Preparing school students for chemistry degree interviews

Almost all UK universities select chemistry students through UCAS applications, focusing on strong A-level (or equivalent) grades in chemistry and maths. Applications are assessed alongside personal statements that demonstrate enthusiasm for the subject, engagement in extracurricular activities (such as science competitions), and potential for scientific thinking.

Oxford, Cambridge, and Imperial College London require an interview as a core part of their admissions process. There can be exceptional circumstances where a university uses an interview as part of its fair-selection process for disadvantaged applicants.

This guide provides practical advice for supporting students who are preparing for these interviews.

General: Build up a portfolio of questions asked at interviews so that year 13 students can see what sort of questions are being asked. Create a template with the name of the institution and date and ask students to enter the questions they were asked and the answer that they gave.

Academic Preparation

- Check university websites for details about their interview or ask your student to do so.
  - **Imperial College London:** Applying to us | Faculty of Natural Sciences | Imperial College London . The most relevant part is in the expanded 'Interviews and Offers' section (also at the bottom of this email)
  - **University of Cambridge:** https://www.undergraduate.study.cam.ac.uk/apply/after/cambridge-interviews
  - **University of Oxford**: https://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/guide/interviews Their website includes an example of a chemistry question asked at an interview and the expectation of the answer. (Also at the bottom of this email)
  - Encourage students to revisit A-level chemistry and think about chemistry topics they will enjoy discussing.

- Offer an opportunity for them to practice thinking aloud by asking them to explain chemistry concepts or work through problems out loud with you, friends, or family.

- Offer a practice interview or suggest self-recorded Q&A to build confidence.

- Ask them to reflect on why they want to study chemistry at the university offering them an interview, and be prepared for this question

- Encourage them to read articles or listen to podcasts about real-world chemistry applications.
  - The Royal Society of Chemistry offers short career videos: https://rsc.li/job-profiles
  - Chemistry World provides free articles: https://www.chemistryworld.com

- **Personal statement:** Remind them to be ready to discuss anything mentioned, especially related to chemistry interests or projects.

Tips to support students on the day

- They've done well to reach this stage.
- They can be themselves and wear what feels comfortable.
- The interview is a friendly conversation.
- Interviewers care about how they think, not just the answer.
- It's okay to ask for clarification and share their own ideas.

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- It’s okay to pause and think—reasoning matters more than speed.

Tips for online interviews

- Choose a quiet space with no interruptions.
- Check webcam, microphone, and internet connection.
- Ensure the device is charged and ready.
- Have pen and paper for notes or problem-solving.
- If a stylus/tablet is required, confirm access with the university in advance.

Tips for in-person interviews

- Check the location and plan travel.
- Arrive on time and silence phones.
- Bring any required documents or materials.

If something goes wrong

If illness or personal issues arise on the day, contact the university before the interview. Late notifications are rarely considered.

APPENDIX

Imperial:

What will I be asked in the interview?

All interviews will be conducted online with two experienced Chemistry academics, which will last approx. 20 minutes. We are looking to see your motivation and enthusiasm for Chemistry. The interview will include questions about familiar and unfamiliar Chemistry-related topics, to assess your overall background knowledge and understanding, and your problem-solving skills. The interview will also assess your engagement and your communication skills. You will also be asked about your personal statement or a topic of particular interest. We aim to see your thought-process and to teach you something new - (and hopefully useful!) - through structured questioning. This gives you an impression of how we teach, and it will give us an indication of your learning and ability to adapt to unfamiliar problems, and how you communicate Chemistry ideas. Our aim is not to give you a hard time, rather to use the interview time constructively, to guide you if you are unsure, and hopefully to give you a new insight on an area of chemistry you already have some knowledge of. It also gives you the chance to ask our academics any questions regarding the course and College, to help you in making your decision of where to study.

University of Oxford:

Sample question:
Interviewer: Martin Galpin, University College.

How many different molecules can be made from six carbon atoms and twelve hydrogen atoms?

This question gives candidates an opportunity to demonstrate a wide understanding of chemistry and there is no simple, immediate answer.
Most candidates would start by drawing some molecules to construct some that satisfy the requirement of six carbons and twelve hydrogens. If the candidate gets stuck, the interviewer may ask them to explain how many bonds they’d expect each carbon and each hydrogen to form.
This part of the interview tests candidates’ familiarity with different kinds of molecules, their ability to visualise molecules in three dimensions and then draw them, and their ability to decide if two differently-drawn molecules are actually equivalent. During this process, the interviewer would also be looking at how well the candidate responds to prompting.

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After a few minutes, the interviewer may use the question to move the discussion toward concepts such as chirality, cis-trans isomerism, ring strain, and isotope effects. Candidates may not have heard of these before, which is fine and to be expected; the interviewer wants to see how quickly the candidate picks up new concepts and whether they can offer plausible explanations for them.
The interviewer might finish the discussion with a rather more difficult question, such as 'is a molecule only stable if all the carbons form four bonds?', thus challenging what is taught at school and getting the candidate to think critically about the nature of a chemical bond.

University of Cambridge
Subject-specific interviews
You're likely to be asked to:

- discuss topics with two or three interviewers
- apply your knowledge to new situations, materials, problems or scenarios
- explain your understanding of vocational aspects of the course, if applying for Medicine, Veterinary Medicine, or similar courses

You may also be asked about:

- why you want to study at Cambridge and why you chose your course
- key issues or developments in your subject
- recent topics from school or your personal statement

You may be asked to share your workings if the interviewers ask you a problem-solving question. This usually happens if you've applied to a Science or Mathematics course. There are several ways of sharing your workings. The College interviewing you will confirm arrangements in your invitation to interview.
You may be provided with material to read before your interview. You'll then discuss this material with your interviewers. The College interviewing you will advise you if this is the case.

Useful links:

UCAS: University Interview - Find tips For Interviews & auditions