

Orbital Notation Notes

Essential question: How can the arrangement of electrons be modeled?

Electrons follow three rules when it comes to filling atomic orbitals...

Aufbau Principle: _____

Hund's Rule: _____

Pauli Exclusion Principle: _____

Orbital notation drawing conventions...

- Draw a box () to represent an _____. How many _____ (boxes) per sublevel?
 - 1 _____ (box) for s sublevel
 - 3 _____ (boxes) for p sublevel
 - 5 _____ (boxes) for d sublevel
- Draw an arrow ($\uparrow$) to represent an _____.
 - Each _____ (box) gets a max of ____ e⁻.

Follow these steps when drawing orbital notations:

- **Step 1:** Write the e⁻ config. for the atom.
- **Step 2:** Determine # of principal energy levels needed.
 - (n = 1, 2, 3...)
- **Step 3:** Determine # of sublevels in each energy level and # of orbitals in each sublevel.
 - s=1 box, p=3 boxes, d=5 boxes.
- **Step 4:** Add electrons ($\uparrow$) to the box(es) in order of increasing energy.

Practice:

Hydrogen (H)

Helium (He)

Nitrogen (N)