SEC G3 Chemistry for Year 3 (2026) onwards

INTRODUCTION

Chemistry is the central science which examines, describes and explains interactions between matter and energy. Chemical principles lie behind the physical environment in which we live, and some understanding of chemistry is essential preparation for studies in the life sciences. The study of chemistry thus serves two roles – preparation for courses in other sciences as well as preparation for a career or higher academic studies, especially chemical engineering, medicine, biomedicine and the life sciences.

Chemistry is closely related to the other natural sciences and, in a sense, unifies them. As an empirical study of the world of substances and their transformations, it traces its descent from the Egyptian, Greek and Arabic philosophers of earlier times. Chemistry emerges as a full-fledged science in the 'long' 19th century, that period of change between American Revolution of 1776 and the First World War of 1914. The first true chemists called themselves natural philosophers, believing that chemical principles showed the underlying truth of the universe.

Chemistry remains one of the most popular subjects at Anglo-Chinese School (Independent) over the years. As the subject has evolved over the decades to one involving conceptual mastery and logical thinking, a good grade in mathematics at the end of Year 2 is mandatory if a student intends to offer the subject at G3 level in the Secondary Education Certificate (SEC) Examinations. Only G3 Chemistry is offered at ACS(Independent).

Candidates should also be prepared to spend significant time in practical work and planning experiments, since Chemistry is a 'hands-on' subject. Students with good practical skills are more likely to be successful in the subject as they tend to understand the concepts behind the theory.

Here is an overview of the content structure of G3 Chemistry, applicable to 2026 Year 3 cohort onwards:

Sections	Topics
I. Matter – Structures and Properties	1. Experimental Chemistry 2. The Particulate Nature of Matter 3. Chemical Bonding and Structure
II. Chemical Reactions	4. Chemical Calculations 5. Acid-Base Chemistry 6. Qualitative Analysis 7. Redox Chemistry 8. Patterns in the Periodic Table 9. Chemical Energetics 10. Rate of Reactions
III. Chemistry in a Sustainable World	11. Organic Chemistry 12. Maintaining Air Quality

ASSESSMENT

Students are assessed at Secondary Three in tests, practical work and a Final Examination.

In Secondary Four, each of the three major assessments — the Mid-Year Common Test, the Preliminary Examination, and the SEC Examination itself — has a grade independent of the others. The weighting and format of the papers in the SEC Examination are as follows:

Paper	Type of Paper	Duration	Marks	Weighting
1	Multiple Choice	1 hr	40	30%
2	Structured and Free Response	1 hr 45 min	80	50%
3	Practical	1 hr 50 min	40	20%