PERIODICITY

The word periodicity is used to imply that when elements are arranged in atomic number order, then those having similar chemical and physical properties recur periodically, that is at regular intervals. Periodicity of the elements and their compounds, in particular their oxides and chlorides will be investigated.

Make a table as follows

Subject for comparison	Hydrogen	Group I	Group II	Group VII

Use this table to compare the following...

1. Symbol and electronic structure for elements.
2. Physical state and the appearance of the elements.
3. Bonding in the elements (and formula of molecules where relevant)
4. Reaction (if any) of the elements with O_2
5. Reaction (if any) of the elements with Cl_2
6. Reaction (if any) of the elements with H_2
7. Reaction (if any) of the elements with acids (dilute HCl)
8. Reaction (if any) of the elements with alkalis
9. Reaction (if any) of the elements with metals
10. Oxidation numbers shown by the elements in their compounds
11. Oxides of the elements:
    formula, bonding, action (if any) with water and pH of the solution. Physical state and general m.pt. b.pt.
12. Chlorides of the elements:
    formula, bonding, action (if any) with water and pH of the solution. Physical state and general m.pt. b.pt.
13. Hydrides of the elements:
    formula, bonding, action (if any) with water and pH of the solution. Physical state and general m.pt. b.pt.

You may find it helpful to stick pages together so you have a double page for each comparison. Keep comparisons parallel as far as possible. Work in note form. Remember to include as many equations for reactions as possible.

When you have completed this table, you should be aware of some of the trends in chemical properties of the elements, and of their principal oxides, chlorides and hydrides, that occur across periods 2 and 3 of the Periodic Table.