

Triple science teaching arrangements in schools

Arrangements for GCSE science teaching in schools are diverse and complex, not least because there are a variety of ways that students can be entered for GCSE science qualifications. A science teacher got in touch with Teacher Tapp wanting extra intelligence about how schools were offering and accommodating three science entries because their school is planning a change in their approach.

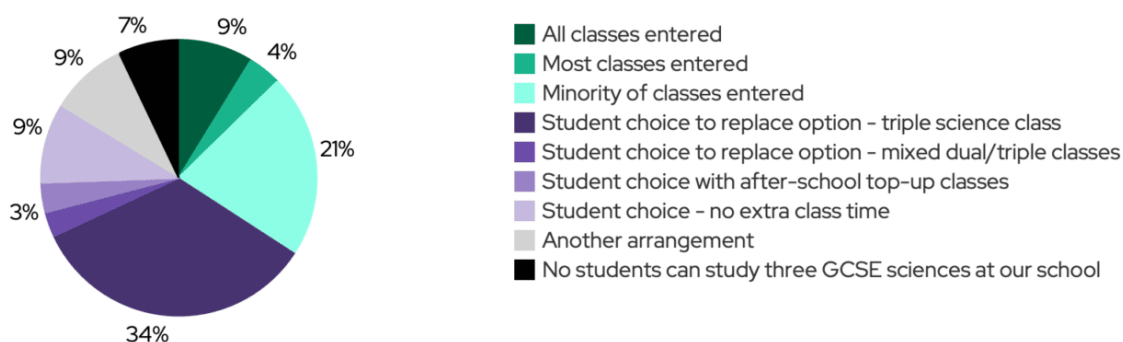
Before we look at the national picture, it's important to say that we don't know what 'good' or 'less good' practice looks like. There isn't any research out there (yet) on whether GCSE triple science arrangements affect either GCSE attainment, the mix of students going on to study A-Level sciences, or A Level science attainment. Allowing some students to study 'more science' sounds great, but it necessarily means that other students feel they have studied 'less science' which may affect their future subject decisions.

The national picture

The chart below shows the amazingly diverse number of ways that a school can invite students to sit three individual science GCSEs. The green slices on the chart show schools where science entry is entirely determined by the class a student is in. In 9% of schools, everyone enters three sciences; in 4% most classes do; in 21% a minority of classes do (e.g. just the top set).

Half of schools give students a choice as to whether they study three sciences (although this option may not be open to all). Most typically, electing to take three sciences means dropping another option subject to gain extra teaching time (dark purple). Very few teach it with after-school classes but almost 1-in-10 are offering some students the choice to enter three sciences with no additional teaching time at all. That said, if this 'choice' is only open to top set students, then it isn't so different to the practice of restriction entry by teaching groups. Just 7% of schools have no opportunity for students to sit three science GCSEs.

How can students study individual GCSE sciences (biology, chemistry and physics - sometimes called 'triple science entry') at your school?

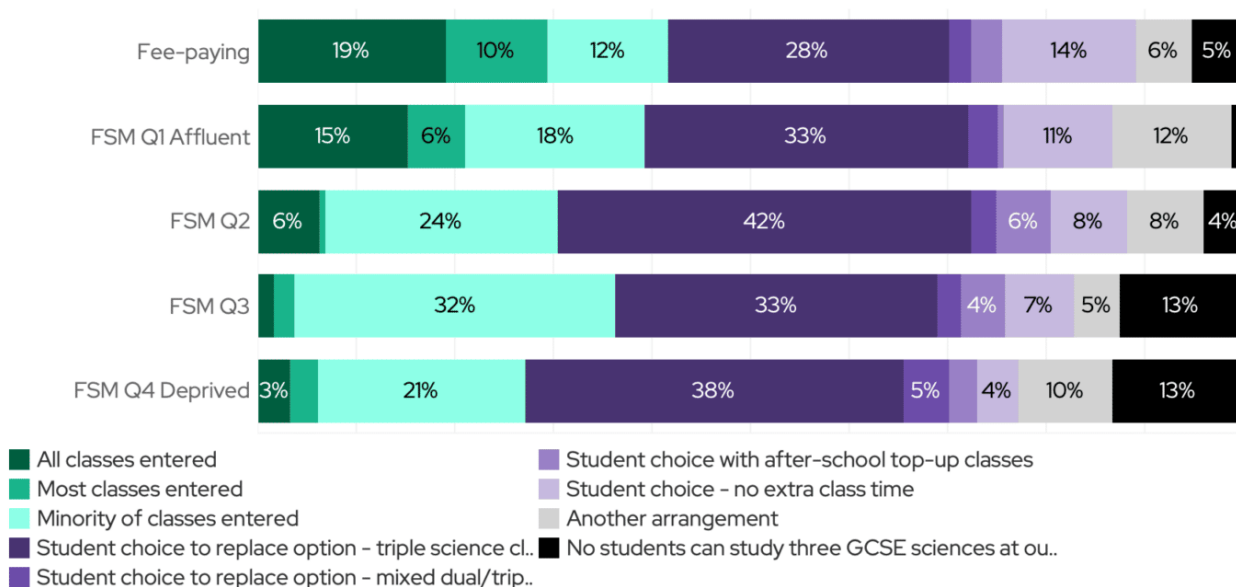


Teacher Tapp sample of 1,278 science teachers and headteachers responding on 26th and 27th November 2022

The influence of school affluence

Triple science entry is far more prevalent in fee-paying and low FSM schools, where the students are more likely to be higher attaining on entry. This isn't a surprise and so far we haven't done additional analysis into why this relationship holds. For example, is it simply that schools deliver the curriculum that best suits the attainment profile of the students, or is there another contributing explanation such as having the right mix of specialist science teachers? The presence of so much variation in entry practices within schools that seem to have a similar attainment profile is interesting and worthy of further exploration.

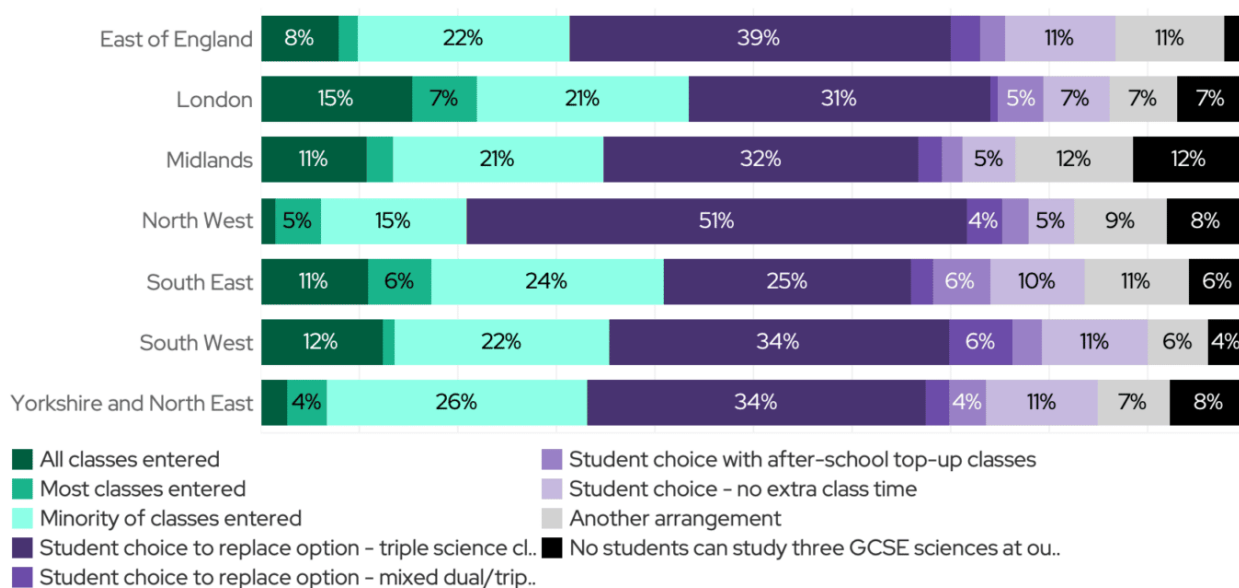
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Regional questions

We were quite surprised to see large differences across regions. For example, 12% of schools in the Midlands do not offer three sciences at all, yet this figure is just 2% in the East of England. Similarly, just 1% of schools in the North West have every student studying three sciences. Whilst some regional variation clearly relates to the presence of selective private and state schools (e.g. London and the South-East), other variation is hard to explain.

How can students study individual GCSE sciences (biology, chemistry and physics – sometimes called 'triple science entry') at your school?



Teacher views

How do teachers feel about arrangements? We wanted to leave teachers free to tell us anything like wanted about science entry arrangements so asked for free text responses. This yielded 829 different views and it is taking quite a while to sift through them! Looking at schools with an average free school meals profile we have so far noticed:

- Many science teachers emphasised that they preferred students to choose triple sciences and give up another option to create additional teaching time. This does seem optimal for science teachers, but how do other departments feel about it?
- Some said it was very important that they could arrange timetabling so that specialist biology, chemistry and physics teachers could deliver their parts of the curriculum.
- Many mentioned the problems of having higher and foundation tier papers – it is too difficult to schedule teaching time for both versions of the separate sciences.
- A notable minority said they disliked the complexity of science GCSE and felt it should have a standardised qualification like all other subjects.

Do get in touch with [Becky](#) if you'd like to know more about our triple sciences questions.

