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| Electron Configuration – an “address” for the electrons in an atom |
| **An Orbital is:** | **How do we describe orbitals?**1.
2.
3.
4.
 |
| **Different orbitals are in different energy levels** | **Different orbitals have different shapes** |
| **Different orbitals have different orientations** | **Each orbital is only allowed to have two e-s** |
| **Where do e- live? What is the address for one?**State ------> Energy level City ------> Type/shape of orbitalStreet ------> Orientation or orbitalHouse # ------> Spin up or spin down of e– | **They can get REALLY long** 1s+½ , 1s-½ ,2s+½ , 2s-½  2px +½ , 2px -½ , 2py +½ 2py -½ , 2pz +½ , 2pz -½N-10 |

|  |  |
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| **Want to describe where ALL the e- in an atom were? Shrink it down and only list:**1.
2.
3.

**Example:** | **Steps to finding all the electrons**1. Pick an: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Find the number of:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Start putting electrons into the: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Use an: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. List which: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ you used and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ electrons in each one
 |
| **Rules for putting electrons in an orbital diagram:** |
| 1. **Aufbau Principle**

*An electron occupies the lowest energy orbital that it can.*Means:  | 1. **Pauli Exclusion Principle**

*No two e-s in the same atom can have the same set of 4 quantum numbers*Means:  | 1. **Hunds Rule**

*Orbitals of equal energy are each occupied by one e- before any orbital is occupied by a second e-.*Means: |
| **Some Terms You Might Hear** |

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