

# Variability in GCSE results for schools and colleges

## 2016 to 2018



August 2018

Ofqual/18/6419

## Key points

- Some variation in year-on-year results for individual schools and colleges is normal.
- Overall, the level of variation is generally similar to last year.
- There is slightly more variation in the reformed GCSE 9 to 1 subjects that were awarded for the first time this summer, compared to the reformed GCSE 9 to 1 subjects first awarded in 2017. This is not unexpected since there have been changes to the structure of these qualifications compared to the legacy qualifications.

GCSE results in England have been relatively stable in recent years, with only very small changes in the overall percentages of students achieving grades A\* to C or 9 to 4. However, we know that individual schools and colleges will always see variation in the proportion of students achieving particular grades from one year to the next. This can be due to many different factors, including differences in the ability mix of the students, different teaching approaches, changes in teaching staff or teaching time, and changes to qualifications.

This summer, new GCSE qualifications in 20 subjects<sup>1</sup>, graded 9 to 1, were awarded for the first time. We have analysed the year-on-year variation in the percentage of students achieving grades 9 to 4 or A\* to C in 9 of these subjects. We have also analysed the year-on-year variation in the percentage of students achieving grades 9 to 4 or A\* to C in the 3 reformed subjects that were awarded for the first time in 2017.<sup>2</sup> For English language and mathematics, the 2017 data includes students sitting the reformed 9 to 1 qualifications and students sitting the legacy A\* to C qualifications.

For English language, English literature and mathematics we have looked at schools and colleges with 50 or more students in both years. For other subjects, we have looked at schools and colleges with 25 or more students in both years. We have also looked at the variation in English language, English literature, mathematics and science for students in year 11 only (16-year-old students).<sup>3</sup>

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<sup>1</sup> Ancient languages (classical Greek and Latin), art and design, biology, chemistry, citizenship studies, combined science, computer science, dance, drama, food preparation and nutrition, geography, history, modern foreign languages (French, German and Spanish), music, physical education, physics and religious studies.

<sup>2</sup> English language, English literature and mathematics.

<sup>3</sup> Note that the number of schools/colleges is slightly lower in the year 11 only graphs because we have only included schools/ colleges with 50/25 or more year 11 students.

We have plotted the variation seen in each of several hundred schools and colleges. Each bar represents the number of schools and colleges with a particular level of variation, measured in intervals of 2.5 percentage points. For example, the bar to the left of zero represents schools that had a drop of up to 2.5 percentage points and the bar to the right of zero represents schools that had an increase of up to 2.5 percentage points. The higher the peaks in the middle, the greater the stability from one year to the next.<sup>4</sup> The mean on each graph is the average of the year-on-year difference for each school. The standard deviation (SD on the graphs) is a measure of the spread of the variation; a lower standard deviation means there is less variation overall whereas a higher standard deviation means there is more variation.

Overall variation in results is similar to last year. In these graphs the schools tend to be clustered around the middle, which means that most schools see very little year-on-year variation. There is greater variation in the reformed GCSE 9 to 1 subjects that were awarded for the first time this summer, compared to the reformed GCSE 9 to 1 subjects that were first awarded in 2017. This is not unexpected since there have been changes to the structure of these qualifications compared to the legacy qualifications, for example, changes to the proportion of controlled assessment.

This year there are reformed GCSEs in science subjects, including a new double award GCSE in combined science. There is more information on page 10 to explain the comparisons included in this report.

More centre variability graphs can be seen using our online application <http://analytics.ofqual.gov.uk>. Here the graphs are 'interactive' such that users can explore centre variability:

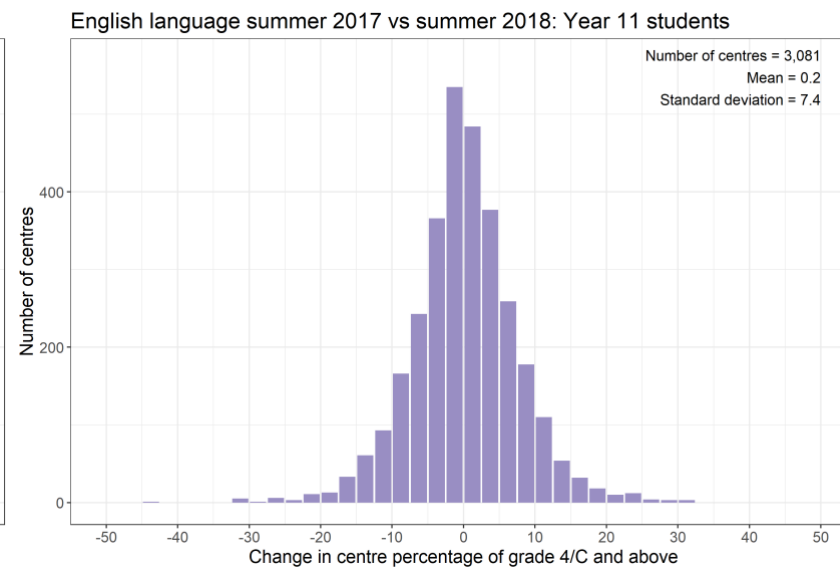
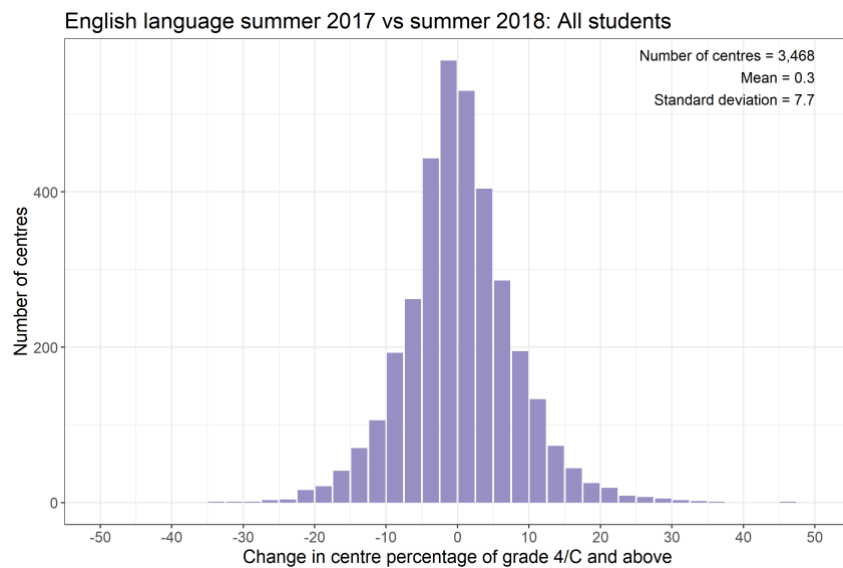
- within different subjects
- for various sizes of centres
- for only centres with stable (similar sized) cohorts from one year to the next

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<sup>4</sup> Note that, although the same scales are used for the y axis on each of the graphs within a subject, the scales do vary between subjects.

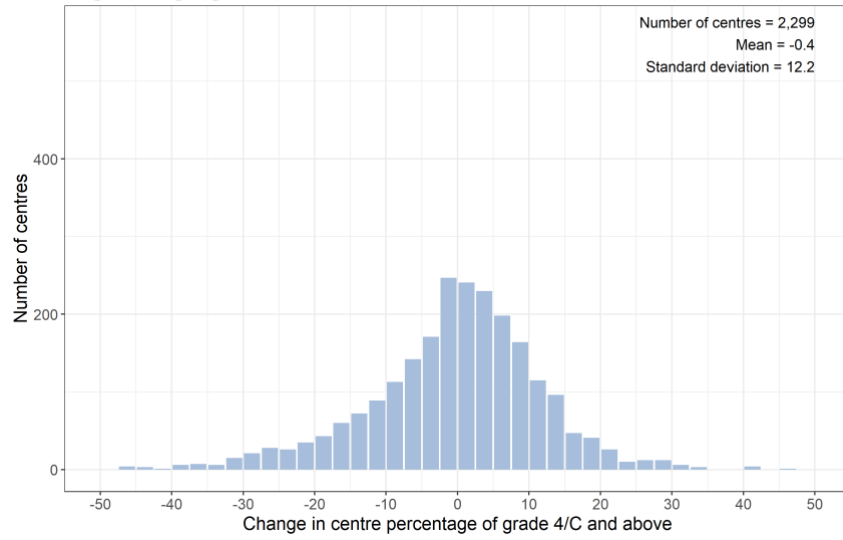
## English language

There is less variability in English language results this year than last year, when considering all students or year 11 students only. This is illustrated by the decrease in the standard deviations in 2017/2018 compared to 2016/2017. The mean difference is also smaller. In 2016 many schools took an international GCSE in English language, hence there are fewer centres included in the comparison between 2016/2017 than between 2017/2018.<sup>5</sup>

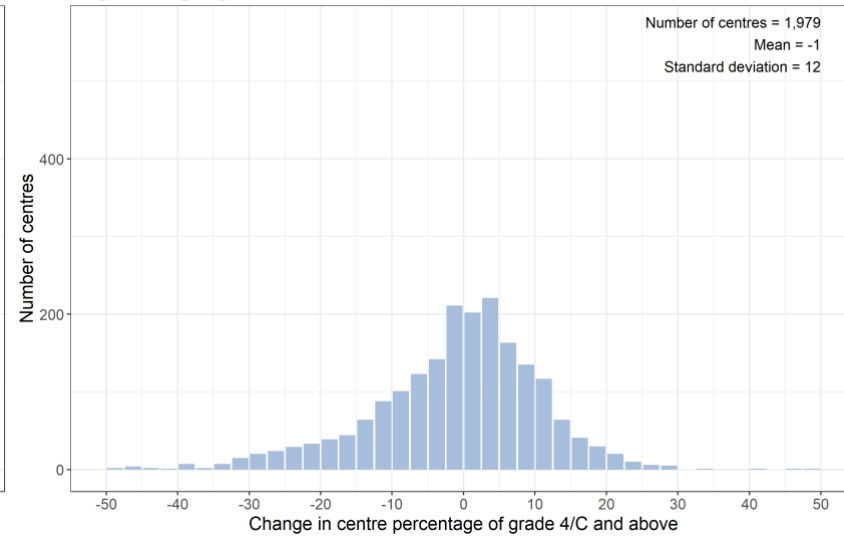


<sup>5</sup> Our [GCSE centre variability report](#) published in 2017 has comparisons including and excluding international GCSEs in English language. Ofqual 2018

English language summer 2016 vs summer 2017: All students

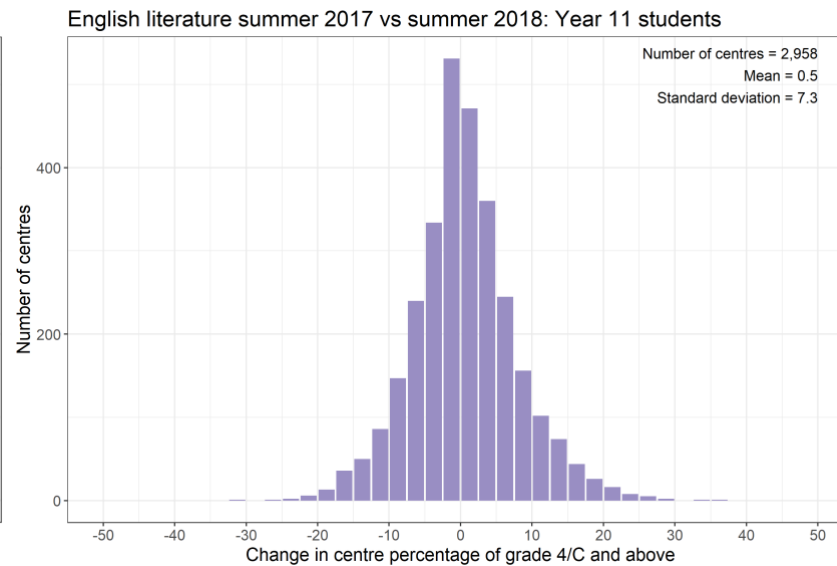
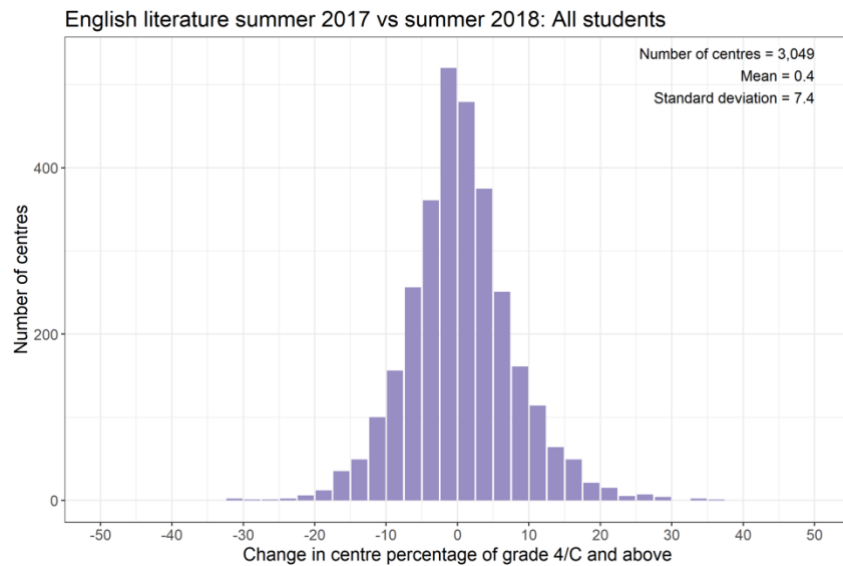


English language summer 2016 vs summer 2017: Year 11 students

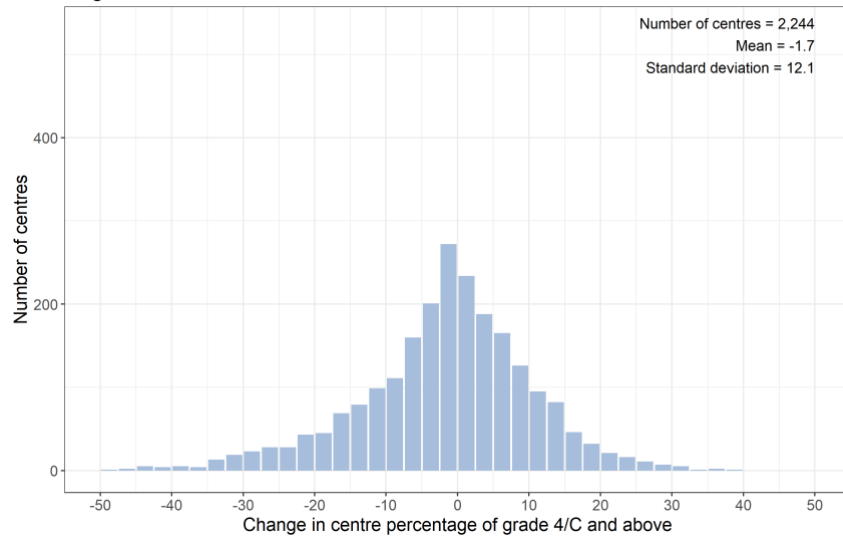


## English literature

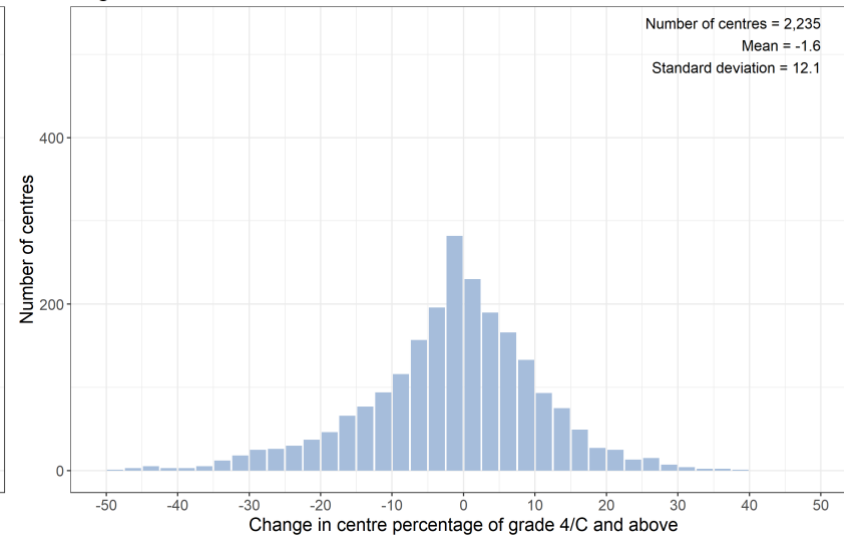
There is less variability in English literature results this year than last year, when considering all students or year 11 students only. This is illustrated by the decrease in the standard deviations in 2017/2018 compared to 2016/2017. The mean difference is also smaller between 2017/2018. In 2016 some schools took an international GCSE in English literature, hence there are fewer centres included in the comparison between 2016/2017 than between 2017/2018.



English literature summer 2016 vs summer 2017: All students

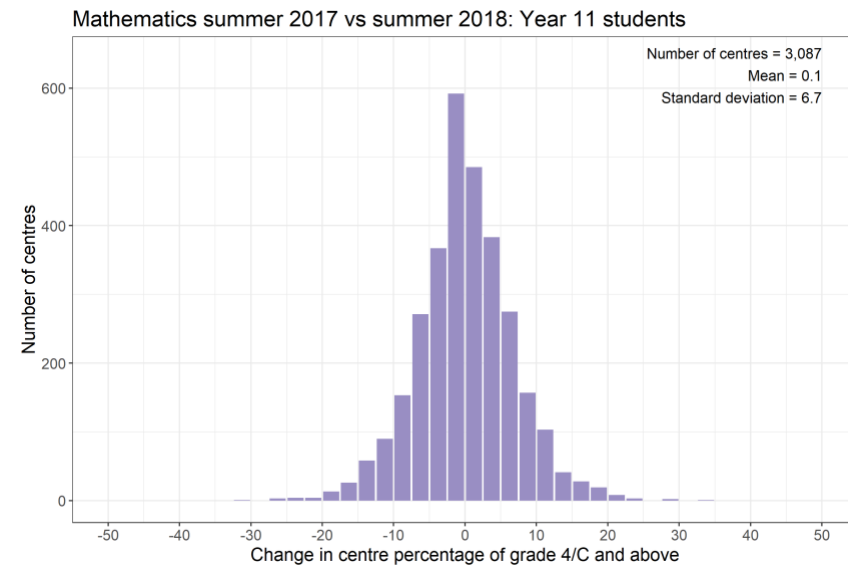
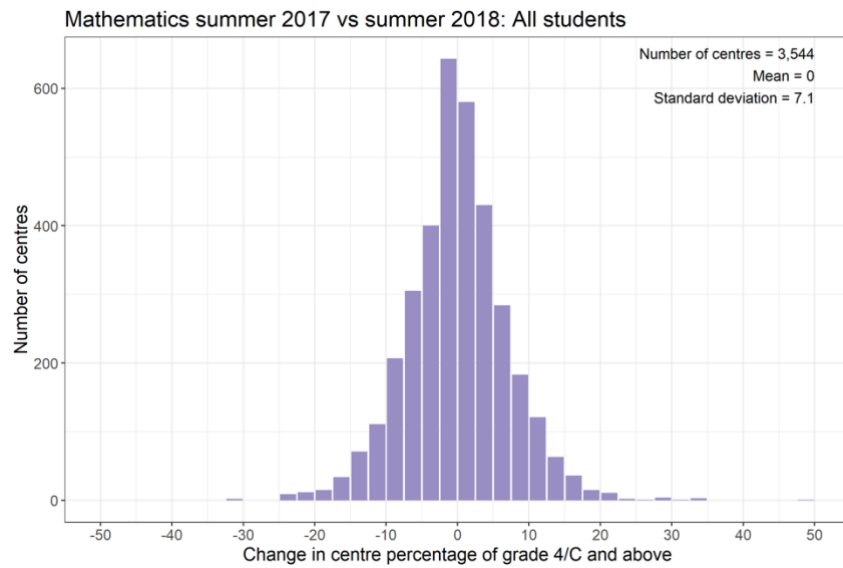


English literature summer 2016 vs summer 2017: Year 11 students



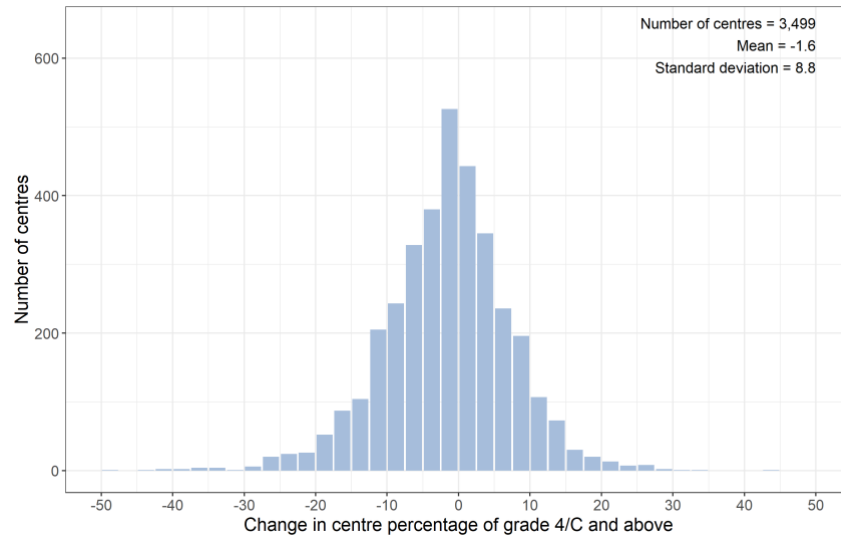
## Mathematics

In mathematics, there is slightly less variation in schools' and colleges' results between 2017/2018 than there was between 2016/2017, as illustrated by the decrease in the standard deviations. In general, most schools are clustered around the middle of the graphs, so overall they see very little variation in results from one year to the next.

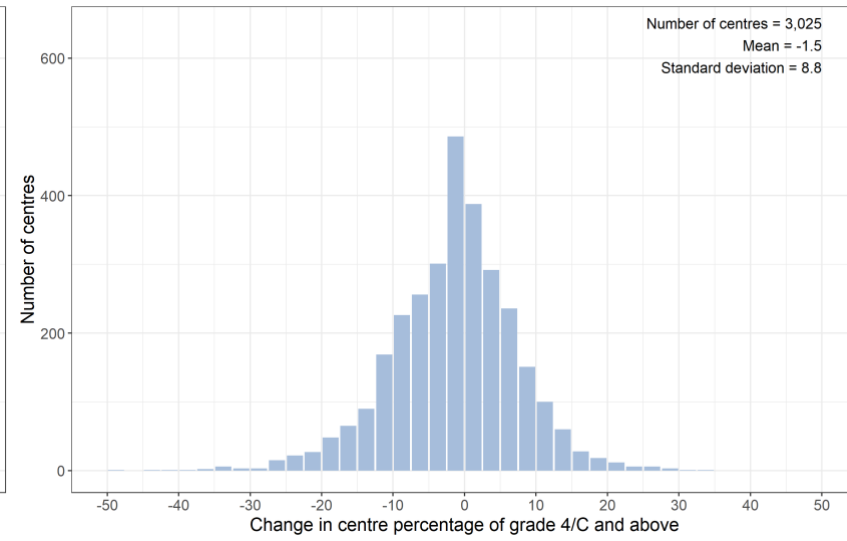




Mathematics summer 2016 vs summer 2017: All students



Mathematics summer 2016 vs summer 2017: Year 11 students



## Science subjects

This summer is the first awards of reformed 9 to 1 GCSEs in science subjects. There is a new combined science qualification available that replaces the legacy GCSE science and GCSE additional science qualifications. Combined science is worth 2 GCSEs so is graded on a 17-point scale from 9-9, 9-8, 8-8 through to 1-1. There are also new qualifications available in the 3 separate sciences – GCSE biology, GCSE chemistry, and GCSE physics.

The move to a double GCSE in combined science makes year-on-year comparisons more challenging. In previous years some students taking GCSE science and GCSE additional science have taken both at the end of year 11, but a sizeable number of students instead took GCSE science in year 10 and GCSE additional science in year 11. In 2018, students taking GCSE combined science had to take all the exams at the end of year 11.

For each school or college, we have compared the following:

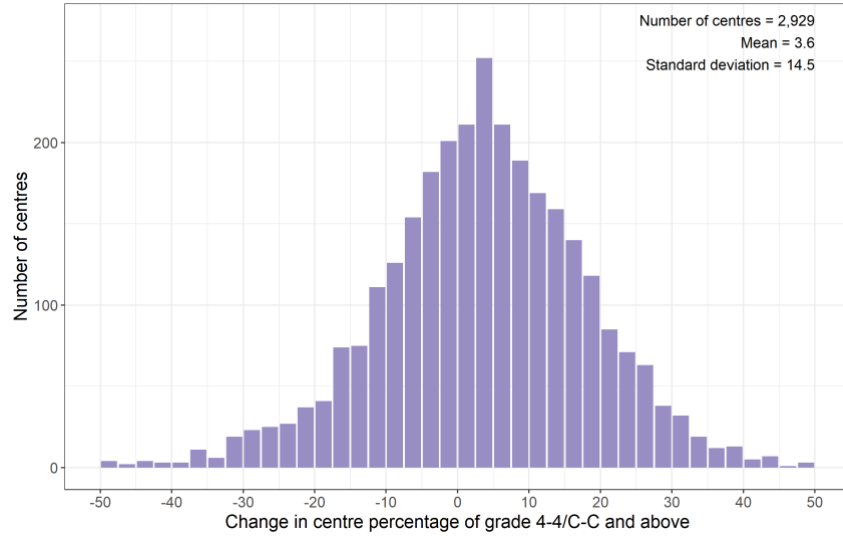
- in 2017 the proportion of students that previously achieved at least a grade C in both GCSE science and GCSE additional science, whether they took both in year 11 or one in year 10 (in 2016) and the other in year 11
- in 2018 the proportion of students that achieved at least a grade 4-4 in GCSE combined science

The graph shows that the overall variation is similar to the overall variation in either GCSE science or GCSE additional science in previous years,<sup>6</sup> for all students and for year 11 students only. The average of the year-on-year difference for each school (the mean) is positive, indicating that, on average, outcomes are higher in 2018 compared to 2017. This is not unexpected as we know that some students in 2017 will have gained a grade C in GCSE science and a grade D in GCSE additional science (and vice versa), perhaps by scoring more marks than were needed for a grade C in one GCSE and slightly fewer marks than were needed for a grade C in the other. In the new GCSE combined science, there is a greater element of compensation across the six exams and so, on average, more students have achieved grade 4-4 or above than previously achieved at least two grade Cs in both GCSE science and GCSE additional science.

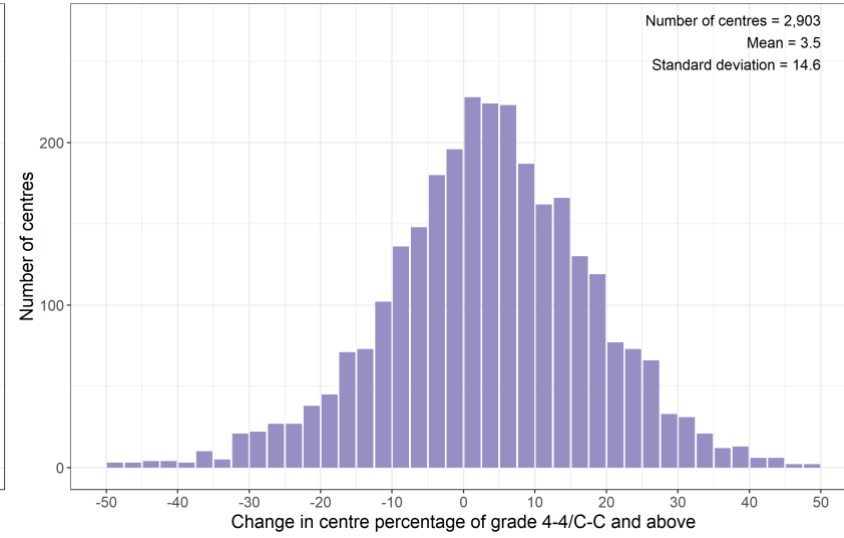
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<sup>6</sup> Our [GCSE centre variability report](#) from 2017 includes comparisons for science and additional science in previous years.

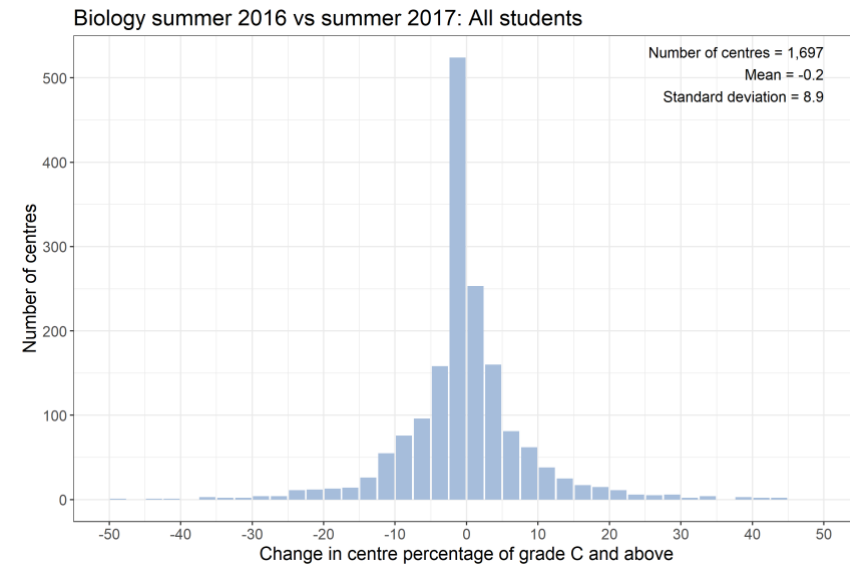
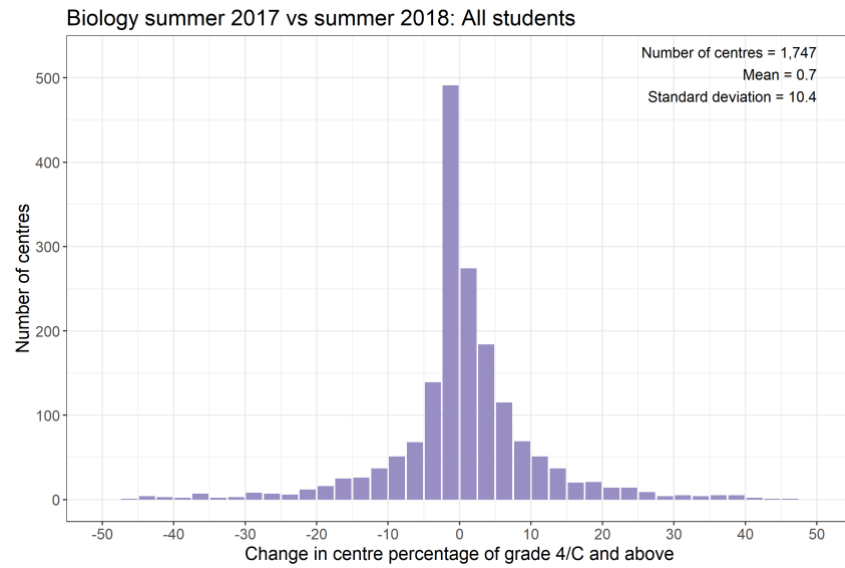
Combined science summer 2017 vs summer 2018: All students



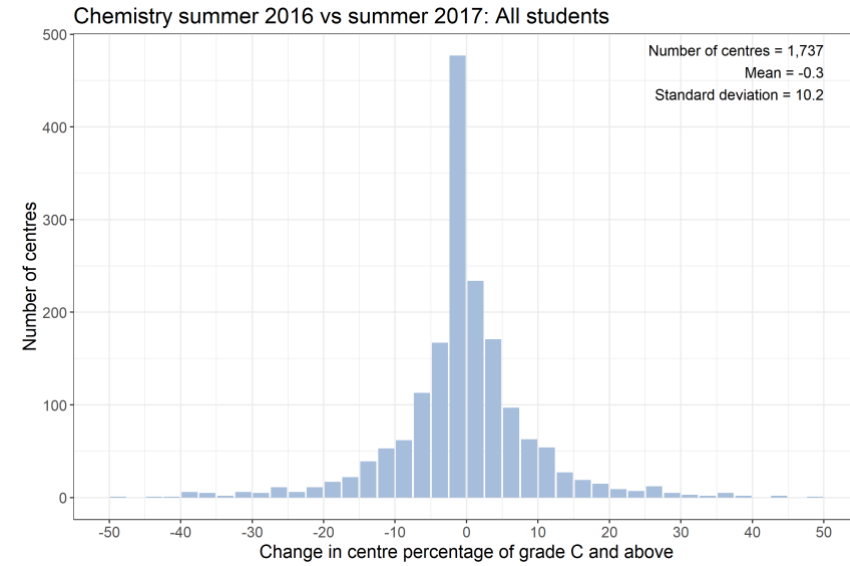
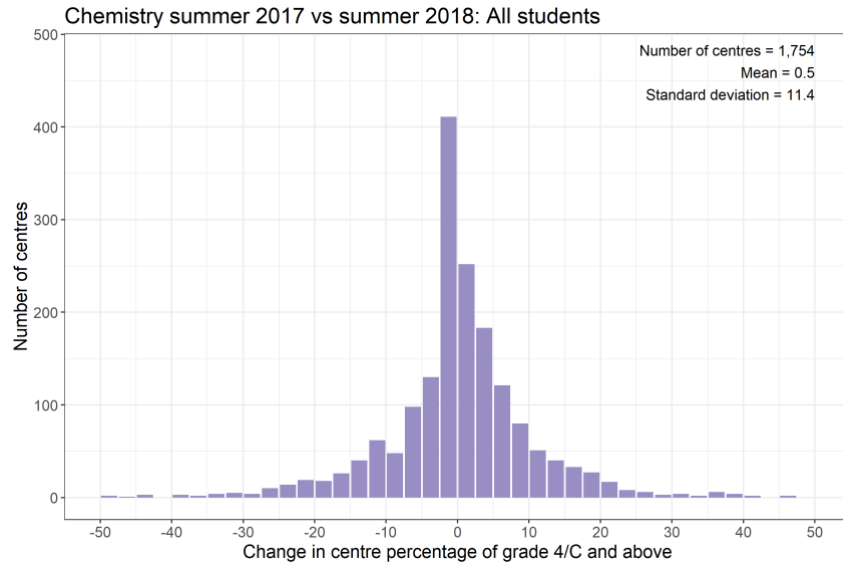
Combined science summer 2017 vs summer 2018: Year 11 students



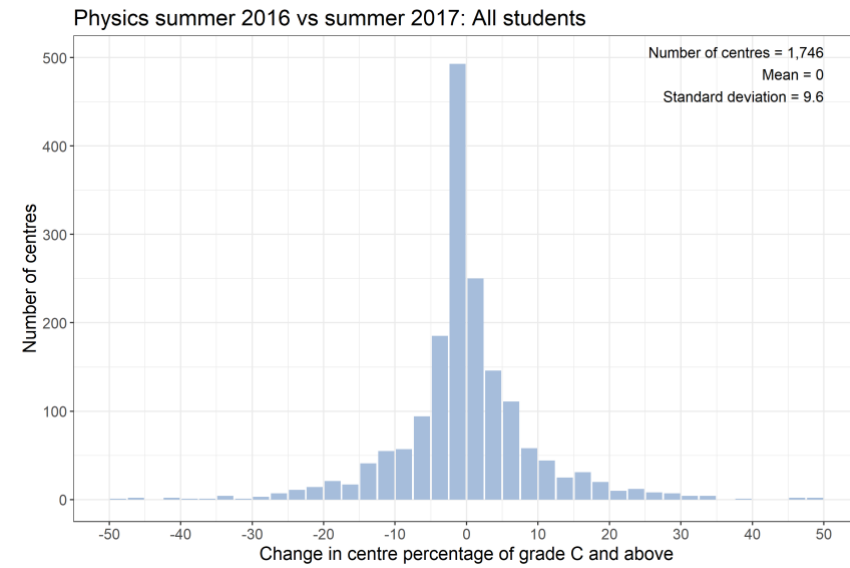
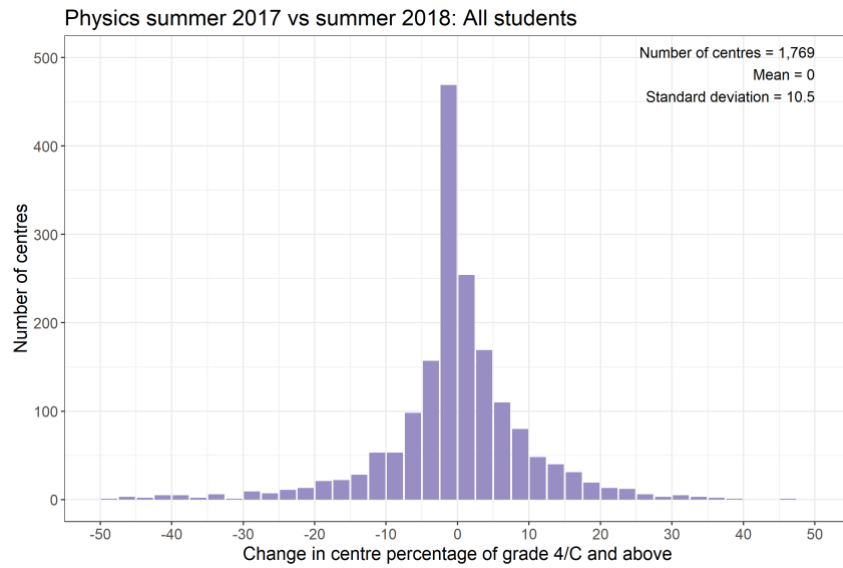
## Biology



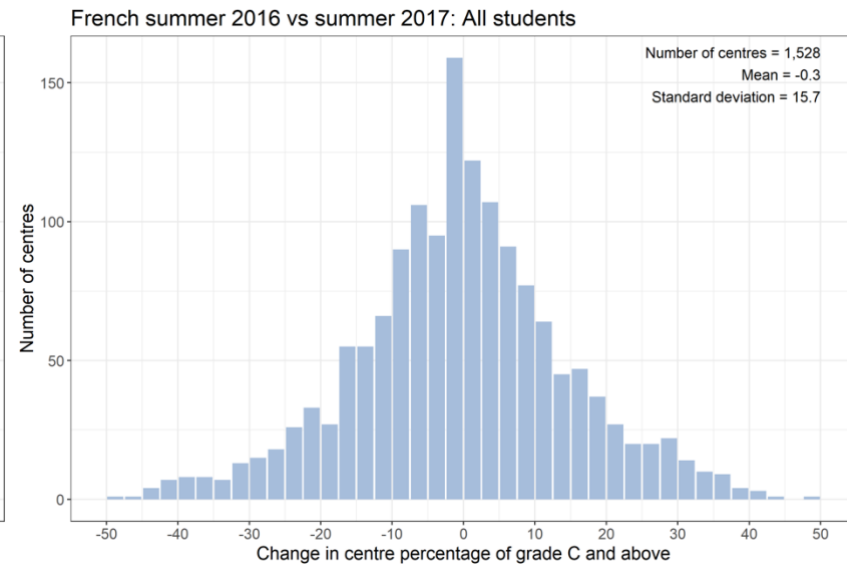
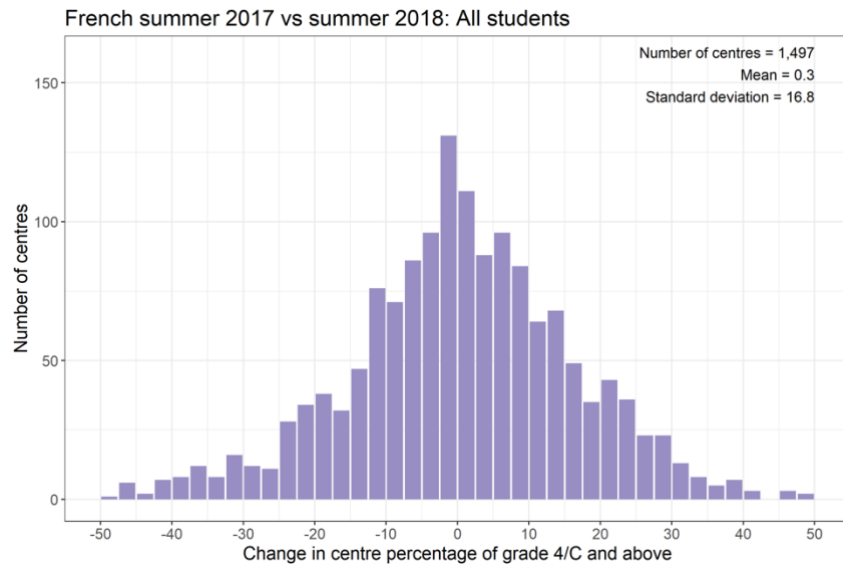
## Chemistry



## Physics

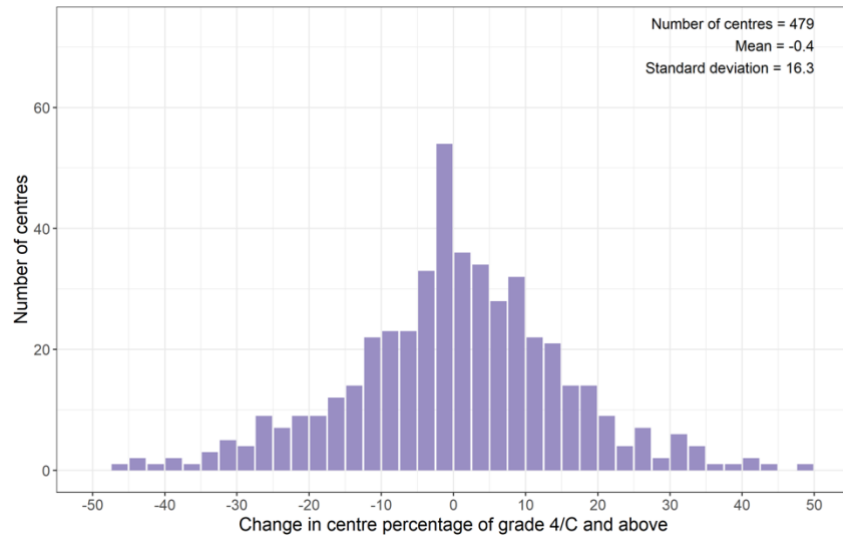


## French

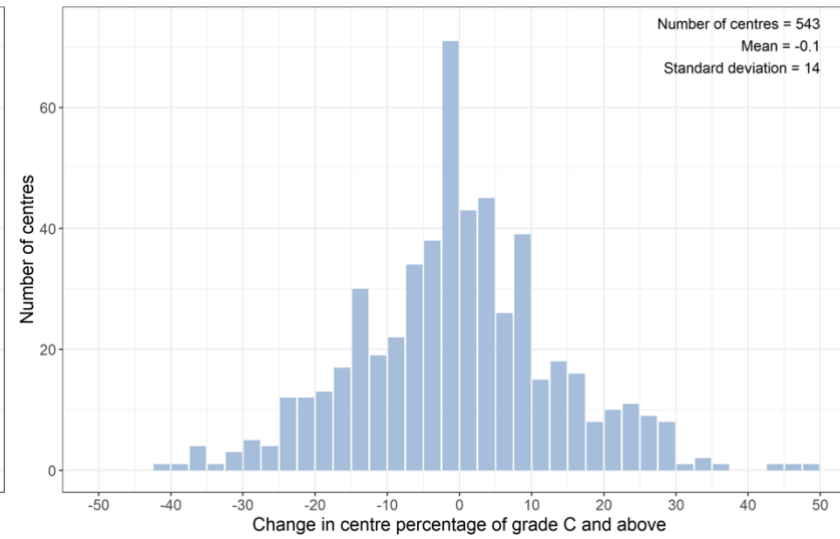


## German

German summer 2017 vs summer 2018: All students



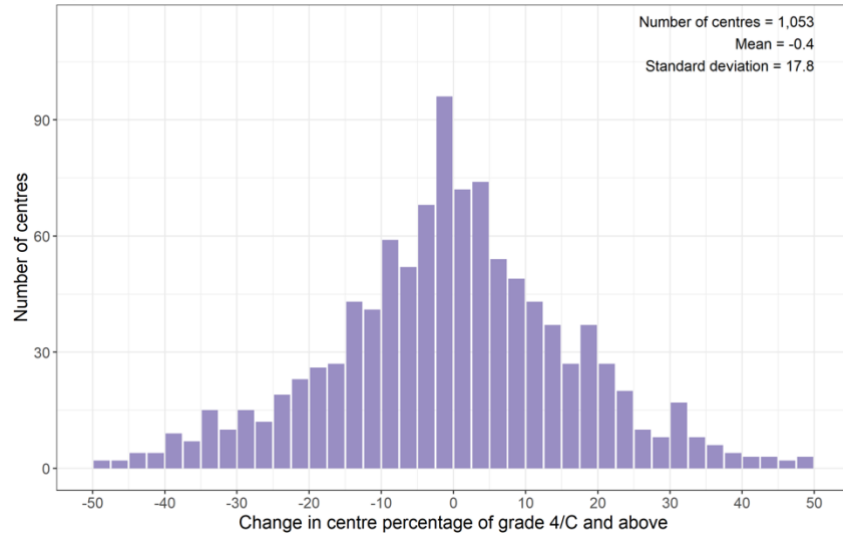
German summer 2016 vs summer 2017: All students



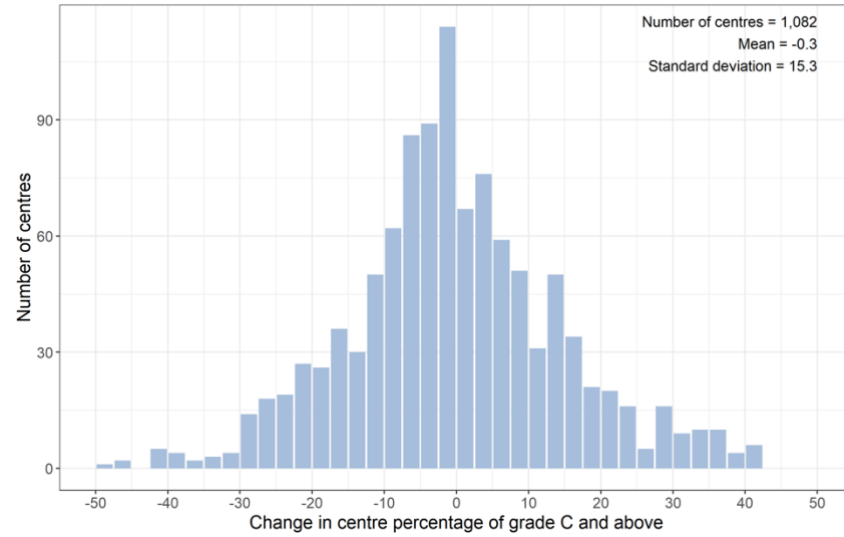


## Spanish

Spanish summer 2017 vs summer 2018: All students

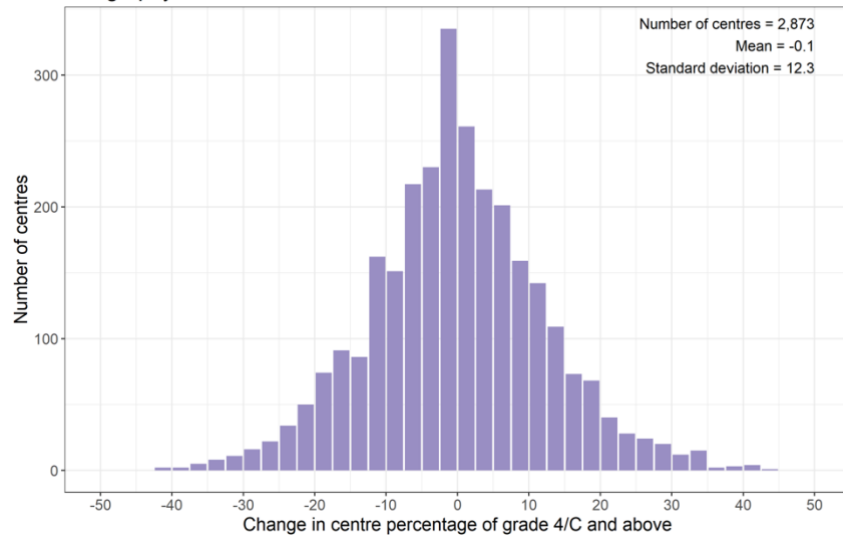


Spanish summer 2016 vs summer 2017: All students

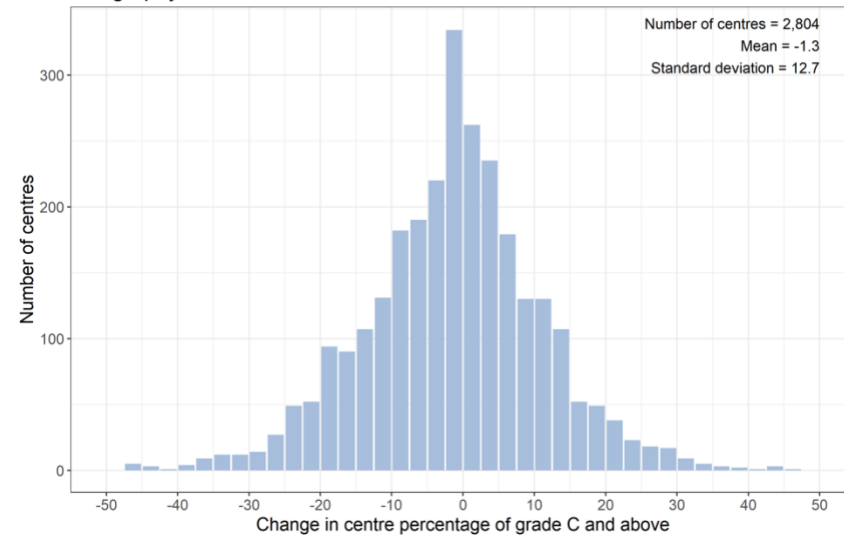


## Geography

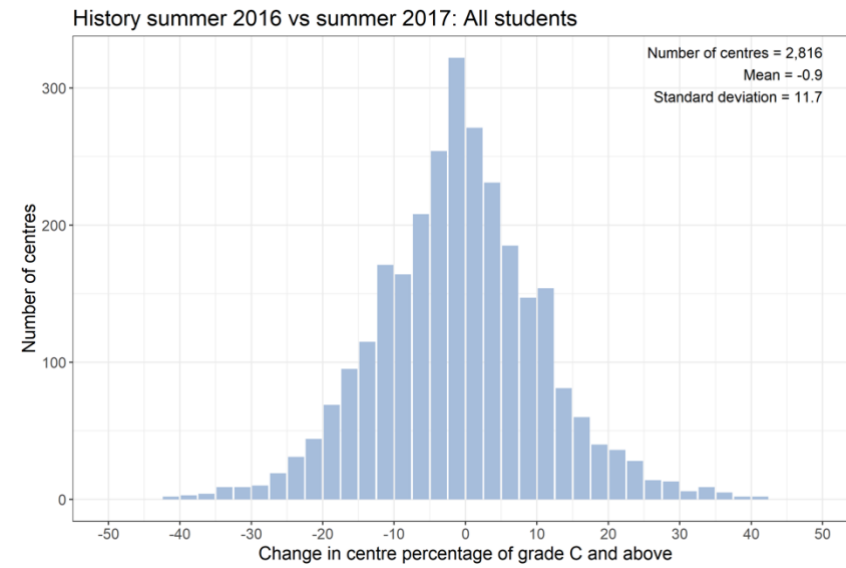
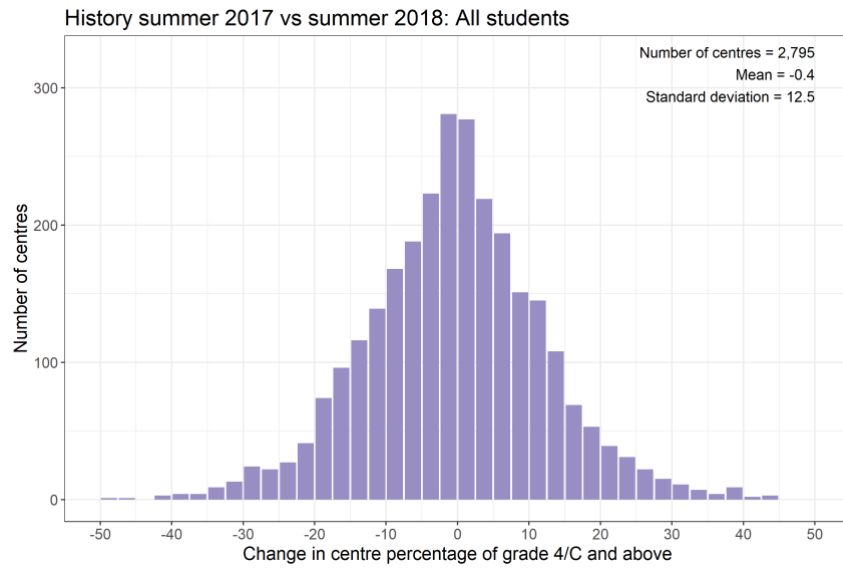
Geography summer 2017 vs summer 2018: All students



Geography summer 2016 vs summer 2017: All students



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