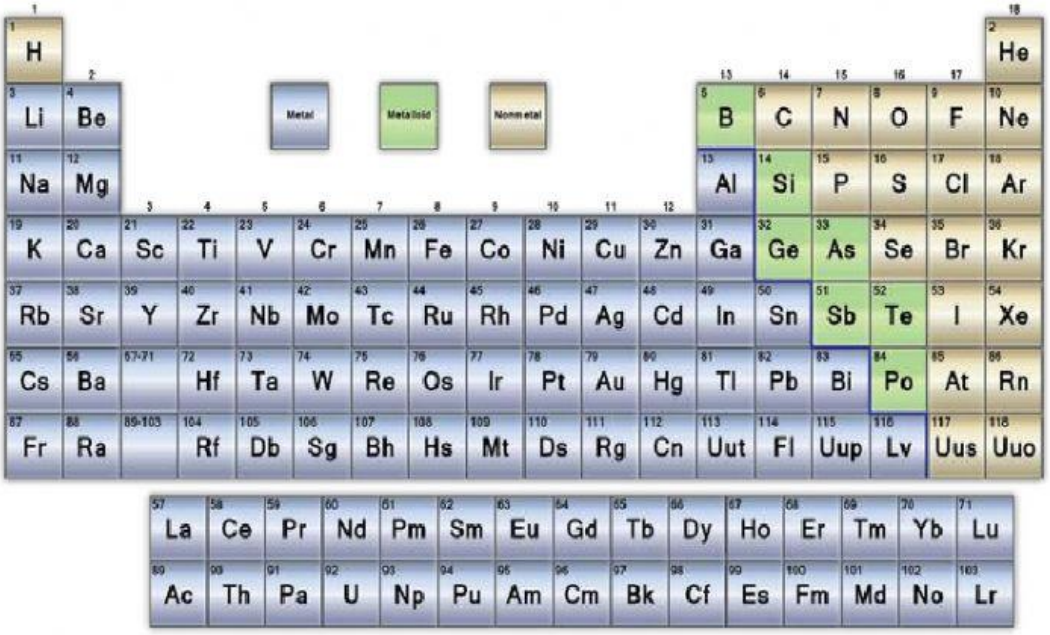
Name:.....	**Mark:**
Class:.....	**CHEMISTRY**
Periodic table	**GRADE 11 General**

2.2: Development of Periodic Table

Metals, Nonmetals and Metalloids

The periodic table can be divided into metals, nonmetals and metalloids



Metals are:

Hard, strong, lustre (shiny), malleable, ductile, good conductors of electricity and heat

Non-metals are:

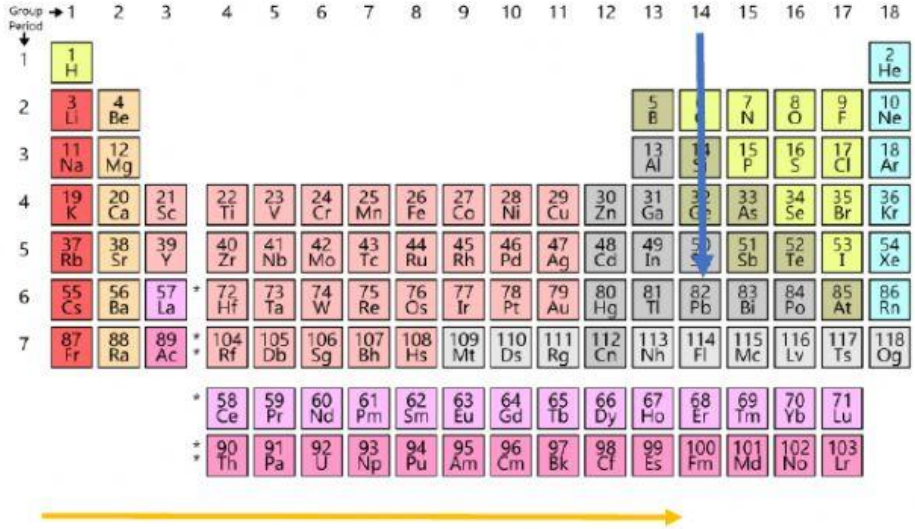
gases or dull solids, soft, brittle (easy to break), do not conduct electricity or heat, good insulators.

Metalloids are:

Properties of metals and nonmetals, Si and Ge are used for computer chips and solar cells.

Groups, Periods and Blocks

The periodic table can also be divided into groups and periods

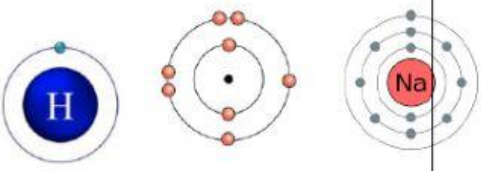


Groups – 18 groups in the periodic table, going down in columns

Periods – 7 periods in the periodic table, going across in rows

Example: What element is in group 16, period 6? Pb, Lead

Period number is number of shells.



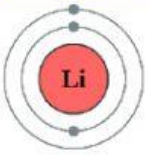
1 shell 2 shells 3 shells

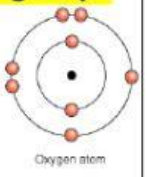
Period 1

Period 2 Period 3

End number of group number is valence electrons (Electrons in last shell). Only for groups 1, 2, 13, 14, 15, 16, 17, 18.

Group **1** . Group **13** . Group **16**





1 valence electron . **3** valence electrons . **6** valence electrons

Group 1 - Alkali metals – Extremely reactive. Most reactive metal. Lithium used for batteries.

Group 2 - Alkaline earth metals – highly reactive. Magnesium used in laptops.

Transition Metals - They are usually hard and dense materials. High melting points and boiling points.

Metalloids - have properties of both metals and nonmetals, used in solar cells and computer chips.

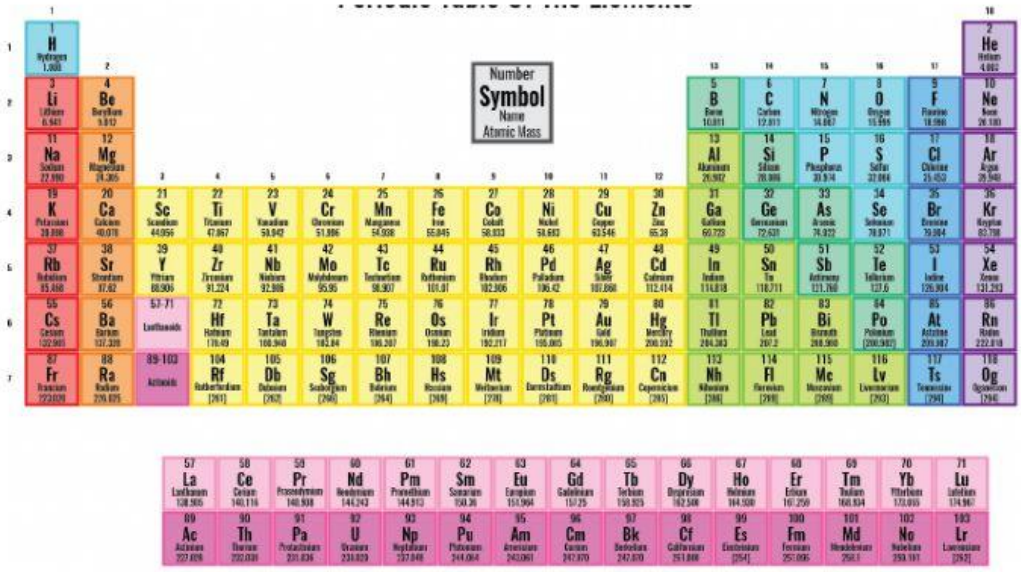
Non-metals - usually gases or dull, brittle solids. Bad conductors of heat and electricity.

Group 17 - Halogens - highly reactive. Most reactive nonmetals. F used in toothpaste

Group 18 - Noble gases - unreactive because they have full shell of electrons. Used in lasers and neon lights bulbs.

Lanthanides – emit light when hit by electrons

Actinides – used in nuclear power.



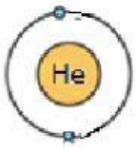
Questions

1. Calcium Ca is a type of metal/metalloid/nonmetal _____
2. Boron B is a type of metal/metalloid/nonmetal _____
3. F is a type of metal/metalloid/nonmetal _____
4. True or false: Chorine Cl is a metal _____
5. True or false: Metals are soft and easy to break _____
6. True or false: Metalloids are used in making solar cells and computer chips _____
7. What element is in period 5, group 16? _____

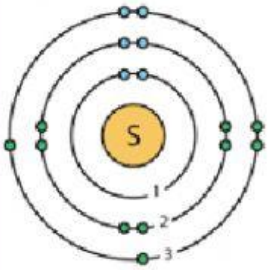
8. True or false: Potassium K is in period 4, group 1? _____

9. Look at the diagram of Helium, what period is it in, in the periodic table?

_____



10. Look at the element Sulphur, fill in the missing information



Shells: _____
Period: _____
Valence electrons: _____
Group Number: _____

11. Group 17 elements are called _____

12. True or False: Group 1 are called the transition metals _____

13. Which group of elements have a full shell of electrons? _____

14. What is the name of the group with the most reactive metals? _____

15. _____ have properties of both metals and nonmetals.

16. True of False: Metals are bad conductors of electricity. _____

17. What is the name of the group 2 elements? _____