

## Chemistry

Year 13 Summer Term

## Transition Metals &amp; Properties of Period 3 elements and their oxides

The 3d block contains 10 elements, all of which are metals. Unlike the metals in Groups 1 and 2, the transition metals Ti to Cu form coloured compounds and compounds where the transition metal exists in different oxidation states. Some of these metals are familiar as catalysts. The properties of these elements are studied in this section with opportunities for a wide range of practical investigations.

Teacher 1 –  
Transition  
metals3.2.5.1  
General  
properties of  
transition metals3.2.5.3  
Shapes of  
complex ions3.2.5.2  
Substitution  
reactions3.2.5.4  
Formation of  
coloured ions3.2.5.5  
Variable  
oxidation states3.2.5.6  
CatalystsIons in aqueous  
solution3.2.6.1  
Reactions of ions  
in aqueous  
solution

**Required Practical 8-** Carry out simple test-tube reactions to identify transition metal ions in aqueous solution.

The reactions of transition metal ions in aqueous solution provide a practical opportunity to show and to understand how transition metal ions can be identified by test-tube reactions in the laboratory.

End of Unit  
assessmentTeacher 2 -  
Period 3  
Elements3.2.4.1  
The reactions of  
Na and Mg with  
water.3.2.4.2  
The trends in the  
reactions of the  
elements Na, Mg,  
Al, Si, P and S  
with oxygen,

The reactions of the Period 3 elements with oxygen are considered. The pH of the solutions formed when the oxides react with water illustrates further trends in properties across this period.

Explanations of these reactions offer opportunities to develop an in-depth understanding of how and why these reactions occur.

3.4.2.3  
The reactions of  
the oxides of the  
elements Na-S  
with water.3.4.2.4  
The trends in the  
reactions of the  
elements Na, Mg,  
Al, Si, P and S  
with oxygen,End of Unit  
assessment

## TUDOR HABITS

You will be inquisitive, curious, yet critical, as you look at many reactions of transition metals and the role they play in both medicine and the industry. You will continue to build metacognitive skills through your questioning of concepts and ideas.

## VOCABULARY:

Oxidation State, Ligand, Co-ordinate bond, adsorption, autocatalysis, colorimeter, amphoteric, oxides, dissociate, complex,