Periodic Table with Electrons per Shell

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 **H** Hydrogen 1																	2 **He** Helium 2
2	3 **Li** Lithium 2-1	4 **Be** Beryllium 2-2											5 **B** Boron 2-3	6 **C** Carbon 2-4	7 **N** Nitrogen 2-5	8 **O** Oxygen 2-6	9 **F** Fluorine 2-7	10 **Ne** Neon 2-8
3	11 **Na** Sodium 2-8-1	12 **Mg** Magnesium 2-8-2											13 **Al** Aluminium 2-8-3	14 **Si** Silicon 2-8-4	15 **P** Phosphorus 2-8-5	16 **S** Sulfur 2-8-6	17 **Cl** Chlorine 2-8-7	18 **Ar** Argon 2-8-8
4	19 **K** Potassium 2-8-8-1	20 **Ca** Calcium 2-8-8-2	21 **Sc** Scandium 2-8-9-2	22 **Ti** Titanium 2-8-10-2	23 **V** Vanadium 2-8-11-2	24 **Cr** Chromium 2-8-13-1	25 **Mn** Manganese 2-8-13-2	26 **Fe** Iron 2-8-14-2	27 **Co** Cobalt 2-8-15-2	28 **Ni** Nickel 2-8-16-2	29 **Cu** Copper 2-8-18-1	30 **Zn** Zinc 2-8-18-2	31 **Ga** Gallium 2-8-18-3	32 **Ge** Germanium 2-8-18-4	33 **As** Arsenic 2-8-18-5	34 **Se** Selenium 2-8-18-6	35 **Br** Bromine 2-8-18-7	36 **Kr** Krypton 2-8-18-8
5	37 **Rb** Rubidium 2-8-18-8-1	38 **Sr** Strontium 2-8-18-8-2	39 **Y** Yttrium 2-8-18-9-2	40 **Zr** Zirconium 2-8-18-10-2	41 **Nb** Niobium 2-8-18-12-1	42 **Mo** Molybdenum 2-8-18-13-1	43 **Tc** Technetium 2-8-18-13-2	44 **Ru** Ruthenium 2-8-18-15-1	45 **Rh** Rhodium 2-8-18-16-1	46 **Pd** Palladium 2-8-18-18	47 **Ag** Silver 2-8-18-18-1	48 **Cd** Cadmium 2-8-18-18-2	49 **In** Indium 2-8-18-18-3	50 **Sn** Tin 2-8-18-18-4	51 **Sb** Antimony 2-8-18-18-5	52 **Te** Tellurium 2-8-18-18-6	53 **I** Iodine 2-8-18-18-7	54 **Xe** Xenon 2-8-18-18-8
6	55 **Cs** Cesium 2-8-18-18-8-1	56 **Ba** Barium 2-8-18-18-8-2		72 **Hf** Hafnium 2-8-18-32-10-2	73 **Ta** Tantalum 2-8-18-32-11-2	74 **W** Tungsten 2-8-18-32-12-2	75 **Re** Rhenium 2-8-18-32-13-2	76 **Os** Osmium 2-8-18-32-14-2	77 **Ir** Iridium 2-8-18-32-15-2	78 **Pt** Platinum 2-8-18-32-17-1	79 **Au** Gold 2-8-18-32-18-1	80 **Hg** Mercury 2-8-18-32-18-2	81 **Tl** Thallium 2-8-18-32-18-3	82 **Pb** Lead 2-8-18-32-18-4	83 **Bi** Bismuth 2-8-18-32-18-5	84 **Po** Polonium 2-8-18-32-18-6	85 **At** Astatine 2-8-18-32-18-7	86 **Rn** Radon 2-8-18-32-18-8
7	87 **Fr** Francium 2-8-18-32-18-8-1	88 **Ra** Radium 2-8-18-32-18-8-2		104 **Rf** Rutherfordium 2-8-18-32-32-10-2	105 **Db** Dubnium 2-8-18-32-32-11-2	106 **Sg** Seaborgium 2-8-18-32-32-12-2	107 **Bh** Bohrium 2-8-18-32-32-13-2	108 **Hs** Hassium 2-8-18-32-32-14-2	109 **Mt** Meitnerium 2-8-18-32-32-15-2	110 **Ds** Darmstadtium 2-8-18-32-32-16-2	111 **Rg** Roentgenium 2-8-18-32-32-17-2	112 **Cn** Copernicium 2-8-18-32-32-18-2	113 **Nh** Nihonium 2-8-18-32-32-18-3	114 **Fl** Flerovium 2-8-18-32-32-18-4	115 **Mc** Moscovium 2-8-18-32-32-18-5	116 **Lv** Livermorium 2-8-18-32-32-18-6	117 **Ts** Tennessine 2-8-18-32-32-18-7	118 **Og** Oganesson 2-8-18-32-32-18-8

				57 **La** Lanthanum 2-8-18-18-9-2	58 **Ce** Cerium 2-8-18-19-9-2	59 **Pr** Praseodymium 2-8-18-21-8-2	60 **Nd** Neodymium 2-8-18-22-8-2	61 **Pm** Promethium 2-8-18-23-8-2	62 **Sm** Samarium 2-8-18-24-8-2	63 **Eu** Europium 2-8-18-25-8-2	64 **Gd** Gadolinium 2-8-18-25-9-2	65 **Tb** Terbium 2-8-18-27-8-2	66 **Dy** Dysprosium 2-8-18-28-8-2	67 **Ho** Holmium 2-8-18-29-8-2	68 **Er** Erbium 2-8-18-30-8-2	69 **Tm** Thulium 2-8-18-31-8-2	70 **Yb** Ytterbium 2-8-18-32-8-2	71 **Lu** Lutetium 2-8-18-32-9-2
				89 **Ac** Actinium 2-8-18-32-18-9-2	90 **Th** Thorium 2-8-18-32-18-10-2	91 **Pa** Protactinium 2-8-18-32-20-9-2	92 **U** Uranium 2-8-18-32-21-9-2	93 **Np** Neptunium 2-8-18-32-22-9-2	94 **Pu** Plutonium 2-8-18-32-24-8-2	95 **Am** Americium 2-8-18-32-25-8-2	96 **Cm** Curium 2-8-18-32-25-9-2	97 **Bk** Berkelium 2-8-18-32-27-8-2	98 **Cf** Californium 2-8-18-32-28-8-2	99 **Es** Einsteinium 2-8-18-32-29-8-2	100 **Fm** Fermium 2-8-18-32-30-8-2	101 **Md** Mendelevium 2-8-18-32-31-8-2	102 **No** Nobelium 2-8-18-32-32-8-2	103 **Lr** Lawrencium 2-8-18-32-32-8-3

Periodic Table PDF with Electrons per Shell (black and white): notes

About this sheet

Each tile shows the atomic number, symbol, name and the number of electrons in each shell, for example 2-8-1 for sodium.

Best for

Drawing Bohr diagrams, seeing how shells fill across a period, and linking shell counts to periods and valence electrons.

Printing

Plain white tiles with black outlines use very little ink and photocopy cleanly, so it suits class sets and sheets students will write on. Sized for A4 landscape: print at 100% (actual size) so the margins stay correct.

What the data shows

Each tile shows how the electrons are spread over the shells. Oganesson, for example, reads 2, 8, 18, 32, 32, 18, 8, filling seven shells, the most any element uses.

The number of elements with 1 to 7 shells is 2, 8, 8, 19, 17, 32 and 32. Palladium is the one element with fewer shells than its period number, because its outer shell is empty.

How the table is organised

Atomic number counts the protons in an atom's nucleus and fixes each element's place in the table. Moving down a group adds a new electron shell, so atomic radius grows and metallic character increases.

More periodic table PDFs are free to download at https://periodictable.page/periodic-table-pdf/.