



01

Chemistry - UK

YEARS 10 - 12

Experience Level: **KEY-STAGE 4**Number of Classes: **VARIABLE**Age Range: **15 - 18 YEARS**

Chemistry is the science of the composition, structure, properties and reactions of matter, understood in terms of atoms, atomic particles and the way they are arranged and link together. It is concerned with the synthesis, formulation, analysis and characteristic properties of substances and materials of all kinds.

Students should be helped to appreciate the achievements of chemistry in showing how the complex and diverse phenomena of both the natural and man-made worlds can be described in terms of a number of key ideas which are of universal application, and which can be illustrated in the separate topics set out below.



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02

01

Cell biology

- cells as the basic structural unit of all organisms; adaptations of cells related to their functions; the main sub-cellular structures of eukaryotic and prokaryotic cells
- stem cells in animals and meristems in plants
- enzymes
- factors affecting the rate of enzymatic reactions
- the importance of cellular respiration; the processes of aerobic and anaerobic respiration
- carbohydrates, proteins, nucleic acids and lipids as key biological molecules.

02

Transport systems

- the need for transport systems in multicellular organisms, including plants
- the relationship between the structure and functions of the human circulatory system.

03

Health, disease and the development of medicines

- the relationship between health and disease
- communicable diseases including sexually transmitted infections in humans (including HIV/AIDs)
- non-communicable diseases
- bacteria, viruses and fungi as pathogens in animals and plants
- body defences against pathogens and the role of the immune system against disease.



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