



# Hampton Court House

## Curriculum Outline 2020/21 – Year 12 Chemistry (TJMW)

### Autumn 2020

Principal Text: *Hodder AQA A-level Chemistry Year 1 Student Book*

We begin by extending GCSE knowledge of atomic structure and mole calculations, covering TOF mass spectrometry, electronic orbitals and sub-shells, and advanced mole calculations involving gases. The moles topic concludes with several investigative practicals including an assessed titration.

We then will look at bonding and the periodic table, using this to springboard ideas about reduction and oxidation.

Students opting to specialise in chemistry will commence the AQA course at the beginning of Year 12. They have two single and two double lessons per week, as well as five hours of independent study time.

There is no practical coursework element but some practical work is required and will be assessed in examinations. There are numerous opportunities to use practical experiences to link theory to reality, which equips students with the essential practical skills they need.

The AQA specification is linear, meaning that students will sit all the AS exams at the end of their AS course and all the A-level exams at the end of their A-level course.

### Spring 2021

Principal Text: *Hodder AQA A-level Chemistry Year 1 Student Book*

The physical chemistry side of the course will focus on energy changes and chemical equilibria this term, relating these to important industrial processes.

This term we will also begin looking at organic chemistry, focusing on naming, functional groups, and reaction mechanisms.

Links with fundamental values

The fundamental values of democracy, rule of law, liberty, and respect are promoted through a strongly individualised classroom ethos.

More specifically, topics involving the chemical and pharmaceutical industries, and the effect of chemicals on the environment highlight the importance of these values.

Social, moral, spiritual and cultural content  
Links to SMSC include

- Development of medicines and the societal effects thereof.
- An understanding of the dangers to the environment posed by chemical industry and ways to mitigate these dangers.
- The Scientific Method and how evidence-based decision making is vital.
- The importance of contributions of scientists from various cultures, genders, and sexualities.

### Summer 2021

Principal Text: *Hodder AQA A-level Chemistry Year 1 Student Book*

The first half of summer term will focus on preparation for the AS exams in the week before half term.

After half term we will begin the second year course looking at entropy and Gibb's Free Energy. We will use advanced Born-Haber cycles to develop our understanding of ionic bonding.