In the first period, the 1s sublevel is being filled. The 1s sublevel can hold a total of two electrons. Therefore, the first period consists of two elements—hydrogen and helium. In the second period, the 2s sublevel, which can hold two electrons, and the 2p sublevel, which can hold six electrons, are being filled. Consequently, the second period totals eight elements. Similarly, filling of the 3s and 3p sublevels accounts for the eight elements of the third period. Filling 3d and 4d sublevels in addition to the s and p sublevels adds 10 elements to both the fourth and fifth periods. Therefore, each of these periods totals 18 elements. Filling 4f sublevels in addition to s, p, and d sublevels adds 14 elements to the sixth period, which totals 32 elements. And as new elements are created, the 29 known elements in Period 7 could, in theory, be extended to 32.

The period of an element can be determined from the element's electron configuration. For example, arsenic, As, has the electron configuration [Ar] $3d^{10}4s^24p^3$. The 4 in $4p^3$ indicates that arsenic's highest occupied energy level is the fourth energy level. Arsenic is therefore in the fourth period in the periodic table. The period and electron configuration for each element can be found in the periodic table on pages 140–141.

Based on the electron configurations of the elements, the periodic table can be divided into four blocks, the s, p, d, and f blocks. This division is illustrated in **Figure 5.** The name of each block is determined by whether an s, p, d, or f sublevel is being filled in successive elements of that block.

FIGURE 5 Based on the electron configurations of the elements, the periodic table can be subdivided into four sublevel blocks.

1 H				s-k	olock el	ements											Group 18
Group 1	Group 2			p -	p-block elements Group 13 Group 14 Group 15 Group 16 Group 17												
3	4			d-block elements								5 B	6	7	8	9	10
Li	Be			f-block elements									С	N	0	F	Ne
Na	12 Mg	Group 3 Group 4 Group 5 Group 6 Group 7 Group 8 Group 9 Group 10 Group 11 Group 12											Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	Ge	33 As	34 Se	35 Br	³⁶ Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	Ru	45 Rh	Pd Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	⁵² Te	53 	⁵⁴ Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	At	Rn 86
87 Fr	Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	Uuu	Uub	Uut	Uuq	Uup	116	117	118
				58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
				90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr