

# Educational inequalities in England and Wales

## Commission on Inequality in Education

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# Introduction and summary findings

This slide pack sets out our findings on inequalities in educational attainment at age 16 and age 11. It describes four aspects of inequality and how these affect school results: region, family income, gender and ethnicity.

We also examine how these trends in inequality have evolved over time, looking at cohorts of children born in different years: 1958, 1970, 1997/98 and 2000.

## Regional inequalities

- GCSE performance at age 16 across England and Wales reveals marked disparities between regions, with over 70% of pupils in London achieving 5 good GCSEs compared to 63% in Yorkshire & Humber.
- Regional differences in attainment are already apparent by the end of primary school and they are observable even when you control for other factors such as ethnicity and income.
- Our analysis across different cohorts of children sitting exams at age 16 shows that regional inequalities have remained stubborn and in some cases worsened over the last three decades. Areas such as the North East, Yorkshire and the Humber, the West Midlands and the East Midlands have persistently under-performed, behind whilst London's performance has surged.
- Comparing the performance of 11-year olds born in 2000 with those born in 1970 reveals that the geographic area a child comes from has become a more powerful predictive factor for those born in 2000 compared to 1970.

### Inequalities by family income

- A very low proportion of pupils who receive Free School Meals achieve 5 A\* to C at GCSEs (40%) compared to those not receiving Free School Meals (70%).
- The performance gap between the richest and the poorest has remained persistently large between the mid-1980s and the mid-2000s.
- When using the measure of '5 A\* to C grades', the attainment gap between FSM pupils and non-FSM pupils is observed to narrow over the last decade. However, when more demanding measures, such as '5 A\* to C including English and Maths' are applied, this progress is no-longer observable.

### Inequalities by ethnic group

- Educational performance varies significantly across different ethnic minority groups. For instance, while over 85% of Chinese pupils get five good GCSEs, only around 59% of Black Caribbean pupils achieve this benchmark.
- Ethnic differences are important in their own right – as distinct from income, region or other factors – with the performance of a Chinese child at age 11 higher than for a white child of the same age.
- Over the last three decades, ethnic inequalities have altered radically but a similar level of unevenness remains. While Asian students born in 1970 performed poorly, Chinese, Indian and Bangladeshi born in 1997/98 were the best performers. White students have fallen from over-performers to under-performers on average over the three decades.

## Secondary school: GCSE results

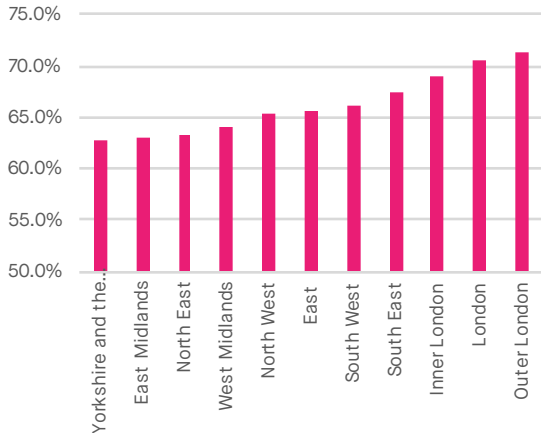
## What we did

- Our analysis of GCSE results is based on Department for Education statistics, broken down by income, gender, ethnicity and region. These statistics are based on exam results of all students taking GCSEs in England and Wales.
- To look at how inequalities have evolved over time, we use data from the British Cohort Study (BCS) covering children born in 1970. This follows the lives of 17,000 children born in 1970, and contains data on their O-level results, taken in 1985-1986.



## London and the South out-perform the rest of the country

Attainment by region, 2013-14  
Percentage achieving 5+ A\*-C GCSEs or equivalent



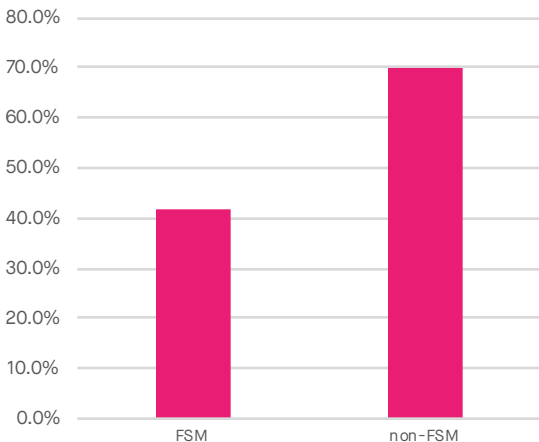
Source: Department for Education

Big differences in GCSE results between worst performing and best performing areas.

Over 70% of pupils in London achieve five good GCSEs compared to 63% in Yorkshire & Humber

## Poorer students are less likely to receive five good GCSEs

Attainment by Free School Meal status, 2013-14  
Percentage achieving 5+ A\*-C GCSEs or equivalent



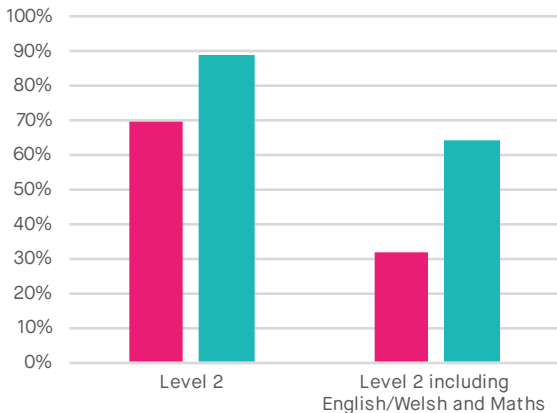
Source: Department for Education

Pupils are eligible for free school meals if their families receive certain income-related benefits. As such, it provides a proxy for pupils from a low income background.

Just over 40% of pupils who are eligible for free school meals get five good GCSEs, compared to almost 70% of pupils who are not eligible for free school meals.

## The picture for income inequality is similar for Wales

Attainment by Free School Meal status, Wales,  
2014-15



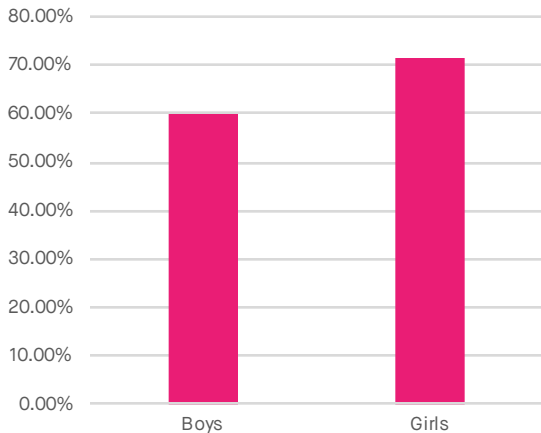
Level 2 is defined as 5 A\*-C GCSEs or equivalent  
Source: Statistics for Wales

Differences between England and Wales mean it is difficult to compare results across the two directly.

However, it is clear that the gap between poorer and richer pupils in Wales is of a similar magnitude to that in England.

### Girls out-perform boys

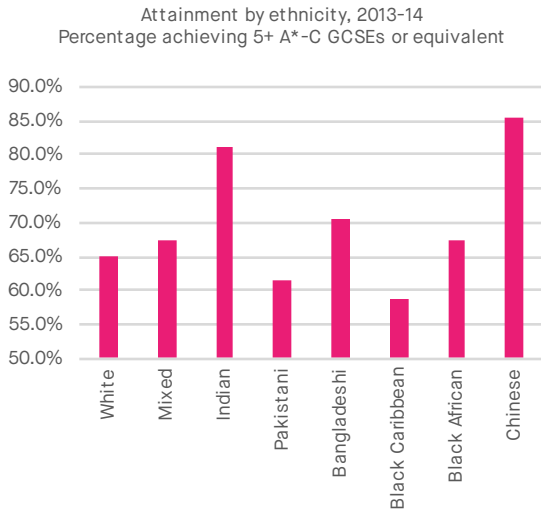
Attainment by gender, 2013-14  
Percentage achieving 5+ A\*-C GCSEs or equivalent



Source: Department for Education

Over 71% of girls achieve five good GCSEs compared with just under 60% of boys

## Chinese and Indian groups out-perform; Black Caribbean and Pakistani under-perform



Source: Department for Education

There are substantial differences across ethnicity.

Some ethnic minority groups out-perform by a large margin: over 85% of Chinese pupils get five good GCSEs.

But others lag behind. Only around 59% of Black Caribbean pupils get five good GCSEs

## Secondary school: GCSE results

- Our analysis of the latest data on GCSE performance at age 16 across England and Wales illustrates the **significant inequalities that exist across region, family income, ethnicity and gender**.
- Particularly noteworthy is the significant disparity between regions **with over 70% of pupils in London achieve good GCSEs compared to 63% in Yorkshire & Humber**.
- In the next section, we look at how this has changed over time to understand whether there have been improvements and where inequalities may have worsened.
- To do this, we compare performance in use data from the 1970 British Cohort Study (BCS), which follows the lives of 17,000 children born in 1970, and contains data on their O-level results, taken in 1985-1986. We do this rather than use official examination results for all pupils because the BCS is a rich source of data that allows us to break down results by family background, region and gender.

## Little progress in evening out regional inequalities over three decades, with some areas falling further behind

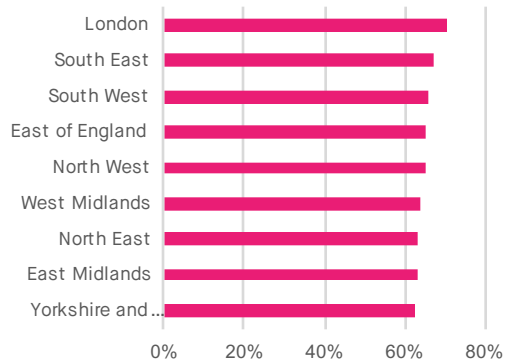
The East Midlands, West Midlands, North East and Yorkshire & Humberside have persistently under-performed compared to the national average.

The South-East maintained its higher than average performance. London has seen an especially dramatic improvement.

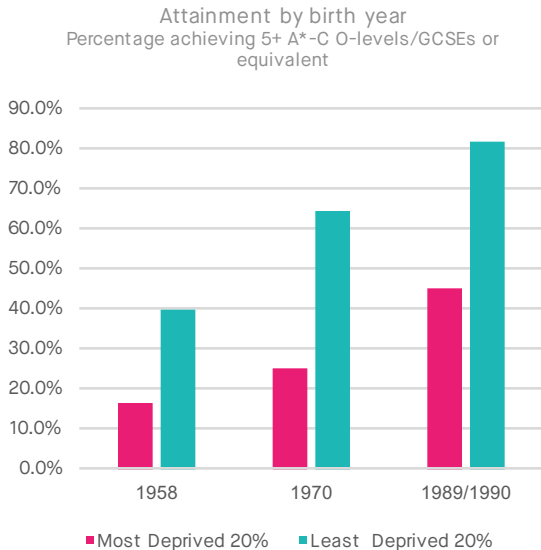
1970 cohort taking O-levels in 1985-1986  
Percentage achieving 5+ A-C O-levels



2013-14 results: Percentage achieving 5+ A\*-C  
GCSEs or equivalent



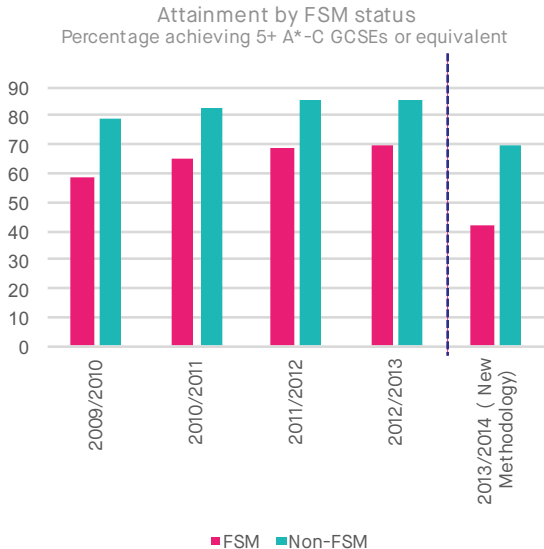
## Persistently large gap between richest and poorest



Previous research by Blanden and Macmillan (2014) comparing cohorts of individuals born in 1958, 1970 and 1989/90 shows that there are persistent, long-standing gaps in performance between children from the poorest and richest families.



In more recent years, much of the apparent narrowing of the gap between rich and poor disappears when more demanding measures are used

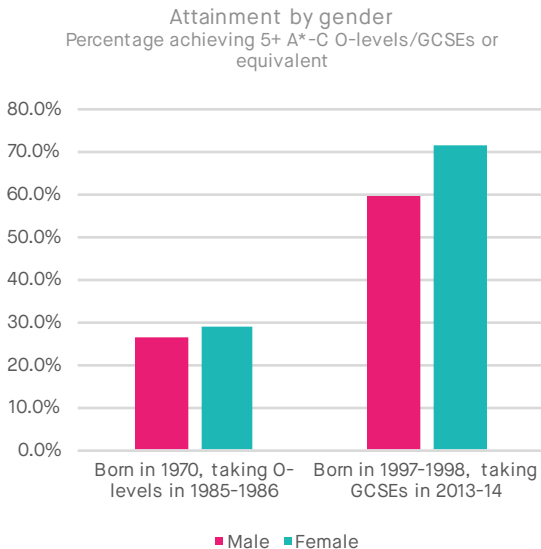


In recent years, there was an apparent narrowing of the gap in performance between pupils on free schools meals and other pupils. However, this mainly applied to the “5 A\*-C or equivalents” measure, not to 5 A\*-C including English and Maths (Lupton and Thomson, 2015).

In 2013-14, a new methodology was brought in to measure performance. The new methodology is more restrictive in what qualifications are counted as equivalent to GCSEs.

On this new measure, gap between FSM and non-FSM pupils is much larger.

## The gender gap has widened over time



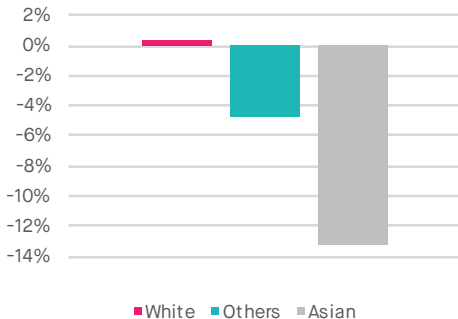
Qualifications and performance measures have changed over the past decades, making direct comparisons difficult.

However, the gender gap – with girls out-performing boys – appears to have become starker over time

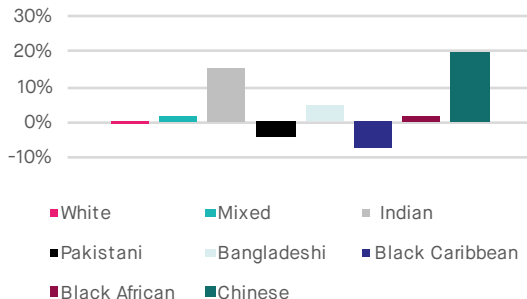
## Some ethnic minorities are doing much better than previously

Children from some ethnic groups are now doing much better than average. It is hard to compare against past performance as ethnicity was not captured in the same way; however the large penalty previously associated with “Asian” appears to have fallen dramatically. Chinese and Indian students outperform the average by a large margin.

1970 cohort taking O-levels in 1985-1986  
Percentage point difference between the proportion achieving 5+ A-C O-levels and the population average



2013-14 results: Percentage point difference between the proportion achieving 5+ A\*-C GCSEs or equivalent and the population average



### Conclusions from the latest GCSE results

- Marked disparities between regions, with over 70% of pupils in London achieving 5 good GCSEs compared to 63% in Yorkshire & Humber.
- Low proportion of pupils who receive Free School Meals achieving 5 A\* to C at GCSEs (40%) compared to those who do not receive Free School Meals (70%).
- Attainment varies across different ethnic minority groups. While over 85% of Chinese pupils get five good GCSEs, only around 59% of Black Caribbean pupils achieve this benchmark.

### Conclusions on changing pattern of inequalities over time

- Regional disparities persist, with some areas such as the North East, Yorkshire and the Humber and the East Midlands falling further behind and London's performance surging over the last three decades.
- The performance gap between the richest and the poorest has remained persistently large between the mid-1980s and the mid-2000s.
- When using the measure of '5 A\* to C grades', the attainment gap between FSM pupils and non-FSM pupils is observed to narrow over the last decade. However, when more demanding measures are applied, this progress is no-longer observable.
- Ethnic inequalities have altered radically but have not levelled out. While Asian students born in 1970 performed poorly, Chinese, Indian and Bangladeshi born in 1997/98 were the best performers. White students have fallen from over-performers to under-performers on average over the three decades.
- Between 1970 and 2013/2014, girls have advanced their attainment compared to boys.

## Primary school: age 11 results

## What we did

- Our analysis for age 11 focuses on evidence from cognitive test scores from two different cohort studies:
  - Children born in 1970 (British Cohort Study or BCS)
  - Children born in 2000 (Millennium Cohort Study, or MCS)
- We used the results from verbal reasoning tests. The rationale for doing this was threefold:
  - These tests are comparable over time (unlike KS2 tests which were introduced more recently, and other cognitive test scores which are not consistently available).
  - Evidence suggests that verbal reasoning is an important indicator of later attainment (Strand 2006).
  - Analysis of attainment levels in verbal reasoning tests provides a complementary method of assessing inequalities. It strips out the potential effect that grade inflation in public exams may have on attainment and the inequalities that we observe.
- We examine inequality across the following dimensions: region, income and ethnicity. We do not report results for gender as the evidence suggests that the performance of boys and girls may vary depending on the type of test.

## Regional differences are already apparent at primary school level

To analyse the data, we have split pupils into three groups depending on their test results: low ability, mid ability and high ability. The table below shows the distribution of each group across regions, and compared to the survey population.

Yorkshire & Humberside and the West Midlands have disproportionately high numbers of low-scoring pupils. The North West, London and Wales have disproportionately high numbers of high-scoring pupils.

Note: the survey populations for the MCS dataset are not the same as the national average as the sample was boosted in certain areas.

	Survey population	Low ability group	Mid ability group	High ability group
North East	4%	4%	3%	3%
North West	11%	9%	9%	14%
Yorkshire & Humber	9%	12%	9%	5%
East Midlands	7%	7%	8%	7%
West Midlands	8%	9%	7%	7%
East of England	9%	9%	11%	8%
London	10%	9%	10%	13%
South East	15%	15%	17%	14%
South West	9%	9%	9%	7%
Wales	18%	17%	17%	21%

## High ability children are more likely to come from the top income deciles

As before, we have split pupils into three groups depending on their test results: low ability, mid ability and high ability. The table below shows the distribution of each group across family income deciles, where decile 1 is made up of the poorest households, and decile 10 is made up of the richest.

A disproportionately high number – 14% of high scoring pupils - come from the richest 10% of households. Meanwhile 17% of low scoring pupils come from the poorest 10% of families.

Income decile	Survey population	Low ability group	Mid ability group	High ability group
1 Poorest	10%	17%	8%	5%
2	10%	15%	9%	6%
3	10%	12%	10%	8%
4	10%	11%	10%	8%
5	10%	9%	10%	11%
6	10%	9%	11%	10%
7	10%	8%	10%	12%
8	10%	7%	11%	13%
9	10%	6%	11%	12%
10 Richest	10%	5%	10%	14%



## Several ethnic minority groups out-perform the average, but many lag behind

As before, we have split pupils into three groups depending on their test results: low ability, mid ability and high ability. The table below shows the distribution of each group across ethnic groups.

The Chinese, Indian, Black African and Other Asian groups have disproportionately high numbers of high scoring pupils.

The Pakistani, Bangladeshi, Black Caribbean and other Black groups have disproportionately high numbers of low scoring pupils.

Note: these are figures for the MCS sample, which was boosted for certain ethnic groups– therefore figures not necessarily representative of the national population.

Ethnic group	Survey population	Low ability group	Mid ability group	High ability group
White	88.1%	86.1%	90.0%	88.9%
Mixed	2.5%	2.2%	2.7%	2.6%
Indian	1.7%	1.4%	1.6%	2.3%
Pakistani	2.8%	4.5%	2.1%	1.9%
Bangladeshi	1.2%	2.2%	0.6%	0.6%
Other Asian	0.6%	0.6%	0.5%	0.7%
Black Caribbean	0.7%	0.8%	0.7%	0.7%
Black African	1.4%	1.3%	1.4%	1.5%
Other Black	0.2%	0.3%	0.1%	0.2%
Chinese	0.1%	0.0%	0.0%	0.2%
Any other	0.5%	0.7%	0.4%	0.5%

## But these aspects of difference are related to each other

There are a number of inter-relationships between ethnicity, income and region. For example, Black Caribbean children are, on average, in lower income households than Indian children. Some regions have higher average incomes, and some regions have higher proportions of certain ethnic groups.

In the following slides, we present the results of regression analysis which explores which effects – ethnicity, income or region are strongest once other factors are taken into account.

In the following charts, the verbal reasoning test scores are standardised: mean 0, standard deviation 1. This means:

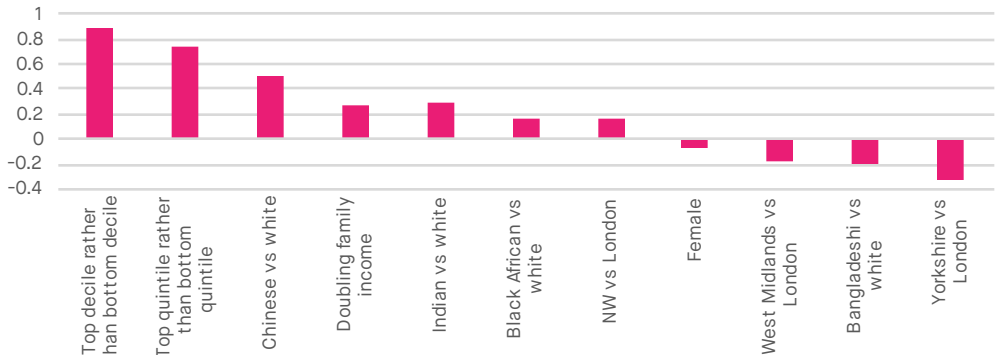
- a score of 0 represents the average score;
- a score of 1 loosely represents an average high ability score;
- a score of -1 loosely represents an average low ability score

## Income, ethnicity and region are all important drivers of test scores

Being in the top income decile rather than the bottom income decile increases a child's expected score by about 0.9 – so takes the expected score from being average to being high ability. This is after taking into account other effects such as region and ethnicity.

Doubling family income adds around 0.3 to the expected score.

Overall predictors of verbal reasoning score: children born in 2000

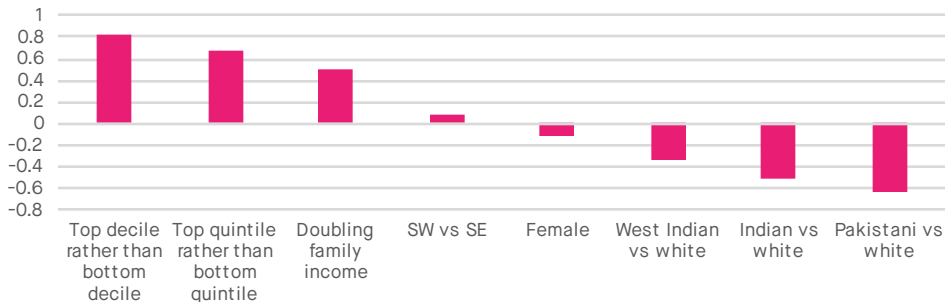


## For children born in 1970, income was important, but region less so

For children born in 1970, doubling family income had a stronger effect – adding 0.5 rather than 0.3 to child’s test score. However, being in top decile rather than the bottom decile was slightly less important – adding 0.8 rather than 0.9 to a child’s expected score.

For children born in 1970, non-white ethnic groups did much worse than the white group. Regional differences were very small.

Overall predictors of verbal reasoning score: children born in 1970



## Findings for 11 year-olds born in 2000

- Regional differences in attainment are already apparent by the end of primary school.
- High ability children at age 11 are much more likely to come from families in the top income deciles and low ability children to come from families in the bottom income deciles.
- When controlling for all other observable factors, we find that:
  - Being in the top income decile rather than the bottom income decile increases a child's expected score from being average to being high ability.
  - Ethnic differences are important in their own right with the performance of a Chinese child higher than for a white child similar in all other ways.
  - Regional differences matter: for instance, being from London rather than Yorkshire is associated with better attainment all other things being equal.

## Conclusions on changing pattern of inequalities over time

- The effect on attainment of doubling the family income was lower for children born in 2000 than those born in 1970 suggesting a flattening of inequalities.
- However, this masks more marked inequalities at the extremes: Being in the top rather than bottom decile became a stronger predictor of a high score in 2000 than 1970 (adding 0.8 for the 1970 cohort rather than 0.9 for the 2000 cohort)
- The geographic area a child comes from has become a more powerful predictive factor for those born in 2000 compared to 1970.