

# Periodic Table of Elements

(By Dmitri Mendeleev)

Atomic number → 1  
(# of protons)  
 $p^+$

Symbol ← H

Name → Hydrogen  
Element name

Atomic mass ← 1  
(protons + neutrons)  
 $p^+ n^0$

|                              |                             |                            |                              |                             |                              |                              |                              |                            |                              |                           |                            |                             |                             |                             |                              |                              |                           |
|------------------------------|-----------------------------|----------------------------|------------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|----------------------------|------------------------------|---------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|---------------------------|
| 1<br>H<br>Hydrogen<br>1      |                             |                            |                              |                             |                              |                              |                              |                            |                              |                           |                            |                             |                             |                             |                              |                              | 2<br>He<br>Helium<br>4    |
| 3<br>Li<br>Lithium<br>7      | 4<br>Be<br>Beryllium<br>9   |                            |                              |                             |                              |                              |                              |                            |                              |                           |                            | 5<br>B<br>Boron<br>11       | 6<br>C<br>Carbon<br>12      | 7<br>N<br>Nitrogen<br>14    | 8<br>O<br>Oxygen<br>16       | 9<br>F<br>Fluorine<br>19     | 10<br>Ne<br>Neon<br>20    |
| 11<br>Na<br>Sodium<br>23     | 12<br>Mg<br>Magnesium<br>24 |                            |                              |                             |                              |                              |                              |                            |                              |                           |                            | 13<br>Al<br>Aluminum<br>27  | 14<br>Si<br>Silicon<br>28   | 15<br>P<br>Phosphorus<br>31 | 16<br>S<br>Sulfur<br>32      | 17<br>Cl<br>Chlorine<br>35.5 | 18<br>Ar<br>Argon<br>40   |
| 19<br>K<br>Potassium<br>39   | 20<br>Ca<br>Calcium<br>40   | 21<br>Sc<br>Scandium<br>45 | 22<br>Ti<br>Titanium<br>48   | 23<br>V<br>Vanadium<br>51   | 24<br>Cr<br>Chromium<br>52   | 25<br>Mn<br>Manganese<br>55  | 26<br>Fe<br>Iron<br>56       | 27<br>Co<br>Cobalt<br>59   | 28<br>Ni<br>Nickel<br>59     | 29<br>Cu<br>Copper<br>64  | 30<br>Zn<br>Zinc<br>65     | 31<br>Ga<br>Gallium<br>70   | 32<br>Ge<br>Germanium<br>73 | 33<br>As<br>Arsenic<br>75   | 34<br>Se<br>Selenium<br>79   | 35<br>Br<br>Bromine<br>80    | 36<br>Kr<br>Krypton<br>84 |
| 37<br>Rb<br>Rubidium<br>85.5 | 38<br>Sr<br>Strontium<br>88 | 39<br>Y<br>Yttrium<br>89   | 40<br>Zr<br>Zirconium<br>91  | 41<br>Nb<br>Niobium<br>93   | 42<br>Mo<br>Molybdenum<br>96 | 43<br>Tc<br>Technetium<br>98 | 44<br>Ru<br>Ruthenium<br>101 | 45<br>Rh<br>Rhodium<br>103 | 46<br>Pd<br>Palladium<br>106 | 47<br>Ag<br>Silver<br>108 | 48<br>Cd<br>Cadmium<br>112 | 49<br>In<br>Indium<br>115   | 50<br>Sn<br>Tin<br>119      | 51<br>Sb<br>Antimony<br>122 | 52<br>Te<br>Tellurium<br>128 | 53<br>I<br>Iodine<br>127     | 54<br>Xe<br>Xenon<br>131  |
| 55<br>Cs<br>Cesium<br>133    | 56<br>Ba<br>Barium<br>137   | 57-71<br>La-Lu             | 72<br>Hf<br>Hafnium<br>178.5 | 73<br>Ta<br>Tantalum<br>181 | 74<br>W<br>Tungsten<br>184   | 75<br>Re<br>Rhenium<br>186   | 76<br>Os<br>Osmium<br>190    | 77<br>Ir<br>Iridium<br>192 | 78<br>Pt<br>Platinum<br>195  | 79<br>Au<br>Gold<br>197   | 80<br>Hg<br>Mercury<br>201 | 81<br>Tl<br>Thallium<br>204 | 82<br>Pb<br>Lead<br>207     | 83<br>Bi<br>Bismuth<br>209  | 84<br>Po<br>Polonium         | 85<br>At<br>Astatine         | 86<br>Rn<br>Radon         |
| 87<br>Fr<br>Francium         | 88<br>Ra<br>Radium          | 89-103<br>Ac-Lr            | 104<br>Rf<br>Rutherfordium   | 105<br>Db<br>Dubnium        | 106<br>Sg<br>Seaborgium      | 107<br>Bh<br>Bohrium         | 108<br>Hs<br>Hassium         | 109<br>Mt<br>Meitnerium    | 110<br>Ds<br>Darmstadtium    | 111<br>Rg<br>Roentgenium  | 112<br>Cn<br>Copernicium   | 113<br>Nh<br>Nihonium       | 114<br>Fl<br>Flerovium      | 115<br>Mc<br>Moscovium      | 116<br>Lv<br>Livermorium     | 117<br>Ts<br>Tennessine      | 118<br>Og<br>Oganesson    |

|                       |                            |                                 |                              |                        |                             |                             |                               |                            |                                 |                            |                           |                            |                              |                             |
|-----------------------|----------------------------|---------------------------------|------------------------------|------------------------|-----------------------------|-----------------------------|-------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------|----------------------------|------------------------------|-----------------------------|
| 57<br>La<br>Lanthanum | 58<br>Ce<br>Cerium<br>140  | 59<br>Pr<br>Praseodymium<br>141 | 60<br>Nd<br>Neodymium<br>144 | 61<br>Pm<br>Promethium | 62<br>Sm<br>Samarium<br>150 | 63<br>Eu<br>Europium<br>152 | 64<br>Gd<br>Gadolinium<br>157 | 65<br>Tb<br>Terbium<br>159 | 66<br>Dy<br>Dysprosium<br>162.5 | 67<br>Ho<br>Holmium<br>165 | 68<br>Er<br>Erbium<br>167 | 69<br>Tm<br>Thulium<br>169 | 70<br>Yb<br>Ytterbium<br>173 | 71<br>Lu<br>Lutetium<br>175 |
| 89<br>Ac<br>Actinium  | 90<br>Th<br>Thorium<br>232 | 91<br>Pa<br>Protactinium<br>231 | 92<br>U<br>Uranium<br>238    | 93<br>Np<br>Neptunium  | 94<br>Pu<br>Plutonium       | 95<br>Am<br>Americium       | 96<br>Cm<br>Curium            | 97<br>Bk<br>Berkelium      | 98<br>Cf<br>Californium         | 99<br>Es<br>Einsteinium    | 100<br>Fm<br>Fermium      | 101<br>Md<br>Mendelevium   | 102<br>No<br>Nobelium        | 103<br>Lr<br>Lawrencium     |

- Alkali metals
- Alkali earth metals
- Transition metals
- Lanthanides
- Actinides
- Basic Metals
- Metalloids
- Non-metals
- Halogens
- Noble Gases