

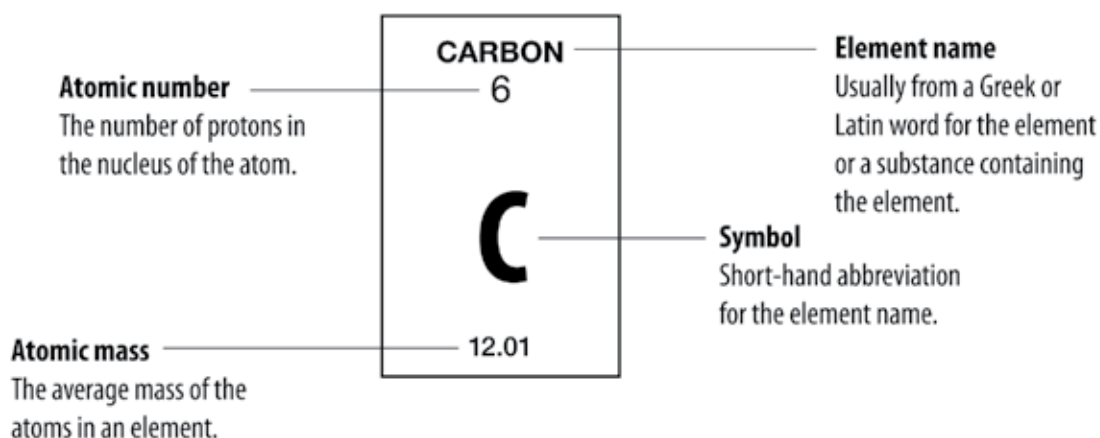
Activity Sheet
Chapter 4, Lesson 2
The Periodic Table

Name _____

Date _____

Your group will receive a set of cards with information that describes a particular atom. Your job is to figure out which atom the card describes and to place it in the area in your classroom for that atom.

You will use the Periodic Table, Elements 1–20 chart to help you determine what atom your card describes. The diagram and information below will help you match your cards to the correct atoms.



Parts of an Atom

Proton

Positively charged particle in the nucleus of the atom.

The number of protons in an atom's nucleus is the atomic number.

Electron

Negatively charged particle surrounding the nucleus of the atom.

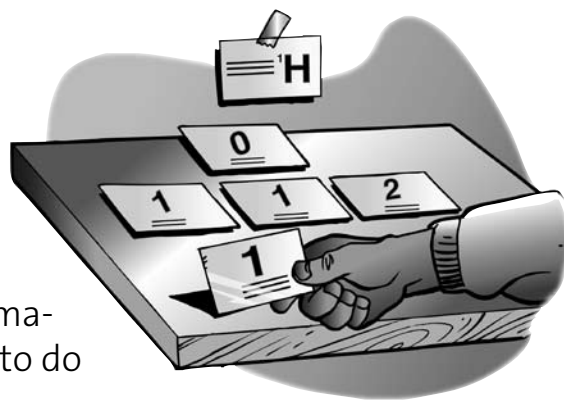
The number of electrons surrounding the nucleus of an atom is equal to the number of protons in the atom's nucleus.

Neutron

Particle in the nucleus that has about the same mass as a proton but has no charge. For the atoms of the first 20 elements, the number of neutrons is either equal to or slightly greater than the number of protons.

Placing your cards

Once you know what the information in each box on your periodic table stands for and you know the parts of the atom, you will be able to correctly place most of your cards with the atoms they describe. You will need to know the following additional information in order to answer any question having to do with neutrons.



To match the number of neutrons listed on your card to the correct element, look for an element on the periodic table so that if you add the number of neutrons on your card to the protons of the element, you will get close to the atomic mass for that element.

For example, you may have a card that says, “The atom you are looking for has 5 neutrons.” Look at the periodic table to find an atom that you could add 5 to its number of protons that would give you a sum close to the atomic mass given for that element. The answer is beryllium (Be), which has 4 protons and an atomic mass of 9.01.

PERIODIC TABLE ELEMENTS 1-20

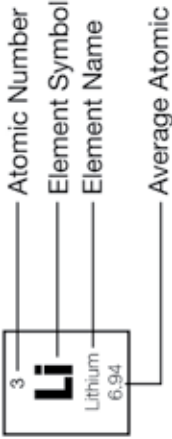
Write the number of protons, electrons, and neutrons in each element.

HYDROGEN 1 # of Protons: # of Electrons: # of Neutrons: 1.01	HELIUM 2 # of Protons: # of Electrons: # of Neutrons: 4.00					
LITHIUM 3 # of Protons: # of Electrons: # of Neutrons: 6.94	BORON 5 # of Protons: # of Electrons: # of Neutrons: 10.81	CARBON 6 # of Protons: # of Electrons: # of Neutrons: 12.01	NITROGEN 7 # of Protons: # of Electrons: # of Neutrons: 14.01	OXYGEN 8 # of Protons: # of Electrons: # of Neutrons: 16.00	FLUORINE 9 # of Protons: # of Electrons: # of Neutrons: 19.00	NEON 10 # of Protons: # of Electrons: # of Neutrons: 20.18
SODIUM 11 # of Protons: # of Electrons: # of Neutrons: 22.99	MAGNESIUM 12 # of Protons: # of Electrons: # of Neutrons: 24.31	ALUMINIUM 13 # of Protons: # of Electrons: # of Neutrons: 26.98	SILICON 14 # of Protons: # of Electrons: # of Neutrons: 28.09	SULFUR 16 # of Protons: # of Electrons: # of Neutrons: 32.07	CHLORINE 17 # of Protons: # of Electrons: # of Neutrons: 35.45	ARGON 18 # of Protons: # of Electrons: # of Neutrons: 39.95
POTASSIUM 19 # of Protons: # of Electrons: # of Neutrons: 39.10	CALCIUM 20 # of Protons: # of Electrons: # of Neutrons: 40.08					

Note: Remember that the number of neutrons is not the same for every atom of an element. The number of neutrons you write in this chart will be a number, that when added to the number of protons, gives a sum as close as possible to the atomic mass.

The Periodic Table of the Elements

1 H Hydrogen 1.01																	2 He Helium 4.00
3 Li Lithium 6.94																	9 F Fluorine 19.00
4 Be Beryllium 9.01																	10 Ne Neon 20.18
5 B Boron 10.81																	11 Na Sodium 22.99
6 C Carbon 12.01																	12 Mg Magnesium 24.31
7 N Nitrogen 14.01																	13 Al Aluminum 26.98
8 O Oxygen 16.00																	14 Si Silicon 28.09
9 F Fluorine 19.00																	15 P Phosphorus 30.97
10 Ne Neon 20.18																	16 S Sulfur 32.07
11 Na Sodium 22.99																	17 Cl Chlorine 35.45
12 Mg Magnesium 24.31																	18 Ar Argon 39.95
19 K Potassium 39.10																	19 K Potassium 39.10
20 Ca Calcium 40.08																	20 Ca Calcium 40.08
21 Sc Scandium 44.96																	21 Sc Scandium 44.96
22 Ti Titanium 47.87																	22 Ti Titanium 47.87
23 V Vanadium 50.94																	23 V Vanadium 50.94
24 Cr Chromium 52.00																	24 Cr Chromium 52.00
25 Mn Manganese 54.94																	25 Mn Manganese 54.94
26 Fe Iron 55.85																	26 Fe Iron 55.85
27 Co Cobalt 58.93																	27 Co Cobalt 58.93
28 Ni Nickel 58.69																	28 Ni Nickel 58.69
29 Cu Copper 63.55																	29 Cu Copper 63.55
30 Zn Zinc 65.39																	30 Zn Zinc 65.39
31 Ga Gallium 69.72																	31 Ga Gallium 69.72
32 Ge Germanium 72.61																	32 Ge Germanium 72.61
33 As Arsenic 74.92																	33 As Arsenic 74.92
34 Se Selenium 78.96																	34 Se Selenium 78.96
35 Br Bromine 79.90																	35 Br Bromine 79.90
36 Kr Krypton 83.80																	36 Kr Krypton 83.80
37 Rb Rubidium 85.47																	37 Rb Rubidium 85.47
38 Sr Strontium 87.62																	38 Sr Strontium 87.62
39 Y Yttrium 88.91																	39 Y Yttrium 88.91
40 Zr Zirconium 91.22																	40 Zr Zirconium 91.22
41 Nb Niobium 92.91																	41 Nb Niobium 92.91
42 Mo Molybdenum 95.94																	42 Mo Molybdenum 95.94
43 Tc Technetium (98)																	43 Tc Technetium (98)
44 Ru Ruthenium 101.07																	44 Ru Ruthenium 101.07
45 Rh Rhodium 102.91																	45 Rh Rhodium 102.91
46 Pd Palladium 106.42																	46 Pd Palladium 106.42
47 Ag Silver 107.87																	47 Ag Silver 107.87
48 Cd Cadmium 112.41																	48 Cd Cadmium 112.41
49 In Indium 114.82																	49 In Indium 114.82
50 Sn Tin 118.71																	50 Sn Tin 118.71
51 Sb Antimony 121.76																	51 Sb Antimony 121.76
52 Te Tellurium 127.60																	52 Te Tellurium 127.60
53 I Iodine 126.90																	53 I Iodine 126.90
54 Xe Xenon 131.29																	54 Xe Xenon 131.29
55 Cs Cesium 132.91																	55 Cs Cesium 132.91
56 Ba Barium 137.33																	56 Ba Barium 137.33
57 La Lanthanum 138.91																	57 La Lanthanum 138.91
58 Ce Cerium 140.12																	58 Ce Cerium 140.12
59 Pr Praseodymium 140.91																	59 Pr Praseodymium 140.91
60 Nd Neodymium 144.24																	60 Nd Neodymium 144.24
61 Pm Promethium (145)																	61 Pm Promethium (145)
62 Sm Samarium 150.36																	62 Sm Samarium 150.36
63 Eu Europium 151.96																	63 Eu Europium 151.96
64 Gd Gadolinium 157.25																	64 Gd Gadolinium 157.25
65 Tb Terbium 158.93																	65 Tb Terbium 158.93
66 Dy Dysprosium 162.50																	66 Dy Dysprosium 162.50
67 Ho Holmium 164.93																	67 Ho Holmium 164.93
68 Er Erbium 167.26																	68 Er Erbium 167.26
69 Tm Thulium 168.93																	69 Tm Thulium 168.93
70 Yb Ytterbium 173.04																	70 Yb Ytterbium 173.04
71 Lu Lutetium 174.97																	71 Lu Lutetium 174.97
72 Hf Hafnium 178.49																	72 Hf Hafnium 178.49
73 Ta Tantalum 180.95																	73 Ta Tantalum 180.95
74 W Tungsten 183.84																	74 W Tungsten 183.84
75 Re Rhenium 186.21																	75 Re Rhenium 186.21
76 Os Osmium 190.23																	76 Os Osmium 190.23
77 Ir Iridium 192.22																	77 Ir Iridium 192.22
78 Pt Platinum 195.08																	78 Pt Platinum 195.08
79 Au Gold 196.97																	79 Au Gold 196.97
80 Hg Mercury 200.59																	80 Hg Mercury 200.59
81 Tl Thallium 204.38																	81 Tl Thallium 204.38
82 Pb Lead 207.2																	82 Pb Lead 207.2
83 Bi Bismuth 208.98																	83 Bi Bismuth 208.98
84 Po Polonium (209)																	84 Po Polonium (209)
85 At Astatine (210)																	85 At Astatine (210)
86 Rn Radon (222)																	86 Rn Radon (222)
87 Fr Francium (223)																	87 Fr Francium (223)
88 Ra Radium (226)																	88 Ra Radium (226)
89 Ac Actinium (227)																	89 Ac Actinium (227)
90 Th Thorium 232.04																	90 Th Thorium 232.04
91 Pa Protactinium 231.04																	91 Pa Protactinium 231.04
92 U Uranium 238.03																	92 U Uranium 238.03
93 Np Neptunium (237)																	93 Np Neptunium (237)
94 Pu Plutonium (244)																	94 Pu Plutonium (244)
95 Am Americium (243)																	95 Am Americium (243)
96 Cm Curium (247)																	96 Cm Curium (247)
97 Bk Berkelium (247)																	97 Bk Berkelium (247)
98 Cf Californium (251)																	98 Cf Californium (251)
99 Es Einsteinium (252)																	99 Es Einsteinium (252)
100 Fm Fermium (257)																	100 Fm Fermium (257)
101 Md Mendelevium 168.93																	101 Md Mendelevium 168.93
102 No Nobelium (259)																	102 No Nobelium (259)
103 Lr Lawrencium (262)																	103 Lr Lawrencium (262)



58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97
90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium 168.93	102 No Nobelium (259)	103 Lr Lawrencium (262)