

How is the Periodic Table Arranged?

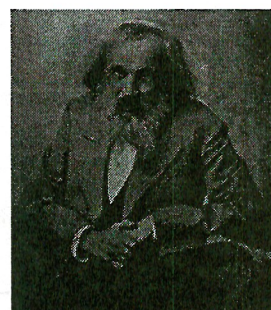
Below is a portion of the periodic table. In the answer spaces provided in the table, fill in the [1] atomic number, [2] electron configuration, [3] number of shells, and [4] number of outer shell electrons as indicated in the key below. Then, answer the questions that follow.

KEY



Moseley

| Symbol | |
|-------------------------------|-------|
| [1] Atomic Number | _____ |
| [2] Electron Configuration | _____ |
| [3] Number of Shells | _____ |
| [4] Number of Outer Electrons | _____ |



Mendeleev

| | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| H | | | | | | | He |
| [1] _____ | | | | | | | [1] _____ |
| [2] _____ | | | | | | | [2] _____ |
| [3] _____ | | | | | | | [3] _____ |
| [4] _____ | | | | | | | [4] _____ |
| Li | Be | B | C | N | O | F | Ne |
| [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ |
| [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ |
| [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ |
| [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ |
| Na | Mg | Al | Si | P | S | Cl | Ar |
| [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ | [1] _____ |
| [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ | [2] _____ |
| [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ | [3] _____ |
| [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ | [4] _____ |
| K | Ca | | | | | | |
| [1] _____ | [1] _____ | | | | | | |
| [2] _____ | [2] _____ | | | | | | |
| [3] _____ | [3] _____ | | | | | | |
| [4] _____ | [4] _____ | | | | | | |

Answer the questions below by referring to the data on the table you filled in on the first page.

1. In what order are the elements of the *Periodic Table* arranged? _____

2. What do all the elements in a vertical column of the *Periodic Table* have in common? _____

3. What do all the elements in a horizontal row of the *Periodic Table* have in common? _____

4. By what two characteristics are all the elements of the *Periodic Table* placed in a particular row and column? _____

5. Imagine element number 15 had never been discovered. What characteristics would you predict it to have based on its location on the periodic table? _____

| | | | | | | | | |
|----|----|----|----|---|---|----|--|----|
| H | | | | | | | | He |
| Li | Be | B | C | N | O | F | | Ne |
| Na | Mg | Al | Si | ? | S | Cl | | Ar |
| K | Ca | | | | | | | |

6. Which element has 3 outer electrons and 2 shells? _____

7. How is helium different from neon and argon? How is it similar? _____
