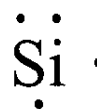
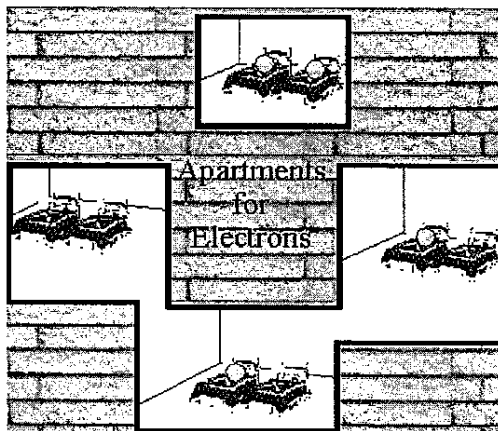


Electron Dot Diagrams, Etc.

Electron dot diagrams are a useful way to show the arrangement of outer electrons of an atom. They show valence electrons as dots at 12 o'clock, 3 o'clock, 6 o'clock, and 9 o'clock, and the rest of the atom, known as the kernel, as a symbol.

It is useful to think of the outer shell as if it contained two apartments, one with one bedroom and the other with three bedrooms. Each bedroom has space for two occupants. Think of electrons as frugal little fellows who do not like to share. Electrons will prefer to move into the cheaper, one bedroom apartment if it is available even if it means sharing a room with another electron. If the cheap apartment is not available, they'll settle for the three bedroom apartment, but they won't share a bedroom until the apartment becomes too crowded to have a choice. As a result, the first space gets two electrons before any of the other spaces get electrons. The next three spaces get the electrons one at a time until pairing becomes necessary.

Silicon, for example, has four valence electrons. As a result, it will have two electrons in one of the clock positions and one electron in each of two of the remaining three.



The dots representing the electrons in silicon are much like the ones occupying the apartments above.

Use the information supplied in the table to fill in the remaining blanks in each row.

Mass Number	Atomic Number	Isotope Notation	Number of Neutrons	Bohr Notation	Electron Dot
				2-8-7	
					$\cdot \ddot{\text{O}} \cdot$
			2		
20					
		${}_{13}^{27}\text{Al}$			
				2-8-18-5	
	20				
					$\cdot \ddot{\text{Ar}} \cdot$

Mass Number	Atomic Number	Isotope Notation	Number of Neutrons	Bohr Notation	Electron Dot
31					
	36				
			0		
		${}^{14}_6\text{C}$			
	21				
					$\ddot{\text{Ba}}$
7					