**Key Stage 3 Chemistry**

**Department for Education**

**National Curriculum (September 2013)**

**Subject content**

Pupils should be taught about:

**The particulate nature of matter**

 the properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure

 changes of state in terms of the particle model.

**Atoms, elements and compounds**

 a simple (Dalton) atomic model

 differences between atoms, elements and compounds

 chemical symbols and formulae for elements and compounds

 conservation of mass changes of state and chemical reactions.

**Pure and impure substances**

 the concept of a pure substance

 mixtures, including dissolving

 diffusion in terms of the particle model

 simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography

 the identification of pure substances.

**Chemical reactions**

 chemical reactions as the rearrangement of atoms

 representing chemical reactions using formulae and using equations

 combustion, thermal decomposition, oxidation and displacement reactions

 defining acids and alkalis in terms of neutralisation reactions

 the pH scale for measuring acidity/alkalinity; and indicators

 reactions of acids with metals to produce a salt plus hydrogen

 reactions of acids with alkalis to produce a salt plus water

 what catalysts do.

**Energetics**

 energy changes on changes of state (qualitative)

 exothermic and endothermic chemical reactions (qualitative).

**The Periodic Table**

 the varying physical and chemical properties of different elements

 the principles underpinning the Mendeleev Periodic Table

 the Periodic Table: periods and groups; metals and non-metals

 how patterns in reactions can be predicted with reference to the Periodic Table

 the properties of metals and non-metals

 the chemical properties of metal and non-metal oxides with respect to acidity.

**Materials**

 the order of metals and carbon in the reactivity series

 the use of carbon in obtaining metals from metal oxides

 properties of ceramics, polymers and composites (qualitative).

**Earth and atmosphere**

 the composition of the Earth

 the structure of the Earth

 the rock cycle and the formation of igneous, sedimentary and metamorphic rocks

 Earth as a source of limited resources and the efficacy of recycling

 the carbon cycle

 the composition of the atmosphere

 the production of carbon dioxide by human activity and the impact on climate.