The Periodic Table

Content 

Alkali Metals

Physical Properties of Alkali Metals (Group I)

- Soft and easily cut with a knife
- Low melting and boiling point
- Low density
- Good conductors of electricity and heat
- Shiny and silvery in color

Specific to this group **compared** to other metals

Chemical Properties of Alkali Metals (Group I)

S/N	Property
1	Alkali metals react with water to form a soluble metal hydroxide (alkali) and Hydrogen gas e.g. $2K(s) + 2H_2O(l) \rightarrow 2KOH(aq) + H_2(g)$
2	Alkali metals react with oxygen to form a metal oxide (basic oxide) and Hydrogen gas e.g. $4K(s) + O_2\ (g) \rightarrow 2K_2O(s)$

Trends down the group

- Melting and boiling points decrease
- Reactivity of the alkali metal increase

Halogens (Group VII)

Physical Properties of Halogens

- Colored non-metals
- Exist as diatomic molecules
- Low melting and boiling points

Chemical Properties of Halogens

S/N	Property
1	Metals react with halogens to form a class of compounds called metal halides
2	A more reactive halogen will displace a less reactive halogen from its compound e.g. $2KBr(aq) + Cl_2\ (aq) \rightarrow Br_2(aq) + 2KCl(aq)$

Colors of Halogens

Halogen	Color and state
Fluorine	Pale Yellow Gas
Chlorine	Greenish yellow gas
Bromine	Red-brown liquid
Iodine	Black solid
Astatine	Black Solid

Noble Gases (Group 0)

Physical Properties of Noble Gases

- Colorless gases
- Monoatomic in most conditions

Chemical Properties of Noble Gases

S/N	Property
1	Noble gases are inert (generally unreactive) Explanation →Noble gases have a full valence shell hence do not need to gain, lose, or share electros with other elements

Uses of noble gases

Noble Gas	Use
Helium	Fill balloons
Neon	Used in advertising lights
Argon	Filling light bulbs

Transition Metals

Properties of Transition Metals

- High melting and boiling point
- High densities
- Variable Oxidation states
- Form colored compounds
- Are good catalysts

Test yourself 

1. What are the physical properties of Alkali Metals?
2. What are the chemical properties of Alkali Metals?
3. What are the physical properties halogens?
4. What are the chemical properties of halogens?
5. What are the physical and chemical properties of Noble Gases?
6. Why are noble gases inert?
7. What are uses of Noble Gases?
8. What are the properties of Transition Metals?