Why do you, as a teacher, like to take part in Olympiad round 1?
It gives those who are interested in taking chemistry beyond their A-level studies the opportunity to attempt some hard questions. We open it up to any student who’s doing A-level chemistry, whether they’re in Year 12 or Year 13, so it’s entirely self-selecting. In particular I noticed that the Olympiad questions tend to bring in quite a lot of maths, so it does tend to be favoured by the students doing further maths; they seem to both enjoy doing it and do quite well on the questions. I think it helps them not only think beyond the A-level syllabus but also bring in and use their other subjects.

It’s nice to provide an extension opportunity for those who are aiming at the top grades. It also gives them something good to put on their UCAS form to show that they’re really engaged academically with their subject – something to make them stand out from the crowd.

How do you prepare for round 1?
We run an Olympiad discussion group starting in September where we meet once a week at a lunch time. We have really short lunchtimes, only about 40 minutes, so they’re allowed to bring their lunch and it’s again open to any sixth form students. They sit around in small groups in the classroom and they discuss past questions. We try to choose the question for the week that is based around something that they’re studying at that time. Sometimes there are separate questions for Year 12 and 13, and sometimes everyone attempts the same question. That works quite well to get them into the questions, and the ones that come to that group regularly from September until we sit it in January obviously tend to do the best. They’ve seen past questions and had a go with their friends at tackling them, and got used to the sorts of things you might need to do. I also think it makes it a bit less scary if they’ve attempted it with other people first.

What do your students get out of taking part in the Olympiad?
If they do come out with an award it gives them a good confidence boost. We generally find that Year 13s can reasonably easily get a bronze, whilst Year 12s often come out with nothing because they’ve just done a bit too little chemistry. But it does give them a really good confidence boost, which is often really welcome at that time of year in Year 13, because they’re deep into the syllabus and thinking, ‘Am I going to get my predicted grade?’ It gives them a bit more practice at having to think; the new A-level questions are more application based so I think the Olympiad does definitely help with that. Some of them come out without an award, but it doesn’t seem to faze them particularly. They get over it and they realise that it’s a really difficult paper, and that there’s no shame in not quite making it. And we do have quite a number that might come out with a 13 or a 14 when the threshold for bronze is say 15, then they still feel reasonably good about themselves because they recognise that they were nearly there.

What do your students find most challenging and how do you overcome this?
I mentioned that the questions are quite mathematical, so if they don’t do A-level maths I think that they struggle. And they really do struggle a bit with the organic questions, I think possibly because we do organic quite late on in the year – in Year 12 they’ve hardly done any by January. And the Year 13s find the synthesis questions quite difficult, again I think it’s just familiarity. To overcome these we practise. We give Year 12 a bit of advice about how to approach the paper, for example: look through it all first and start with a question that looks doable. But I do encourage them that it’s possible to get a silver award even if you don’t attempt the organic question, and we have had Year 12s get a silver award and we regard that as very impressive. There can be quite a lot of surprises actually – the students who you think would do the best, don’t, and it sometimes uncovers hidden potential from some of them. Maybe it’s different skills that you wouldn’t always see in an exam question; it’s not all recall, it’s not all about having read up on your notes and drawing the mechanism from memory or whatever else. It’s about thinking and applying.

The Chemistry Olympiad is the leading chemistry competition for students in the UK. To find out more about this opportunity to challenge your chemistry students visit [rsc.li/olympiad](rsc.li/olympiad)
What advice would you give a school that was thinking of taking part in Olympiad round 1 for the first time?

I would say definitely make sure your students have seen some questions in advance, and maybe consider running some sort of preparation class or club, because it really does give them confidence. Even if they don’t then want to sit the exam, it’s still beneficial for their overall learning and their studies. Encourage everyone and anyone to have a go regardless of what grade they’re aiming at.

It is quite different to A-level, but it can be tied up with the syllabus - I have put some questions into our scheme of work as stretch and challenge. For example, there are questions on calorimetry where you have to take into account the specific heat capacity of the can as well as the solution. At A-level we just don’t do that, we ignore the fact that the can has absorbed energy as well as the water in it. But it’s nice to have those stretch and challenge questions in there. So a school could start to include some of the more straightforward ones to give their students a bit more extension material.