

# Post-16 Qualification and Subject Mix- a Report for The Royal Society

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## Abbreviations

- EAL English as an Additional Language
- FE Further Education
- FSM Free School Meals
- GS/C General Studies and/or Citizenship
- HE Higher Education
- IB International Baccalaureate
- NA Not Available
- PRU Pupil Referral Unit
- STEM Science, Technology, Engineering and Mathematics

## Preliminary Notes

FSM Status refers to that of pupils when they were in their final year of compulsory schooling (Year 11). Whilst FSM status is commonly reported as eligibility for free school meals (the terminology also used here), in practical terms, it describes pupils who were both eligible for and claiming the allowance.

Throughout this report, ‘A Level’ can be taken to refer to both A Levels and Pre-U qualifications. The Pre-U is a diploma-type qualification which is accepted by higher education institutions for entry.

The points scores we use for A levels throughout are: A\*=300, A=270, B=240, C=210, D=180, E=150, U=0. Other qualification have equivalent point scores. A difference of 30 points is notionally equivalent to one grade in one A level.

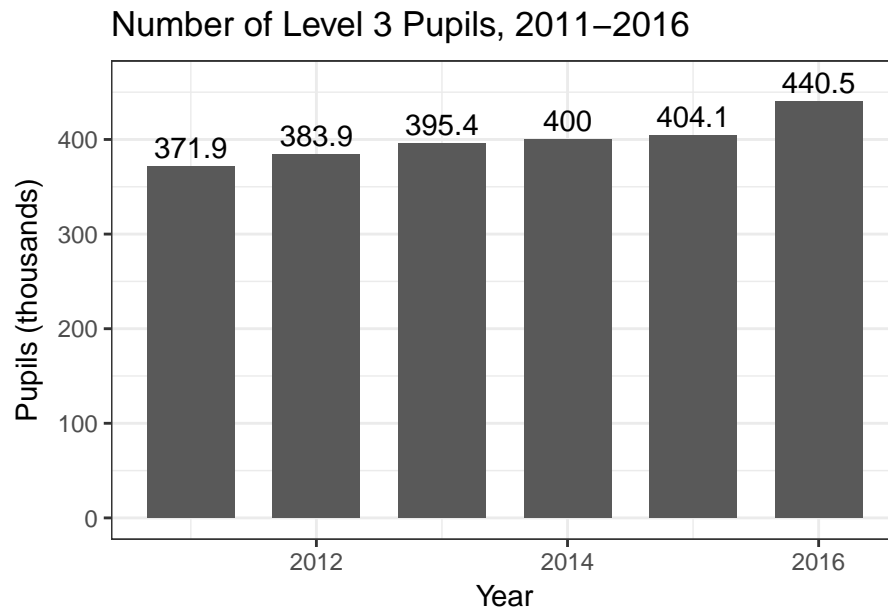
## Introduction

We examine trends in qualifications achieved by students at the end of advanced level (A-level or equivalent) study between 2011 and 2016 with a particular focus on (1) the number and type of these qualifications: “Qualification Mix”, (2) the mixtures of subjects taken by pupils with a focus on STEM and facilitating subjects: “Subject Mix”, and (3) the attainment of pupils in these qualifications: “Attainment”. We provide breakdowns of these outcome measures according to region, school type and pupil characteristics (gender, ethnicity, EAL status, FSM eligibility at the end of year 11 and prior attainment). We begin with a brief discussion of background changes over this period for context.

## Background

### Pupil Numbers

The number of pupils taking at least one substantive level 3 qualification (the population this report considers) increased from 371,894 to 440,453 between 2011 and 2016.



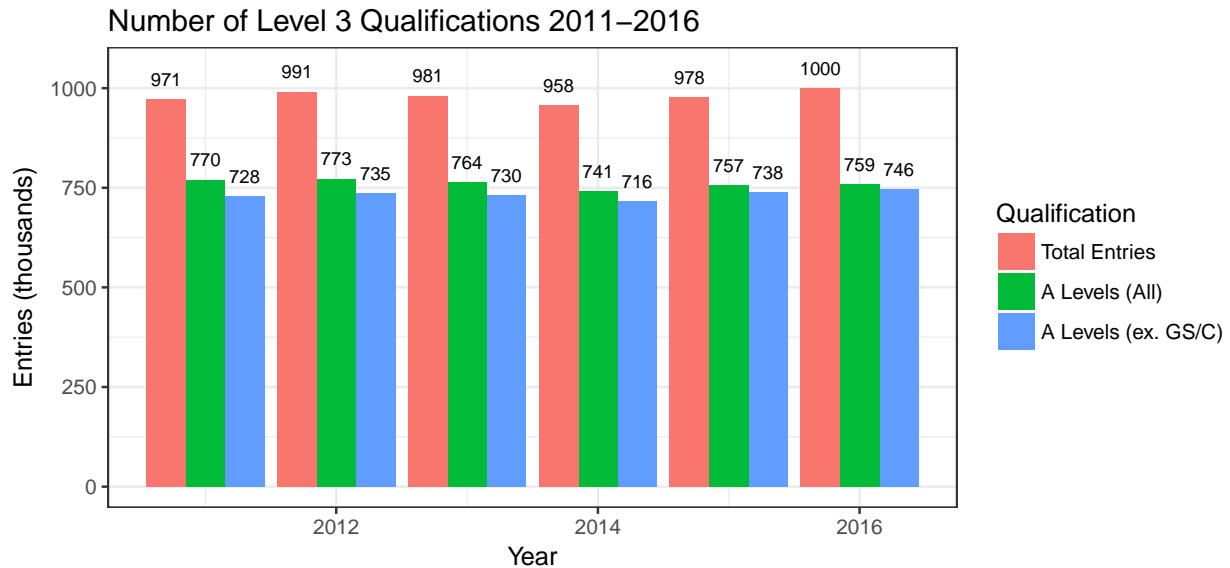
The figures presented in this report make reference to the *percentage* of pupils in each group (e.g. FSM vs. Non FSM, females vs. males) that obtain some outcome in a given year (e.g. entering 4 or more A Levels, average point score, scoring AAA etc.). These figures are therefore insensitive to changes in underlying pupil population sizes. We provide tabulations of group sizes for reference in the “Background” workbook.

### Number of qualifications entered by A Level students

In this section, we only consider pupils who have entered one or more A Levels as this is more appropriate for the purposes of examining trends in A Level entries. As such, pupils not included are those taking exclusively other types of qualification (e.g. BTECs). Note this is also the population considered for the “Total Entries” time series in the next graph, i.e. the series describes A Level and other types of entry amongst those taking at least one A Level.

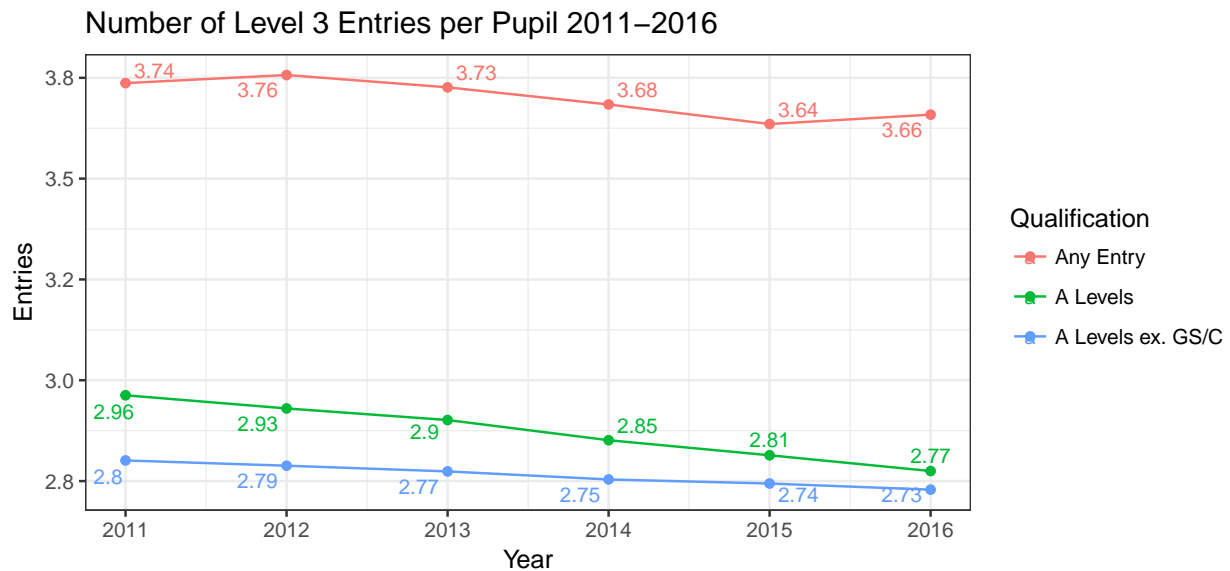
The total number of entries in all Level 3 qualifications (which includes A Levels and A Level equivalents such as the International Baccalaureate or applied general qualifications) increased from 971,359 to 1,000,129

between 2011 and 2016. The number of A Levels in any subject entered by pupils decreased in the same period from 770,121 to 758,554. If we instead consider A Level entries specifically excluding General Studies and Citizenship, the number of entries increased over time. In 2011, there were 728,116 entries to A Levels excluding General Studies and Citizenship and this number increased to 745,913 in 2016. For the purposes of this report, we exclude A Level General Studies and Citizenship when examining trends in A Level qualifications. We do this as these two subjects are typically delivered with less teaching time than others, are not accepted by some higher education (HE) institutions and will not be available for awarding from 2018 onwards.



NB 'ex. GS/C' indicates A Level Entries excluding General Studies and Citizenship

Whilst the total number of entries and the number of A Levels (excluding General Studies) taken increased in 2011 to 2016, these increases were smaller than those of the pupil population size with the result that per pupil entries for each type of qualification were lower in 2016 as compared to 2011 as shown below.



NB 'ex. GS/C' indicates A Level Entries excluding General Studies and Citizenship

## Part 1: Qualification Mix

In this first section, we examine the combination of qualifications entered by advanced level pupils. We look specifically at the number of A Levels or Pre-U qualifications entered by each pupil as well as whether they also entered a substantive vocational qualification. A small percentage of pupils enter the International Baccalaureate in lieu of A Levels or other qualifications and we group these pupils separately.

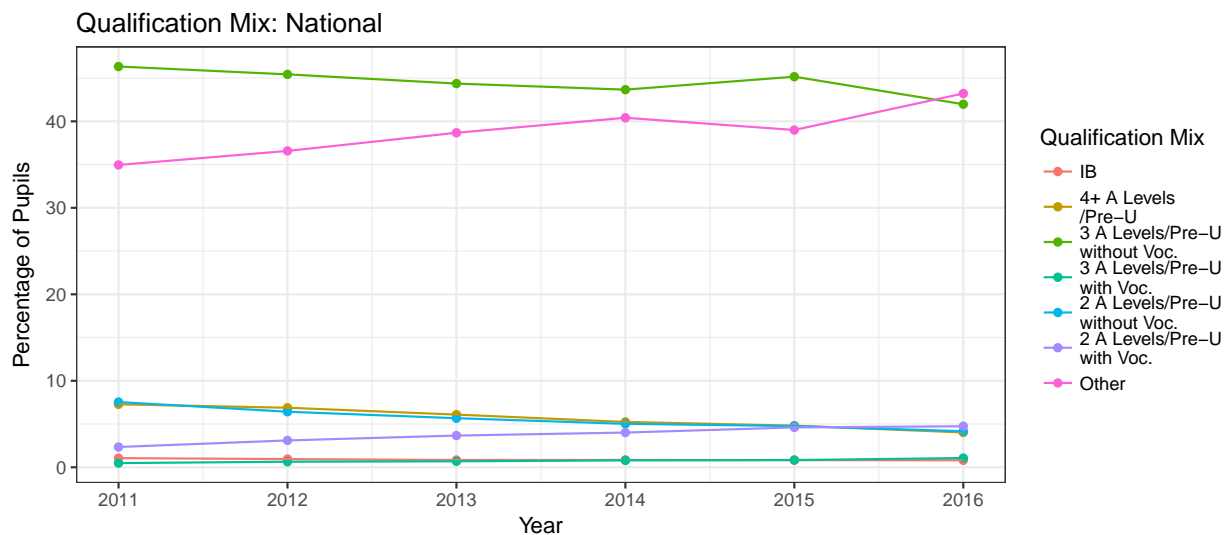
We used the following mutually exclusive categories to examine qualification makeup in the period 2011 to 2016:

1. International Baccalaureate/ AQA Baccalaureate
2. 4 or more A-levels/ Pre-U principal subjects
3. 3 A-levels/ Pre-U principal subjects without a substantive vocational qualification
4. 3 A-levels/ Pre-U principal subjects with a substantive vocational qualification
5. 2 A-levels/ Pre-U principal subjects without a substantive vocational qualification
6. 2 A-levels/ Pre-U principal subjects with a substantive vocational qualification
7. Other (primarily vocational) sets of qualifications

Substantive vocational qualifications are those equivalent in size to one or more A Levels. As mentioned, we have excluded General Studies and Citizenship A Level subjects. We have also excluded qualifications which are smaller than one A Level in size, which includes AS Levels and certain others such as free-standing mathematics.

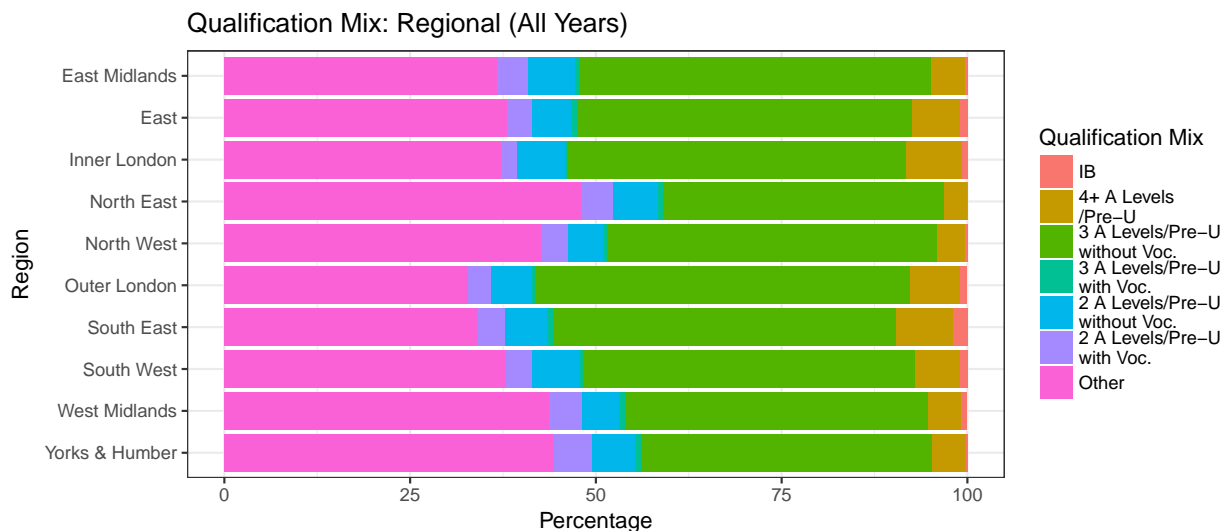
### National Overview

The most common qualification mix throughout 2011-2016 was 3 A Levels without a vocational qualification and Other (mainly pupils studying qualifications other than A Levels e.g. BTECs). We see an increase in the percentage of pupils categorised as Other from 35% in 2011 to 44% in 2016, mirrored by a decrease in the percentage of pupils taking 3 A Levels without a vocational qualification from 46% to 42%. There were also decreases in the percentage of pupils taking 2 A Levels without a vocational qualification (from 8% to 4%) and 4 A Levels (from 7% to 4%) and an increase in the percentage taking 2 A Levels with a vocational qualification (from 2% to 5%). Overall, as the Level 3 population has grown, uptake of the BTEC has increased.



## Regions

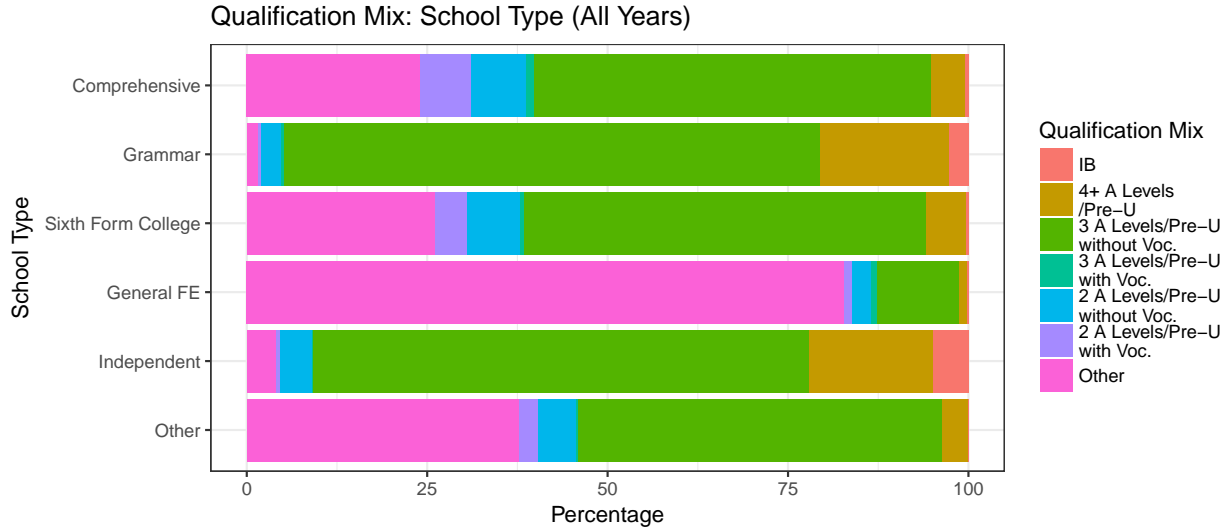
Qualification mix varies by region although the *changes* observed in any given region over time are largely in line with those observed nationally. When looking at regional variation (aggregating data from all years 2011-2016), we see that the North East, North West, Yorkshire and the Humber and the West Midlands all had lower percentages of pupils entering 2 or more A Levels. The opposite is true of other regions, particularly London and the South East.



## School Type

Pupil qualification mix varies markedly by school type. Looking first at the difference between school types over the full six year period, we see that comprehensive schools and sixth form colleges had larger percentages of pupils taking 3 A Levels without a vocational qualification (55% and 56% respectively) than General FE colleges where only 11% of pupils took 3 A Levels without a vocational qualification. 83% of pupils at General FE colleges were classified in the other (non-A Level) group.

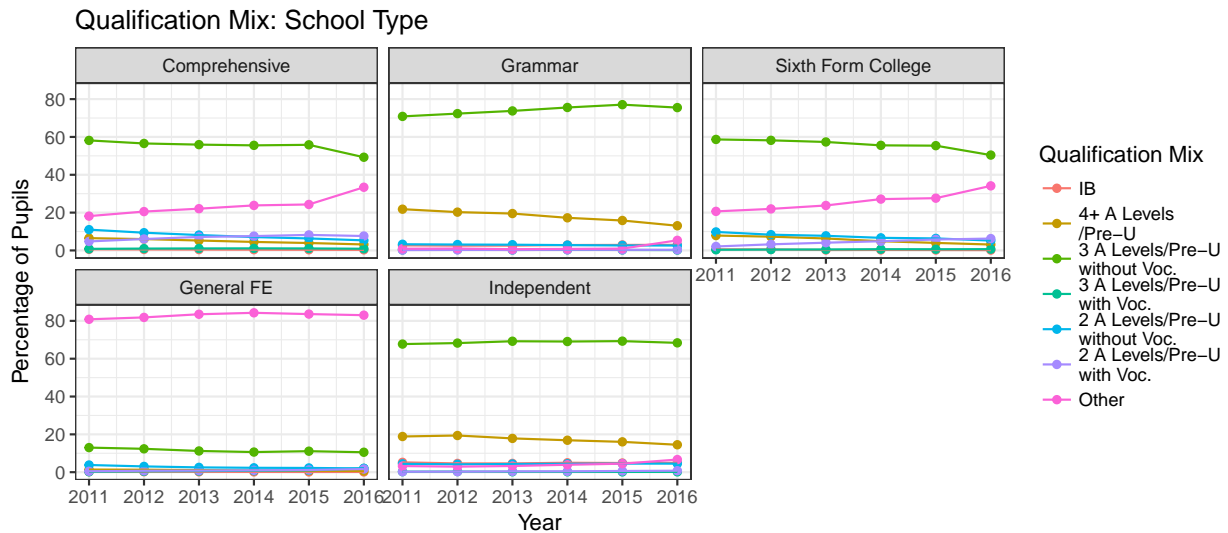
By contrast, grammar and independent schools had smaller percentages of pupils entering fewer than 2 A Levels compared to the national average and higher percentages entering 3 or 4 A Levels, or the International Baccalaureate. The “Other” category of institution types includes special schools, hospital schools and pupil referral units (PRUs). A relatively small number of pupils attend these institutions (fewer than one in one thousand on average between 2011 and 2016). Due to these institutions’ size and heterogeneity, it is difficult to make meaningful statements about the average qualification mix for this group of institutions as presented below although we present data for completeness.



Looking at how this picture has changed over time, we see that grammar and independent schools do not follow national trends (see “National Overview” section) as closely as other institution types. In particular, their percentages of pupils entering 3 A Levels without a vocational qualification have increased (7 percentage points at grammars and 4 percentage points at independents) whereas the national average has decreased by 4 percentage points. This has been accompanied by a move away from pupils entering 4 or more A Levels at these institution types.

Proportionately more pupils at comprehensive schools and sixth form colleges now take up other (predominantly non A-level) qualifications (from 18% to 34% at comprehensives and from 21% to 34% at sixth form colleges).

The “Other” category of school type has been excluded from the time series due to small numbers effects impacting on the trends over time.



## Gender

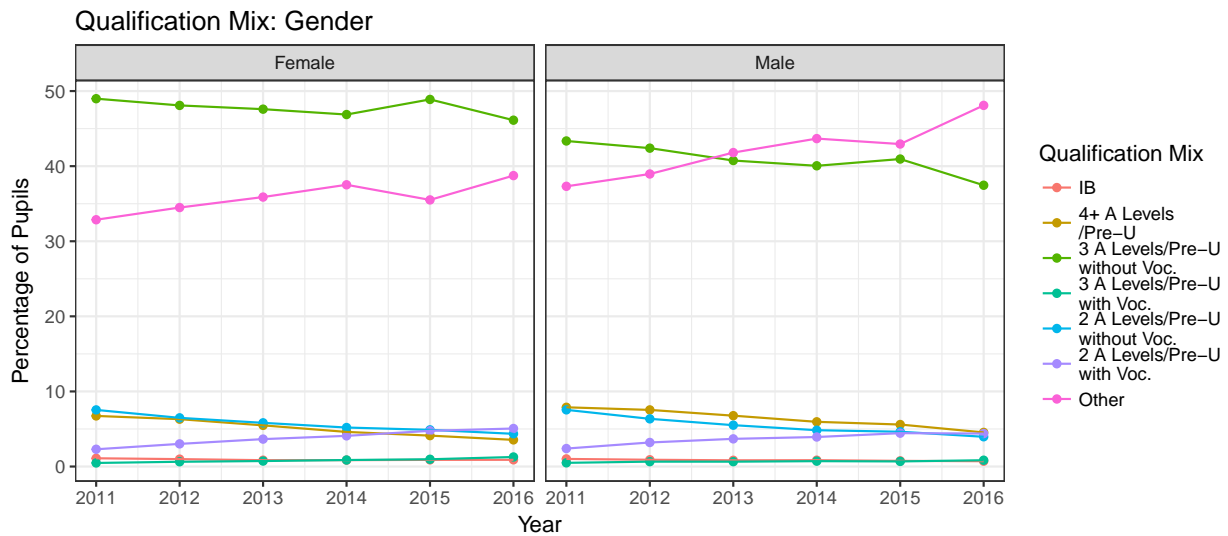
The percentage of girls taking 3 A Levels without a vocational qualification was higher than that of boys and the percentage taking fewer than 2 A Levels was lower over the full six-year time period. These average percentages (for the whole time period) by gender are tabled below. It should be noted that, in addition to

this, girls are more likely to both start and complete Level 3 study in general than boys. The total number of girls undertaking Level 3 study 2011-2016 was 1,264,404 whilst the total number of boys was 1,127,368 (i.e. girls constituted 53% of the population). This disparity exists in each year in the time series considered and not just on average.

Table 1: Qualification Mix by Gender (All Years)

Qualification Mix	Female	Male
IB	0.92	0.84
4+ A Levels /Pre-U	5.08	6.32
3 A Levels/Pre-U without Voc.	47.72	40.72
3 A Levels/Pre-U with Voc.	0.84	0.68
2 A Levels/Pre-U without Voc.	5.67	5.41
2 A Levels/Pre-U with Voc.	3.85	3.71
Other	35.92	42.33

Breaking down changes over time by gender does not reveal major differences between how girls' and boys' qualification mix changed between 2011 and 2016, as can be seen below.

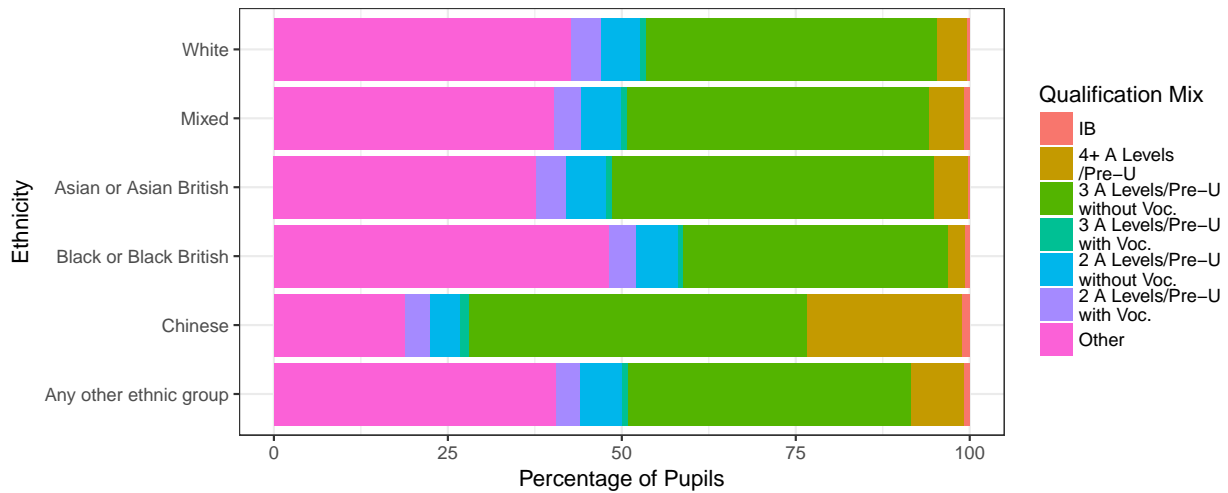


### Ethnic Background (Major Groups)

When looking at qualifications disaggregated according to pupils' ethnic backgrounds, we see that Black or Black British pupils are less likely than other groups to enter 3 or more A levels whilst a greater than average percentage of Chinese pupils do so.

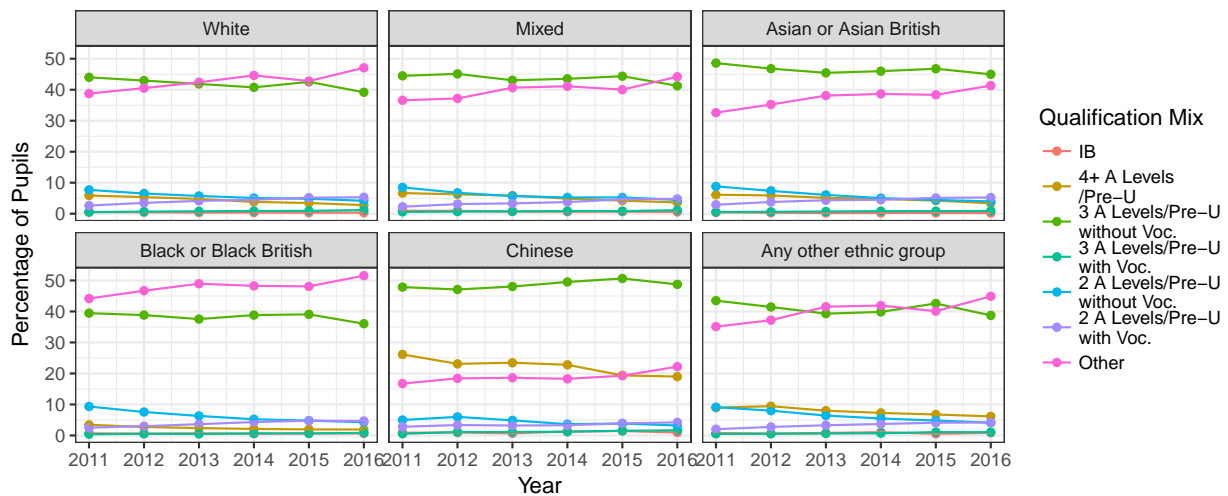


Qualification Mix: Ethnicity (All Years)



The changes we observe according to pupils' ethnic backgrounds throughout this period once again deviate little from the national trend, although notably amongst Chinese pupils there was a slight increase (of 1 percentage point) in the percentage of pupils taking 3 A Levels without a vocational qualification albeit accompanied by a decrease in the percentage taking 4 or more.

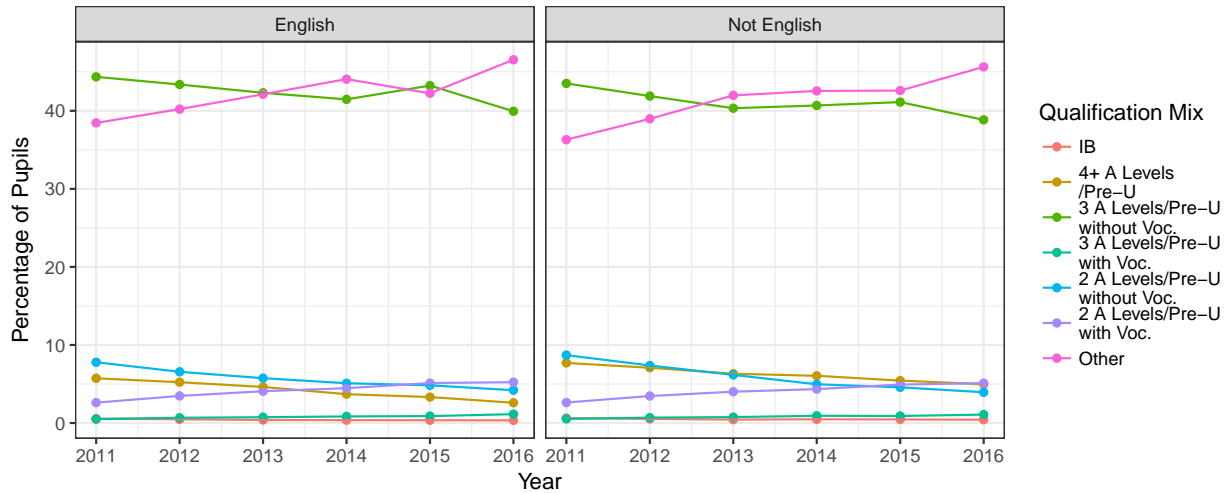
Qualification Mix: Ethnicity



## First Language (English as an Additional Language)

There is little disparity in the percentage of pupils in each qualification mix category when disaggregating pupils by first language. There was some difference in the trend exhibited across groups in 2013-2015, during which time pupil entries were more stable amongst pupils whose first language is not English as compared with native English-speaking pupils in the two most common groups (3 A Levels without a vocational qualification and Other). Pupils who do not speak English as a first language constitute on average 14% of the pupil population when considering all years in aggregate (286,037 non-native English-speaking pupils versus 1,789,603 native English-speaking pupils). This percentage is roughly stable across time (it lies in the range of 12% and 15% for all years).

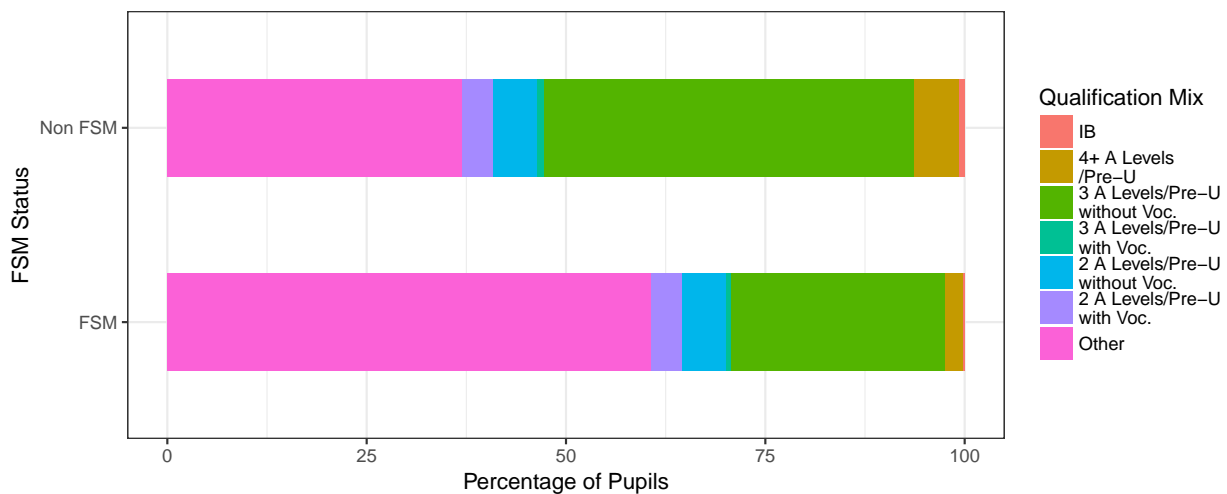
### Qualification Mix: First Language (EAL Status)



### Free School Meals (FSM) Status

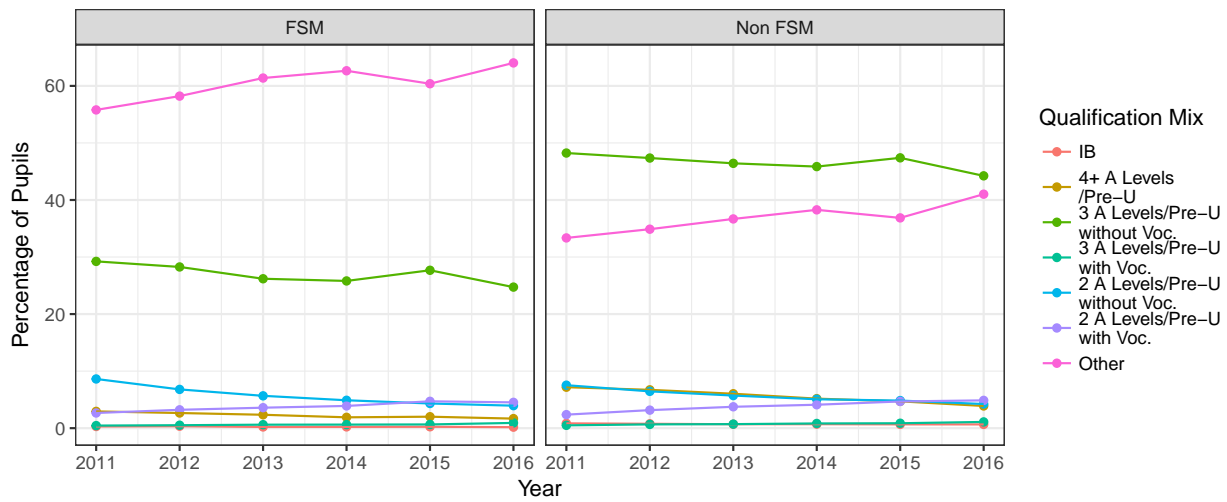
There is a marked difference in pupil qualification mix according to FSM status. Aggregating across 2011-2016, 47% of Non FSM pupils entered 3 A Levels without a vocational qualification whereas only 27% of FSM pupils did so. For pupils taking 4+ A Levels, these percentages were 6% and 2% for Non FSM and FSM pupils respectively. A much greater percentage of FSM pupils instead pursue “Other” (non A Level) routes: 61% of FSM pupils fall into this group as compared with 37% for Non FSM pupils. For reference, in total from 2011 to 2016 there were 195,899 FSM pupils undertaking Level 3 study and 2,129,875 Non FSM pupils. FSM pupils therefore made up on average 8.4% of Level 3 pupils (this percentage was roughly stable over time) when we consider only pupils for whom we know FSM status.

### Qualification Mix: FSM Status (All Years)



Over time, the changes parallel those of the national trend, indicating that there is no obvious sign of a narrowing of the gaps present in the volume of A Level qualifications taken between FSM and Non FSM pupils.

### Qualification Mix: FSM Status



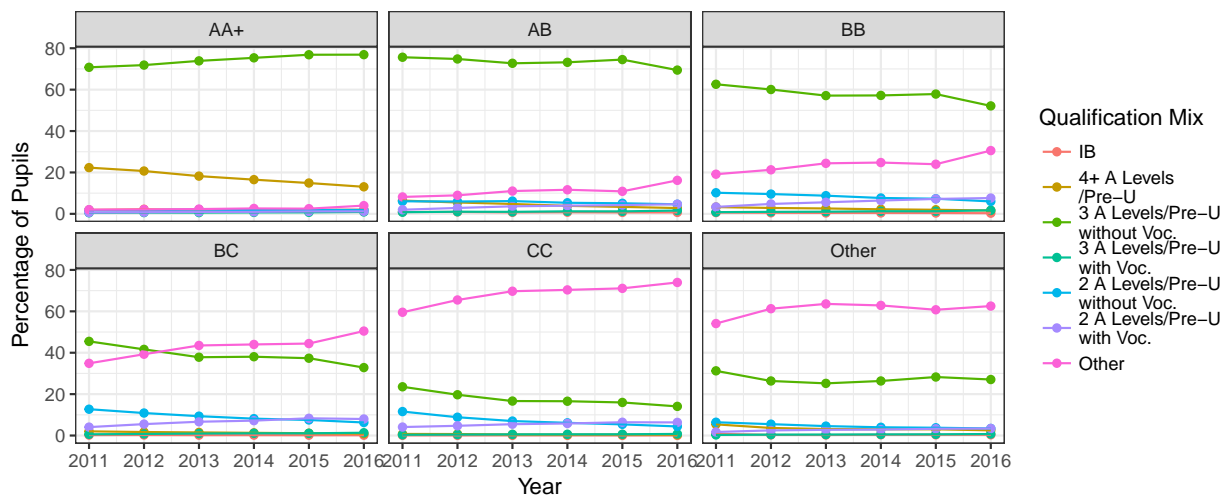
Note that FSM status refers to a pupil’s status in Year 11 and in practical terms a pupil will only have been recorded as FSM if they were both eligible and claiming free school meals.

### Prior Attainment: English and Mathematics GCSE

In this section, we disaggregate qualification mix by pupils’ prior attainment in English and mathematics. We group pupils according to whether they achieved a combination of English and mathematics grades at AA or higher (AA+), AB, BB, BC, CC or any other combination of grades. Note that pupils in this latter group will include some who achieved a high grade in one subject but not the other as well as the pupils who achieved below a C in both.

We see a trend amongst pupils with high prior attainment (AA+) towards 3 A Levels without a vocational qualification and a move away from 4 or more A Levels. In all other groups we see a decline in the percentage of pupils taking 3 A Levels and an increase in the percentage of pupils entering fewer than 2 A Levels.

### Qualification Mix by Prior Attainment in English and Maths



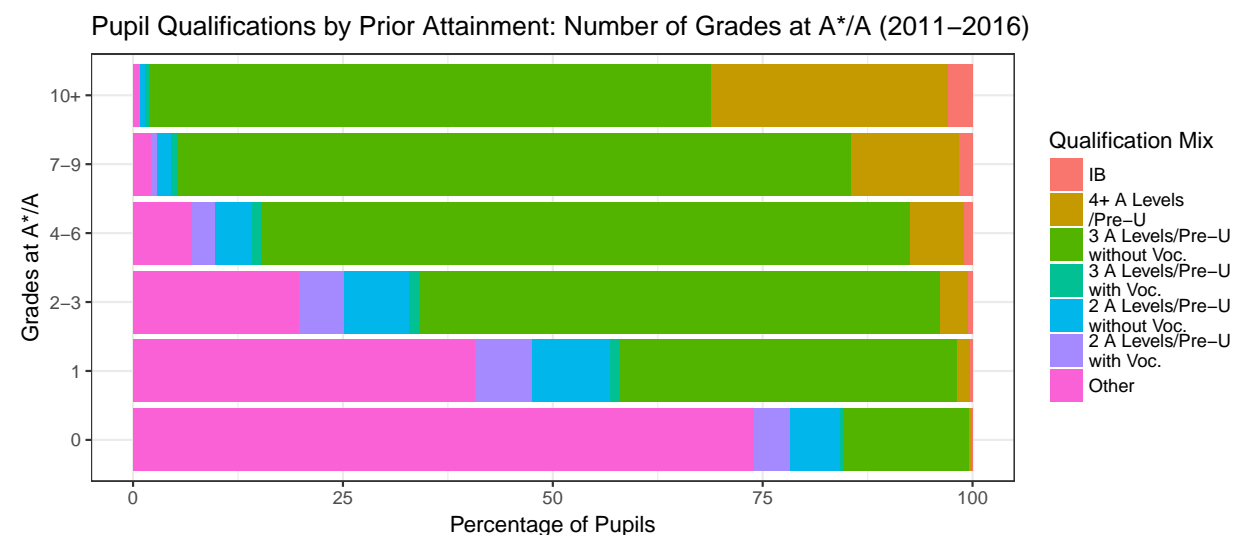
## Prior Attainment: Number of Grades at A\*/A at GCSE

For this section of the report, we have grouped pupils according to the number of grades they achieved at A\* or A instead of providing breakdowns for each possible number of A/A grades achieved. The groups used are 0, 1, 2-3, 4-6, 7-9 and 10+ GCSEs at A or A\*. The number and percentage (out of the total number of pupils across 2011-2016) are tabled below.

Table 2: Pupils Grouped by Prior Attainment: Number of Grades at A\*/A at GCSE (All Years)

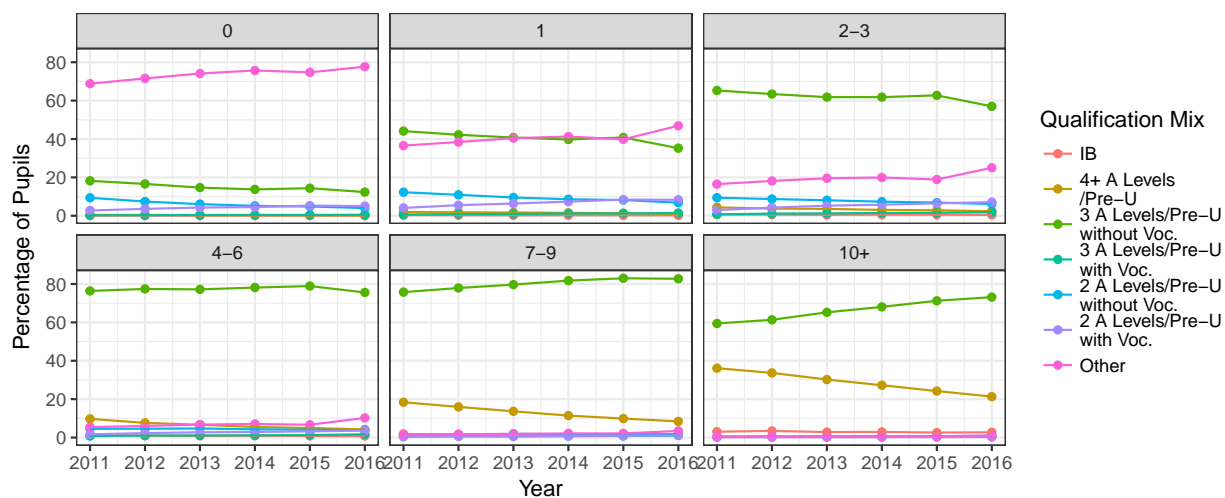
GCSEs at A*/A	Number	Percentage
0	922642	38.5
1	318943	13.3
2-3	331761	13.8
4-6	311182	13.0
7-9	270394	11.3
10+	173798	7.2

The number of GCSEs at Grade A\*/A a pupil achieves is also highly predictive of the number of A Levels they will go on to take. Amongst pupils who achieved 10 or more A\*/A grades at GCSE, 28% took 4 or more A Levels, 67% took 3 A Levels without a vocational qualification and less than 1% took fewer than 2 A Levels. For pupils with no A\*/A grades, less than 1% took 4 or more A Levels, 15% took 3 A Levels without a vocational qualification and 74% took fewer than 2 A Levels.



Amongst pupils with 10 or more A\*/A grades at GCSE, there was an increase from 59% to 73% of pupils taking 3 A Levels without a vocational qualification from 2011 to 2016. Corresponding figures were 76% to 83% amongst pupils who had achieved between 7 and 9 A\*/A grades at GCSE. These increases were traded off with a decline in the number of pupils taking 4 or more A Levels (a 12 percentage point decrease amongst the 10+ cohort and a 10 percentage point decrease amongst the 7-9 cohort).

Pupil Qualifications by Prior Attainment: Number of Grades at A\*/A (2011–2016)



## Part 2: Subject Mix

In this section, we examine subject mix, looking specifically at uptake of facilitating subjects (all) and STEM facilitating subjects. The facilitating subjects are a group of subjects recognised by the Russell Group as facilitating entry to university. They are also recommended for pupils who are undecided as to which degree course to pursue and so wish to maintain a broad programme of study. The facilitating subjects are English literature, maths and further maths, biology, chemistry, physics, geography, history, modern and classical languages. The STEM facilitating subjects are a subset of these and include biology, chemistry, physics, maths and further maths. These STEM facilitating subjects are commonly prerequisites of STEM degree programmes. Whilst not a STEM facilitating subject, we include additional breakdowns by STEM subject mix with the inclusion of computing.

We use the following indicators to look at changes over time at the national and regional levels, as well as across school types

- 1) 2 or more facilitating subjects
- 2) 1 or more facilitating subjects
- 3) 2 or more science/ maths facilitating subjects
- 4) 2 or more science/ maths facilitating subjects including computing
- 5) Exclusively maths and science

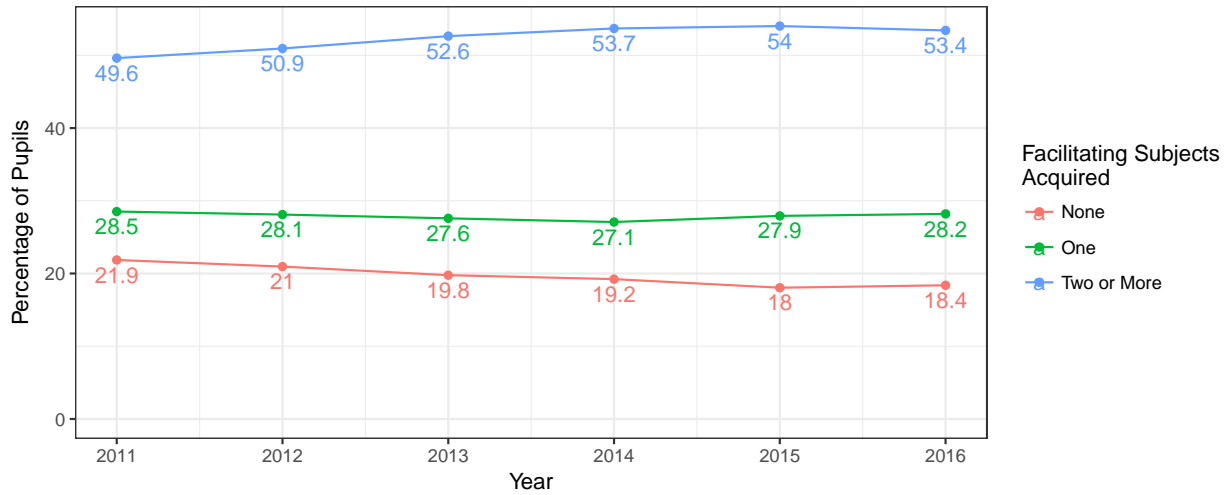
For the statistics included in this section, we have filtered the cohort to include exclusively pupils who took 3 or more A Levels (excluding General Studies and Citizenship). By considering these pupils exclusively, the statistics presented in this section are made more relevant to university entrance, which is appropriate when looking specifically at trends in uptake of facilitating subjects.

### National

#### Facilitating Subjects

Nationally, between 2011 and 2016, there was a general upwards trend in the percentage of pupils taking 2 or more facilitating subjects from 49.6% to 53.4% (though the peak occurred in 2015 at 54.0%). The percentage of pupils taking 1 facilitating subjects was roughly stable, having decreased by 0.3 percentage points between 2011 and 2016 (though this figure did drop to 27.1% in 2014). There was a decrease in the percentage of pupils taking no facilitating subjects from 21.9% in 2011 to 18.4% in 2016.

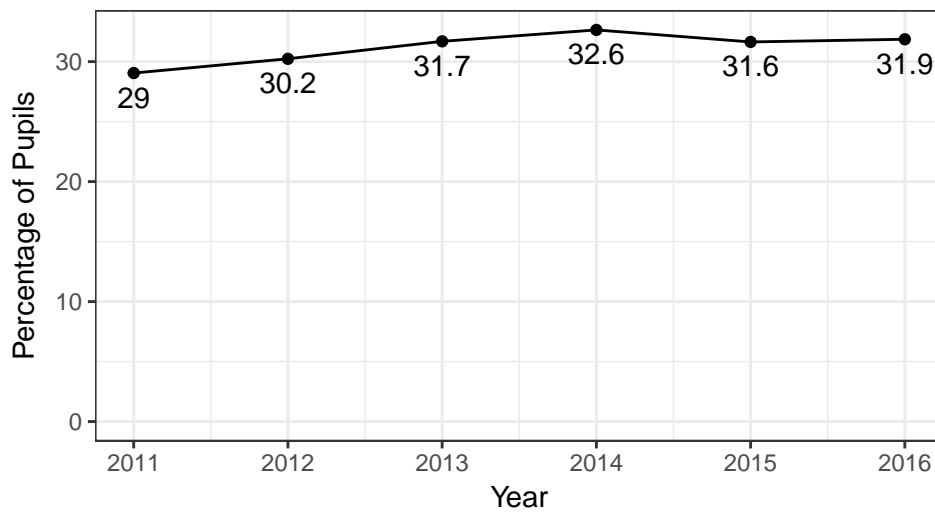
**Pupils Entering Facilitating Subjects: National**



### STEM Facilitating Subjects

There was an increase in the percentage of pupils (entering 3 or more A Levels) who took 2 or more STEM facilitating subjects from 29.0% in 2011 to 31.9% in 2016.

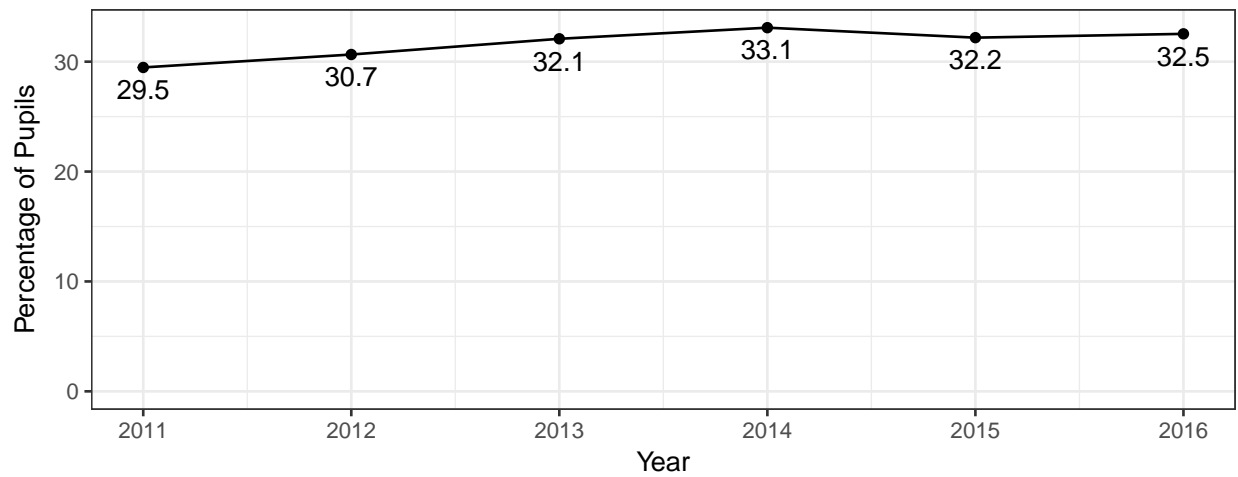
**Pupils Entering Two or More STEM Facilitating Subjects**



### STEM Facilitating Subjects inc. Computing

The change in the percentage of pupils who took 2 or more STEM facilitating subjects including computing was similar, increasing from 29.5% in 2011 to 32.5% in 2016.

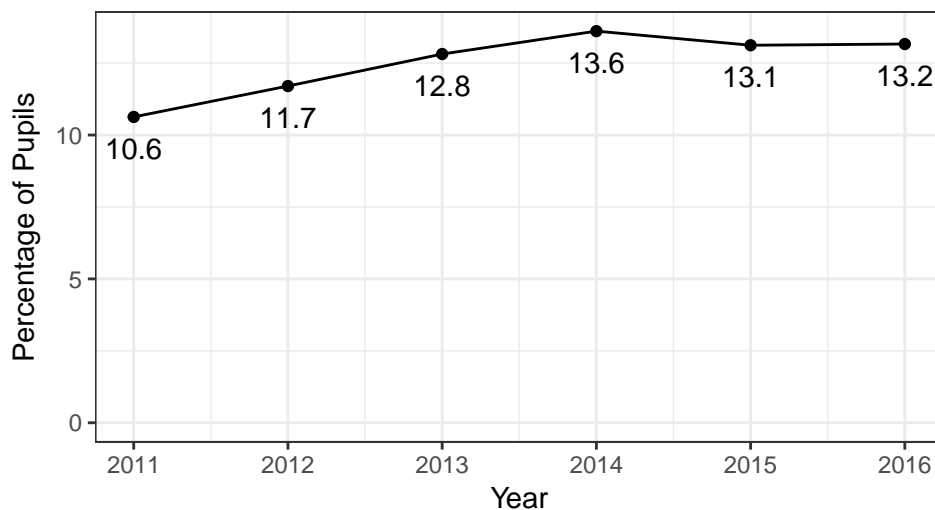
Percentage of Pupils Entering Two or More STEM Qualifications inc. Computing



### Exclusively STEM Subjects

Nationally, there was also an increase in the percentage of pupils taking exclusively STEM subjects from 10.6% in 2011 to 13.2% in 2016. This figure peaked in 2014 at 13.6%.

Pupils Entering Exclusively STEM Subjects: National

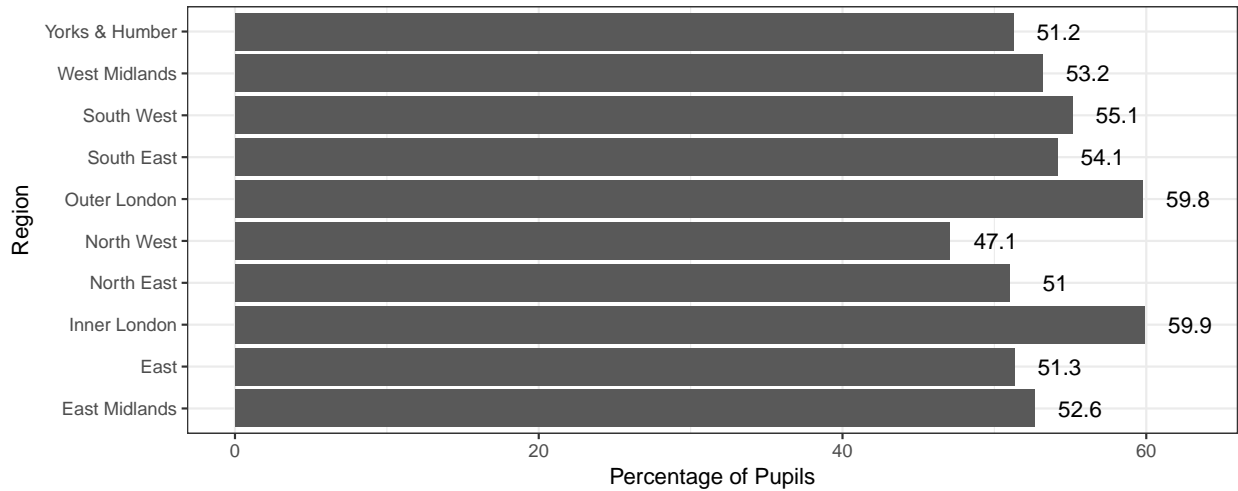


## Regional

### Facilitating Subjects

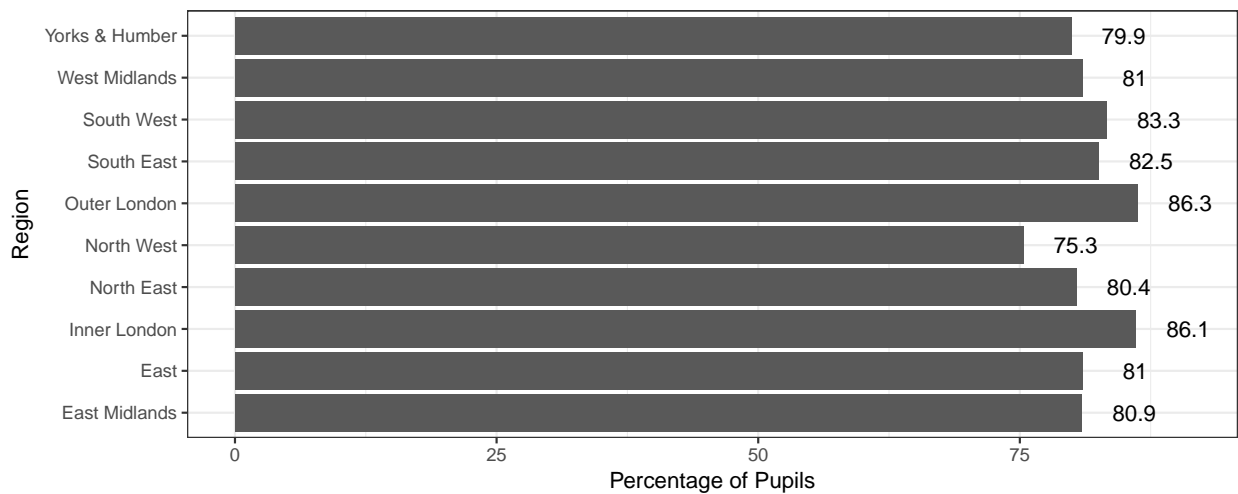
There has been an increase in the percentage of pupils who took two or more facilitating subjects in every region. The rank-wise order of the regions remained similar with the sole exception of the West Midlands and East of England switching places as the former experienced a 4.6 percentage point increase whilst the latter a 1.5 percentage point increase. The East of England in fact experienced the smallest increase whilst the largest increases were in Inner London and the North East (both of 5.5 percentage points). The graphs below show only data for 2016.

Pupils Entering Two or More Facilitating Subjects: Region (2016)



There is a similar set of trends when we examine regional variation over time in the percentages of pupils entering one or more facilitating subjects. We see that the West Midlands experienced a 4.5 percentage point increase, overtaking the East Midlands which saw a 3.1 percentage point increase. The order of regions was otherwise similar in 2016 as compared to 2011. The North East saw the greatest increase (5.0 percentage points) whilst the East of England saw the smallest (1.9 percentage points).

Pupils Entering One or More Facilitating Subjects: Region (2016)

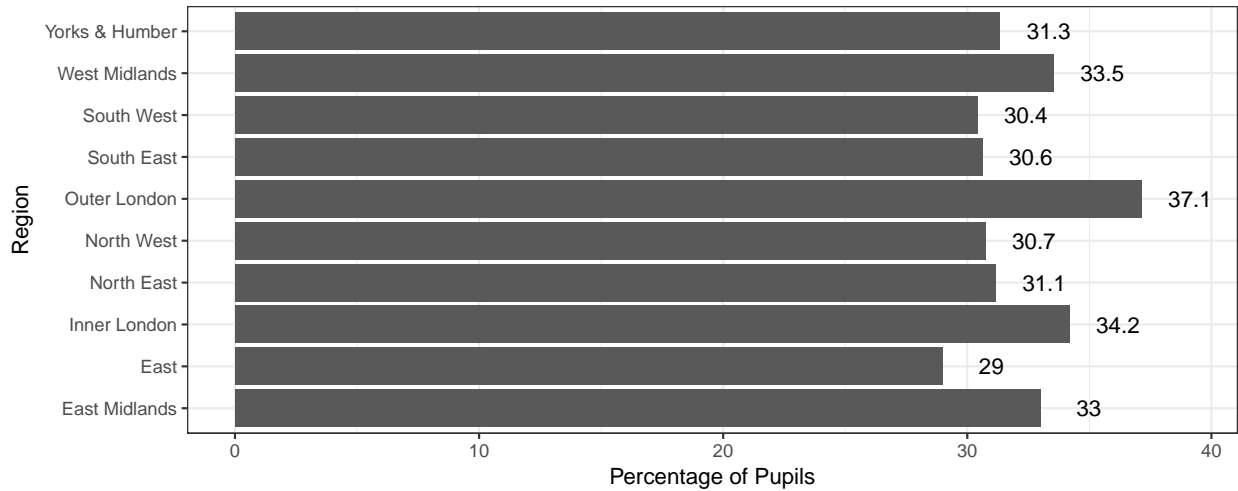


### STEM Facilitating Subjects

Outer London consistently had the highest percentage of pupils taking two or more STEM facilitating subjects as well as experiencing the second largest increase in this percentage between 2011 and 2016 (4.7 percentage point; Inner London's percentage increased more, by 5.3 percentage points). The region experiencing the smallest increase was the East of England, which saw a 1.8 percentage point increase since 2011 leave it as the lowest ranking region in 2016.



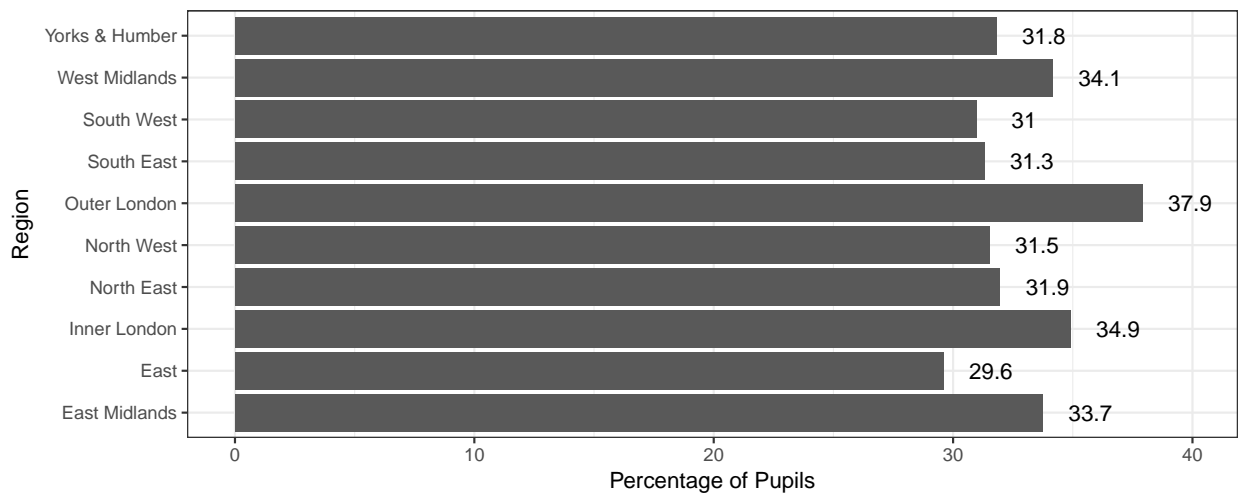
Pupils Entering Two or More STEM Facilitating Subjects: Region (2016)



### STEM Facilitating Subjects inc. Computing

Outer London also had consistently the highest percentage of pupils entering two or more STEM facilitating subjects including computing; this increased from 33% to 38% between 2011 and 2016 (5.1 percentage points). Inner London experienced the largest increase over this time of 5.5 percentage points. The East of England once again experienced the smallest increase in this percentage of 2.1 percentage points from 28% to 30% and was lowest ranking in 2016.

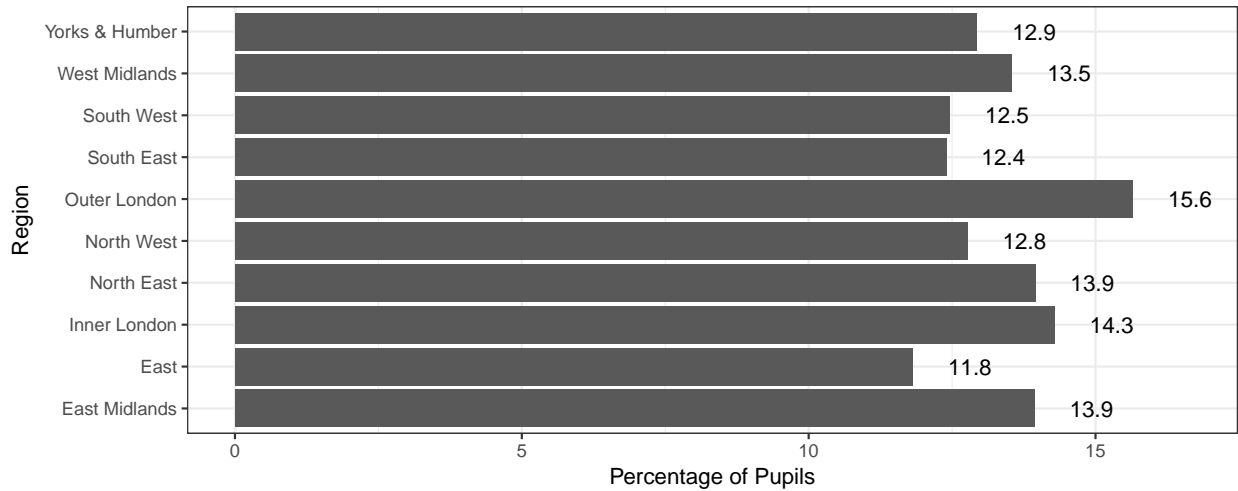
Pupils Entering Two or More STEM Facilitating Subjects inc. Computing: Region (2016)



### STEM Exclusively

Outer London also had consistently the highest percentage of pupils studying exclusively STEM subjects. This percentage increased by 3.0 percentage points, moving from 13% in 2011 to 16% in 2016. The East of England had the lowest or jointly lowest percentages of pupils studying exclusively STEM subjects throughout the period 2011 to 2016. The North East experienced the greatest increase in the percent of STEM only pupils at 3.5 percentage points whilst the North West the lowest at 1.8 percentage points.

Pupils Entering Exclusively STEM Qualifications: Region (2016)



## School Type

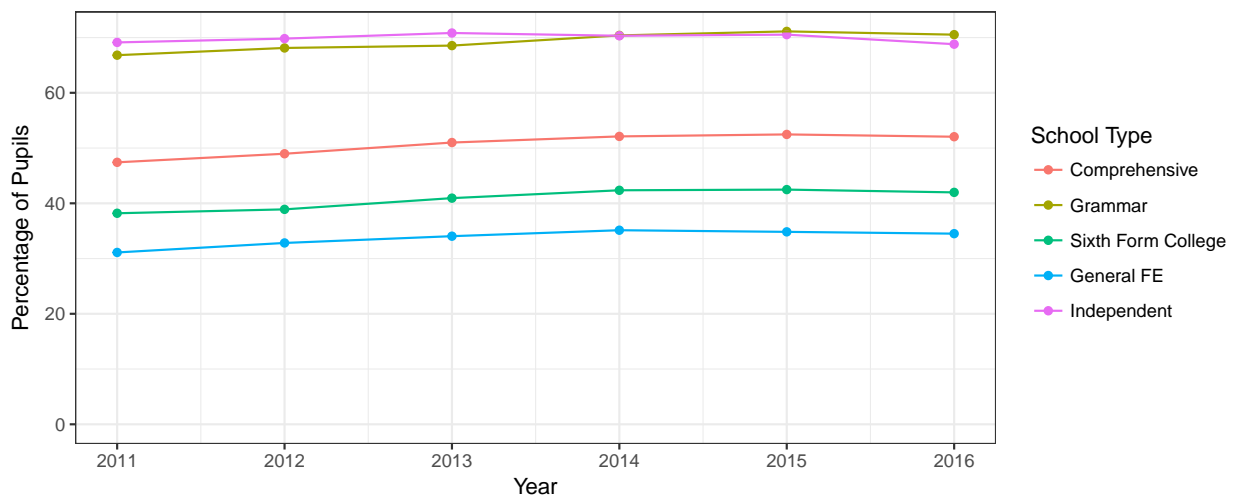
### Facilitating Subjects

Looking at uptake of facilitating subjects by school type reveals that independent and grammar schools have the highest percentages of pupils taking two or more facilitating subjects. At independent schools, this percentage increased slightly from 69% to 71% between 2011 and 2016 whilst at grammars it increased by 3.7 percentage points in the same period from 67% to 71%.

General FE colleges have the lowest percentages of pupils studying two or more facilitating subjects (at 31% in 2011 and 34% in 2016).

Comprehensives saw the greatest increase in this percentage at almost 5 percentage points.

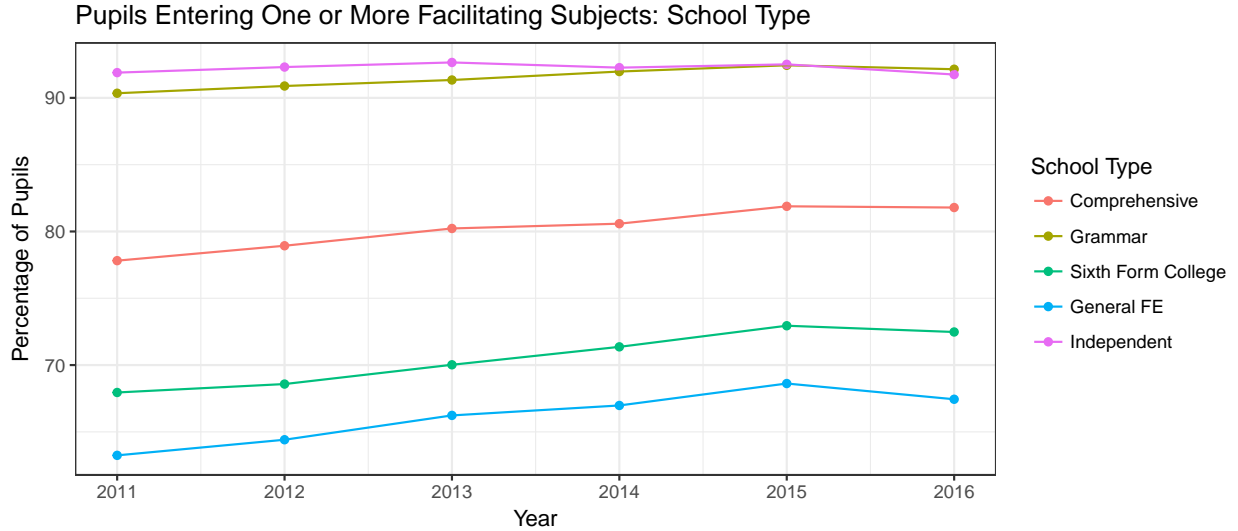
Pupils Entering Two or More Facilitating Subjects: School Type



We see a similar picture when examining trends in the percentages of pupils taking one or more facilitating subjects. Independent and grammar schools again have the highest percentages. Amongst independent schools, this figure stayed at 92% in 2016 as compared with 2011 whilst at grammars, it increased from 90%

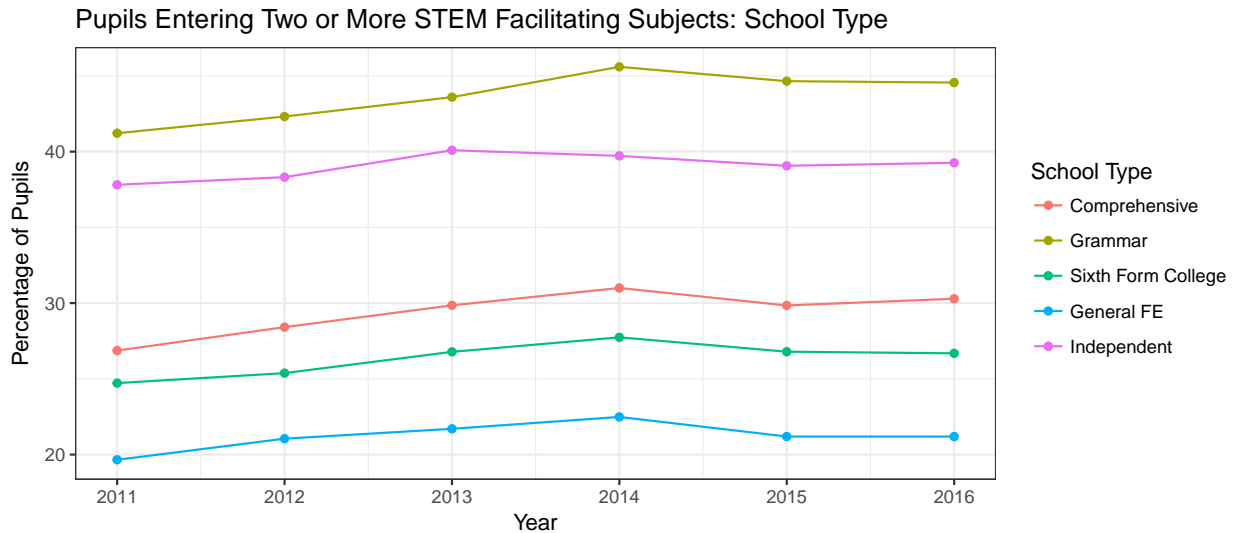
to 92%. General FE colleges had the lowest percentages of pupils taking one or more facilitating subjects at 63% in 2011 and 67% in 2016.

As in the previous section changes across time were comparable with comprehensives experiencing the largest increase of 4.6 percentage points and independent schools seeing a small decrease of 0.2 percentage points.



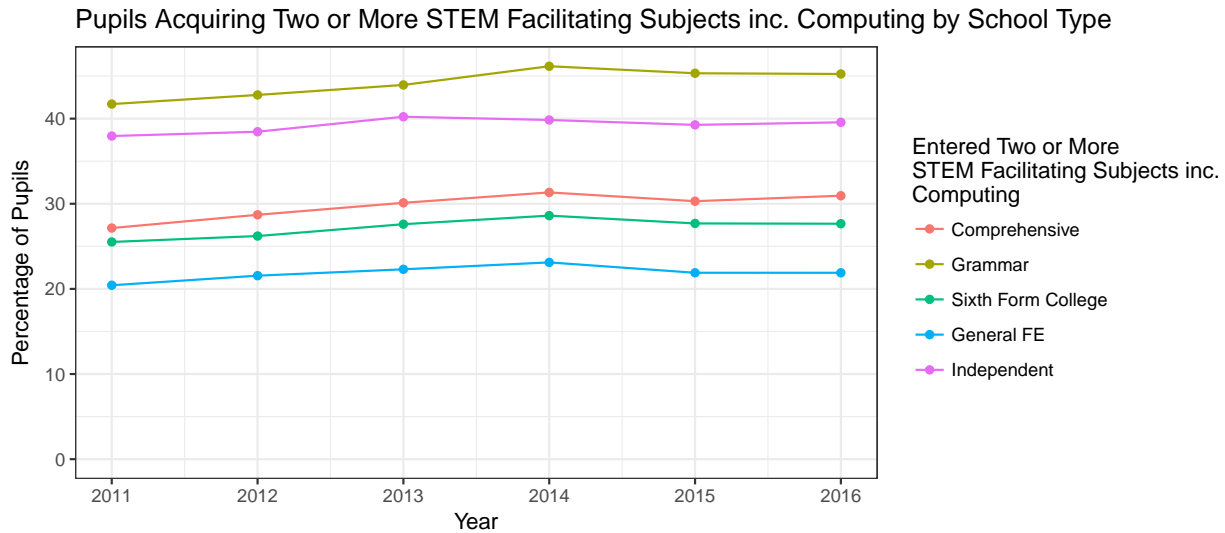
### STEM Facilitating Subjects

Grammar and independent schools have the highest percentages of pupils studying STEM facilitating subjects. Between 2011 and 2016, this percentage increased from 41% to 45% at grammar schools and from 38% to 39% at independent schools. General FE colleges have the lowest percentages (20% in 2011 and 21% in 2016). Comprehensives experienced the greatest increase between 2011 and 2016 of 3.4 percentage points whilst independent schools the smallest of 1.4 percentage points (excluding other school types).



## STEM Facilitating Subjects inc. Computing

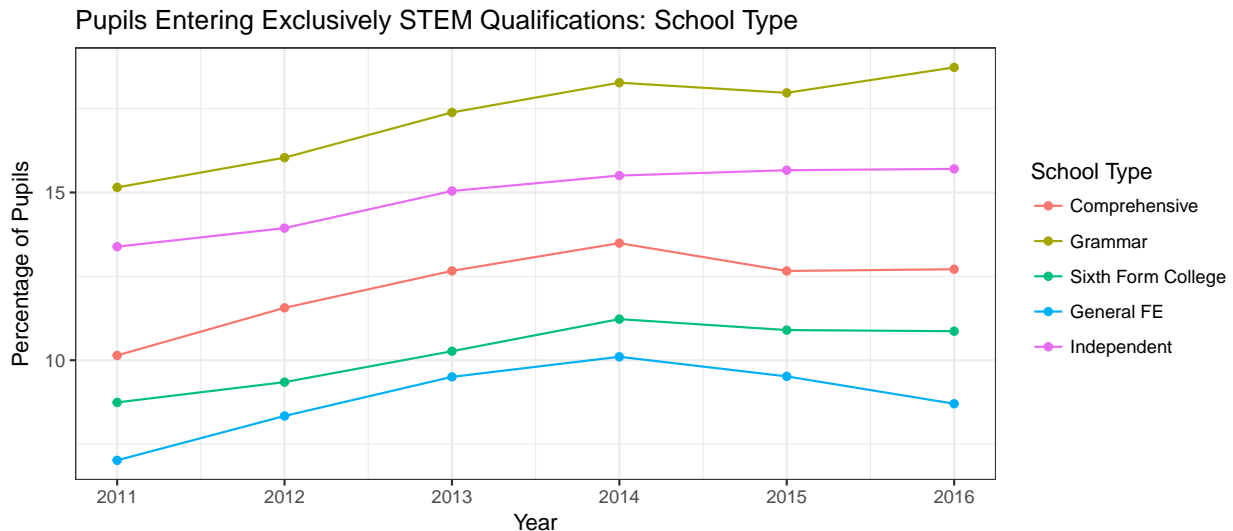
Outcomes were similar on this metric as compared with the preceding section. Grammar and independent schools had the highest percentages of pupils entering STEM facilitating subjects when we include computing in the indicator. At grammars the percentage increased from 42% to 45% and at independents from 38% to 40%. General FE colleges had consistently the lowest percentage of pupils entering these subjects, which increased 1.5 percentage points from 20% to 22%; this was also the smallest increase over the time period of any institution type with comprehensives once again exhibiting the largest increase of 3.8 percentage points.



## Exclusively STEM

Grammars have the highest percentage of pupils taking exclusively STEM subjects (this percentage was 15% in 2011 and 19% in 2016). General FE colleges have the lowest at 7% in 2011 and 9% in 2016.

Grammar schools saw the largest increase in the percentage of pupils taking exclusively STEM subjects (3.6 percentage points) whilst general FE colleges saw the smallest increase (1.7 percentage points; this was excluding other school types).



## Part Three: Attainment Measures

In this section we present measures of the attainment of pupils in advanced level study. We present statistics on the following outcomes:

- Average points per pupil (in all qualifications)
- Average points per pupil (in best 3 qualifications)
- Average points per qualification
- % achieving AAA (or equivalent)
- % achieving ABB (or equivalent)

Points are assigned to qualifications by the Department for Education on the basis of both the grade achieved in and size of a qualification, and are a means of comparing schools and colleges that (in principle) accounts for the different types of qualifications they offer. As such, we use them to compare the outcomes of advanced level pupils of different groups.

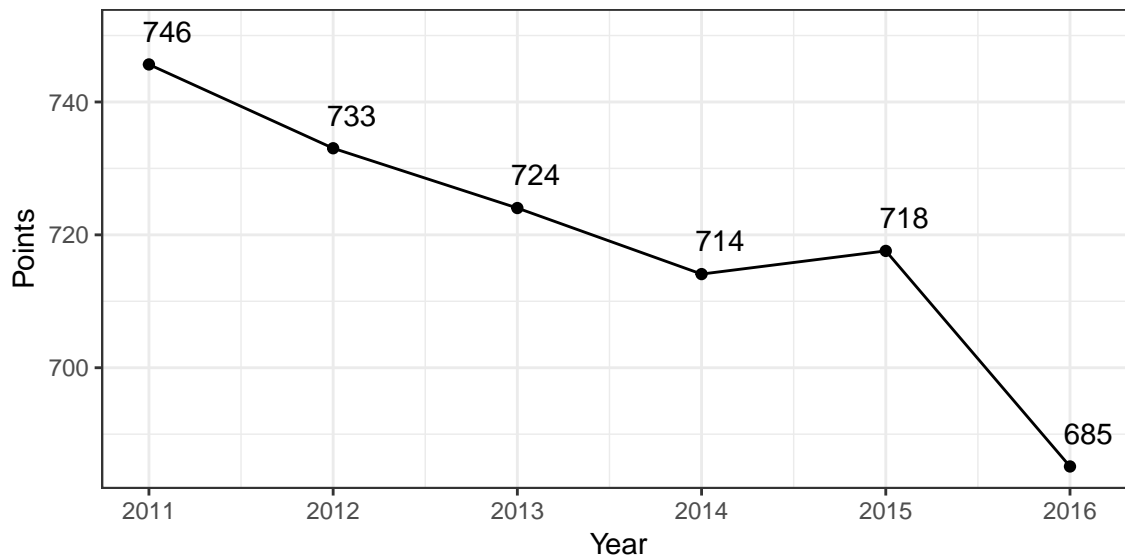
Average points per pupil is calculated both for all qualifications taken by pupils and also using only the best three qualifications that each pupil achieved; this latter metric is also referred to as an average capped (best 3) score. We additionally provide a measure of average points per qualification to control for variation in the number of qualifications taken by pupils. Finally, we provide statistics on the percentages of pupils who achieve (the equivalent of) AAA or higher and ABB or higher in their A Levels or other qualifications.

### National Overview

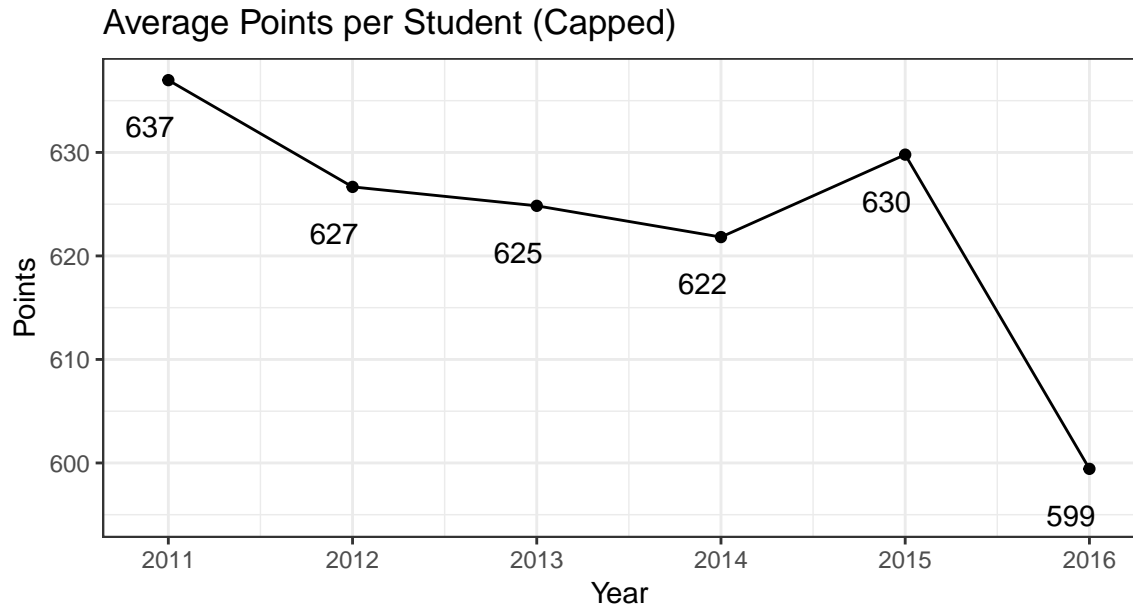
#### Average Point Scores

Between 2011 and 2016 there was a decrease in the average points scored per pupil in all qualifications from 746 in 2011 to 685 in 2016. The decline in point scores seen in 2016 is largely as a result of changes implemented following the Wolf Review, which was published in 2011 and reviewed education for 14-19 year-olds with a focus on vocational qualifications. The changes (which did not have an effect on post-16 education until 2016) affected whether vocational qualifications were eligible to be counted, how points were assigned to grades and which pupils were included in performance measures. Further detail on these changes can be found in Section 2 of the *Revised A Level and other 16-18 result in England (2015/2016) Statistical First Release* (see references).

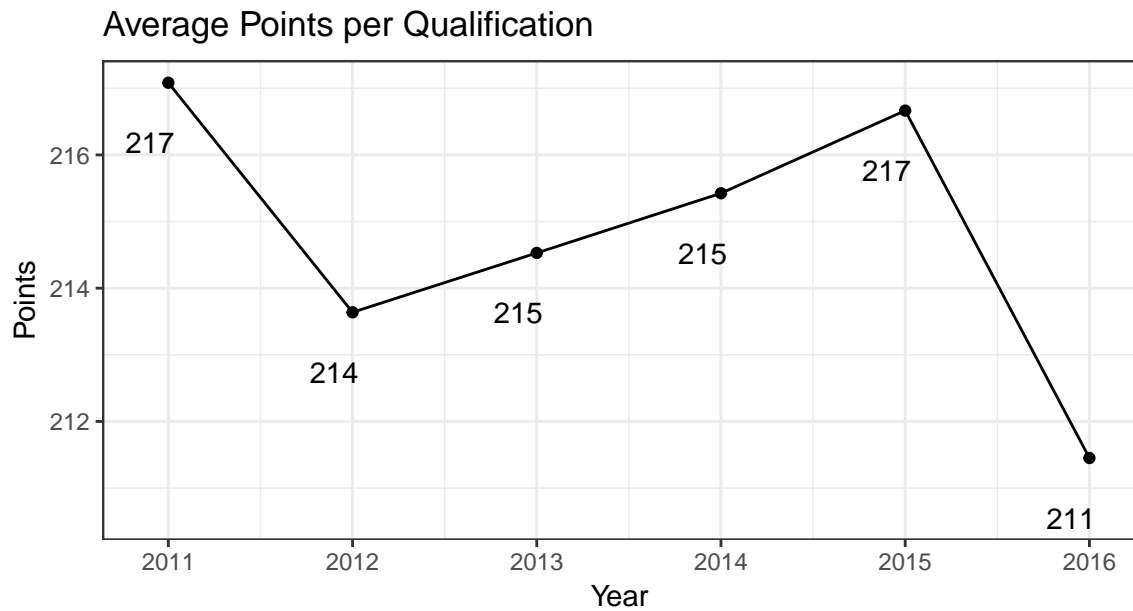
Average Points per Student (All Qualifications)



Similarly, average points scored per pupil in pupils' best three qualifications also decreased from 637 to 599.



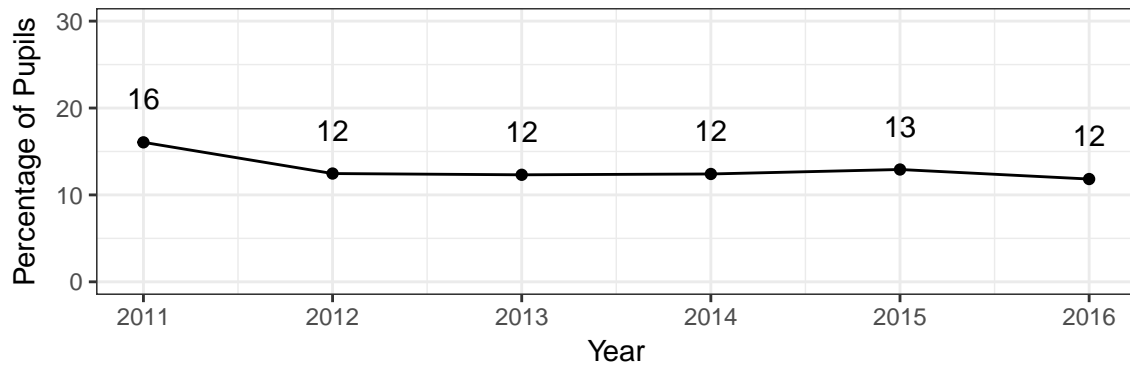
Average point score per qualification decreased from 217 in 2011 to 211 in 2016.



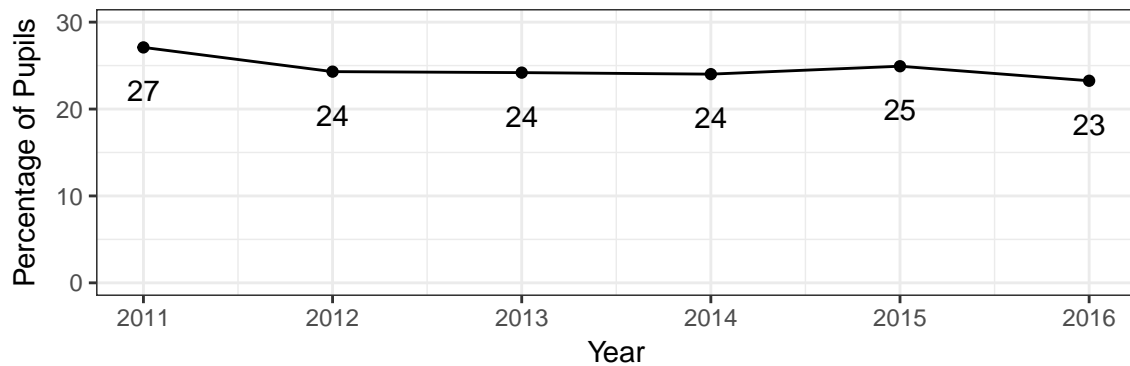
### Percentage Achieving At Least AAA and ABB

Nationally, the percentage of pupils achieving AAA or higher decreased from 16% in 2011 to 12% in 2016. The percentage of pupils achieving ABB or higher also decreased, from 27% in 2011 to 23% in 2016.

Percentage of Pupils Achieving AAA or Equivalent



Percentage of Pupils Achieving ABB or Equivalent

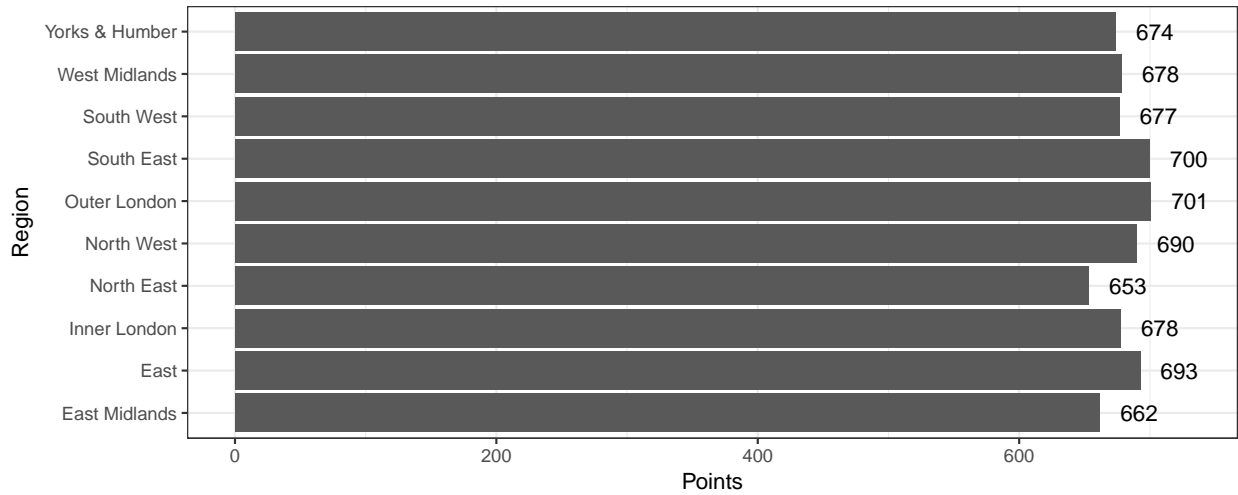


## Regions

### Average Points Scores

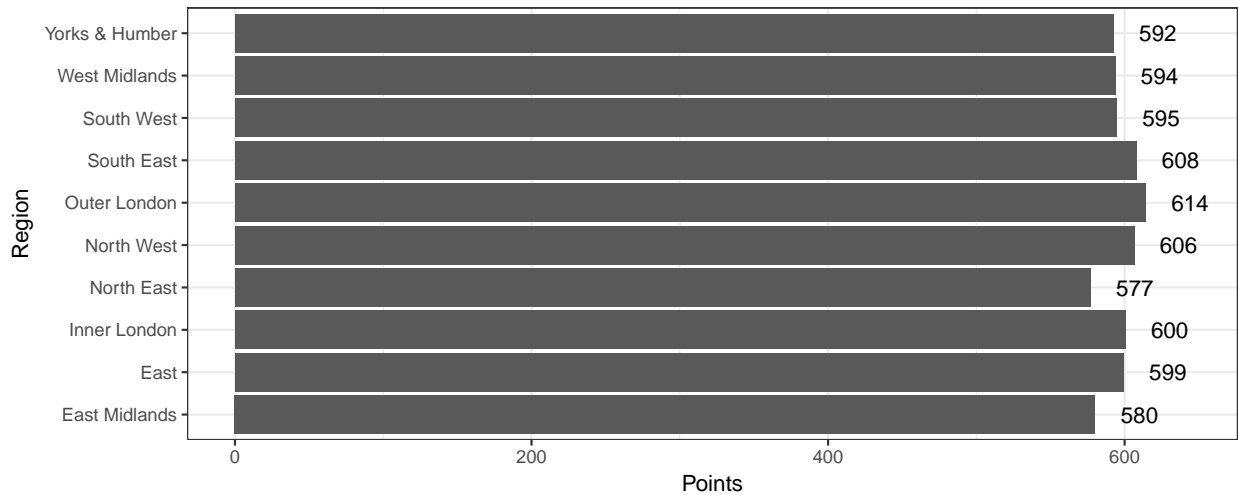
In 2011, the region with the highest average point score was the North West (762), whilst the region with the lowest was Inner London (709). Between 2011 and 2016, all regions experienced a decrease in the average points score per pupil in all qualifications. Notably, Inner London saw the smallest decrease (31 points) of any region in this time and so moved from lowest position by rank to fifth out of the ten regions (with an average point score of 678 in 2016). In 2016, the region with lowest average point score was the North East (653), which also experienced the largest decrease since 2011 (a decrease of 73 points). In 2016, the region with the highest average point score was Outer London (701). In the graphs below, we show the most up to date data (for 2016) by region.

Average Points per Student (All Qualifications) by Region (2016)



Average point scores in pupils' best three qualifications also decreased for all regions. The West Midlands saw the smallest decrease (of 26 points) between 2011 and 2016 whilst the South West the largest (50 points).

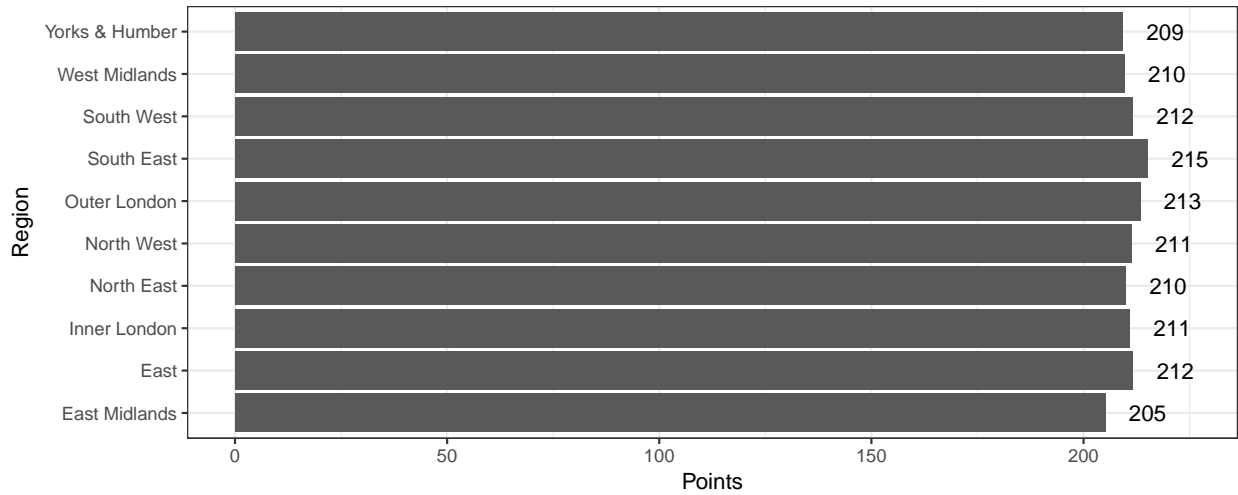
Average Points per Student (Capped) by Region (2016)



Average point score per qualification decreased most for Inner London (8.8 points from 220 to 211) and least for Yorkshire and the Humber (3.1 points from 212 to 209).



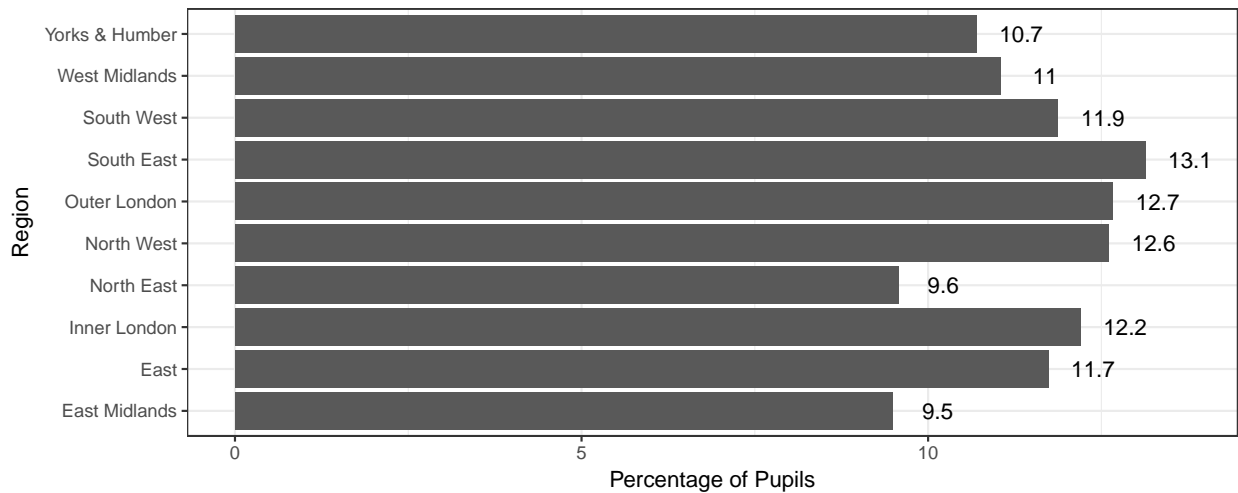
Average Points per Qualification by Region (2016)



**Percentage Achieving At Least AAA and ABB**

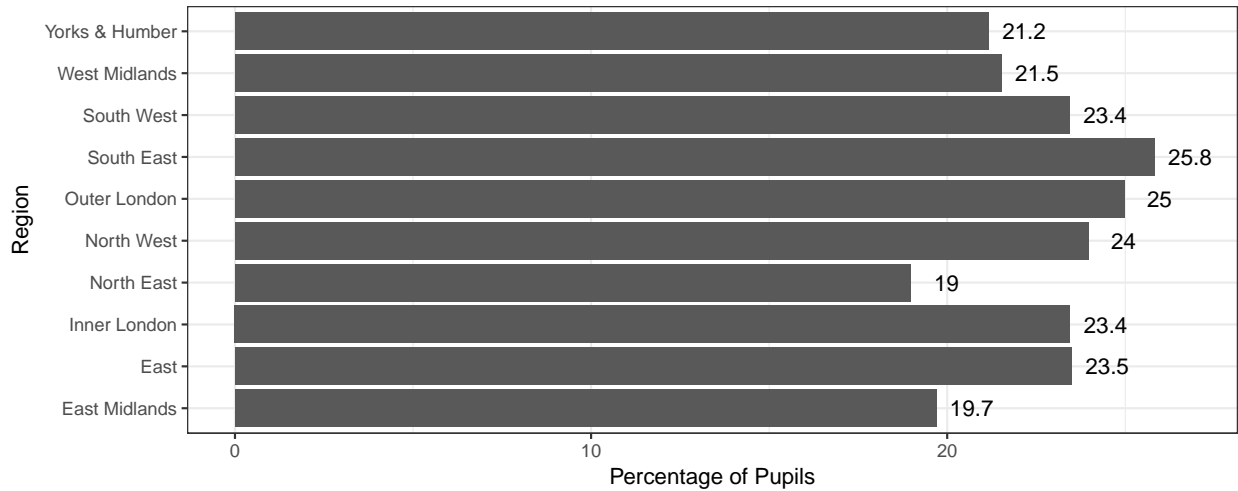
There were comparable decreases in the percentages of pupils achieving AAA or higher across regions between 2011 and 2016. The South West had the largest decrease of 5.3 percentage points in this time whilst Yorkshire and the Humber had the smallest (3.3 percentage points).

Percentage of Pupils Achieving AAA or Equivalent by Region (2016)



Similarly, the percentages of pupils achieving ABB or higher also decreased for all regions and by the greatest amount in the South West (5.3 percentage points) and the smallest amount in Yorkshire and the Humber (2.3 percentage points).

Percentage of Pupils Achieving ABB or Equivalent by Region (2016)

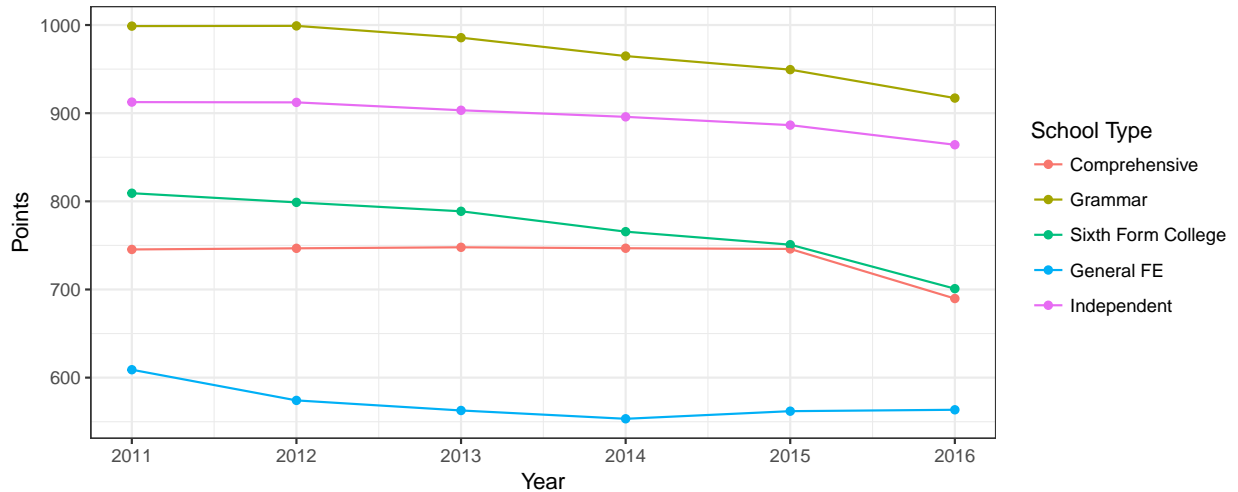


## School Type

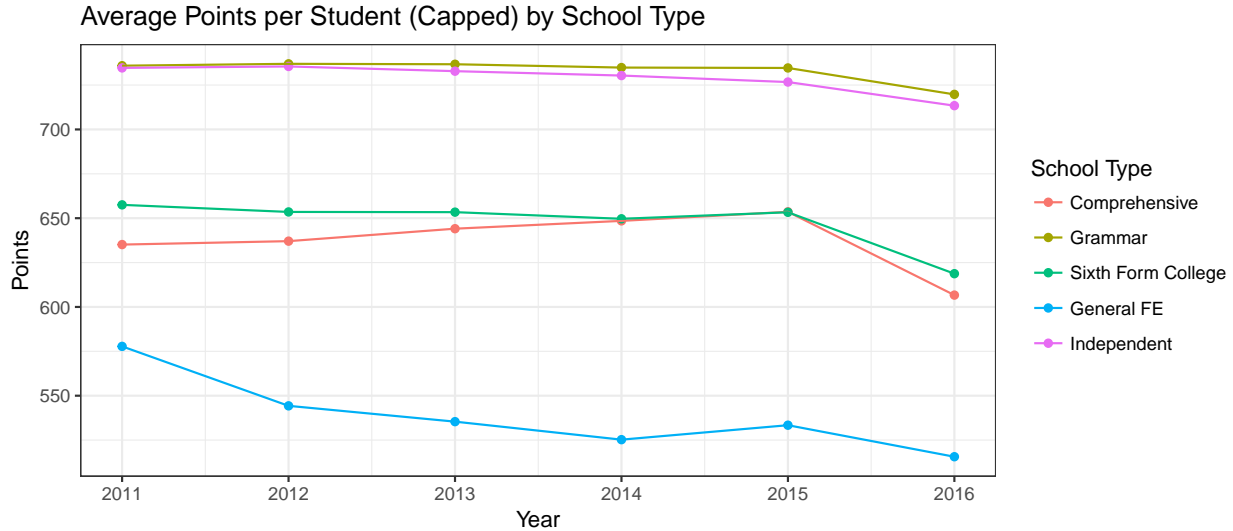
### Average Point Scores

Grammar schools had consistently the highest average point scores (all qualifications) decreasing from 999 in 2011 to 917 in 2016 whilst general FE colleges had consistently the lowest (609 to 564).

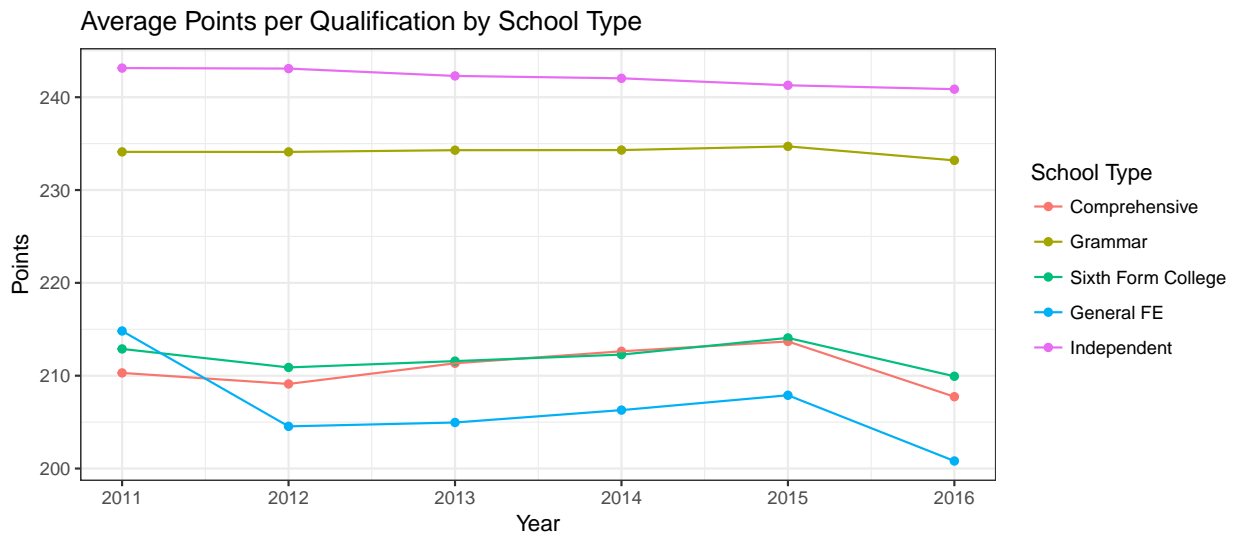
Average Points per Student (All Qualifications) by School Type



Grammar schools also had the highest average scores when considering pupils' best three qualifications (decreasing 16 points between 2011 and 2016 from 736 to 720). General FE colleges have the lowest capped scores at an average of 578 in 2011 decreasing to 516 in 2016.



When looking at average point scores per qualification, independent schools have consistently the highest at 243 in 2011 decreasing to 241 in 2016 (this is higher than grammars which scored 234 and 233 in 2011 and 2016 respectively). In 2011, general FE colleges had higher scores (at an average of 215) than comprehensives (then lowest on 210) and sixth form colleges (213) but their scores dropped to lowest by 2016 (201), below comprehensives on 208 and sixth form colleges on 210.

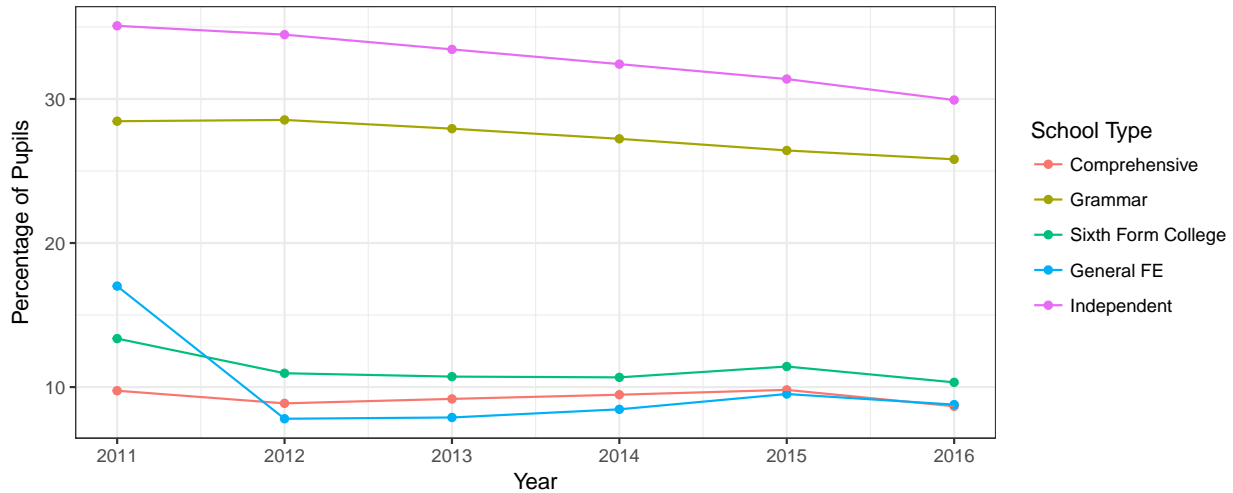


### Percentage Achieving At Least AAA and ABB

Independent schools had the highest percentage of pupils achieving AAA or higher in A Levels in all years with grammars consistently ranking second. Comprehensives had the lowest percentages of pupils achieving this outcome in both 2011 (10%) and 2016 (9%).

General FE colleges saw the greatest decrease between 2011 and 2016 of 8.2 percentage points, whilst comprehensives saw the smallest (1.1 percentage points). Notably, General FE colleges also had the lowest percentage of pupils achieving AAA or higher in the period between 2012 and 2015.

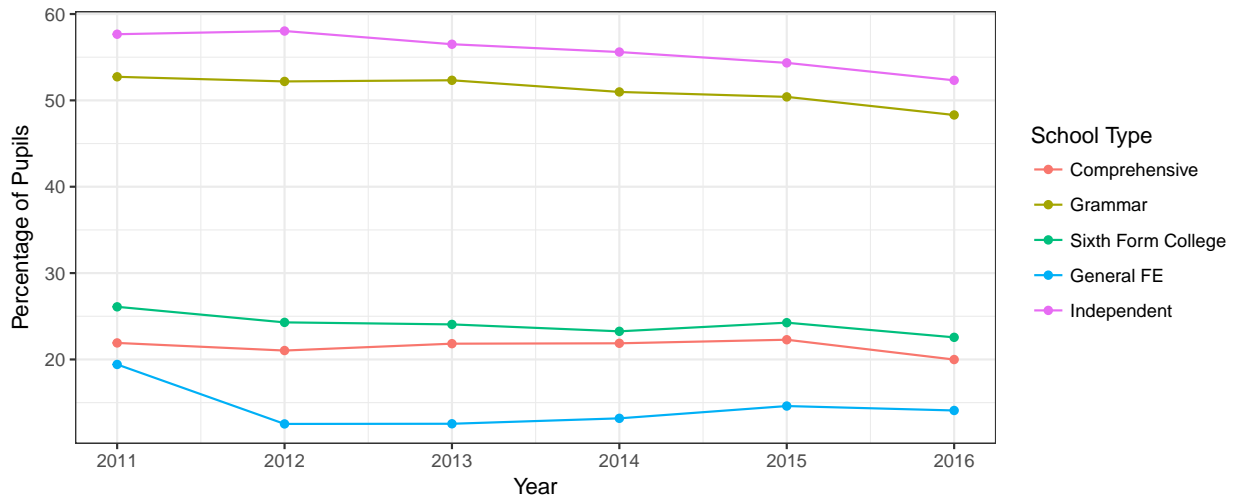
Percentage of Pupils Achieving AAA or Equivalent by School Type



Similarly, independent schools also had the highest percentages of pupils achieving ABB or higher (58% in 2011 and 54% in 2016) and grammars once again were consistently second. General FE colleges had consistently the lowest percentages achieving ABB or higher at 19% in 2011 and 14% in 2016.

Independent schools and General FE colleges saw jointly the largest decreases between 2011 and 2016 (of 5.3 percentage points) whilst comprehensives saw the smallest decrease (of 1.9 percentage points).

Percentage of Pupils Achieving ABB or Equivalent by School Type



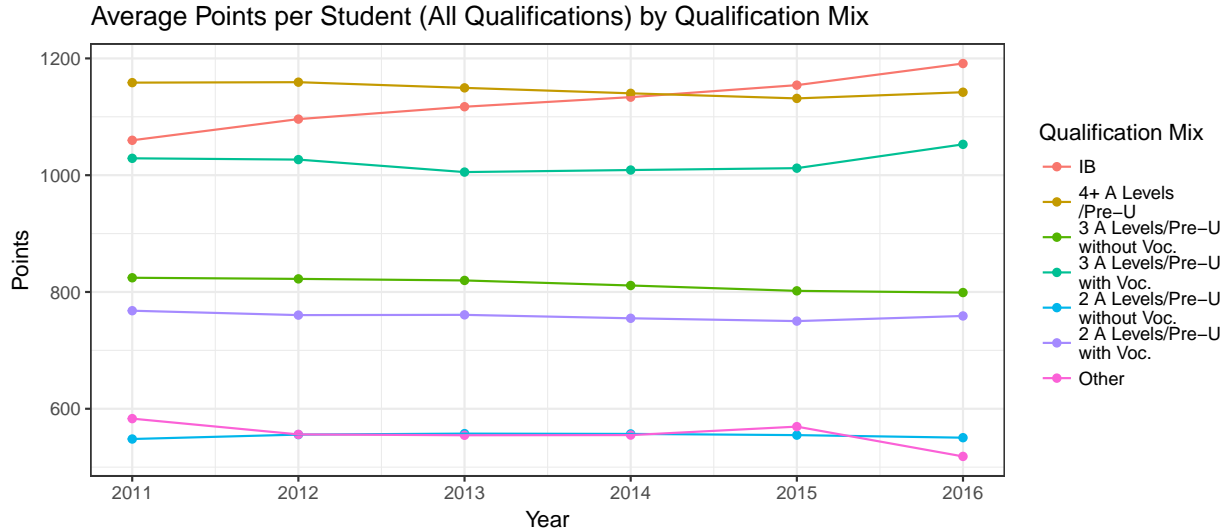
## Qualification Mix

In this subsection, we look at attainment measures by qualification mix.

### Average Point Scores

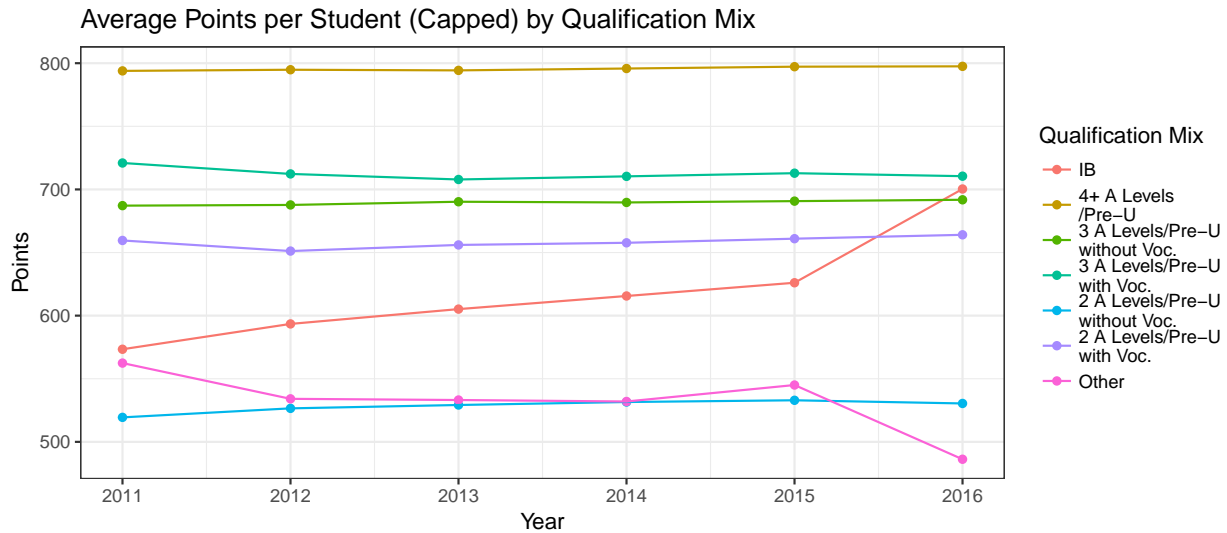
Disaggregating average point scores by qualification mix shows that pupils taking more qualifications do indeed tend to achieve higher scores. There is a clear and consistent hierarchy over the time period (2011-2016) with the sole exceptions of the International Baccalaureate and “Other” groups. Pupils taking the IB achieved a lower average point score than those taking 4 or more A Levels in 2011 (1060 versus 1158) but this increased

by a greater amount and in 2016 IB pupils achieved an average score of 1191 whereas pupils taking 4 or more A Levels achieved an average score of 1142. Pupils taking fewer than 2 A Levels (“Other”) experienced a decrease of 65 points between 2011 and 2016 and therefore ranked lower than the group of pupils taking 2 A Levels without a vocational qualification in 2016, having ranked higher than them in 2011.



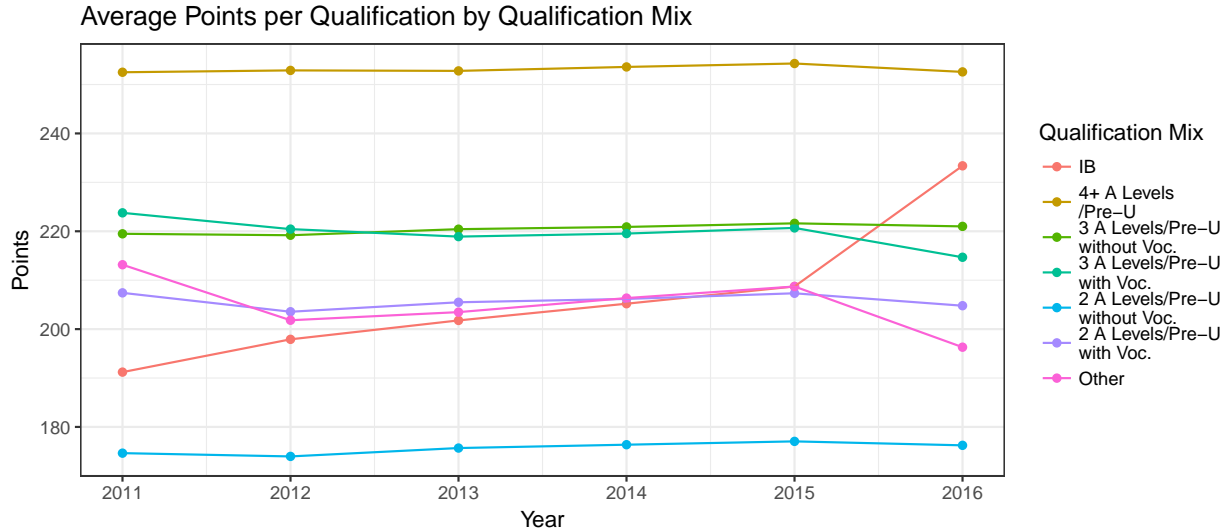
Looking at average point scores of pupils’ best three qualifications shows that pupils taking 4 or more A Levels had the highest attainment across all years (794 in 2011 increasing to 798 in 2016) whilst pupils taking 2 A Levels without a vocational qualification had the lowest with the sole exception of 2016 when pupils taking fewer than 2 A Levels scored lower on average.

It should be noted that in 2016 the International Baccalaureate changed in “weight” having previously been considered to be equivalent to 5.5 A Levels and from 2016 onwards being equivalent to only 5. As such, more points are counted when calculating pupils’ capped point scores and hence we see a sharp increase between 2015 and 2016 when capped point scores rose from 626 to 700 amongst pupils taking the IB.



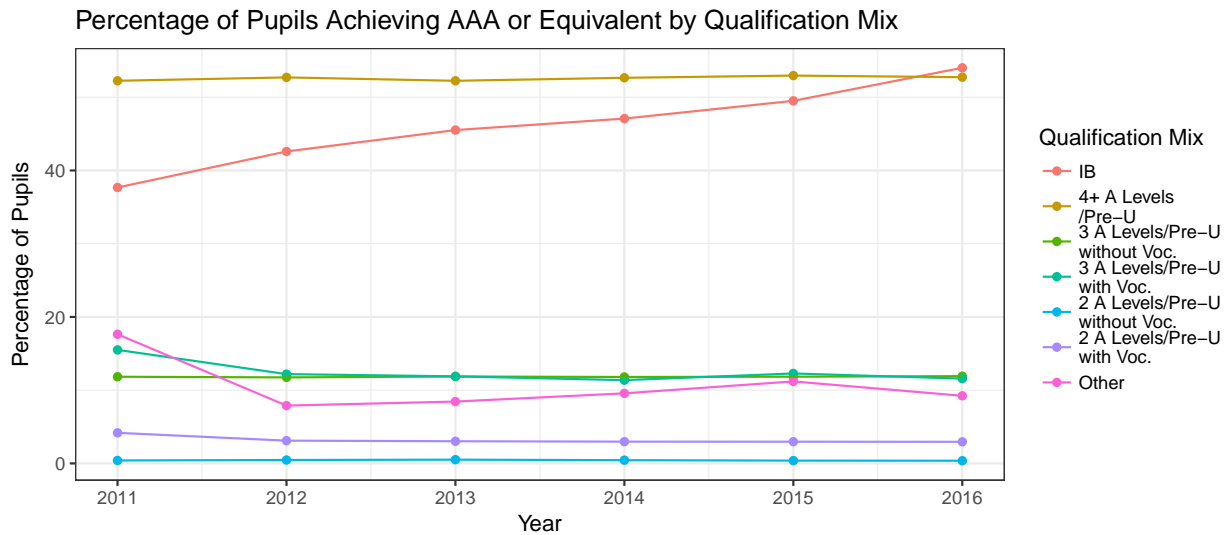
When we take the average point score attained per qualification, pupils taking 4 or more A Levels still had the highest attainment (253 in both 2011 and 2016). Pupils taking 2 A Levels without a vocational qualification had consistently the lowest attainment (increasing marginally between 2011 and 2016 from 175

to 176). Average point scores amongst IB pupils increased from 191 to 233 whereas the group made up of pupils taking fewer than 2 A Levels (“Other”) experienced a small decrease from 213 to 196 between 2011 and 2016. The aforementioned re-weighting of the IB’s A Level equivalence is the reason for the sharp increase in average points per qualification for this group to 233 in 2016 from the 2015 average of 209.



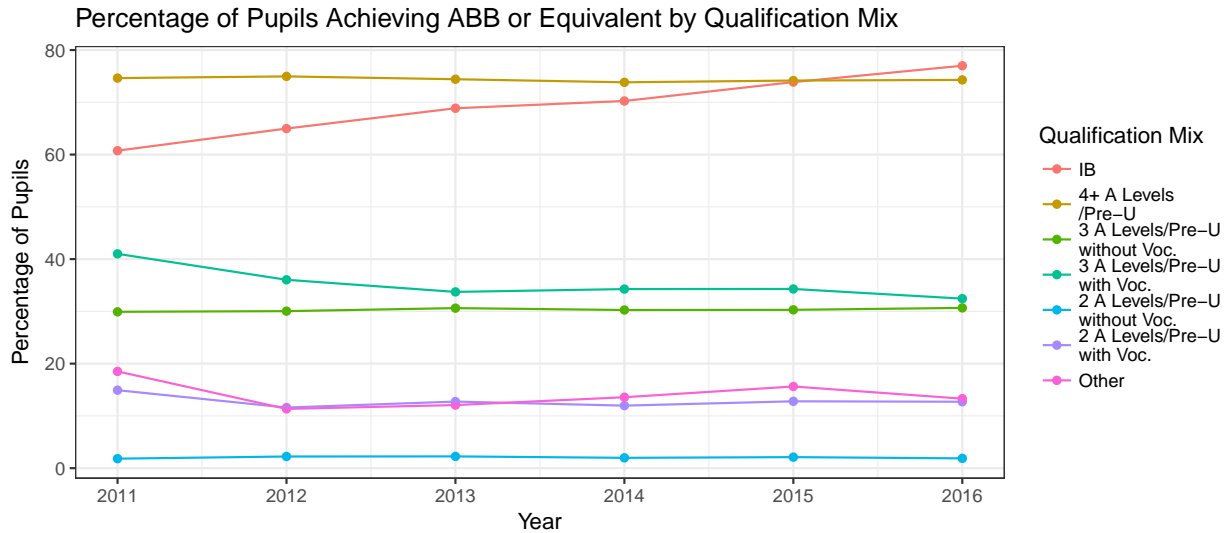
**Percentage Achieving At Least AAA and ABB**

The highest percentage of pupils achieving AAA or higher is within the cohort taking 4 or more A Levels in all but the final year when the percentage was highest amongst IB pupils. Amongst pupils taking 4 or more A Levels, 52.2% achieved AAA or higher in 2011 compared to 52.7% in 2016; in 2016 54.0% of IB pupils achieved the equivalent of AAA or higher. The percentage is lowest amongst pupils taking 2 A Levels without a vocational qualification (in both 2011 and 2016 0.4% of these pupils achieved AAA or higher with intervening years’ percentages being similar).



Similarly, the percentage of pupils who achieved ABB or higher was highest amongst pupils taking 4 or more A Levels in all year except 2016, when once again IB pupils had the highest attainment by this measure. The

group with the lowest percentage of pupils achieving ABB or higher was again the one consisting of pupils taking 2 A Levels without a vocational qualification.



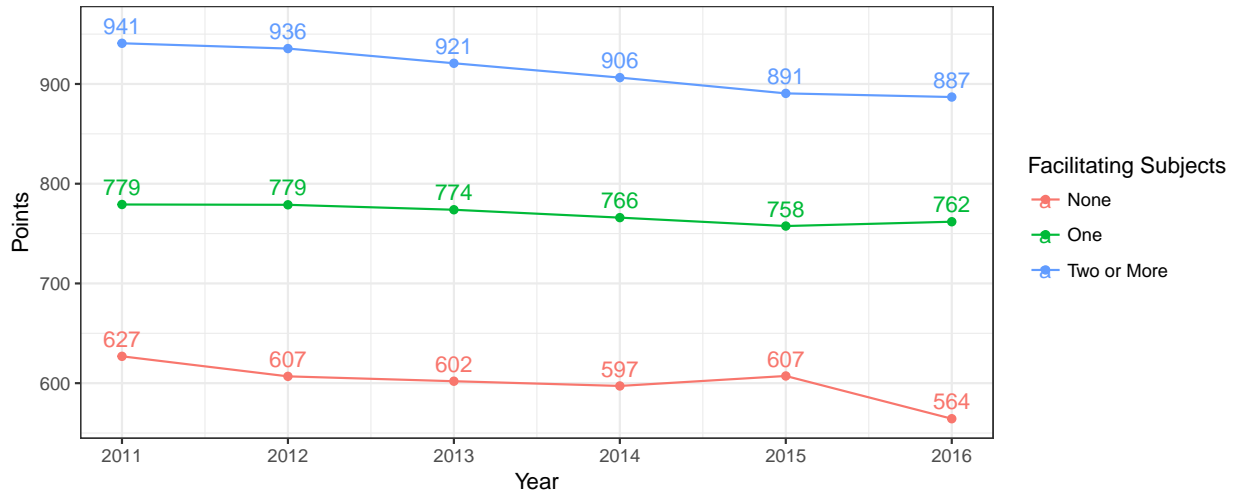
## Subject Mix

In this final subsection, we look at attainment disaggregated both by the number of facilitating subjects a pupil is taking and the number of STEM facilitating subjects that a pupil is taking. A separate section is appended to look at STEM facilitating subjects when we include computing in the category.

### Average Point Scores (by Facilitating Subjects Entered)

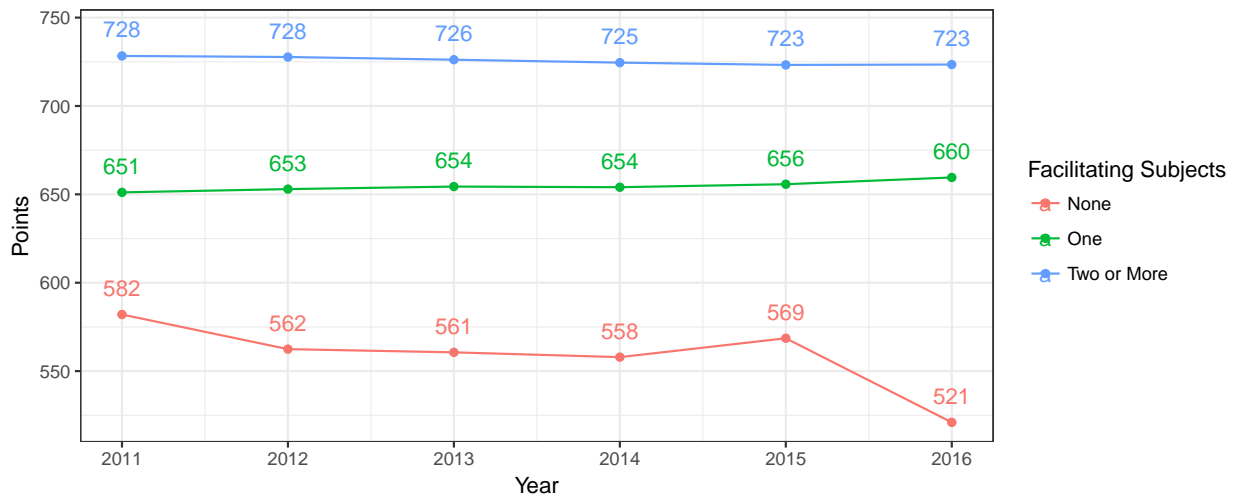
Average point scores were highest amongst pupils taking two or more facilitating subjects, lower for those taking one facilitating subject and lowest amongst pupils taking none. In this latter group, a particularly sharp decrease is seen in the final year (2015-2016), which is likely due to this group's greater participation in vocational qualifications and the aforementioned reforms following the Wolf Review. On average across all years, 71% of pupils taking no facilitating subjects took a vocational qualification compared with 14% for pupils taking one facilitating subject and 3% amongst pupils taking two or more.

Average Points per Student (All Qualifications) by Facilitating Subjects



We see similar trends when looking at capped average point scores. Once again, there was a sharp decline for the group taking no facilitating subjects between 2015 and 2016 from 569 to 521.

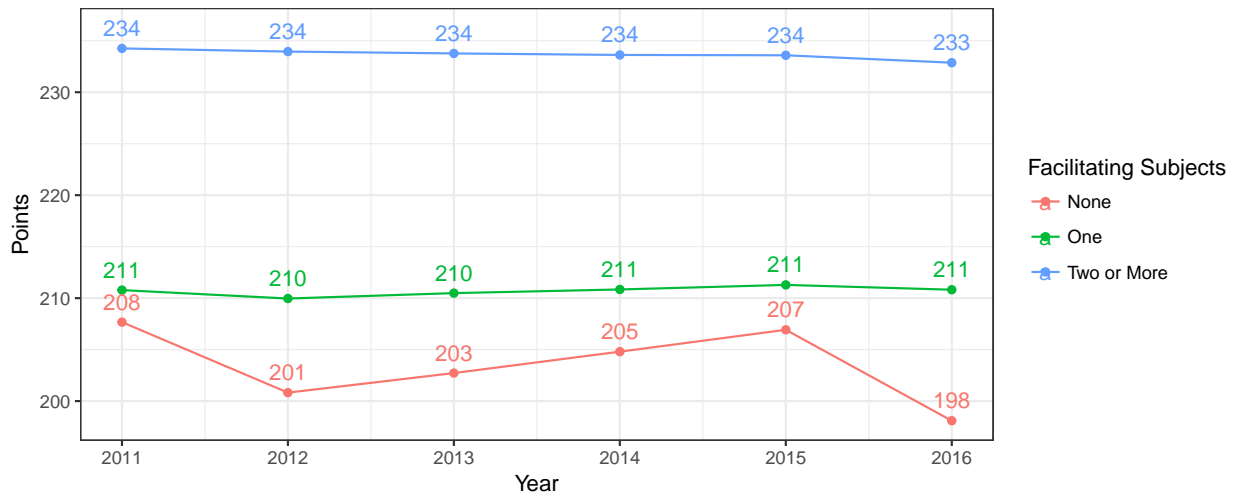
Average Points per Student (Capped) by Facilitating Subjects



For average point scores per qualification entered, the gap between the scores of groups taking one facilitating subject and none is smaller than was seen for average point scores (all qualifications) or capped point scores. This gap does however widen in the final year to 13 points.



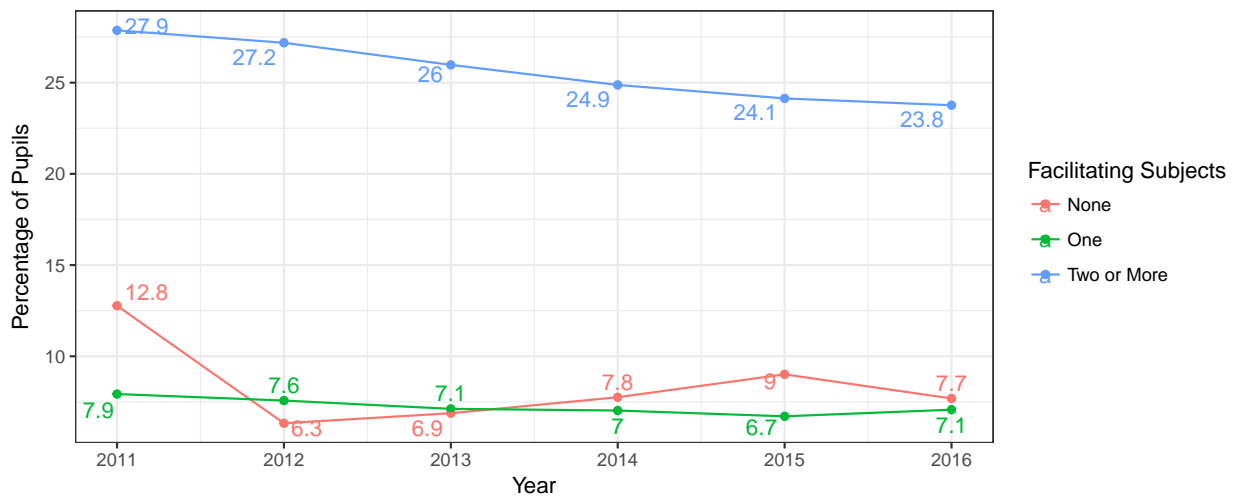
Average Points per Qualification by Facilitating Subjects



Percentage Achieving At Least AAA and ABB (by Facilitating Subjects Entered)

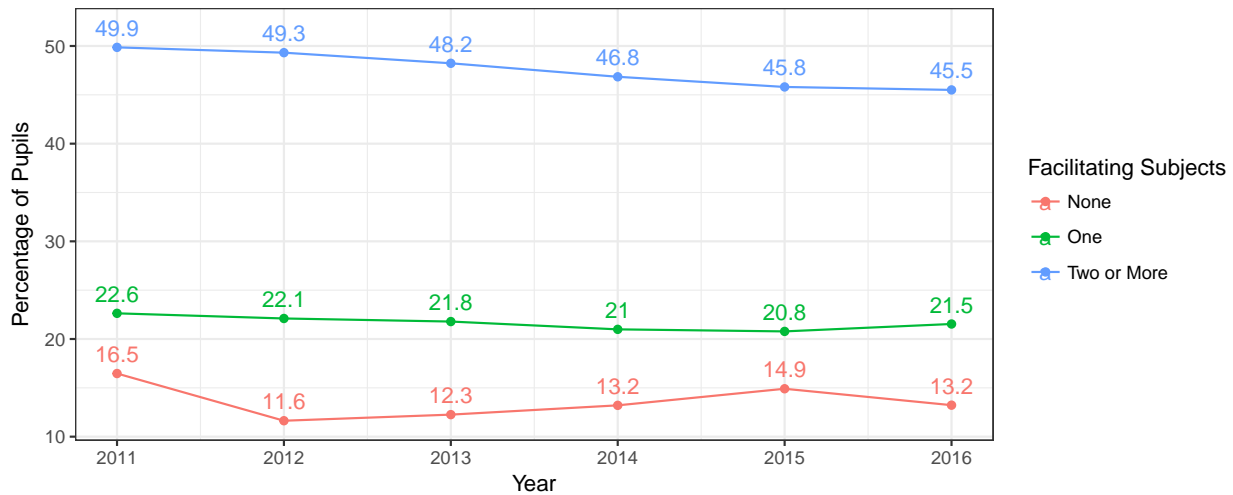
The percentage of pupils achieving AAA or higher is highest amongst pupils taking two or more facilitating subjects. The relative positions of the groups taking no facilitating or one facilitating subjects is less clear cut with a higher percentage of pupils who take no facilitating subjects achieving this outcome in four out of the six years in the time series.

Percentage of Pupils Achieving AAA or Equivalent by Facilitating Subjects



The percentage of pupils achieving ABB or higher was once again highest amongst the group of pupils taking two or more facilitating subjects. However, by contrast to the AAA or higher outcome, the pupils taking one facilitating subject clearly have higher attainment (on this outcome) than those taking none in all years.

Percentage of Pupils Achieving ABB or Equivalent by Facilitating Subjects

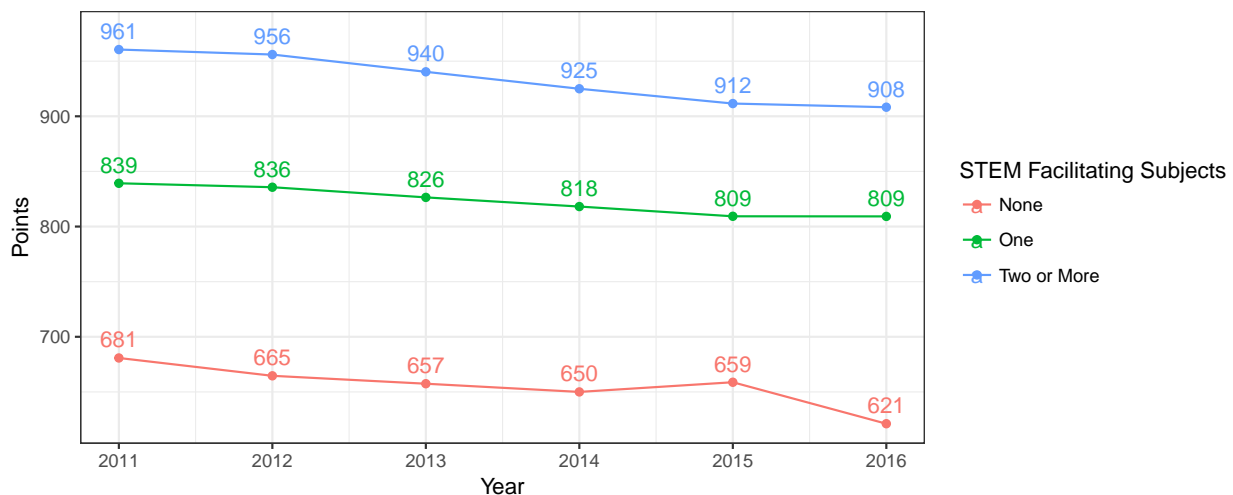


Average Point Scores (by STEM Facilitating Subjects Entered)

Disaggregating average point scores by STEM facilitating subjects shows a hierarchy wherein the highest scores are achieved by pupils taking two or more STEM facilitating subjects, then one and then none. The decline in point scores in 2016 amongst pupils taking no STEM facilitating subjects can be ascribed largely to the changes that took effect that year following the Wolf Review as previously mentioned.

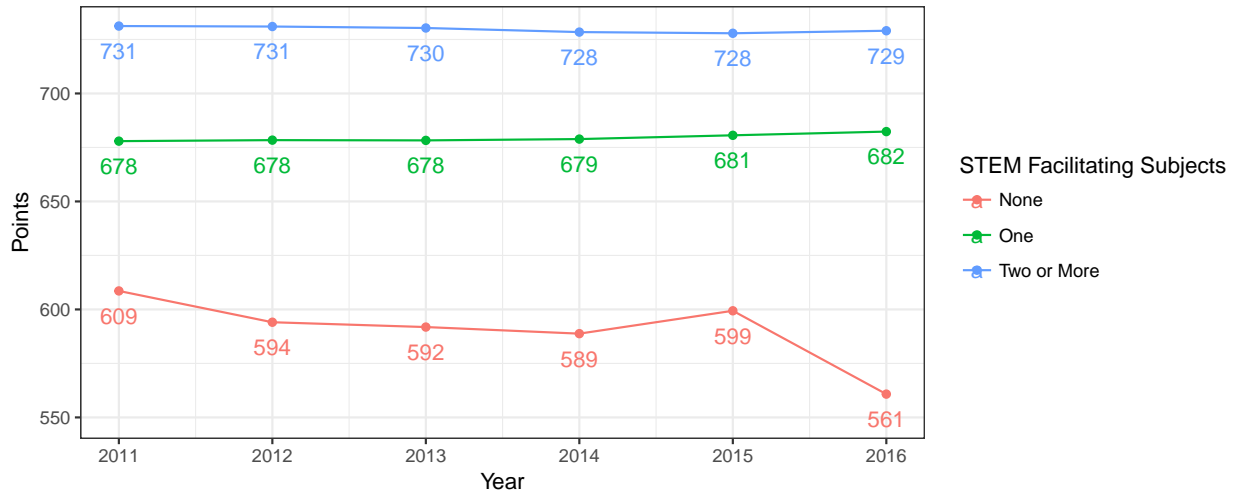
Notably, average point scores for pupils taking two or more *STEM* facilitating subjects are higher than those analogous point scores of pupils taking two or more facilitating subjects. The same is true of pupils taking one STEM facilitating versus one facilitating subject. Put another way, pupils who take STEM facilitating subjects in particular have higher attainment than those who take any facilitating subject.

Average Points per Student (All Qualifications) by STEM Facilitating Subjects



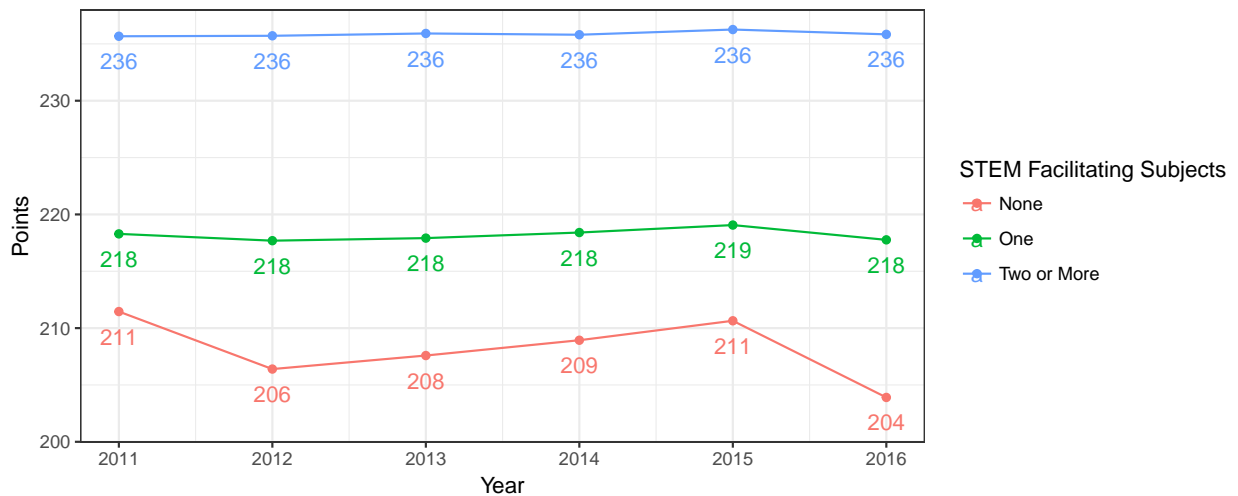
Similar patterns are visible when looking at capped point scores. Pupils taking more STEM facilitating subjects perform on average better. Once again, the capped scores for pupils taking two or more, or one STEM facilitating subject(s) are higher than for pupils taking two or more, or one of any of the facilitating subjects.

Average Points per Student (Capped) by STEM Facilitating Subjects



Looking at average point scores per qualification, we see that pupils taking two or more STEM facilitating subjects have the highest scores and those not taking any the lowest, with the characteristic decline in scores for the latter group in the final year.

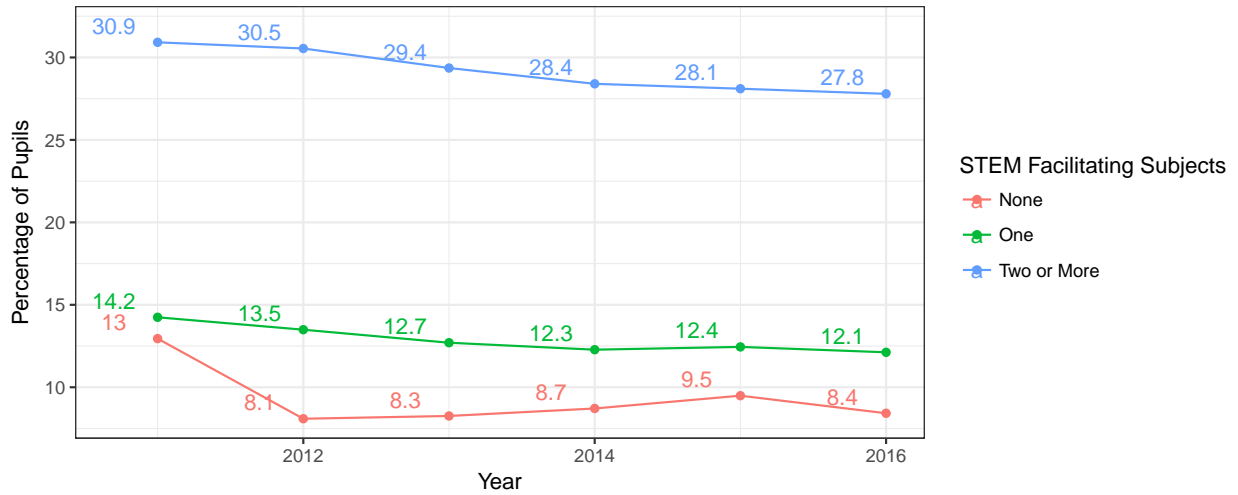
Average Points per Qualification by STEM Facilitating Subjects



### Percentage Achieving At Least AAA and ABB (by STEM Facilitating Subjects Entered)

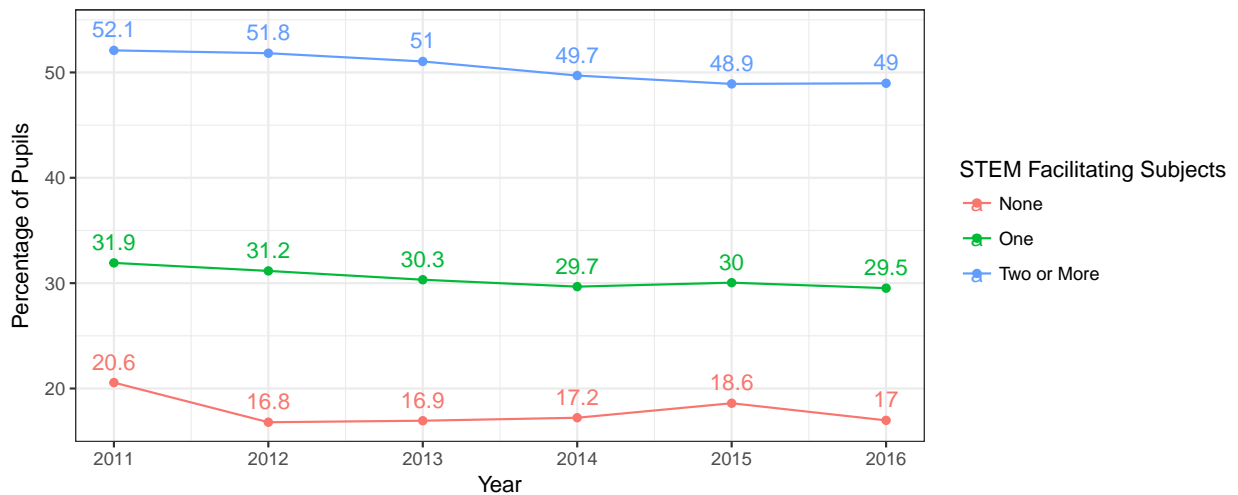
The percentage of pupils achieving AAA or higher was highest amongst pupils taking two or more STEM facilitating subjects, although this did decrease between 2011 and 2016. A greater percentage of pupils taking one STEM facilitating subject achieved AAA or higher than those taking none.

Percentage of Pupils Achieving AAA or Equivalent by STEM Facilitating Subjects



The percentage of pupils achieving ABB or higher was highest amongst those taking two or more STEM facilitating subjects and lowest amongst those taking none. The gap in this percentage between pupils taking one and those taking none was greater than the gap when looking at the AAA or higher outcome.

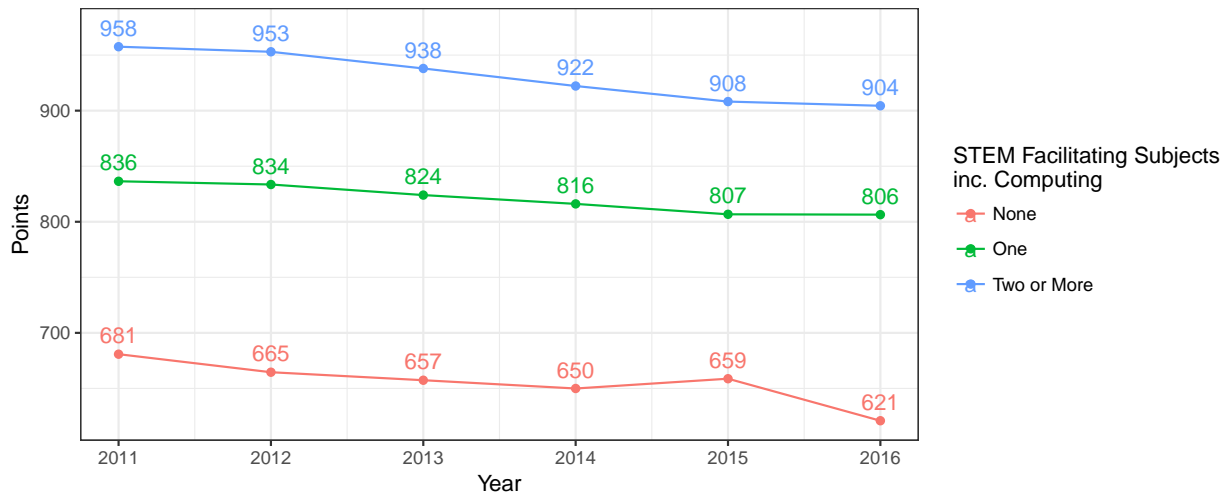
Percentage of Pupils Achieving ABB or Equivalent by STEM Facilitating Subjects



**Average Point Scores (by STEM Facilitating Subjects Entered inc. Computing)**

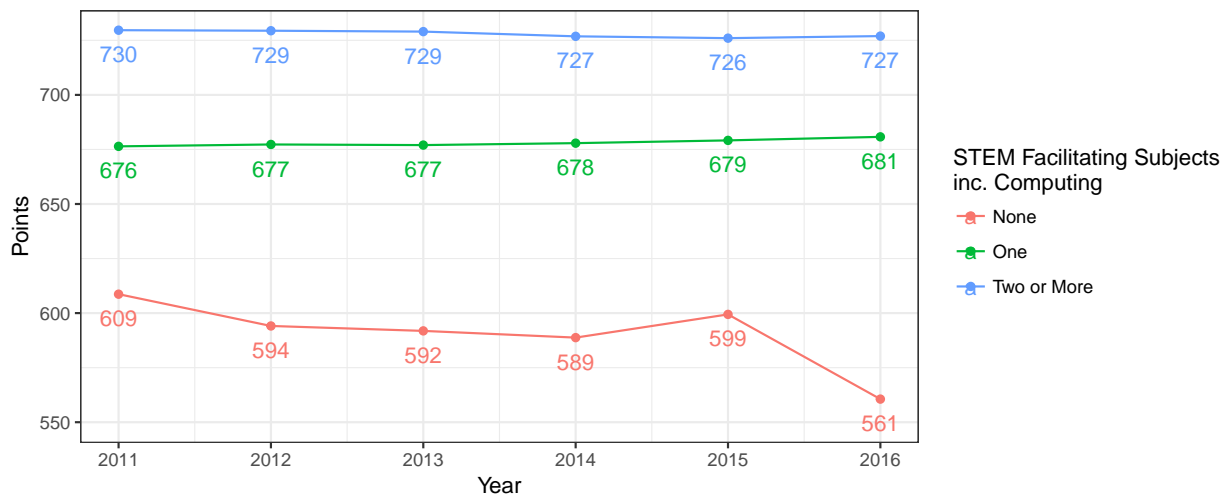
The distribution of average point scores given the number of *STEM facilitating including computing* subjects entered is almost identical to the number entered excluding computing. Pupils who enter two or more of these subjects scored 961 points in 2011 on average decreasing to 908 in 2016, whilst the comparable figures for pupils entering one were 839 point down to 809. The pupils entering none saw a decrease from 681 points in 2011 to 621 in 2016, with a notable fall in final year (the 2015 average score was 659).

Average Points per Student (All Qualifications) by STEM Facilitating Subjects inc. Computing



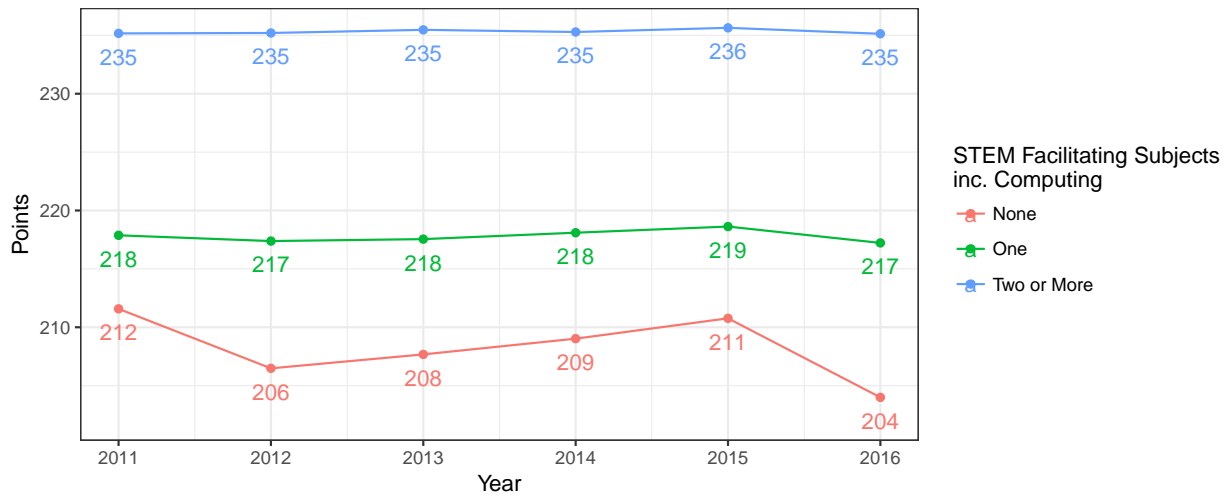
Average capped points decreased from 730 to 727 points (2011-2016) for the highest ranking group of pupils taking two or more STEM facilitating subjects including computing. There was a concurrent increase amongst pupils taking one of these subjects from 676 to 681 points. The final group taking none saw a decrease from 609 points in 2011 to 599 in 2015, decreasing significantly again in the final year to 561 points on average.

Average Points per Student (Capped) by STEM Facilitating Subjects inc. Computing



Average points per qualification show less of a gap between the pupils taking none of the STEM facilitating subjects including computing and those taking one. The pupils taking two of these subjects consistently had the highest average point scores per qualification (235 in both 2011 and 2016), whilst those taking one saw a slight decrease from 218 to 217. The pupils taking none of these again saw a marked decrease in the final year, down to 204 on average having scored 212 points per qualification on average in 2011.

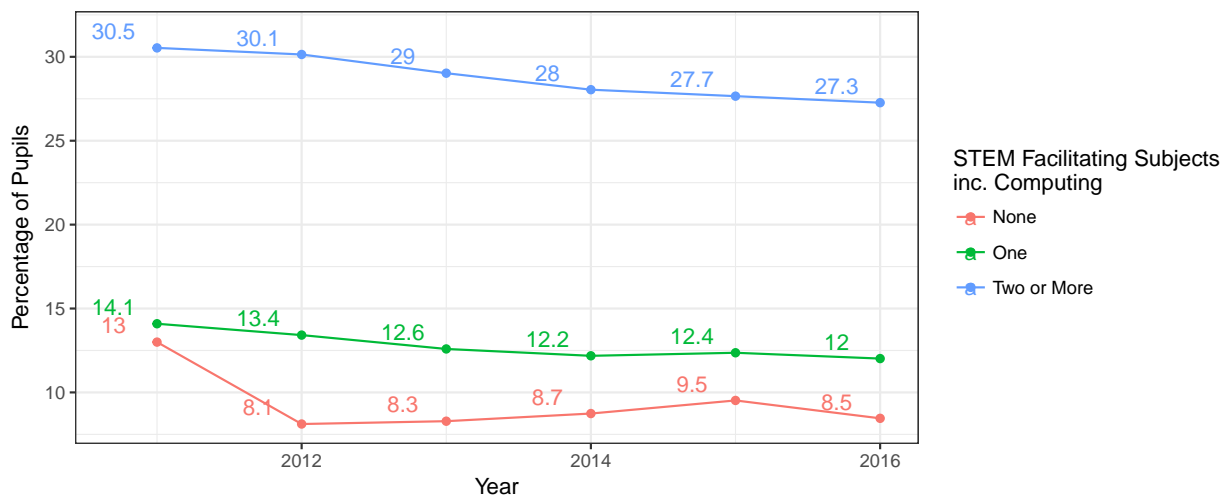
Average Points per Qualification by STEM Facilitating Subjects inc. Computing



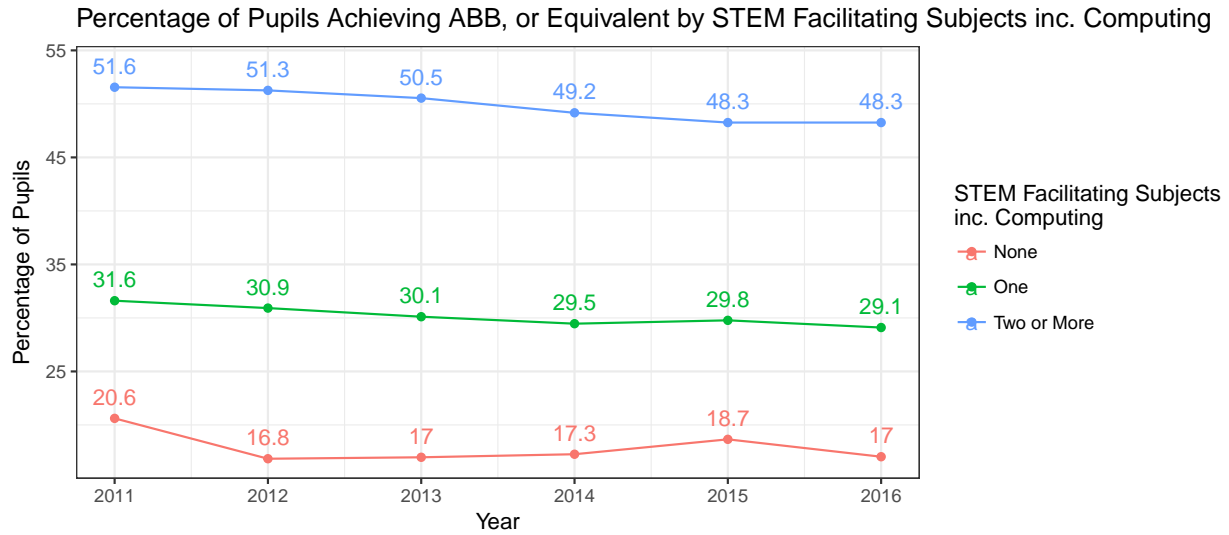
**Percentage Achieving At Least AAA and ABB (by STEM Facilitating Subjects inc. Computing Entered)**

As with STEM facilitating subjects excluding computing, we see that the group with the highest percentage of pupils scoring AAA or higher (or its equivalent) is that of pupils taking two or more Science/ Computing subjects. Meanwhile, pupils taking none had the lowest percentage attaining AAA or higher at 13.0% in 2011 (close to the 14.2% of pupils taking one such subject), which subsequently decreased to 8.4% in 2016 (below the 12.1% of the group entering one subject).

Percentage of Pupils Achieving AAA, or Equivalent by STEM Facilitating Subjects inc. Computing



Finally, looking at percentages of pupils attaining ABB or higher, we see a larger gap between the zero entry and one entry groups. In 2011, 20.6% of pupils with no STEM facilitating subjects including computing scored ABB or higher, decreasing to 17.0% in 2016. These figures were significantly higher amongst pupils taking one such subject at 31.6% in 2011 and 29.1% in 2016. They were highest amongst pupils taking two or more of these subjects at 51.6% in 2011 and 48.3% in 2016.



## References

Alison Wolf (2011) Review of Vocational Education - The Wolf Report. <https://www.gov.uk/government/publications/review-of-vocational-education-the-wolf-report>

Department for Education (2017) Revised A Level and other 16-18 result in England (2015/2016) Statistical First Release. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/584124/SFR05\\_2017\\_\\_A\\_level\\_and\\_other16-18\\_results\\_in\\_England\\_SFR\\_revised.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/584124/SFR05_2017__A_level_and_other16-18_results_in_England_SFR_revised.pdf)