

Pitching it right

Many centres in the network already work with post-16 Biology students, so will have lots of experience with this audience. If unsure, it is valuable to refer to the exam specifications on the exam board websites to find out what concepts are covered and what terms are used. A-level Biology does not cover particularly complex content, so if you plan to involve research scientists in the delivery of the workshop, they will need quite a bit of training to help them cut out jargon and pitch their explanations at the right level. Research scientists will often refer to concepts like gene expression or conserved DNA and assume that students will understand. It can take a while for researchers to drop the jargon.

The school curriculum is never able to reflect all the latest developments in science, but it is particularly out of date in relation to genetics and genomics. Research scientists might not realise what is covered in school/college, so they are likely to need some training on this. A-level Biology students do not learn much about genomes and have a simplistic idea about all DNA being used to code for proteins. They do not get much practical laboratory experience, so they rarely have any molecular biology skills, but they really enjoy learning these techniques.

Students typically attend the *A Question of Taste* workshop in year 13, as most of the genetics content is covered in the A2 year. They are being stretched with some of the concepts in the workshop, but the feedback shows that students enjoy the content and do not feel it is too difficult.

The content of the workshop is closely linked to the curriculum, so students are usually already familiar with: DNA structure, PCR, restriction digests, electrophoresis and evolution. Sometimes students attend before they learn these concepts in school/college – so you need to be ready to adjust your delivery and spend more time introducing ideas. It helps to speak to teachers and ask students some questions at the beginning of the workshop to get a sense of how much they already know. Students will probably not have heard of bioinformatics, convergent evolution or balancing selection before, so some of the content will introduce new ideas and needs to be explained carefully.

However, it is not possible to teach students everything they need to know about DNA and genetics in a single *A Question of Taste* workshop. In particular the detailed mechanisms of DNA replication and transcription/translation are outside the scope of the workshop and it's probably not a good idea to try to fit them in (although demonstrators should be encouraged to answer individual questions from students in these areas).

Students are not often confronted with scientific questions that no one can yet answer and some of them find this unsettling. We think this adds real value – showing students more about *How Science Works*.