














































































































































Mnemonics to Memorise all Chemical Elements and Atomic Numbers

 H															 He		
 Li	 Be											 B	 C	 N	 O	 F	NEON Ne
 Na	 Mg											 Al	 Si	 P	 S	 Cl	 1% Ar
 K	 Ca	 Sc	 Ti	 V	 Cr	 Mn	 Fe	 Co	 Ni	 Cu	 Zn	 Ga	 Ge	 As	 Se	 Br	 Kr
 Rb	 Sr	 Y	 Zr	 Nb	 Mo	 Tc	 44 Ru	 Rh	 Pd	 Ag	 Cd	 In	 Sn	 Sb	 Te	 I	 Xe
 Cs	 Ba	 La	 Hf	 Ta	 BULB W	 Re	 Os	 Ir	 Pt	 Au	 Hg	 Tl	 Pb	 Bi	 Po	 At	 Rn
 Fr	 Ra	 Ac	 Rf	 Db	 Sg	 Bh	 Hs	 Mt	 Ds	 Rg	 Cn	 Nh	 Fl	 Mc	 Lv	 Ts	 Og









 Ce	 Pr	 Nd	 Pm	 Sm	 Eu	 Gd	 Tb	 Dy	 Ho	 Er	 Tm	 Yb	 Lu
 Th	 91° Pa	 U	 Np	 Pu	 Am	 Cm	 Bk	 Cf	 Es	 Fm	 Md	 No	 Lr

	1. Hydrant (Hydrogen H). Hydrant sounds like hydrogen. Shaped like a '1' to remember atomic number is 1. From a Greek word meaning 'water producer'.
	2. Helium Balloon (Helium He). Silver coloured for 'second place' (silver medal) to remember atomic number is 2. From a Greek word meaning 'Sun'.
	3. Lithium watch battery (Lithium Li), 3-volt. From a Greek word meaning 'stone'.
	4. Four Berries (Beryllium Be). Named after the gemstone beryl, which is beryllium aluminium cyclosilicate.
	5. Box of Borax (Boron B). Named after the mineral borax, which is sodium borate. There are 5 letters in the word Boron, to remember atomic number is 5.
	6. Charcoal pencil (Carbon C). Charcoal and graphite in pencil lead are carbon. Hexagonal (6-sided), to remember atomic number is 6. There are 6 letters in the word Carbon.
	7. Nitroglycerin Dynamite (Nitrogen N). Two dynamite sticks, placed together to form the number '7', to remember atomic number is 7.
	8. Oxygen-filled Life Preservers (Oxygen O). Two joined to form the number '8', to remember atomic number is 8. From a Greek word meaning 'acid former'.
	9. Fluoride Toothpaste (Fluorine F). The toothpaste has been squeezed into a '9', to remember atomic number is 9. Named after the compound fluorspar.
	10. Neon Sign (Neon Ne). Parts of the letters form the number '10'.
	11. Narrow Soda Biscuits (Sodium Na). Two biscuits look like '11'. Sodium is named for soda (sodium carbonate). The Latin name for sodium is <i>natrium</i> .
	12. Magazine . (Magnesium Mg). 12 issues per year. Magnesium in chlorophyll gives plants their green colour. Named after the Greek district Magnesia.
	13. Aluminium Ladder (Aluminium Al). It is unlucky to walk under a ladder, and the number 13 is unlucky in western superstition.
	14. Silicon valley (Silicon Si). These 14 letters form a valley. From the Latin word ' <i>silicis</i> ', meaning flint.
	15. Phosphorus Matches (Phosphorus P). A pack of 15 matches. The matches can light the dynamite above it in the periodic table. From a Greek word meaning 'light bringer'.
	16. Sixteen Brimstones falling from the Sky in a Square formation (Sulphur S).
	17. Clorox (Chlorine Cl). Clorox is sodium hypochlorite. You can imagine that the handle looks like '17'. From a Greek word meaning 'green'.
	18. Argon-filled Light bulb (Argon Ar). Air is 1% argon. '1%' looks like '18'. From a Greek word meaning 'lazy'.
	19. Kettle, or Pot of Ash (Potassium K). 19th-century way of making potassium carbonate by leaching wood ashes and evaporating the solution in pots, leaving a residue called 'pot ash'.
	20. Calcium Teeth (Calcium Ca). Children have 20 teeth. Calcium is the main component of teeth. From the Latin word ' <i>calx</i> ' meaning 'lime'.
	21. Scandinavian Scandal (Scandium Sc). One should be 21 years old to read the scandal page of the newspaper. From <i>Scandia</i> , the Latin name for Scandinavia.
	22. Titanic (Titanium Ti). The Titanic was carrying 2200 passengers and travelling at 22 knots when it hit an iceberg. It sank at 2.20 am. Imagine the smoke looking like '22'.
	23. Van (Vanadium V). 23-seat van made of vanadium to accommodate 1 driver and two soccer teams. Named after the Norse goddess Vanadis.
	24. Google Chrome (Chromium Cr). Surfing using Google Chrome 24 hours a day. From a Greek word meaning 'colour'.

	25. Man mining manganese (Manganese Mn). He is a quarter century (25 years) old. Named after the Greek district Magnesia.
	26. Ferris Wheel (Iron Fe). Made of iron. 26 cabins labelled with the 26 letters of the alphabet. The Latin name for iron is <i>ferrum</i> .
	27. Cobblestone (Cobalt Co). It is a 3-cm cube, so it has a volume of 27 cm ³ . From a German word meaning 'evil spirit'.
	28. Nickel 5¢ (Nickel Ni). In 1928, the year before the Great Depression, people had more money than in the next year. From the German word ' <i>kupfernickel</i> ' meaning Devil's copper.
	29. Copper Penny 1¢ (Copper Cu). The Currency during the Great Depression which began in '29. The Latin name for copper is <i>cuprum</i> .
	30. Zinc sheets (Zinc Zn). A shelter made from 3 zinc sheets. Many people lived in shelters in '30 during the Great Depression.
	31. Galleon (Gallium Ga). The old Spanish galleon had 3 masts, each of which looked like a '1' to remind us of 31. From <i>Gallia</i> , the Latin name for Gaul.
	32. Germany (Germanium Ge). Germanium was named for Germany. The Nazis became the largest party in Germany in '32 and Adolf Hitler ran for election.
	33. Arsenic Rat Poison (Arsenic As). Rat poison is arsenic trioxide, commonly called simply 'arsenic'. The ears of the Rats look like '33'.
	34. Serene Moon (Selenium Se). From a Greek word for 'moon'. 3/4 of this crescent is not visible.
	35. Broom (Bromine Br). 35 Bristles (seven rows of five). In the periodic table, note that all the elements in this column are cleaners. From a Greek word meaning 'stench'.
	36. Kryptonite Yardstick . (Krypton Kr). One yard is 36 inches. Think of superman being beaten by this Kryptonite stick. From a Greek word meaning 'hidden one'.
	37. Ruby (Rubidium Rb). The base is triangular (3 sides) which together with the four faces on top adds up to give 7. From a Latin word meaning 'deep red'.
	38. Strongman (Strontium Sr). His biceps look like the number 38. Named after the town of Strontian.
	39. Three ladders leaning on YTT (Yttrium Y). 39 is three times 13. Walking under three ladders is three times unlucky. Named after the village of Ytterby in Sweden.
	40. Zircon Ring (Zirconium Zr). The gem is 4-sided and the ring looks like a zero (0). Zircon is zirconium silicate.
	41. Niobe (Niobium Nb). In Greek mythology, Niobe was turned into a weeping rock and wept <i>for</i> (4) each <i>one</i> (1) of her dead children.
	42. Molly's Denims (Molybdenum Mo). Good fit <i>for</i> (4) <i>two</i> (2) legs. From a Greek word meaning 'lead'.
	43. Technical factory (Technetium Tc). It is the lowest atomic number element without any stable isotopes. And so has to be man-made in a <i>factory</i> (sounds like '43').
	44. Ruth's hen (Ruthenium Ru). Its feet look like 44. It is next to the rhea and ostrich in the periodic table. Named for <i>Ruthenia</i> , the Latin name for Russia.
	45. Rhombus . (Rhodium Rh). This rhombus has a 45° angle. From a Greek word meaning 'rose'.
	46. Palace Dome (Palladium Pd). A Palace Dome was rebuilt in '46, one year after the end of World War II. Named after the asteroid Pallas.
	47. Silver Eagle (Silver Ag). Silver stands for second place. And '47 is two years after the end of World War II. The Latin name for silver is <i>argentum</i> .

	48. CD Caddy (Cadmium Cd) The caddy holds 4 dozen (48) CDs. From a Greek word meaning 'calamine'.
	49. Indian Ink (Indium In). The Constitution of India was signed in '49 using Indian ink, after India gained independence in '47 and Gandhi was assassinated in '48.
	50. Tin of Snails (Tin Sn). The snail is 50% inside the can. The Latin name for tin is <i>stannum</i> .
	51. Anti-money . (Antimony Sb). Sounds like antimony. 5 and 1 together look like \$. Sob when there is no money. The Latin name for antimony is <i>stibium</i> .
	52. Fortune Telling Cards (Tellurium Te). There are 52 cards in a deck. From <i>Tellus</i> , the Latin name for Earth.
	53. Iodine (Iodine I). After a <i>fight</i> (sounds like 5), <i>treat</i> (sounds like 3) with iodine. From a Greek word meaning 'violet'.
	54. Television show ' Xena ' (Xenon Xe). A television tube contains xenon gas. Xena <i>fight</i> s for (sounds like 54) justice. From a Greek word meaning 'stranger'.
	55. Cesium Clock (Cesium Cs). The most accurate clock in the world reads 5:05 p.m.; time to go home. From the Latin word <i>caesius</i> meaning 'sky blue'.
	56. Bear (Barium Ba). Barium is pronounced 'bear-ium'. From a Greek word meaning 'heavy'. <i>Fight a sick</i> (sounds like '56') bear.
	57. Lantern (Lanthanum La). Imagine a lantern that <i>flies to heaven</i> (sounds like '57'). From a Greek word meaning 'to lie hidden'.
	58. Cereal fried egg (Cerium Ce). Named after the asteroid Ceres. Think of cereal <i>fried egg</i> (sounds like '58').
	59. Praise Demon (Praseodymium Pr). The triangular sign has imperfect 59° angles. From a Greek word meaning 'green twin'.
	60. No Demon (Neodymium Nd). The triangular sign has perfect 60° angles. From a Greek word meaning 'new twin'.
	61. Prominent fire (Promethium Pm). Fire is needed after 6:10 p.m. Prometheus brought fire to mankind. The flames looks like '6' and the match looks like '1'.
	62. Samaritan . (Samarium Sm). This Samaritan is <i>sick too</i> (sounds like 62).
	63. Europe . (Europium Eu). A <i>sick tree</i> (sounds like 63) in Europe.
	64. Cattle on a chessboard (Gadolinium Gd). 'Cattle' sounds like 'gadol' in gadolinium. A chessboard has $8 \times 8 = 64$ squares. Named in honour of Johan Gadolin.
	65. Turban (Terbium Tb). The turban and the face show the figure '65'. Named after the village of Ytterby in Sweden.
	66. Handy Bomb Disposal (Dysprosium Dy). The 2 bombs look like '66'. From a Greek word meaning 'hard to get at'.
	67. Home (Holmium Ho). This home is formed by the number '67'. From <i>Holmia</i> , the Latin name for Stockholm.
	68. Herb (Erbium Er). The <i>sick ate</i> (sounds like 68) herbs. The word 'herb' is pronounced as 'erb' in the U.S. Named after the village of Ytterby in Sweden.
	69. Thumbs (Thulium Tm). Arranged to look like 69. Named after the ancient land of 'Thule' in the far north of Europe.
	70. Ladybird . (Ytterbium Yb). Ladybird sounds like Ytterbium. A ladybird with 7 spots (each spot looks like 0). Named after the village of Ytterby in Sweden.
	71. Lute (Lutetium Lu). 7 Strings on 1 Lute (71). From <i>Lutetia</i> , the Latin name for Paris.
	72. Half Dollar . (Hafnium Hf). 72 is half a gross (144). From <i>Hafnia</i> , the Latin name for Copenhagen.

	73. Tan Tall basketball player (Tantalum Ta). He is 7 feet tall and scores 3 points every time he throws. Named after King Tantalus, the father of Niobe, in Greek mythology. Tantalum lies below Niobium in the periodic table.
	74. Wolfram light bulb (Tungsten W), with tungsten filament. The words ‘wolfram bulb’ have 7 and 4 letters respectively. From a Swedish word meaning ‘heavy stone’.
	75. Rhea (Rhenium Re). The rhea looks 75% like the ostrich. Therefore these two elements are next to each other in the periodic table. From <i>Rhenus</i> , the Latin name for the river Rhine.
	76. Ostrich (Osmium Os). The ostrich’s neck & head look like a 7 and its body like a 6. From a Greek word meaning ‘smell’.
	77. Iridescent Rainbow (Iridium Ir). 7 Colours in a rainbow (77). Iris was the Greek goddess of rainbows.
	78. Platinum Record (Platinum Pt). Old records rotate at a speed of 78 rpm. From a Spanish word meaning ‘little silver’.
	79. Gold Audio Record (Gold Au). A gold record is next to a platinum record in record sales, and gold is next to platinum in the periodic table. The Latin word for gold is <i>aurum</i> .
	80. Huge Thermometer (Mercury Hg). There are 180 degrees between 32°F and 212°F. The Latin name for mercury is <i>Hydrargyrum</i> meaning ‘water silver’.
	81. Talons (Thallium Tl). 8 talons on 1 bird. From a Greek word meaning ‘green twig’.
	82. Lead Plumbing (Lead Pb). The 2 shut-off valves and the lead pipe look like ‘82’. The Latin word for lead is <i>plumbum</i> .
	83. Basement Eats Tree (Bismuth Bi). <i>Basement</i> (sounds like Bismuth) <i>eats tree</i> (sounds like ‘83’). From a German word meaning ‘white mass’.
	84. Aid For Poland (Polonium Po). World War II started when Germany invaded Poland. Need to provide <i>Aid For</i> (sounds like ‘84’) Poland.
	85. Eggs Fly Aesthetically (Astatine At). <i>Eggs fly</i> (sounds like ‘85’) <i>aesthetically</i> (sounds like ‘astatine’). From a Greek word meaning ‘unstable’.
	86. Air Raid on . (Radon Rn). ‘Raid On’ sounds like Radon. Need to <i>aid</i> the <i>sick</i> (sounds like ‘86’) during an air raid. ‘Radon’ is short for ‘radium emanation’.
	87. France (Francium Fr). Think of Air Raid on France. The French Revolution took place in 1789.
	88. Radio (Radium Ra). Air Raid on France announced on the Radio. The speakers of the radio look like 88. From a Latin word meaning ‘ray’.
	89. Actor (Actinium Ac). The actor Ronald Reagan was President of the U.S. from ’81 to ’89. From a Greek word meaning ‘beam’.
	90. Thorn (Thorium Th). Thorns stick out at 90° angle. Named after ‘Thor’, the Norse god of thunder.
	91. Paper protractor (Protactinium Pa). Used to measure the angle of the thorns. The slope of the thorns measure 91°, one degree more than a right angle.
	92. Uranium Bomb . (Uranium U). Elements 92, 93 and 94 were named after the planets Uranus, Neptune and Pluto.
	93. Neptune's trident (Neptunium Np). The word ‘Neptunium’ has 9 letters and the trident has 3 prongs. Memorize Uranus, Neptune and Pluto (the planets in a row) for 92, 93, 94.
	94. Pluto the Puppy (Plutonium Pu). The word ‘Plutonium’ has 9 letters and Pluto has 4 legs. Memorize Uranus, Neptune and Pluto (the planets in a row) for 92, 93, 94.
	95. America (Americium Am). Americans use Windows 95.

	96. Curious Combs (Curium Cm). Arranged to look like 96. Named in honour of Marie and Pierre Curie.
	97. Baker (Berkelium Bk). This baker is short of 3 eggs. 97 is 3 short of a hundred. Named after Berkeley, California.
	98. California (Californium Cf). Remember Berkeley is in California. Californians use Windows 98.
	99. Einstein's rocket (Einsteinium Es). Einstein's theory predicts that a rocket can only go at 99.99% of the speed of light. Named in honour of Albert Einstein.
	100. Fur mink (Fermium Fm). Sounds like fermium. It is 100% real fur from mink. Named in honour of Enrico Fermi.
	101. Mental M.D. (Mendelevium Md). They work on brains and study Psychology 101. Named in honour of Dmitri Mendeleev.
	102. No Bell (Nobelium No). The red bar divides the picture into two parts, to remember 102. Named in honour of Alfred Nobel.
	103. Laurel Wreath (Lawrencium Lr). With 3 more leaves, this wreath will be a complete circle. Named in honour of Ernest Lawrence.
	104. Rather buy a Ford (Rutherfordium Rf). A Ford has 4 wheels. The word 'Ford' has 4 letters and sounds like 'four' to remember 104. Named in honour of Ernest Rutherford.
	105. Dubna Donut (Dubnium Db). Dubnium is named after the Russian town Dubna, which sounds like Donut. Both words have 5 letters to remember 105.
	106. Six boxes (Seaborgium Sg). <i>Six boxes</i> sounds like seaborgium. Six of them to remember 106. Named in honour of Glenn Seaborg.
	107. Boorish Boar (Bohrium Bh). A wild boar has 4 legs, 2 tusks and 1 tail. $4 + 2 + 1 = 7$ to remember 107. Named in honour of Niels Bohr.
	108. Hats (Hassium Hs). The rim of the hat looks like '8' to remember 108. From the Latin name for the German state of Hesse.
	109. Mitre (Meitnerium Mt). The front of the mitre is 5-sided and the base is 4-sided. $5 + 4 = 9$ to remember 109. Named in honour of Lise Meitner.
	110. Dumpster (Darmstadtium Ds). This dumpster is overloaded to 110% capacity. Named after the German city Darmstadt, where the element was discovered.
	111. X-ray gun (Roentgenium Rg). X is formed by '11' to remember 111. Named in honour of Wilhelm Conrad Röntgen.
	112. Heliocentric Model (Copernicium Cn). According to Copernicus, the Earth revolves round the Sun once every year. In 1 year there are 12 months to remember 112.
	113. Nihon (Nihonium Nh). Named after Nippon (Japan). Japan was unlucky to lose WWII, to remember '113'.
	114. Flavour (Flerovium Fl). Named after a Russian scientist. Think of 4 flavours: sour, sweet, bitter and spicy, to remember 114.
	115. Moscow (Moscovium Mc). Named after Moscow. Think of 5 domes on St Basil's Cathedral, to remember 115.
	116. Liver (Livermorium Lv). The shape of the liver is like '6', to remember 116.
	117. Tennessee (Tennessine Ts). The name ends in "ine" just like the other halogens.
	118. Organism (Oganesson Og). Named after a Russian scientist. Think of an organism with 8 legs, to remember 118. The name ends in "on" just like the other noble gases.

<http://www.johnpratt.com/atomic/periodic.html>