

## The Periodic Table Notes

### History of the periodic table

There were a great many \_\_\_\_\_ who were investigating the \_\_\_\_\_ of elements in the 1800s.

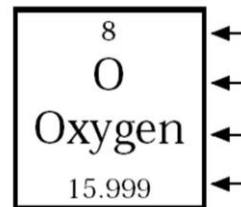
At that time there was no specific way of \_\_\_\_\_ the information about the elements. Each scientist had their own "in house" method.

\_\_\_\_\_ was a \_\_\_\_\_ chemist, and is given most of the credit for arranging the modern periodic table. He wrote out the known information about each element on a \_\_\_\_\_, and spent hours \_\_\_\_\_ and \_\_\_\_\_ them by various means

### How are elements organized?

In Mendeleev's day, nothing was known about the \_\_\_\_\_, but the \_\_\_\_\_ was known. He arranged his periodic table in order of \_\_\_\_\_ atomic mass and by \_\_\_\_\_.

The modern periodic table still arranges atoms by reactivity, but uses the \_\_\_\_\_ rather than the atomic mass. Each element has a box on the periodic table, which tells the element's specific information.



### Electron configuration

Each electron shell can hold a \_\_\_\_\_ number of electrons.

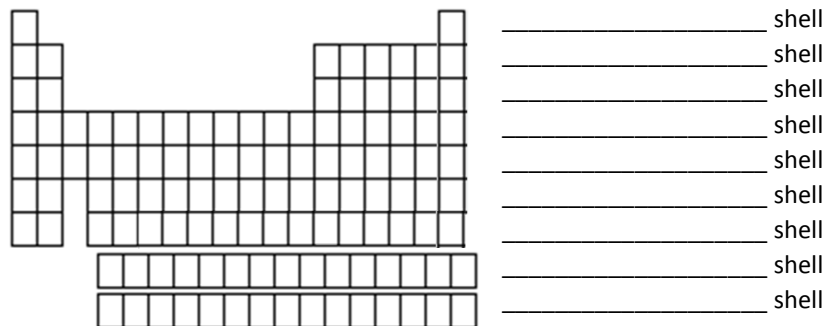
Period Number	1	2	3	4	5	6	7
Electron capacity							

The shells fill from the inside out. For example, if an atom has 8 electrons, the first two will fill the \_\_\_\_\_ shell, and the remaining six will be in the \_\_\_\_\_ shell.

The Noble gases always have a \_\_\_\_\_ valence shell.

### Patterns within the table

The modern periodic table arranges atoms a system of \_\_\_\_\_ and \_\_\_\_\_. The rows are called \_\_\_\_\_. Each period represents one electron shell. For example, period one elements have one shell. Period two elements have two shells, etc.



Elements are arranged in periods according to increasing \_\_\_\_\_ - how strongly the atom pulls \_\_\_\_\_ towards its \_\_\_\_\_.

Groups are the \_\_\_\_\_ on the periodic table. The elements within a group all have the same \_\_\_\_\_ electron \_\_\_\_\_, with one additional filled \_\_\_\_\_.

\_\_\_\_\_ of each element in a group is progressively \_\_\_\_\_ than the last, so atomic mass increases as you move down the column.

The similar \_\_\_\_\_ cause the elements of a period to have similar \_\_\_\_\_ and \_\_\_\_\_.

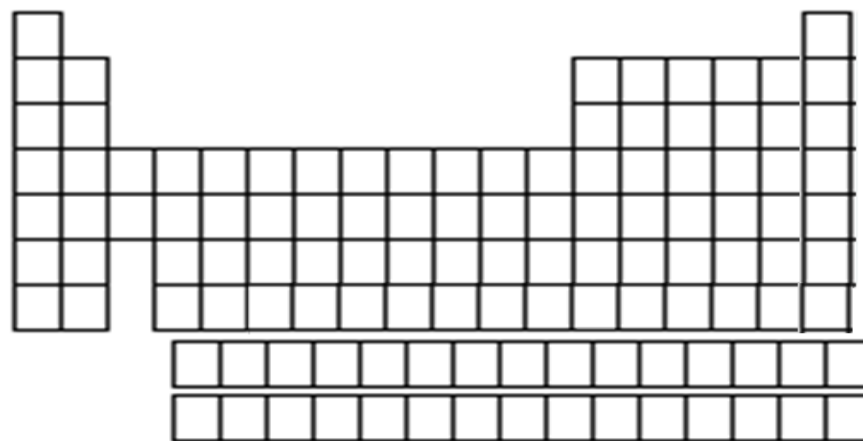
Each group is numbered

Group 1 are alkali metals

Group 2 are alkaline earth metals

### Groups

Label the number of valence electrons in each group,



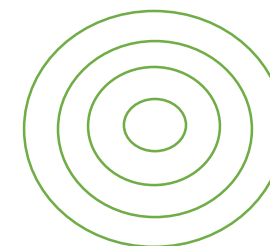
### Transition Metals

Transition Metals have slightly different rules for shells and valence electrons.

Determine the number of shells and the number of valence electrons for Sulfur.

Number of shells \_\_\_\_\_

Valence electrons \_\_\_\_\_



Determine the number of shells and the number of valence electrons for Potassium.

Number of shells \_\_\_\_\_

Valence electrons \_\_\_\_\_

