

# The Periodic Table of the Elements

| 1                                  |                                    | 2                                   |                                    |                                        |                                     |                                      |                                     |                                     |                                      |                                     |                                       |                                       |                                    | 3                                      | 4                                   | 5                                     | 6                                | 7                             | 0 |
|------------------------------------|------------------------------------|-------------------------------------|------------------------------------|----------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|------------------------------------|----------------------------------------|-------------------------------------|---------------------------------------|----------------------------------|-------------------------------|---|
| 1<br><b>H</b><br>Hydrogen<br>1     |                                    |                                     |                                    |                                        |                                     |                                      |                                     |                                     |                                      |                                     |                                       |                                       |                                    |                                        |                                     |                                       |                                  | 4<br><b>He</b><br>Helium<br>2 |   |
| 7<br><b>Li</b><br>Lithium<br>3     | 9<br><b>Be</b><br>Beryllium<br>4   |                                     |                                    |                                        |                                     |                                      |                                     |                                     |                                      |                                     |                                       | 11<br><b>B</b><br>Boron<br>5          | 12<br><b>C</b><br>Carbon<br>6      | 14<br><b>N</b><br>Nitrogen<br>7        | 16<br><b>O</b><br>Oxygen<br>8       | 19<br><b>F</b><br>Fluorine<br>9       | 20<br><b>Ne</b><br>Neon<br>10    |                               |   |
| 23<br><b>Na</b><br>Sodium<br>11    | 24<br><b>Mg</b><br>Magnesium<br>12 |                                     |                                    |                                        |                                     |                                      |                                     |                                     |                                      |                                     |                                       | 27<br><b>Al</b><br>Aluminum<br>13     | 28<br><b>Si</b><br>Silicon<br>14   | 31<br><b>P</b><br>Phosphorous<br>15    | 32<br><b>S</b><br>Sulfur<br>16      | 35.5<br><b>Cl</b><br>Chlorine<br>17   | 40<br><b>Ar</b><br>Argon<br>18   |                               |   |
| 39<br><b>K</b><br>Potassium<br>19  | 40<br><b>Ca</b><br>Calcium<br>20   | 45<br><b>Sc</b><br>Scandium<br>21   | 48<br><b>Ti</b><br>Titanium<br>22  | 51<br><b>V</b><br>Vanadium<br>23       | 52<br><b>Cr</b><br>Chromium<br>24   | 55<br><b>Mn</b><br>Manganese<br>25   | 56<br><b>Fe</b><br>Iron<br>26       | 59<br><b>Co</b><br>Colbalt<br>27    | 59<br><b>Ni</b><br>Nickel<br>28      | 63.5<br><b>Cu</b><br>Copper<br>29   | 65<br><b>Zn</b><br>Zinc<br>30         | 70<br><b>Ga</b><br>Gallium<br>31      | 73<br><b>Ge</b><br>Germanium<br>32 | 75<br><b>As</b><br>Arsenic<br>33       | 79<br><b>Se</b><br>Selenium<br>34   | 80<br><b>Br</b><br>Bromine<br>35      | 84<br><b>Kr</b><br>Krypton<br>36 |                               |   |
| 85<br><b>Rb</b><br>Rubidium<br>37  | 88<br><b>Sr</b><br>Strontium<br>38 | 89<br><b>Y</b><br>Yttrium<br>39     | 91<br><b>Zr</b><br>Zirconium<br>40 | 93<br><b>Nb</b><br>Niobium<br>41       | 96<br><b>Mo</b><br>Molybdenum<br>42 | 99<br><b>Tc</b><br>Technetium<br>43  | 101<br><b>Ru</b><br>Ruthenium<br>44 | 103<br><b>Rh</b><br>Rhodium<br>45   | 106<br><b>Pd</b><br>Palladium<br>46  | 108<br><b>Ag</b><br>Silver<br>47    | 112<br><b>Cd</b><br>Cadmium<br>48     | 115<br><b>In</b><br>Indium<br>49      | 119<br><b>Sn</b><br>Tin<br>50      | 122<br><b>Sb</b><br>Antimony<br>51     | 128<br><b>Te</b><br>Tellurium<br>52 | 127<br><b>I</b><br>Iodine<br>53       | 131<br><b>Xe</b><br>Xenon<br>54  |                               |   |
| 133<br><b>Cs</b><br>Cesium<br>55   | 137<br><b>Ba</b><br>Barium<br>56   | 139<br><b>La</b><br>lanthanum<br>57 | 178<br><b>Hf</b><br>Hafnium<br>72  | 181<br><b>Ta</b><br>Tantalum<br>73     | 184<br><b>W</b><br>Tungsten<br>74   | 186<br><b>Re</b><br>Rhenium<br>75    | 190<br><b>Os</b><br>Osmium<br>76    | 192<br><b>Ir</b><br>Iridium<br>77   | 195<br><b>Pt</b><br>Platinum<br>78   | 197<br><b>Au</b><br>Gold<br>79      | 201<br><b>Hg</b><br>Mercury<br>80     | 204<br><b>Tl</b><br>Thallium<br>81    | 207<br><b>Pb</b><br>Lead<br>82     | 209<br><b>Bi</b><br>Bismuth<br>83      | 210<br><b>Po</b><br>Polonium<br>84  | 210<br><b>At</b><br>Astatine<br>85    | 222<br><b>Rn</b><br>Radon<br>86  |                               |   |
| 233<br><b>Fr</b><br>Francium<br>87 | 226<br><b>Ra</b><br>Radium<br>88   | 227<br><b>Ac</b><br>Actinium<br>89  |                                    |                                        |                                     |                                      |                                     |                                     |                                      |                                     |                                       |                                       |                                    |                                        |                                     |                                       |                                  |                               |   |
| Lanthanoids                        |                                    |                                     | 140<br><b>Ce</b><br>Cerium<br>58   | 141<br><b>Pr</b><br>Praseodymium<br>59 | 144<br><b>Nd</b><br>Neodymium<br>60 | 147<br><b>Pm</b><br>Promethium<br>61 | 150<br><b>Sm</b><br>Samarium<br>62  | 152<br><b>Eu</b><br>Europium<br>63  | 157<br><b>Gd</b><br>Gadolinium<br>64 | 159<br><b>Tb</b><br>Terbium<br>65   | 162<br><b>Dy</b><br>Dysprosium<br>66  | 165<br><b>Ho</b><br>Holmium<br>67     | 167<br><b>Er</b><br>Erbium<br>68   | 169<br><b>Tm</b><br>Thulium<br>69      | 173<br><b>Yb</b><br>Ytterbium<br>70 | 175<br><b>Lu</b><br>Lutetium<br>71    |                                  |                               |   |
| Actinoids                          |                                    |                                     | 232<br><b>Th</b><br>Thorium<br>90  | 231<br><b>Pa</b><br>Protactinium<br>91 | 238<br><b>U</b><br>Uranium<br>92    | 237<br><b>Np</b><br>Neptunium<br>93  | 242<br><b>Pu</b><br>Plutonium<br>94 | 243<br><b>Am</b><br>Americium<br>95 | 247<br><b>Cm</b><br>Curium<br>96     | 245<br><b>Bk</b><br>Berkelium<br>97 | 251<br><b>Cf</b><br>Californium<br>98 | 254<br><b>Es</b><br>Einsteinium<br>99 | 253<br><b>Fm</b><br>Fermium<br>100 | 256<br><b>Md</b><br>Mendelevium<br>101 | 254<br><b>No</b><br>Nobelium<br>102 | 257<br><b>Lr</b><br>Lawrencium<br>103 |                                  |                               |   |