

## Transition Metals

Using the Internet and your text book research and write about the transition metals - you must include the following:

1. What are the physical properties of transition metals?
2. Explain how transition metals can exhibit different oxidation states with reference to their electronic configurations.
3. Giving examples, discuss the coloured compounds shown by transition metal compounds.
4. Describe the use of transition metals in catalysis with reference to the following processes:
  - a. The Haber Process
  - b. The Contact Process
  - c. The hydrogenation of alkenes
  - d. The decomposition of hydrogen peroxide.
5. Giving examples and equations, discuss the precipitation reactions of transition metal ions and sodium hydroxide.
6. Describe the formation of complex ions by transition metals, including:
  - a. What is a ligand?
  - b. How do coordinate bonds form?
  - c. The shapes of complex ions.
  - d. How the shapes of complex ions give rise to stereoisomerism.