|  |
| --- |
| 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 electron | **Electron configuration for an electron in the second energy level, inside a p shaped orbital that is lined up on the x axis and is a spin up electron:** |
| **They can get REALLY long**1s+½ ,1s-½ ,2s+½ , 2s-½ 2px +½ , 2px -½ , 2py +½ 2py -½ , 2pz +½ , 2pz -½  | **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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Use an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 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: |