**Lab #3 Electron Orbitals**

As a class:

1. What is an orbital?
2. How many electrons fit in the
   1. s orbital? \_\_\_\_\_\_\_\_
   2. p orbital? \_\_\_\_\_\_\_\_
   3. d orbital? \_\_\_\_\_\_\_\_
   4. f orbital? \_\_\_\_\_\_
3. Knowing what you know about protons, neutrons and electrons, build the following atoms.. Make sure you follow these rules:
   1. 1 electron per slot.
   2. Start with 1s and work your way out and up, following the atom mold
   3. To make your life easier, keep the number of protons and neutrons the same. We are more worried about electrons in this lab!
   4. s orbitals get 2 electrons, p orbitals get 6 electrons and d orbitals get 10 electrons

As you build the atoms, complete the table.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element | # of electrons | # of electrons (if none, put a 0 in the box) | | | | | | | |
| 1s | 2s | 2p | 3s | 3p | 4s | 3d | 4p |
| ***Carbon*** | ***6*** | ***2*** | ***2*** | ***2*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** |
| lithium |  |  |  |  |  |  |  |  |  |
| sodium |  |  |  |  |  |  |  |  |  |
| magnesium |  |  |  |  |  |  |  |  |  |
| calcium |  |  |  |  |  |  |  |  |  |
| helium |  |  |  |  |  |  |  |  |  |
| neon |  |  |  |  |  |  |  |  |  |
| argon |  |  |  |  |  |  |  |  |  |
| nitrogen |  |  |  |  |  |  |  |  |  |
| sulfur |  |  |  |  |  |  |  |  |  |
| aluminum |  |  |  |  |  |  |  |  |  |
| copper |  |  |  |  |  |  |  |  |  |
| cobalt |  |  |  |  |  |  |  |  |  |
| zinc |  |  |  |  |  |  |  |  |  |
| bromine |  |  |  |  |  |  |  |  |  |
| chlorine |  |  |  |  |  |  |  |  |  |