

Valence Electrons

The **valence electrons** are the electrons in the outermost principal energy level. They are always *s* electrons or *s* and *p* electrons. Since the total number of electrons possible in *s* and *p* sublevels is eight, there can be no more than eight valence electrons.

Example: carbon

Electron configuration is $1s^2$ $2s^2$ $2p^2$.

Carbon has 4 valence electrons.

Determine the number of valence electrons in each atom.

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|---------------------|--------------------|
| 1. fluorine _____ | 11. lithium _____ |
| 2. phosphorus _____ | 12. zinc _____ |
| 3. calcium _____ | 13. carbon _____ |
| 4. nitrogen _____ | 14. iodine _____ |
| 5. iron _____ | 15. oxygen _____ |
| 6. argon _____ | 16. barium _____ |
| 7. potassium _____ | 17. aluminum _____ |
| 8. helium _____ | 18. hydrogen _____ |
| 9. magnesium _____ | 19. xenon _____ |
| 10. sulfur _____ | 20. copper _____ |