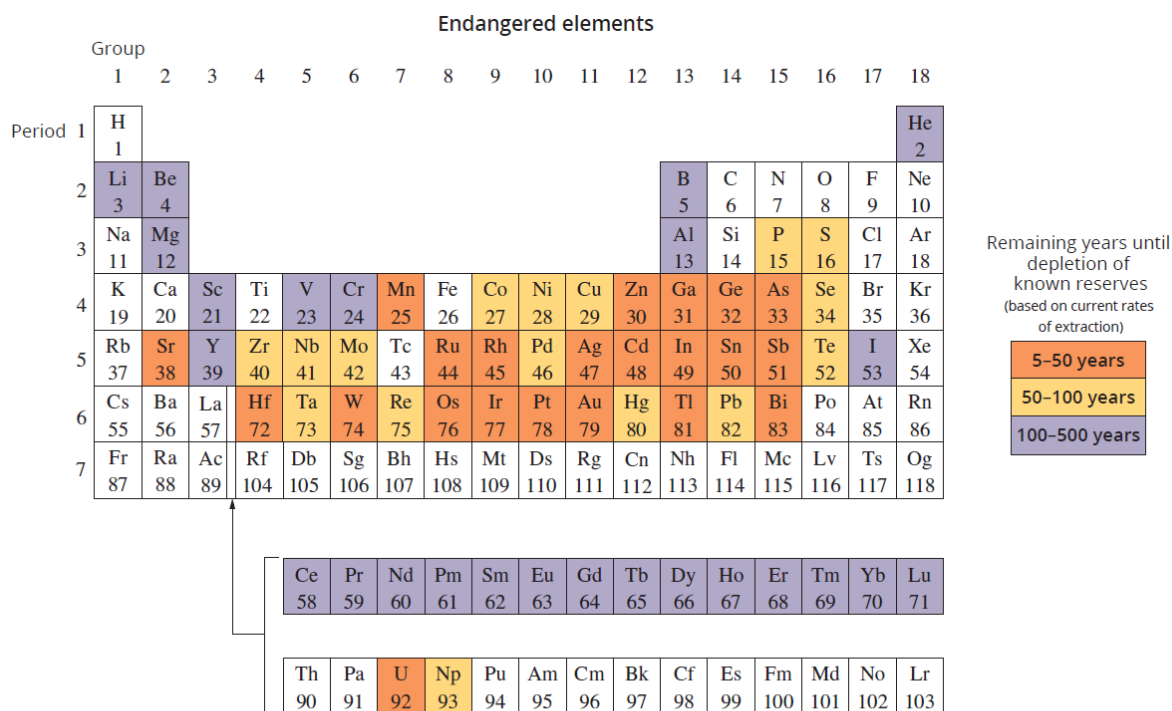


FIGURE 2.4.7 Some of the elements identified as endangered, with estimates for how long they will be available.

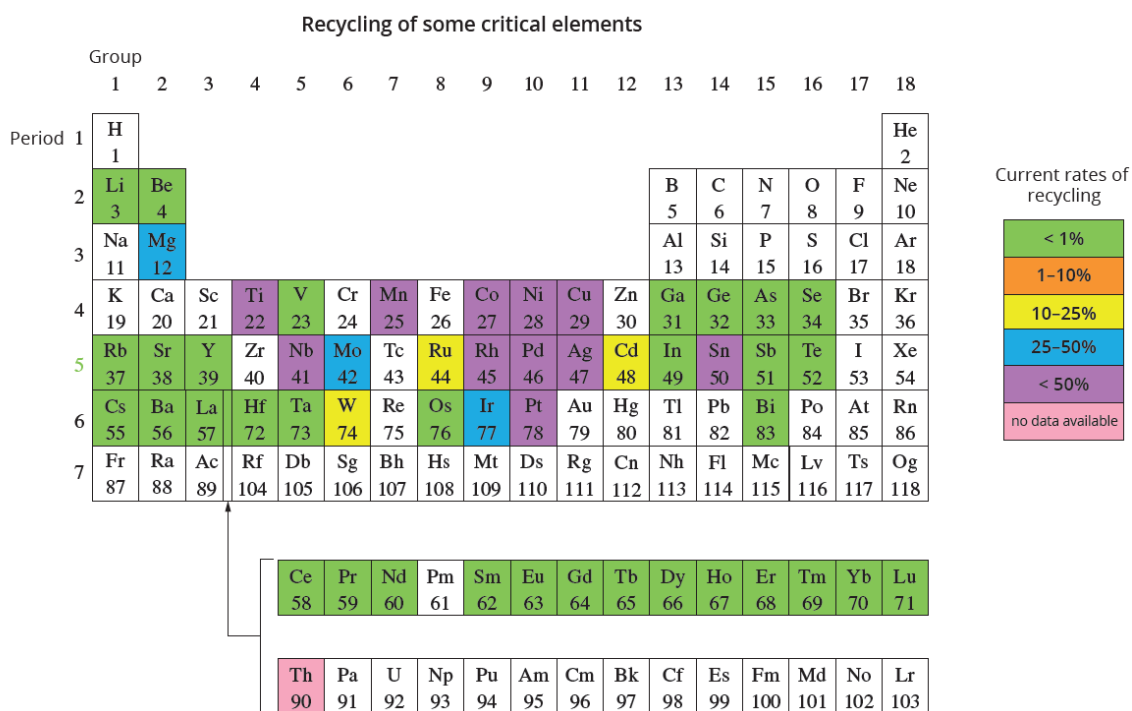


FIGURE 2.4.9 There is little to no recycling of many of the elements currently being used as raw materials.

		Electronegativity increases →												13	14	15	16	17	18	
Group	1	2																		
Period	1																			
			2.2 H — electronegativity — symbol																	
2	1.0 Li	1.6 Be											2.0 B	2.6 C	3.0 N	3.4 O	4.0 F	Ne		
3	0.9 Na	1.3 Mg	3	4	5	6	7	8	9	10	11	12	1.6 Al	1.9 Si	2.2 P	2.6 S	3.2 Cl	Ar		
4	0.8 K	1.0 Ca	1.4 Sc	1.5 Ti	1.6 V	1.7 Cr	1.6 Mn	1.8 Fe	1.9 Co	1.9 Ni	1.9 Cu	1.7 Zn	1.8 Ga	2.0 Ge	2.0 As	2.55 Se	3.0 Br	Kr		
5	0.8 Rb	1.0 Sr	1.2 Y	1.3 Zr	1.6 Nb	2.2 Mo	2.0 Tc	2.2 Ru	2.3 Rh	2.2 Pd	2.0 Ag	1.7 Cd	1.8 In	2.0 Sn	2.0 Sb	2.1 Te	2.7 I	Xe		
6	0.8 Cs	0.9 Ba																		

Electronegativity decreases ↓

FIGURE 3.3.2 Table of electronegativity values. This periodic table shows the electronegativities of the atoms of each element. The electronegativities generally increase from left to right across the periods and decrease down the groups.