

Name: _____ Date _____ Block _____

Orbital Notation Chemistry Lab

Cups – Orbitals (subshells)

Electrons – Beads

White Beads – up arrows

Blue Beads – down arrows

Put the correct number of electrons (beads) into the subshells (cups) of the orbital. Each cup can hold up to 2 electrons. Remember that the electrons will fill in an orbital which has more than one subshell individually before they will pair.

Important Information to remember:

EVERY subshell (line) can hold up to _____ electrons.

The s orbital can hold up to _____ electrons.

The p orbital can hold up to _____ electrons.

The d orbital can hold up to _____ electrons.

The f orbital can hold up to _____ electrons.

Fill in the chart below by writing in the orbital notation of each element. Use the cups and beads to figure it out. Leave your beads in the cups until your teacher has approved your configuration. You will do ONE configuration at a time. Be sure to get approval after each configuration before you move on. (Electron configuration for neon looks like this: $1s^2$ $\frac{\uparrow\downarrow}{2s^2}$ $\frac{\uparrow\downarrow}{2p^6}$ $\frac{\uparrow\downarrow}{2p^6}$ $\frac{\uparrow\downarrow}{2p^6}$ Take special notice to write the energy levels in large numbers, the orbital in lowercase letters, and the number of electrons in superscript above the letter.)

Element	Orbital Notation	Teacher's initials
K		
F		
Sn		
Ra		
Ba		
Mn		
Fe		
Dy		
Ti		
As		
Kr		
Co		
S		
Ni		

Si		
Eu		
Your choice p orbital		
Your choice d orbital		
Your choice f orbital		

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Si		
Eu		
Your choice p orbital		
Your choice d orbital		
Your choice f orbital		

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Si		
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Your choice p orbital		
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