

# Free Schools in England

Jon Andrews and  
Rebecca Johnes  
November 2017

EDUCATION  
POLICY  
INSTITUTE

Research Area:  
School Performance,  
Admissions,  
and Capacity



## About the author

**Jon Andrews** is Director for School System and Performance and Deputy Head of Research at the Education Policy Institute. Prior to this, Jon worked in the Department for Education from 2003 to 2016. Jon is the principal author of EPI's 'The Performance of Local Authorities and Multi Academy Trusts' report and has co-authored reports on grammar and faith schools, school funding, the disadvantage gap, and world class standards.

**Rebecca Johnes**, Senior Researcher. Rebecca is principal author of EPI's report, *Entries to Arts Subjects at Key Stage 4*, and co-authored reports on grammar and faith schools. Before joining EPI, she worked in schools in both Japan and the UK, and also for a social integration charity, The Challenge.

## Acknowledgements

**Natalie Perera** is Executive Director and Head of Research at the Education Policy Institute. Natalie worked in the Department for Education from 2002 to 2014, where she led on a number of reforms, including childcare and early years provision and the design of a new national funding formula for schools. Between 2014 and 2015, Natalie worked in the Deputy Prime Minister's Office. Natalie is the principal author of the EPI's *Annual Report on Education in England* and *Implications of the National Funding Formula for Schools*.

## About the Education Policy Institute

The Education Policy Institute is an independent, impartial, and evidence-based research institute that aims to promote high quality education outcomes, regardless of social background.

Education can have a transformational effect on the lives of young people. Through our research, we provide insights, commentary, and critiques about education policy in England – shedding light on what is working and where further progress needs to be made. Our research and analysis spans a young person's journey from the early years through to higher education and entry to the labour market. Because good mental health is vital to learning, we also have a dedicated mental health team which considers the challenges, interventions, and opportunities for supporting young people's wellbeing.

Our core research areas include:

- Accountability and Inspection
- Benchmarking English Education
- Curriculum and Qualifications
- Disadvantaged, SEND, and Vulnerable Children
- Early Years Development
- School Funding
- School Performance and Leadership
- Teacher Supply and Quality
- Children and Young People's Mental Health

Our experienced and dedicated team works closely with academics, think tanks, and other research foundations and charities to shape the policy agenda.

This publication includes analysis of the National Pupil Database (NPD):

<https://www.gov.uk/government/collections/national-pupil-database>

The Department for Education is responsible for the collation and management of the NPD and is the Data Controller of NPD data. Any inferences or conclusions derived from the NPD in this publication are the responsibility of the Education Policy Institute and not the Department for Education.

Published November 2017, Education Policy Institute.

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. For more information, visit: [creativecommons.org](https://creativecommons.org).



# Contents

Contents.....	5
Foreword.....	7
Executive summary .....	8
Introduction .....	12
Part 1: Access to free schools .....	13
Background .....	13
Free school governance .....	14
Regional variation in free school openers .....	14
Free school places by small geographical areas .....	15
Location by need for new places .....	16
Location by quality of existing provision .....	18
Location by the need for new places and better schools .....	19
Summary .....	20
Part 2: The characteristics of free school pupils and their local communities .....	22
Background .....	22
Descriptive statistics .....	22
Pupils from white British backgrounds .....	24
Disadvantaged pupils .....	27
Summary .....	30
Part 3: School choice and preferences.....	32
Background .....	32
Propensity for free schools to be first preference.....	33
Applications to nearest school.....	35
Schools within reasonable travel distance .....	38
Summary .....	39
Part 4: Performance of free schools .....	41
Background .....	41
Ofsted grades.....	41
Attainment and progress .....	44
Summary .....	54
Conclusion.....	56
Annex 1: Estimating the number of school places in small area geographies.....	58
Reasonable travel distances .....	58

School places in small area geographies.....	59
Demand for new places in small area geographies .....	59
Quality of school places in small area geographies .....	59
Annex 2: Identifying a group of similar pupils .....	60

## Foreword

The Education Policy Institute is an independent, impartial, and evidence-based research institute which aims to promote high quality education outcomes for all, through analysis that both informs and influences the policy debate in England and internationally.

Over recent decades there has been significant reform of the structure of the schools system in England - not least with the introduction and scaling up of the academies programme. Since 2010, the government has introduced a free schools programme in which new schools can be established outside local government control and oversight, with central government funding both the capital and revenue costs. This programme is estimated to cost almost £10bn in capital terms alone by 2021.

The champions of free schools claim that they have multiple benefits, including: enabling more educational innovation; raising standards for children attending the schools; increasing competitive pressures in the wider school system and so improving standards in other schools; responding more effectively to parental preferences; and even cutting the capital costs of delivering new school places.

The critics of free schools argue that these schools: are not raising standards, but may lower them, for example through the employment of unqualified teachers; are often unpopular with parents and so have spare capacity; are largely focused in a small part of the country (namely London and the South East); are increasing social segregation in the schools system; and are diverting capital which could be used more efficiently either to create additional school places or to improve the state of existing school buildings.

Until now, there has been remarkably little detailed and impartial assessment of this major programme of educational reform. Of course, this is in part because the programme is relatively new, and there has been an absence of sufficient data on which to base sound conclusions. What this has meant is that much of the debate about free schools has so far relied upon small data sets, anecdotal reports and a large measure of fairly partisan and ideologically-driven hunches.

This EPI report seeks to provide some of the first detailed, impartial, and quantitative assessments of the outcomes of the programme - using data on parental preferences, attainment and progress, inspection outcomes, and access measures. The conclusions are necessarily tentative at this early stage, but provide some challenges to the assumptions of free schools critics and champions alike.

In this report, we have not sought to provide a value for money assessment of the free schools programme. We have not compared the costs of delivering this programme with a 'counterfactual' costs model. Nonetheless, the results of this report will be of great interest to all those interested in education reform. As ever, we welcome comment on the analysis and conclusions of this report.

Rt. Hon. David Laws

Executive Chairman, Education Policy Institute.

## Executive summary

Free schools are a growing part of the school system. The first schools opened in September 2011 and by the end of the 2016/17 academic year there were 347 open free schools; they are found in every region of England.

### Access to free schools

**Free schools still represent just 2 per cent of all state-funded schools and two-thirds of areas in England are not within a reasonable travel distance of either a primary or secondary free school.**<sup>1</sup> This relative sparsity in free school provision is important to keep in mind when considering their impact on the education system – in terms of expansion of school places, the effect on school choice, and on pupil outcomes.

The Department for Education argues that free schools are being set up in areas that are most in need of new places due to insufficient capacity. **The analysis presented here supports the claim that free school growth has been greatest in the areas most in need of new school places, but we also find significant numbers in areas where there is already an excess number of places.** Secondary free schools have added 76 places per 1,000 pupils in areas with greatest need, but have also added nearly 20 places per 1,000 pupils in areas with sufficient capacity.<sup>2</sup> However, this is also true for other new schools that opened over the same period. Overall, it is the expansion of existing schools that has generated the largest number of new school places within the system and this is more closely linked with need.

A stated aim of the free schools programme has been to target expansion in areas where there is a shortage of high quality provision. **To date, the free schools programme, particularly at secondary level, has been less successful in addressing areas of underperformance (even after controlling for the need for places).** Amongst the top performing areas, an additional 8.9 primary school places per 1,000 pupils were created in free schools. In areas in the bottom fifth there were an additional 8.7 places. At secondary level, free school places were slightly more likely to be established in areas with existing high-quality provision (31.6 places per 1,000 pupils in high performing areas and 25.2 places per 1,000 in low performing areas).

**Given the regional bias in the location of free schools – with many of these early openers operating in high-performing London – this may be addressed by focusing the programme in lower performing regions in the future** (whilst recognising that this needs to be balanced against the expected demand for new places in London and the South East and that the free schools programme is demand led).

### The characteristics of free school pupils and their local communities

**Pupils in free schools are more likely to have a first language other than English than pupils in other state-funded schools and much less likely to be from white British backgrounds.** In primary free schools 39.4 per cent of pupils have a first language other than English compared to 20.6 per cent of pupils nationally (equivalent figures for secondary schools are

---

<sup>1</sup> Defined by lower layer super output areas.

<sup>2</sup> 1,000 pupils refers to total population, not the number of additional places required.



24.9 and 16.2 per cent). In primary free schools 33.0 per cent of pupils are recorded as white British compared to 67.2 per cent of pupils nationally (equivalent figures for secondary schools are 44.9 and 69.5 per cent).

**Pupils in primary free schools are slightly less likely to have special educational needs and disabilities than pupils in other state-funded schools, though the proportions at secondary free schools are similar to other state-funded schools.**

Whilst their supporters have said that free schools are being set up in areas of high disadvantage, opponents have argued that they are socially selective. **Whilst the analysis here supports the claim that a large number of free school places have been created in areas of high disadvantage, the free school meal rates do not reflect higher levels of disadvantage and are in fact in line with national averages.** For example, 15 per cent of primary free school places are in the most disadvantaged tenth of areas and 8 per cent are in the least disadvantaged areas. However, the proportion of pupils who attend free schools that are eligible for free school meals is 13.3 per cent versus 14.7 per cent in all schools. Our analysis of reception aged pupils shows that in the most disadvantaged areas 32 per cent of children are eligible for free school meals, but this falls to 24 per cent in free schools. **This suggests that free schools are not necessarily attracting disadvantaged pupils in the proportions that might be expected given the communities that they serve. This is particularly the case for primary free schools.**

## School choice and preferences

**The assertion that free schools are popular with parents does not, as yet, appear to be supported by the available data, at least in comparison to other school types.** At primary level, just over a third of preferences to free schools were as a first preference. This was the lowest of any school type. This is partly a London effect, however outside of London the prevalence of first preferences for free schools was still lower than for any other school type, but not far behind the rates seen for community schools and voluntary aided schools. There was no such London effect for secondary free schools. These were well behind other school types in and out of London – for example, 28.9 per cent of preferences to secondary free schools in London were first preferences; the next lowest was voluntary aided schools at 39.6 per cent.

**In general, free schools have not yet established themselves as the preferred local school.** Nationally, half of pupils attend their nearest school. Where the nearest school is a free school, just 22 per cent of pupils at both primary and secondary level attend that school. However, some context is required for these statistics. **Free schools can be set up precisely because groups want to offer something different from what is available from other local schools.** That being the case, these schools may never expect to be the ‘default’ local school for many, and other parents may be willing for their children to travel to reach a free school.

There is also some indication that patterns of applications and preferences may change over time. It is not unreasonable to assume that some schools will take time to establish the local reputation required in order to attract applications. **The analysis presented here suggests that the longer a free school has been open, the greater the proportion of local pupils that will apply. This increase is seen in particular in the expression of first preferences.** Of pupils

whose nearest secondary school was a free school which had been open for four years, 34 per cent applied to it as their first preference; for pupils whose nearest secondary school which had been open for one year, or which was a new free school, the equivalent figure was 14 per cent.

**Whilst in most cases these rates remain lower than those of other schools, this analysis does suggest that pupil applications and numbers on roll may be lower in the first years of opening and then improve. This has implications when considering the short and long-term viability of a free school.**

## The performance of free schools

**There is insufficient data to reach robust conclusions on the effectiveness – good or bad – of free schools in terms of Ofsted outcomes and pupil attainment and progress.** Both present a mixed picture and both currently have serious limitations as to the extent to which they can be taken to be a measure of the effectiveness of the programme.

**Primary free schools have a similar propensity to be good or outstanding as other school types but the proportion that are rated as outstanding is nearly double that of all state-funded primary schools.** However, Ofsted outcomes suggest little difference between secondary free schools and other state-funded schools. They are equally likely to be rated as good or outstanding with free schools marginally ahead when considering outstanding. **Special and alternative provision free schools are much less likely than other state-funded special and alternative provision schools to be rated as outstanding.**

**Large numbers of free schools are yet to be inspected. Those that have been inspected have often had an inspection whilst growing** (i.e. before they have all year groups in place) and these inspections will reflect the quality of provision at that point, rather than when they are fully established. Historic data suggests that Ofsted outcomes for new openers are more volatile than those for established schools. **Over time we may see a different profile of Ofsted grades for free schools. In particular, the more recent openers have, on average, achieved higher grades than the early adopters.**

**Attainment and progress in free schools at the end of primary (Key Stage 2) is relatively poor but these statistics are derived from a small number of schools which are likely to be atypical of the programme as a whole** – almost half are former independent schools rather than new provision.<sup>3</sup> The results at the end of Key Stage 1 are good and derived from a larger number of schools, but come with the caveat that they do not control for level of development on entry to the school or other pupil characteristics.

**In 2017, the 54 free schools that had pupils at the end of Key Stage 4 achieved an average Progress 8 score of +0.10. Amongst the major school groups this was the joint highest Progress 8 score alongside converter academies.**<sup>4</sup> This means that, on average, pupils

---

<sup>3</sup> As such they are not 'new schools' in the way that free schools more generally are. Furthermore, as independent schools they would not have had to take part in National Curriculum assessments (though some independent schools do).

<sup>4</sup> In the published statistics local authority mainstream schools are treated as one group and includes community, foundation, voluntary aided and voluntary controlled schools. There is variation in the performance between these groups.

achieve a tenth of a grade higher in each subject than pupils with similar prior attainment nationally.

**Progress 8 measures do not control for the different profile of pupil characteristics seen in free schools.** Of particular significance is the higher proportion of pupils for whom English was not their first language that is seen in free schools. This is because these pupils, on average, tend to make more progress than pupils with similar prior attainment nationally. It may be this effect that is being observed rather than a free schools effect.

An initial 'similar pupils' analysis was only possible on the 2016 data which covers only a small number of schools. It is important that this type of analysis is carried out on later cohorts and at other key stages before commenting on the effectiveness of free schools. In addition this report has made no attempt to scrutinise participation, attainment and destinations post-16.

## Conclusion

Since their introduction in 2011, free schools have often been a divisive issue within the education system. The analysis presented in this report demonstrates strengths and weaknesses in the arguments on both sides of that debate.

Free schools are contributing to the supply of new school places and are more likely to have been set up in areas with the greatest need for places. But they have also been set up where there was already an excess in school places which may ultimately lead to inefficiencies in the school system. The programme has also been less successful in setting up free schools in areas where greater quality school places are needed.

Free schools do not appear to be initially popular with parents, although there is some evidence that this may change over time once they are established. Free schools are more prevalent in areas of high deprivation, but their intake of disadvantaged pupils is only average, suggesting that the pupils that attend free schools are not fully representative of the areas that they serve.

It is difficult so far to draw conclusions about the success or otherwise in improving pupil outcomes.

## Introduction

Free schools in England were introduced in 2010 by the Coalition Government, and were based on a similar concept in Sweden and the 'charter school' model adopted by parts of the United States and Canada.

The Academies Act 2010 enshrined free schools in law, giving parents, local communities, charities, universities, religious groups and other organisations the power to set up new, state-funded free schools. The first 24 free schools opened in September 2011 and there were 347 free schools in operation during the 2016/17 academic year.

Free schools are a type of academy and as such operate outside of the control of local authorities and have the same freedoms, including to set teachers' pay and conditions, to set term dates and the length of school days and are exempt from delivering the National Curriculum. Free schools are state-funded (they receive funding directly from the Department for Education), not-for-profit schools.

This report analyses the coverage of free schools across England, considers whether they have helped to add capacity to areas in need of additional school places or higher quality school places, looks at whether they are popular with parents, their demographic composition and, finally, emerging findings of their impact on pupils' attainment and progress.

The report does not analyse data in relation to post-16 performance or student destinations. Nor does it attempt to make an assessment of whether the free schools programme provides value for money.

This publication includes analysis of the National Pupil Database, the school census, Ofsted grades, school performance tables and school preference data. In addition to primary analysis it draws on a wide range of statistics published by the Department for Education.

## Part 1: Access to free schools

### Background

The Department for Education states that “proposers of free schools are required to demonstrate parental demand [and] whether there is either a need for additional school places or a need for additional high-quality school places in the local area.”<sup>5</sup> In their 2017 review of capital funding for schools, the National Audit Office concluded that “free schools often meet a demographic need for new school places, but they are also creating spare capacity, which may have implications for schools’ financial sustainability.”<sup>6</sup>

The first free schools opened in September 2011. This first wave of openers comprised a total of 24 schools: 7 secondary free schools and 17 primary schools. The first special, alternative provision and 16-19 were opened the following year. After relatively fast expansion in the second and third year the pace of openers has slowed. By the start of the 2016/17 academic year, there were 345 free schools, educating around 83,000 pupils. A further two schools opened during the 2016/17 academic year bringing the total to 347.

**Figure 1.1: Number of open free schools and number of pupils by year open<sup>7</sup>**

		Free schools	Free schools - 16-19	Free schools - special	Free schools - alternative provision
Number of free schools	Sep-11	24	0	0	0
	Sep-12	70	1	3	5
	Sep-13	143	6	8	18
	Sep-14	198	14	11	29
	Sep-15	237	16	19	32
	Sep-16	269	18	23	35
Number of pupils in free schools	Sep-11	3,900	0	0	0
	Sep-12	10,100	0	0	200
	Sep-13	21,800	500	200	500
	Sep-14	38,100	1,900	400	800
	Sep-15	55,900	3,200	700	1,000
	Sep-16	76,500	4,100	1,100	1,200

This table excludes the eight free schools that were recorded as closed by the end of the 2016/17 academic year.<sup>8</sup>

In this section, we consider the extent to which the Department for Education’s conditions have been met by the schools that have been opened between September 2011 and May 2016. When considering the geographic coverage of free schools it should be remembered

<sup>5</sup>Department for Education, *Mainstream free schools: assessing the need for a new school*, March 2015

<https://www.gov.uk/government/publications/mainstream-free-schools-assessing-the-need-for-a-new-school>

<sup>6</sup> National Audit Office, *Department for Education: Capital funding for schools*, February 2017

<https://www.nao.org.uk/wp-content/uploads/2017/02/Capital-funding-for-schools.pdf>

<sup>7</sup> A further two free schools opened during the 2016/17 academic year bringing the total to 347.

<sup>8</sup> These schools have not all fully closed. A school may be reported as closed on Edubase because it has re-opened under a different name or governance arrangement.

that the programme is ‘demand led’ in that it relies on groups applying to the Department for Education rather than the Department directing where a school should be located.

## Free school governance

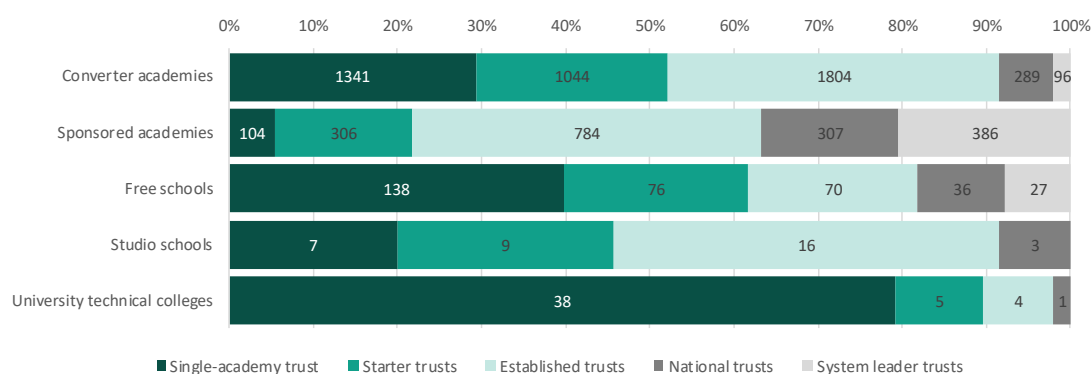
Free schools are a type of academy, and as with converter and sponsored academies, are overseen by an academy trust (either a single-or multi-academy trust). The Department for Education categorises academy trusts by the number of pupils that attend a trusts’s schools:

- <1,200 pupils: starter trusts;
- 1,200 – 5,000 pupils: established trusts;
- 5,000 – 12,000 pupils: national trusts; and
- 12,000+ pupils: system leader trusts.

Of the 347 free schools open by the end of the 2016/17 academic year, 138 (40 per cent) were in single-academy trusts (see Figure 1.2). This means that the prevalence of ‘stand-alone’ free schools is higher than that of converter academies and much higher than that of sponsored academies.

However, free schools are twice as likely as converter academies to be in large national, or system leader, trusts. These characteristics are likely to reflect the different routes by which a free school may arise.

**Figure 1.2: Governance of free schools that were open by the end of the 2016/17 academic year**



## Regional variation in free school openers

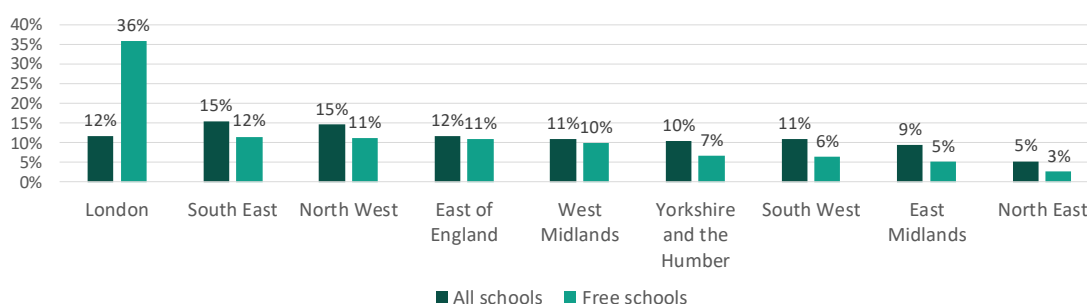
Whilst growth in the number of free schools has been steady since the inception of the free schools programme, they still represent less than 2 per cent of all state-funded schools and many areas of the country have no free school places at all.

Free schools are now found in all regions of England, however, of the 347 free schools open by the end of the 2016/17 year, 124 were in London. This was over three times that in the next three regions (the South East, North West and the East of England). By contrast, the North East had just 9 free schools. Figure 1.4 demonstrates that this is not just a case of different sized regions. London accounts for 12 per cent of all state-funded schools but 36 per cent of free schools, the North East has 5 per cent of all state-funded schools but 3 per cent of free schools.

**Figure 1.3: Number of free schools by end of the 2016/17 academic year by region**



**Figure 1.4: The percentage of all state-funded schools and all free schools that were in each region at the end of the 2016/17 academic year**



### Free school places by small geographical areas

We now estimate the number of free school places that are available in each small area in England to illustrate the current reach of free schools.

We calculate a proxy catchment area for each open free school by identifying the lower layer super output areas (LSOAs) that are within a reasonable travel distance of the school.<sup>9</sup> The total number of places in the school is then divided equally between each of these LSOAs. Repeating for each free school gives a total number of free school places in each area and adopting the same approach across all schools provides a proxy pupil count in each area. This enables us to produce a measure of relative free school density for each LSOA in England.<sup>10</sup>

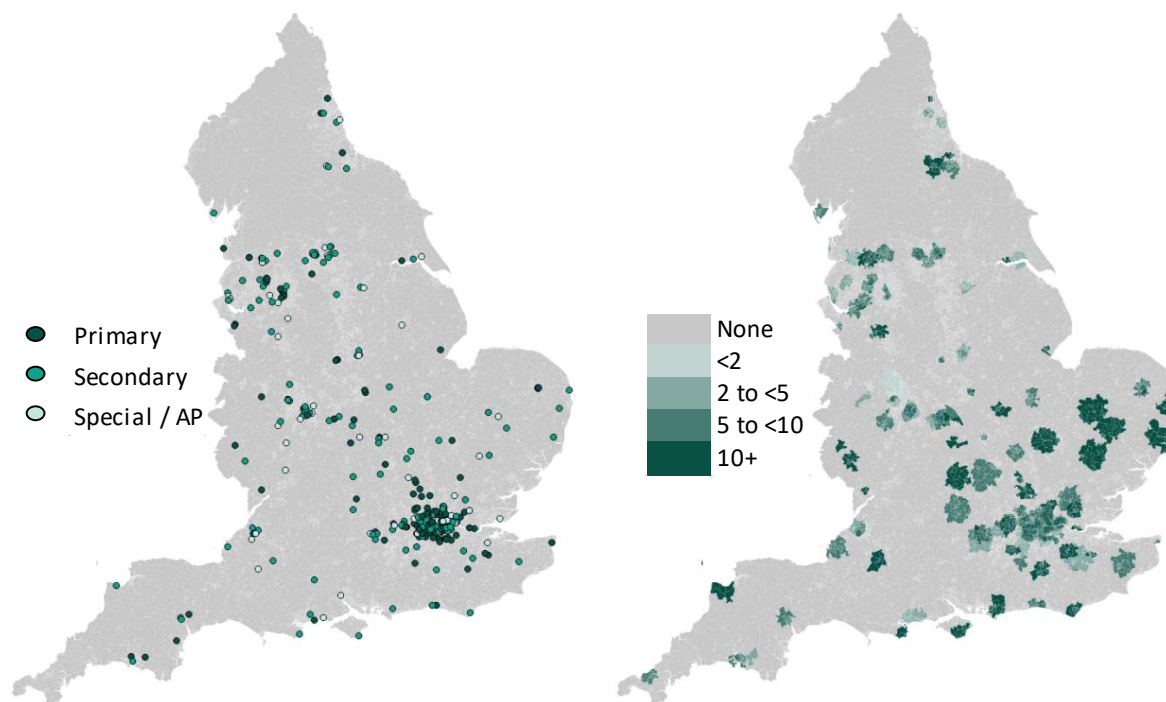
Figure 1.5 maps the location of free schools in England (left) and the relative density of free school places (right). It illustrates the high density of free school places in London, the South East, the East of England and the urban areas of the North West. But large areas of the country are currently untouched by the growth of free schools. **In fact, nearly two-thirds of all LSOAs in England have no free school places at either primary or secondary level.** This

<sup>9</sup> LSOAs are small geographic areas with a population of between 1,000 and 1,500. A reasonable travel distance is the distance travelled to school by up to 90 per cent of pupils at schools of the same phase and area type nationally. Further details are provided in Annex 1.

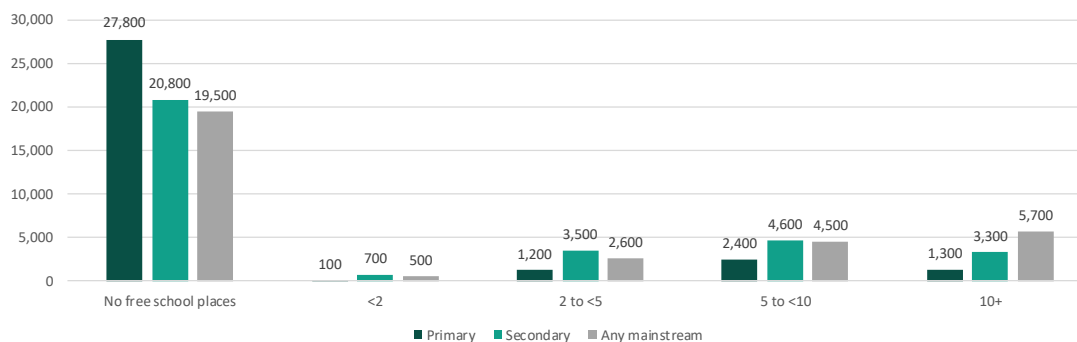
<sup>10</sup> School capacity data are taken from the School Capacity Survey from May 2016. This covers mainstream free schools only and excludes any free school opened after that point.

increases to three quarters in the North East and four-fifths in the East Midlands, whilst around one-sixth of LSOAs have at least 10 places (Figure 1.6).

**Figure 1.5: The location of free schools by end of the 2016/17 academic year and the relative density of free school places in primary and secondary schools (May 2016)<sup>11,12</sup>**



**Figure 1.6 Number of LSOAs by number of free school places, May 2016**



### Location by need for new places

Using a similar approach to identifying the reach of free schools used above, we calculate the number of school places, and number of pupils, at LSOA level towards the end of the 2010/11 academic year and apply projected growth in numbers between 2011 and 2016 derived from local authority estimates.<sup>13</sup>

<sup>11</sup> The school capacity dataset does not include special and alternative provision schools and therefore they are excluded from the density analysis.

<sup>12</sup> Contains National Statistics data © Crown copyright and database right 2016.

Contains OS data © Crown copyright and database right 2016

<sup>13</sup> The methodology is set out in full in Annex 1.



For each LSOA we are then able to calculate a modelled estimate of how full local schools are (number of pupils on roll divided by number of places) for spring 2016 – we call this the school ‘occupancy rate’. This is what we estimate would have been the position if there had been no changes in the number of places available in local schools – through closures, expansion of existing schools, or new provision including free schools. LSOAs are then grouped by this rate and we examine how the number of places has changed through these three routes (see Figure 1.7 and Figure 1.8).<sup>14</sup>

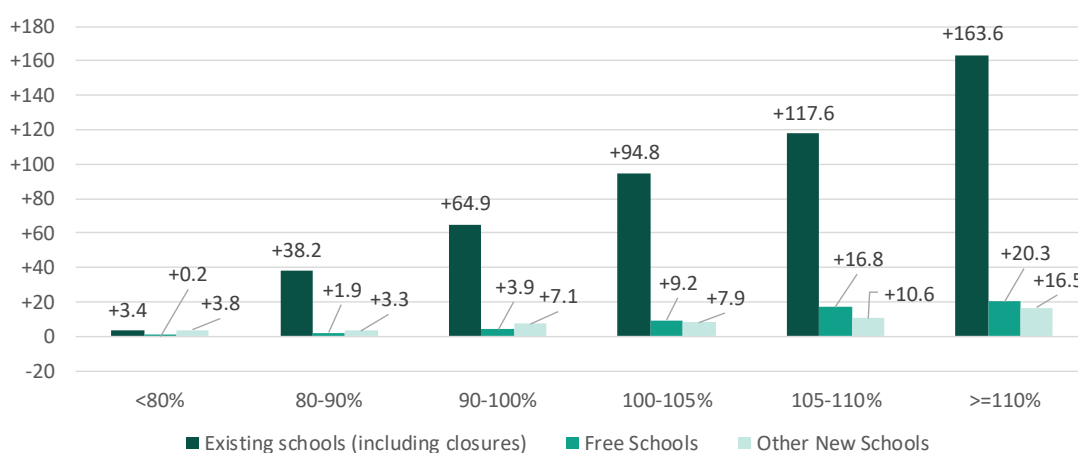
We find that:

- **At both primary and secondary level, free school places have been created at a greater rate in areas that were estimated to experience a shortage in school places, suggesting some success at linking free school opening to areas in need of new school places.** Primary free schools created just under 17 places per 1,000 pupils in areas where school occupancy was estimated to be between 105 and 110 per cent, whilst just under 4 places per 1,000 pupils were created in areas where occupancy was between 90 and 100 per cent. The equivalent figures at secondary level were 51 and 31 places.
- **Free school places have been created in areas where there was already likely to be an excess in school places, particularly at secondary. However, this is not unique to free schools. There was also some expansion in other schools in areas where new school places may not have been needed.** Secondary free schools created 20 new places per 1,000 pupils in areas where school occupancy was estimated to be between 80 and 90 per cent. Existing schools in these areas had a net change of 14 places per 1,000 pupils.
- **At both primary and secondary level, changes in existing schools were more strongly associated with estimated need than free schools were.** Growth in existing schools still made up the majority of additional places particularly at primary level (in areas in need of new places, the expansion of existing schools increased places at a rate eight times that of free schools).

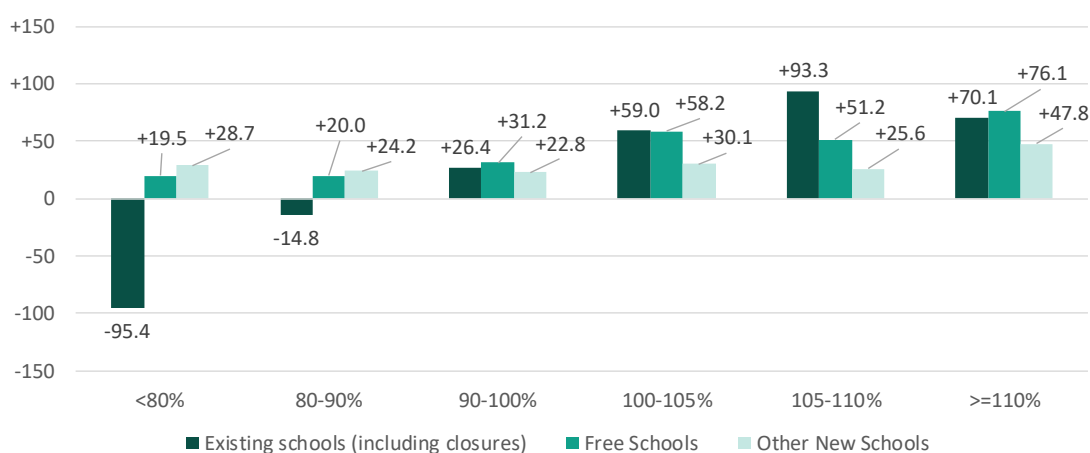
---

<sup>14</sup> The occupancy rate is essentially “how full would schools have been without any changes in the number of places?”

**Figure 1.7: Change in number of school places per 1,000 pupils between 2011 and 2016 by estimated school occupancy rates at LSOA level - primary**



**Figure 1.8: Change in number of school places per 1,000 pupils between 2011 and 2016 by estimated school occupancy rates at LSOA level – secondary**



### Location by quality of existing provision

We now group LSOAs by the quality of school places at the end of the 2010/11 academic year. We choose this point as it reflects the position at the start of the free schools programme. The quality of places is defined according to the latest Ofsted rating of all schools within reach of the LSOA at that point.<sup>15</sup>

We find that:

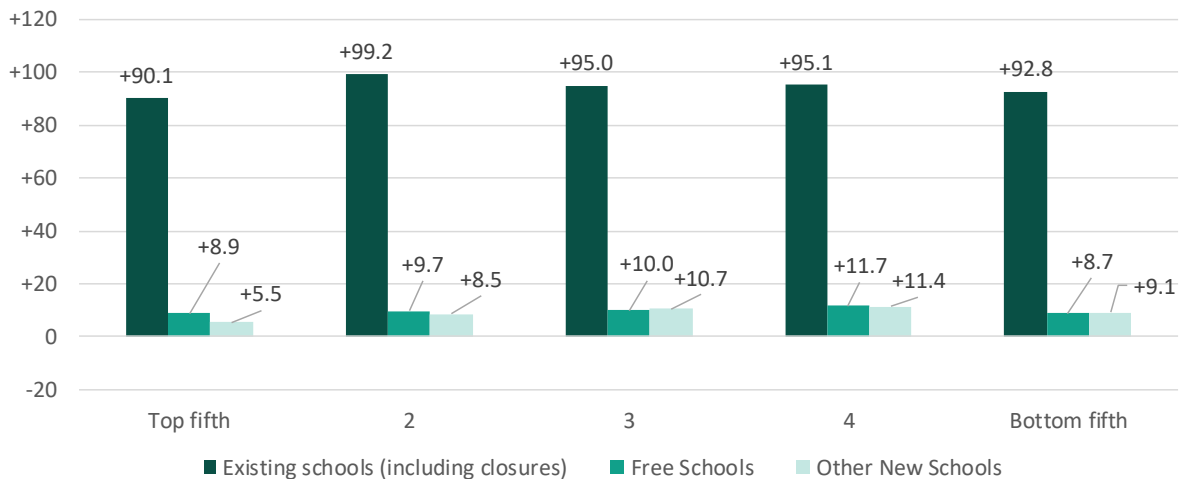
- At primary level there is little relationship between the quality of existing provision and the establishment of new free school places. In LSOAs amongst the top fifth for Ofsted performance an additional 8.9 places per 1,000 pupils were created in free schools. In areas in the bottom fifth there were an additional 8.7 places per 1,000 pupils (Figure 1.9).
- At secondary level free school places were slightly more likely to be established in areas with existing high-quality provision. In LSOAs amongst the top fifth for Ofsted performance an additional 31.6 places per 1,000 pupils were created in free schools.

<sup>15</sup> The methodology is set out in full in Annex 1.

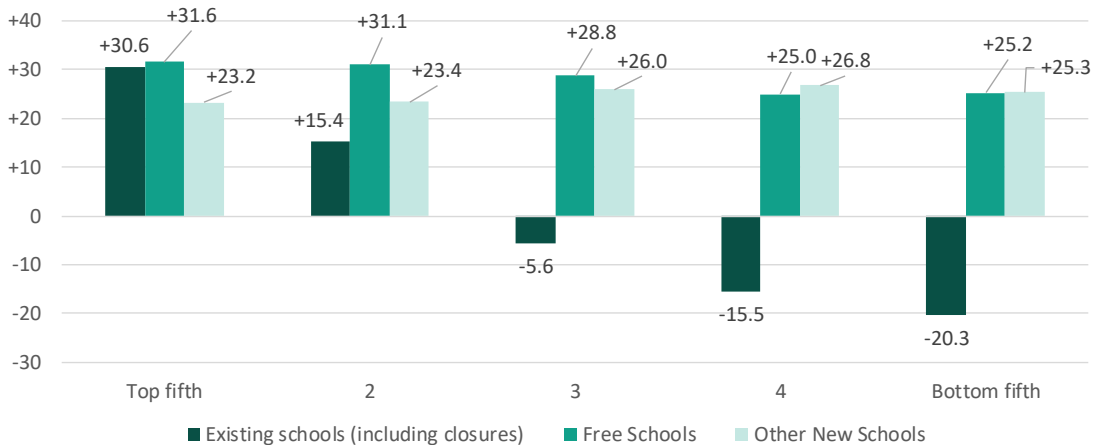
In areas in the bottom fifth there were an additional 25.2 places per 1,000 pupils (Figure 1.10).

It should be remembered that it is difficult to interpret this figure in isolation given that schools may be being set up due to the need for more school places, and the disproportionately large number of free schools that have been set up in London where standards are generally higher than elsewhere.

**Figure 1.9: Change in number of school places between 2011 and 2016 by quality of school places by LSOA - primary**



**Figure 1.10: Change in number of school places between 2011 and 2016 by quality of school places by LSOA – secondary**



### Location by the need for new places and better schools

We now examine the creation of capacity by free schools by both the estimated local capacity and the quality of provision. Each LSOA is categorised in the way set out above on both dimensions. The number of free school places per 1,000 pupils is then calculated.

This analysis is set out in Figure 1.11 and Figure 1.12. Within these tables:

- If free schools are opening where additional places are needed, then the number of places should increase, moving left to right.

- If free schools are opening where standards are currently low, then the number of places should increase, moving top to bottom.

We find that the free schools programme has been reasonably successful in linking new places to areas of need. This is particularly true at primary level. However, it appears to have been less successful at introducing new places where standards, at the start of the programme, were low.

**Figure 1.11: Change in number of school places at LSOA level (per 1,000 pupils) between 2011 and 2016 by quality of school places and estimated school occupancy rates – primary**

		Estimated school occupancy					
		<80%	80-90%	90-100%	100-105%	105-110%	>=110%
Quality	Top fifth	0.0	0.2	1.7	5.6	16.5	20.2
	2	0.0	0.5	5.1	7.7	13.5	20.3
	3	0.0	0.9	3.6	9.5	15.9	22.4
	4	0.0	2.5	3.4	13.2	19.3	23.4
	Bottom fifth	0.5	4.1	5.0	9.2	19.5	14.3

**Figure 1.12: Change in number of school places at LSOA level (per 1,000 pupils) between 2011 and 2016 by quality of school places and estimated school occupancy rates – secondary**

		Estimated school occupancy					
		<80%	80-90%	90-100%	100-105%	105-110%	>=110%
Quality	Top fifth	9.5	19.1	30.8	48.4	49.2	83.5
	2	33.3	18.5	27.4	70.9	65.3	64.6
	3	19.2	17.5	36.0	61.1	61.9	41.5
	4	19.7	18.7	31.5	58.0	22.4	-
	Bottom fifth	16.8	25.5	29.4	51.5	11.9	-

## Summary

Free schools are a growing part of the school system. The first schools opened in September 2011 and by the end of the 2016/17 academic year there were 347 open free schools. They are found in every region of England.

However, they still represent just 2 per cent of all state-funded schools and we found that two-thirds of the country are not within a reasonable travel distance of any free school.<sup>16</sup> This relative sparsity of free schools is important to keep in mind when considering their impact on the system – in terms of expansion of school places, the effect on school choice, and on pupil outcomes.

The analysis presented here supports the claim that free school growth has been greatest in the areas most in need of new school places, but we also find significant numbers in areas where there is already an excess of capacity. This is also true for other new schools opened over the same period. Overall, it is the expansion of existing schools that generates the most capacity within the system and this is more closely linked with need.

To date, the free schools programme, particularly at secondary level, has been less successful in addressing areas of underperformance (even after controlling for the need for places). Given the regional bias in the location of free schools – with many of these early openers

<sup>16</sup> Defined by lower layer super output areas.

operating in high performing London – this may be addressed with a greater emphasis in developing the programme in lower performing regions. As the free schools programme is demand led this will mean finding ways of generating applications from these areas.

## Part 2: The characteristics of free school pupils and their local communities

### Background

Information on the characteristics of pupils that attend free schools is, as with all state-funded schools, collected via the School Census. Amongst a range of data, the School Census records eligibility for free school meals, first language, ethnic group, and special educational needs and disabilities at an individual pupil level. This is then published by the Department for Education at a variety of levels from national aggregations to individual schools.

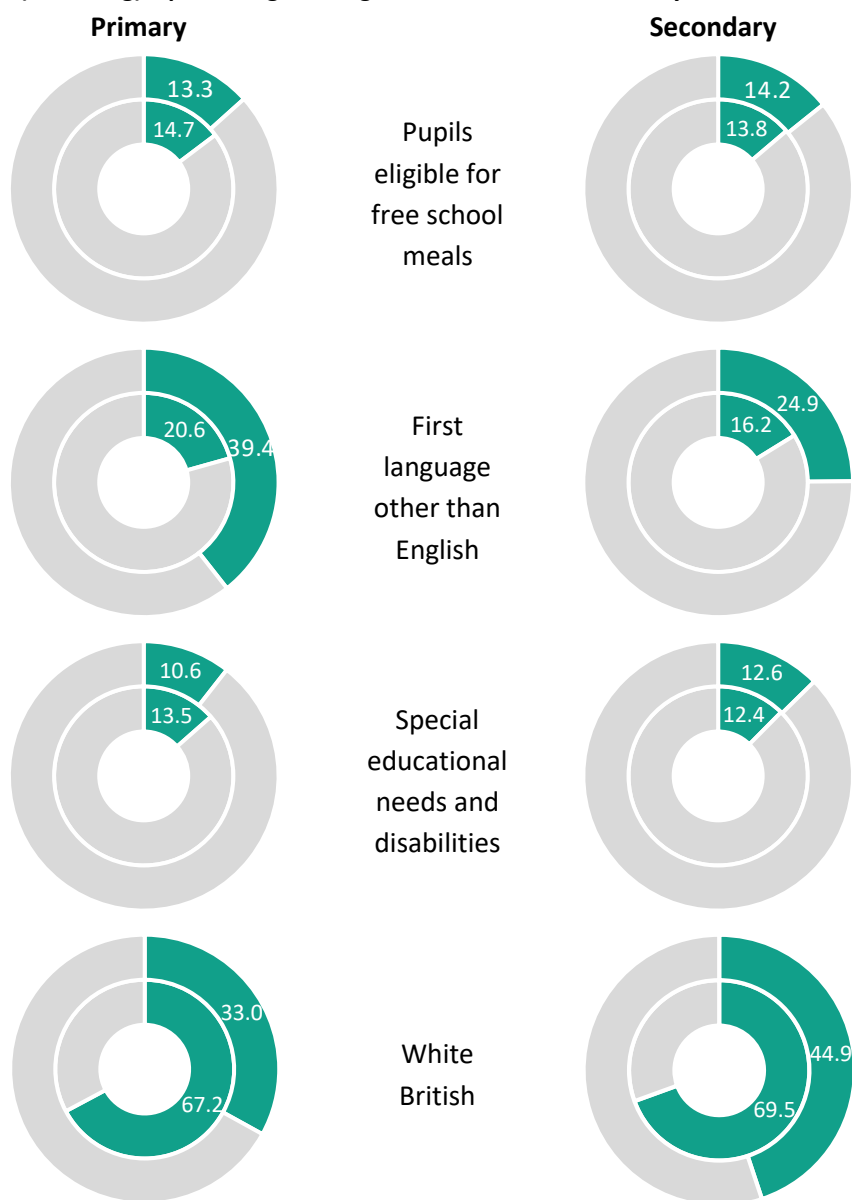
We use this data to examine the characteristics of pupils that attend free schools and the areas served by free schools. In doing so we consider the extent to which free schools reflect their local communities.

### Descriptive statistics

Department for Education statistics show that:

- **Pupils in free schools have a similar propensity to be eligible for free school meals as pupils in other state-funded schools.** In primary free schools 13.3 per cent of pupils are eligible for free school meals compared with 14.7 per cent of pupils nationally. In secondary free schools 14.2 per cent of pupils are eligible for free school meals compared with 13.8 per cent of pupils nationally.
- **Pupils in free schools are more likely to have a first language other than English than pupils in other state-funded schools.** In primary free schools 39.4 per cent of pupils have a first language that is other than English compared with 20.6 per cent of pupils nationally (equivalent figures for secondary schools are 24.9 and 16.2 per cent).
- **Pupils in free schools are much less likely to be from white British backgrounds than pupils in other state-funded schools.** In primary free schools 33.0 per cent of pupils are recorded as white British compared to 67.2 per cent of pupils nationally (equivalent figures for secondary schools are 44.9 and 69.5 per cent).
- **Pupils in primary free schools are slightly less likely to have special educational needs and disabilities than pupils in other state-funded schools though the proportions at secondary free schools are similar to those at other state-funded schools.** In primary free schools 10.6 per cent of pupils are recorded as having special educational needs and disabilities compared with 13.5 per cent in all state-funded schools (equivalent figures for secondary schools are 12.6 and 12.4 per cent).

**Figure 2.1: The characteristics of pupils attending free schools (outer ring) and all state-funded schools (inner ring) – percentage having each characteristic, January 2017<sup>17</sup>**



<sup>17</sup> Department for Education, *Schools, pupils and their characteristics*, June 2017 <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2017>; and Department for Education, *Special educational needs in England*, July 2017 <https://www.gov.uk/government/statistics/special-educational-needs-in-england-january-2017>

## Pupils from white British backgrounds

The statistics set out above show that the proportion of pupils from white British backgrounds is much lower in free schools than across all state-funded schools particularly at primary. There is likely to be a close correlation with the similar results seen for first language.

Figure 2.2 shows how the rates vary at school level. It shows that white British pupils are in a minority in around 60 per cent of primary free schools. Figure 2.3 shows that white British pupils are in a minority in just over half of secondary free schools. These figures require some context. As set out in Part 1, a disproportionate number of free schools have been set up in London. The demographic profile in the capital is very different from other regions of England. In fact, in the capital nearly three-quarters of school aged pupils are from non-white British backgrounds.

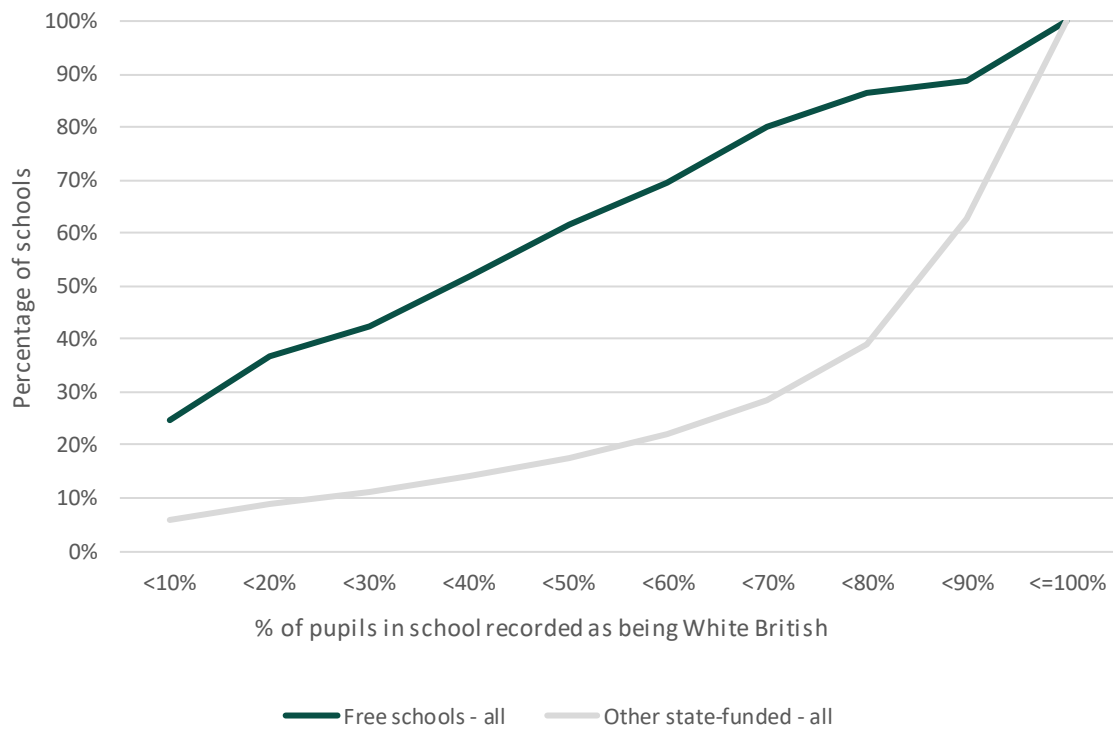
Figures 2.4 and 2.5 split the school distributions described previously by London and elsewhere. They show that the distribution of non-white British pupils between free schools in London is similar to other schools in the city. For example, in London's primary free schools, white British pupils are in the minority in four-fifths of schools – the same rate as seen in other state-funded primary schools.

Outside of London, free schools still tend to have higher proportions of non-white British pupils than other schools. In primary free schools outside of London, white British pupils were in the minority in 48 per cent of schools compared with 10 per cent in other schools. The equivalent figures for secondary were 33 per cent and 11 per cent.

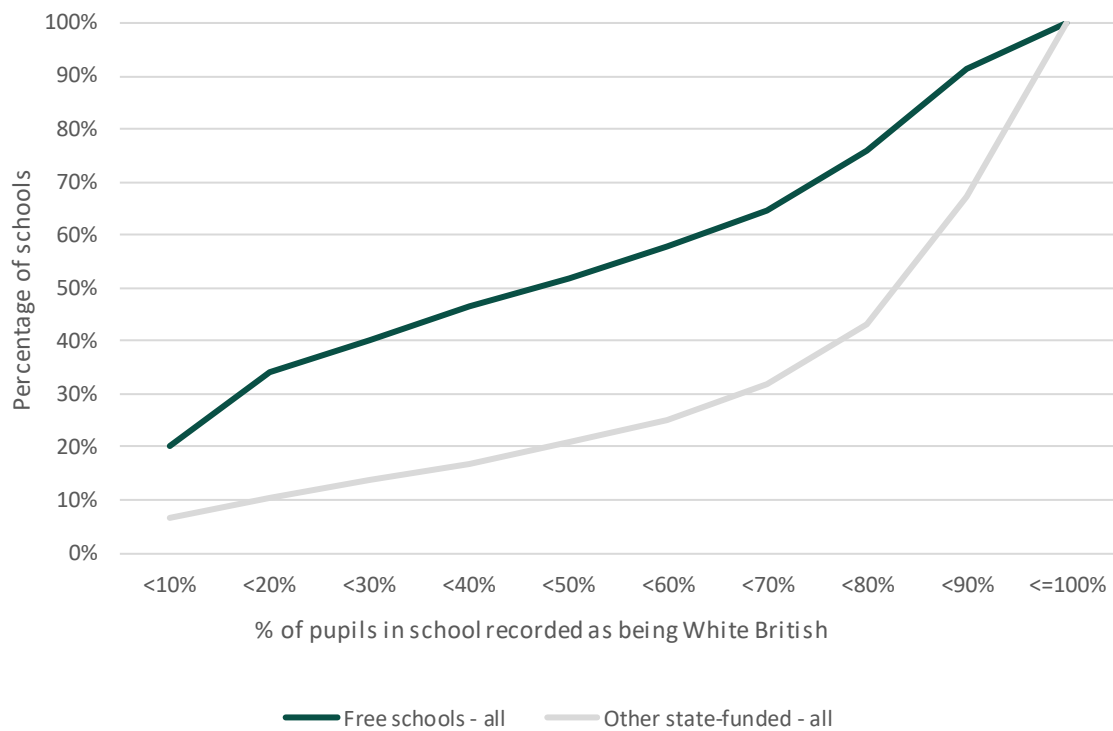
This pattern will in part reflect that a number of faith-based free schools have opened. Of the 347 free schools open by the end of the 2016/17 academic year, 62 have a recorded religious designation including 27 of a Christian denomination, 14 Muslim, 9 Sikh and 6 Jewish.



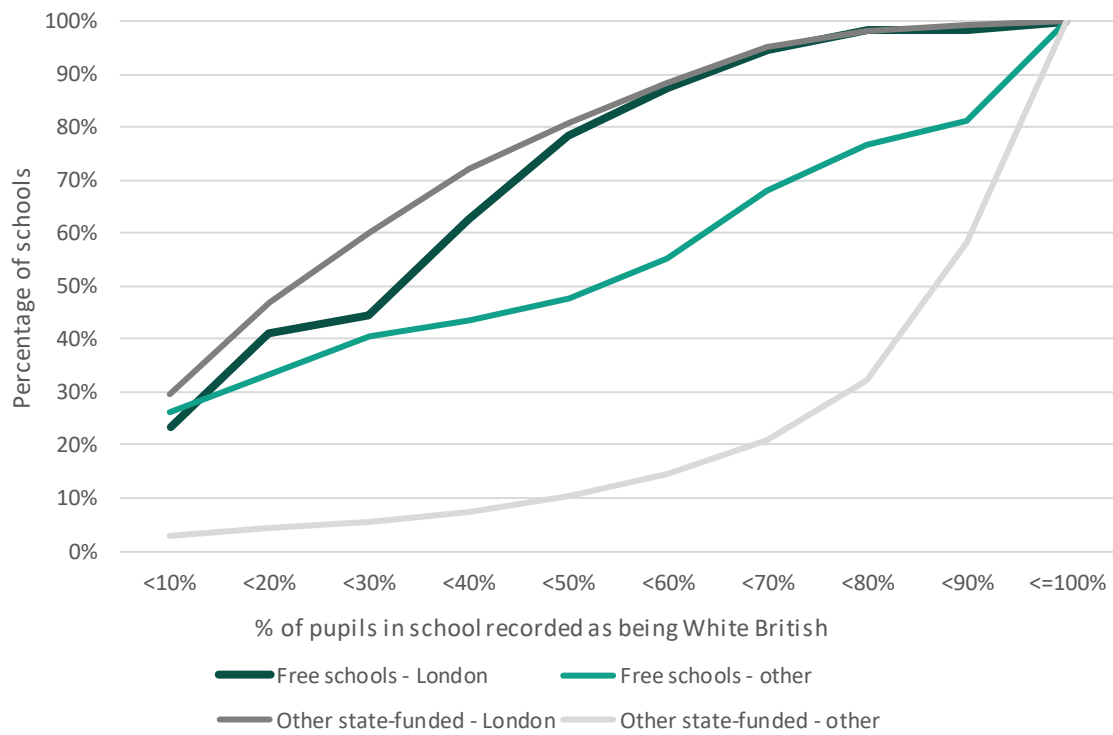
**Figure 2.2: Cumulative distribution of schools by proportion of pupils that are white British by type of school, January – 2017 primary**



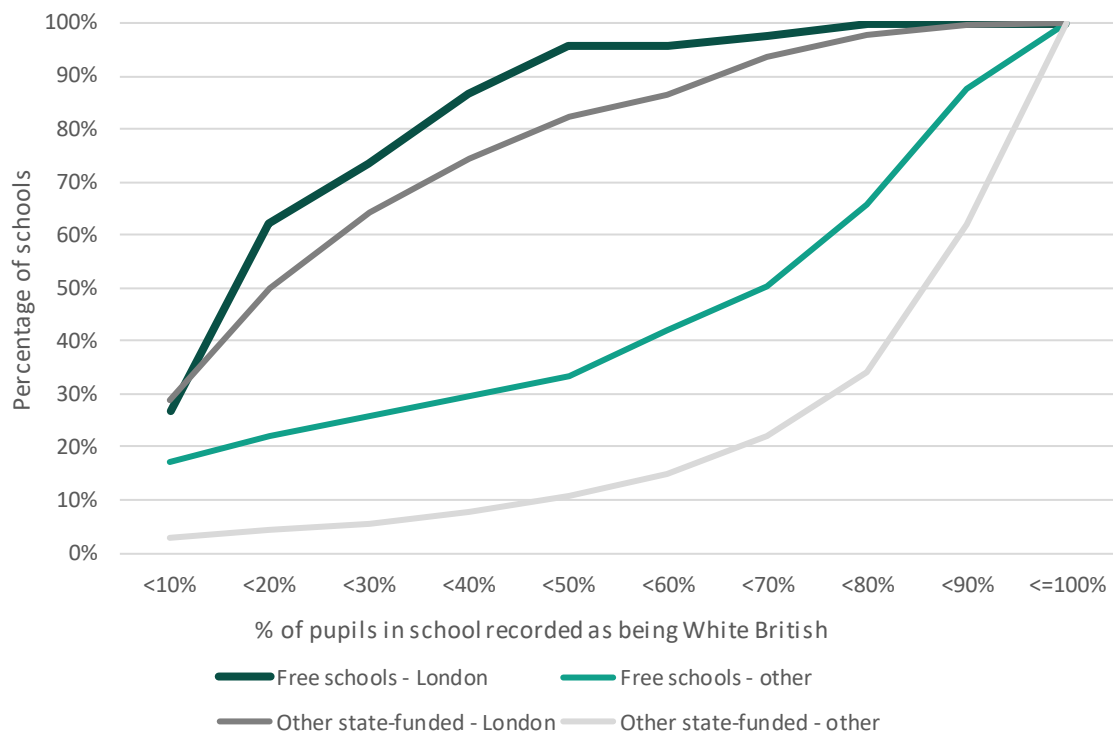
**Figure 2.3: Cumulative distribution of schools by proportion of pupils that are white British by type of school, January – 2017 secondary**



**Figure 2.4: Cumulative distribution of schools by proportion of pupils that are white British by type of school and region, January – 2017 primary**



**Figure 2.5: Cumulative distribution of schools by proportion of pupils that are white British by type of school and region, January – 2017 secondary**



## Disadvantaged pupils

The Department for Education's published statistics set out above suggest that the proportion of pupils from low income backgrounds is similar in free schools to all state-funded schools with, if anything, the proportion in primary schools being slightly lower.

We examine this further by first considering how the creation of free school places relates to the local area. As set out above, we estimate the change in capacity in each LSOA from changes to existing schools, free schools, and other new schools. This is then broken down by the Income Deprivation Affecting Children Index (IDACI). IDACI measures the proportion of children in an area that live in low income families.

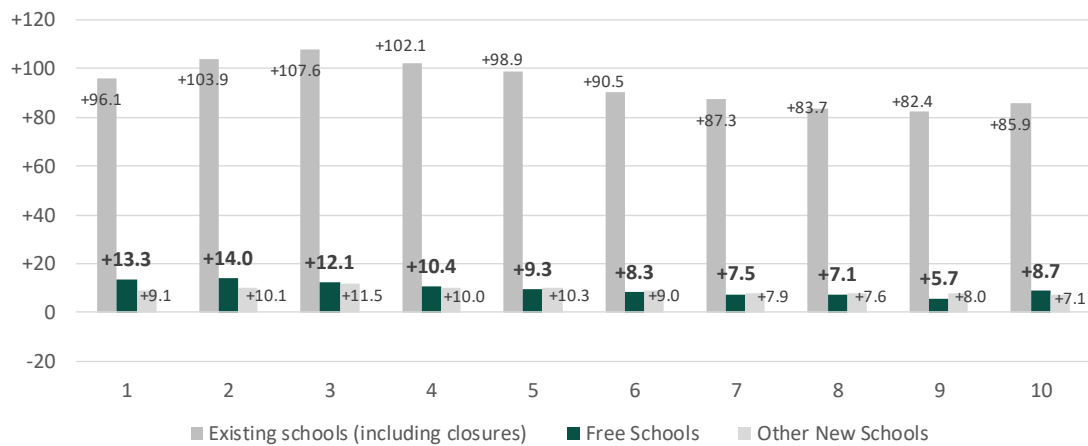
Figure 2.6 (primary) and Figure 2.7 (secondary) show the number of free school places created per 1,000 pupils in ten bands of IDACI scores where 1 is the most deprived and 10 the least deprived. They show that:

- **At primary level, free school places have been created at a greater rate in areas of high deprivation than low deprivation.** In the most deprived band, 13.3 places were created per 1,000 pupils; in the least deprived it was 8.7 (and in the second least deprived it was 5.7).
- **The creation of other school places (through existing schools or other new schools) was also correlated with disadvantage in the local area.** However, it was areas with slightly lower levels of disadvantage (but still above average) that saw the greatest increases.
- **At secondary level, free school places have been created at a greater rate in areas of high deprivation than areas of low deprivation.** In the most deprived band, 36.1 places were created per 1,000 pupils; in the least deprived it was 22.6 (and in the second least deprived it was 21.2).
- **The creation of places in other new schools was also strongly correlated with levels of disadvantage in the area.** However, there was no such relationship for existing schools.

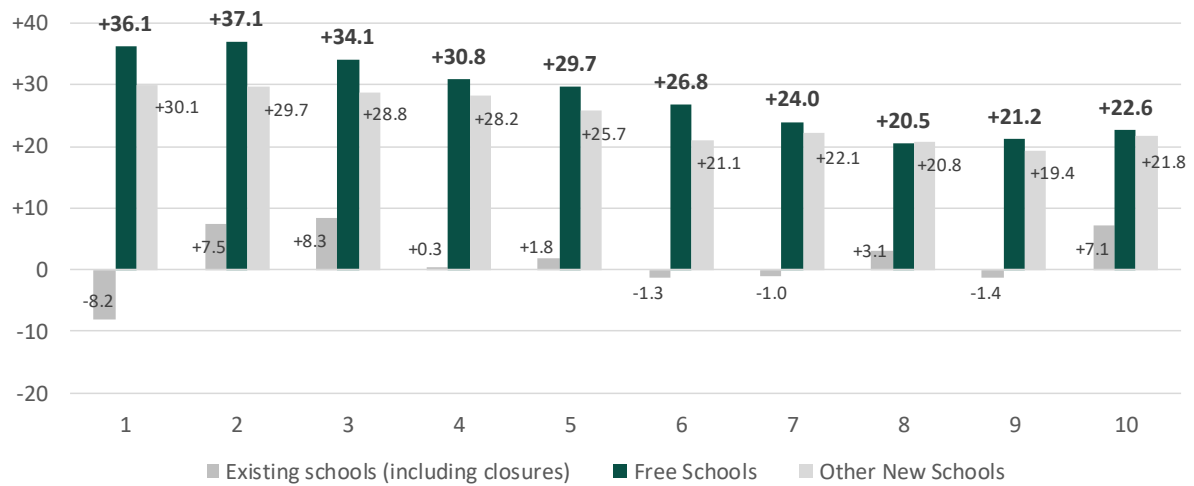
This supports the claim that free school places have been created in greater numbers in areas with higher levels of disadvantage. When we examine the total number of school places (not just the change between 2011 and 2016) we see a clear difference between free schools and all state-funded schools.

Figures 2.8 and 2.9 show how all school places are distributed between IDACI bands and primary and secondary. For example, 11 per cent of primary school places are in the most deprived IDACI band, but 15 per cent of primary free school places are in this band. Similarly, 10 per cent of secondary school places are in the most deprived IDACI band, but 13 per cent of secondary free school places are in this band.

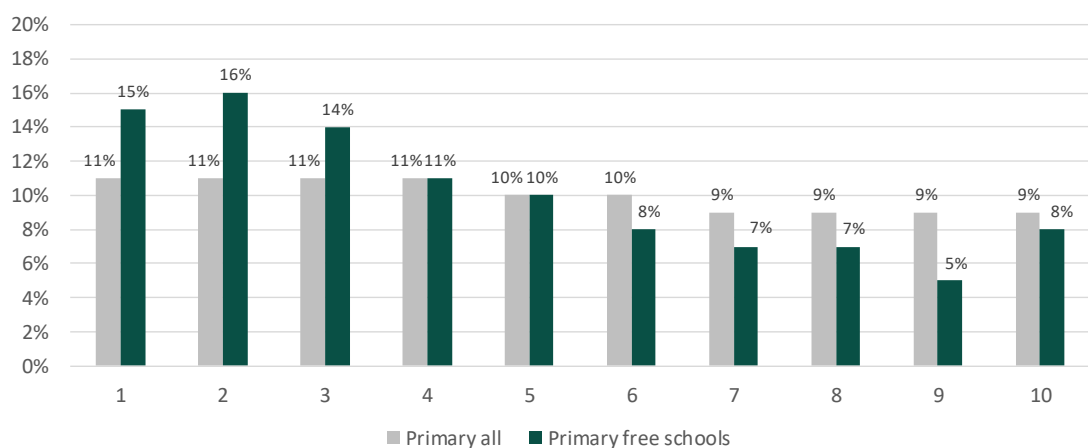
**Figure 2.6: Creation of primary school places between 2011 and 2016 by type of provision and IDACI decile (1 = most deprived)**



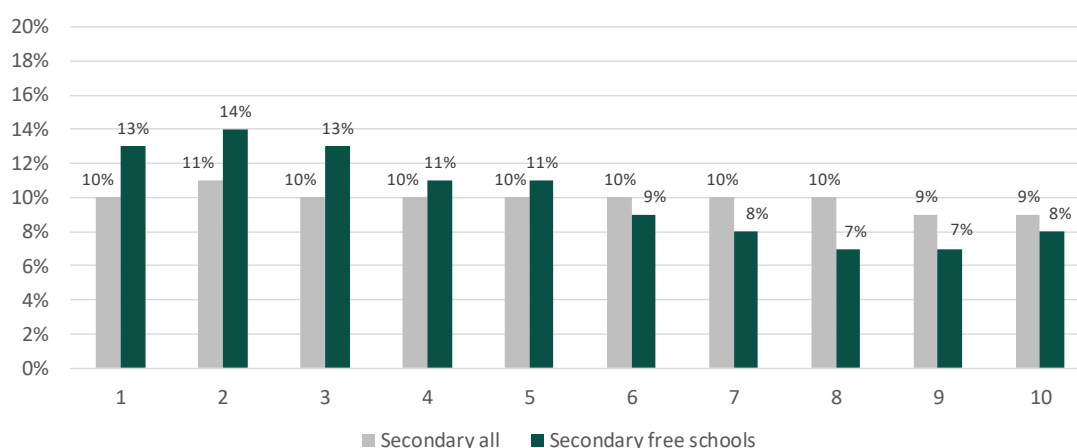
**Figure 2.7: Creation of secondary school places between 2011 and 2016 by type of provision and IDACI decile (1 = most deprived)**



**Figure 2.8: Distribution of primary school places in 2016 by type of provision and IDACI decile (1 = most deprived)**



**Figure 2.9: Distribution of secondary school places in 2016 by type of provision and IDACI decile (1 = most deprived)**



Given this distribution of places we might expect free schools to have higher levels of disadvantage than the national average, however this is not the case. This suggests that whilst free schools are being set up in more disadvantaged areas, they are not, yet, attracting a representative number of pupils from the most disadvantaged backgrounds.

We explore this further by examining the intakes of free schools during the 2015/16 academic year. We consider the proportion of pupils that are eligible for free school meals in free schools and other state-funded mainstream schools by the IDACI score of the pupil's home LSOA. Figure 2.10 shows this for pupils aged four at the start of the academic year (reception aged pupils) and Figure 2.11 shows this for pupils aged 11 at the start of the academic year (year 7 pupils).

Amongst pupils aged 4 that lived in the most deprived areas (the bottom tenth), 24 per cent of pupils in free schools were eligible for free school meals compared to 32 per cent in other schools. In the next ten per cent of areas, 17 per cent of pupils in free schools were eligible for free school meals compared with 23 per cent of pupils in other schools. **In fact, with the exception of the least deprived areas, pupils in free schools were less likely to be eligible for free school meals than other pupils living in similar areas.**

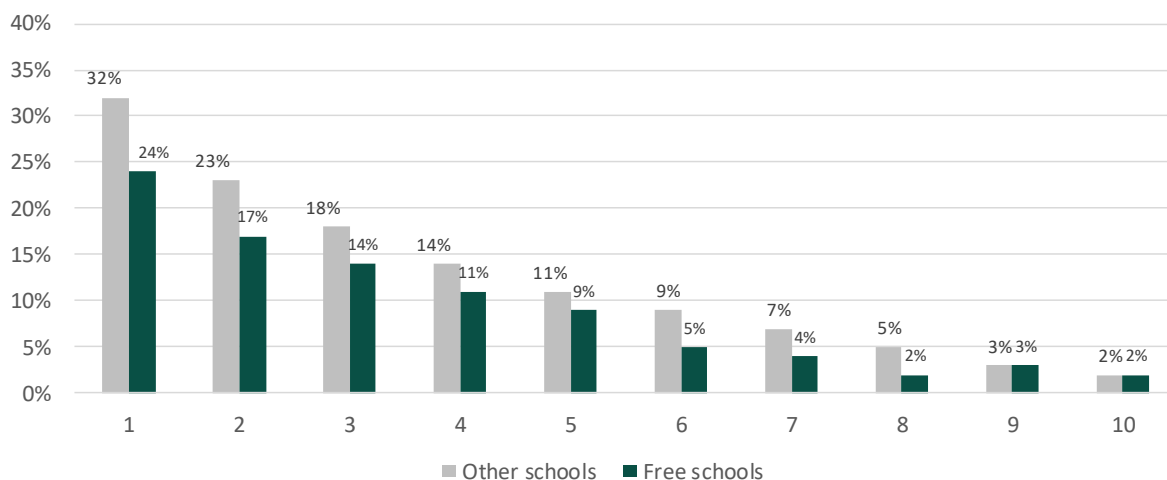
We find that of the 6,300 four-year-olds that were in free schools in 2015/16, 11.9 per cent were eligible for free school meals. If they were representative of the areas in which they lived then we estimate that this rate would increase to 16.1 per cent.

**This picture is less clear for those aged 11 at the start of the academic year. Free school pupils resident in the most deprived areas are still less likely to be eligible for free school meals than other pupils in those areas.** In the most deprived areas (the bottom tenth), 30 per cent of pupils in free schools were eligible for free school meals compared with 34 per cent of pupils in other schools. **However, once you move beyond the bottom fifth of areas, the rate of free school meal eligibility in free schools matches that of other schools. In the least deprived half of areas, free school meal eligibility is actually higher than that in other areas.**

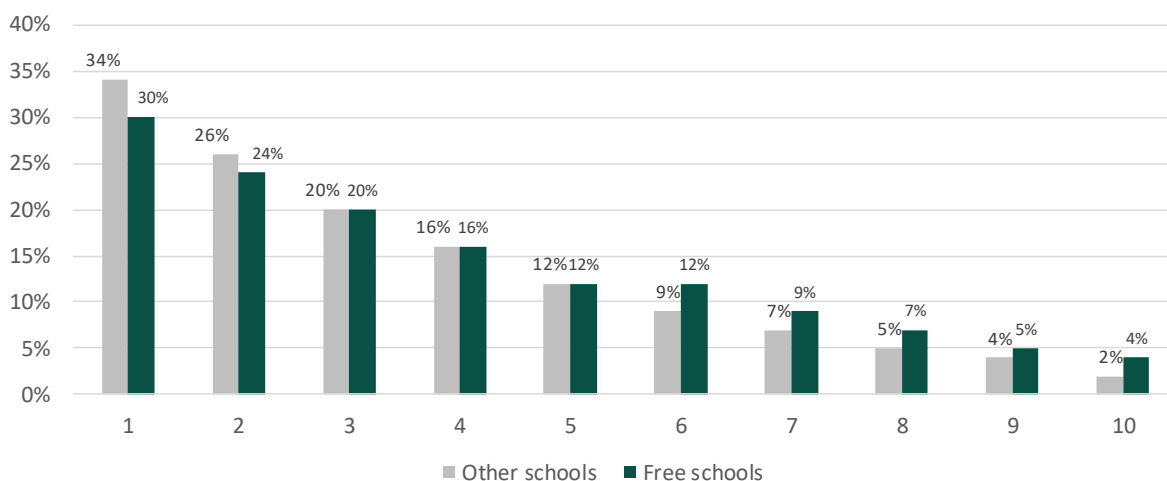
We find that of the 10,800 11 year-olds that were in free schools in 2015/16, 17.0 per cent were eligible for free school meals (2 percentage points higher than the average of all 11

year-olds). If they were representative of the areas in which they lived then we estimate that this rate would increase to 17.5 per cent.

**Figure 2.10: Proportion of pupils aged 4 who were known to be eligible for free school meals in free schools and other state-funded mainstream schools by IDACI decile (1 = most deprived)**



**Figure 2.11: Proportion of pupils aged 11 who were known to be eligible for free school meals in free schools and other state-funded mainstream schools by IDACI decile (1 = most deprived)**



## Summary

Overall, pupils at free schools have a similar propensity to be eligible for free school meals or have special educational needs and disabilities as pupils at other state-funded schools. They are also far more likely to be from a non-white British background or have a first language that is other than English. The underlying patterns are more complex than these statistics convey.

There is partly a London effect in operation when looking at the composition of free schools. In terms of the proportion of pupils that are from non-white British backgrounds, free schools in London follow a similar distribution to other state-funded schools in the capital. Outside of London, the proportion of pupils from non-white British backgrounds in free schools is lower than in London, but higher than other schools outside of the capital. The relatively high number of pupils with a first language other than English will be an important

consideration when examining the performance of free schools. We know that these pupils, on average, make more progress than those with English as their first language.

The analysis here supports the Department for Education's claim that a large number of free school places have been created in areas of high disadvantage. At primary level, 15 per cent of free school places have been created in the most deprived tenth of areas, and 8 per cent have been created in the least deprived. However, this raises questions about the levels of disadvantage seen within the schools themselves. In primary free schools, 13.3 per cent of pupils are eligible for free school meals compared with 14.7 per cent of pupils nationally.

Further analysis suggests that in primary free schools, and in secondary free schools serving the most disadvantaged areas, free schools are not necessarily attracting disadvantaged pupils in the proportions that might be expected.

## Part 3: School choice and preferences

### Background

Since the beginning of the free schools programme, the Department for Education has frequently asserted that these schools are popular with parents. For example, as the first free schools opened in September 2011, the Department claimed that “15 of the 24 schools that were opening were oversubscribed with some seeing more than three applications for one school place”.<sup>18</sup> More recently, the beginning of the 2017/18 school year saw further announcements on new free schools and that “free schools are popular with parents, deliver choice and innovation”.<sup>19</sup>

In this section we consider the extent to which those claims are supported by the Department for Education’s own data through an exploration of pupil preferences collected through the school admissions process.

Applications to primary schools are made in the January of the preceding academic year and applications to secondary schools are made in October of the preceding academic year. Both are largely co-ordinated by the relevant local authority.<sup>20</sup> Preferences are assessed against pre-determined admissions criteria set by the authority or individual school. When setting these criteria, all state-funded schools, including free schools, must comply with the School Admissions Code.<sup>21</sup>

Depending on the local authority, parents are able to express an ordered preference for between three and six schools – though parents may choose not to express a full set of preferences. This feature of the admissions process is crucial when considering the relative popularity of schools through preference data. It means that on average, each pupil expresses a preference for around 2.4 schools. So, any claim based on the ‘number of applications per place’ needs further context around the order of the preferences.

The analysis in this section relates to admissions to schools in the 2015/16 academic year. It is based on preference data at individual pupil level matched to the January School Census. This dataset allows us to see:

- Which pupils, who were in a state-funded secondary school in January 2016, submitted an application through a local authority co-ordinated scheme;
- The preferences expressed in that application (first preference school, second preference etc.);
- The school that the pupil was offered through the local authority scheme; and

---

<sup>18</sup> Department for Education, *New free schools are a popular choice for parents*, September 2011 <https://www.gov.uk/government/news/new-free-schools-are-a-popular-choice-for-parents>

<sup>19</sup> Department for Education, *Back to school for thousands of pupils as new free schools open*, September 2017 <https://www.gov.uk/government/news/back-to-school-for-thousands-of-pupils-as-new-free-schools-open>

<sup>20</sup> Free schools are able to opt-out of local authority co-ordination in their first year.

<sup>21</sup> Department for Education, *School admissions code*, September 2015 <https://www.gov.uk/government/publications/school-admissions-code--2>



- The school that the pupil was attending in January 2016.

### Propensity for free schools to be first preference

We firstly consider the proportion of applications to each school type by the order of preference. Such an analysis provides an indication of the desirability of a particular school within parental preferences – whether the school is where they want their child to attend or whether it is in some senses a ‘fall-back’ option.

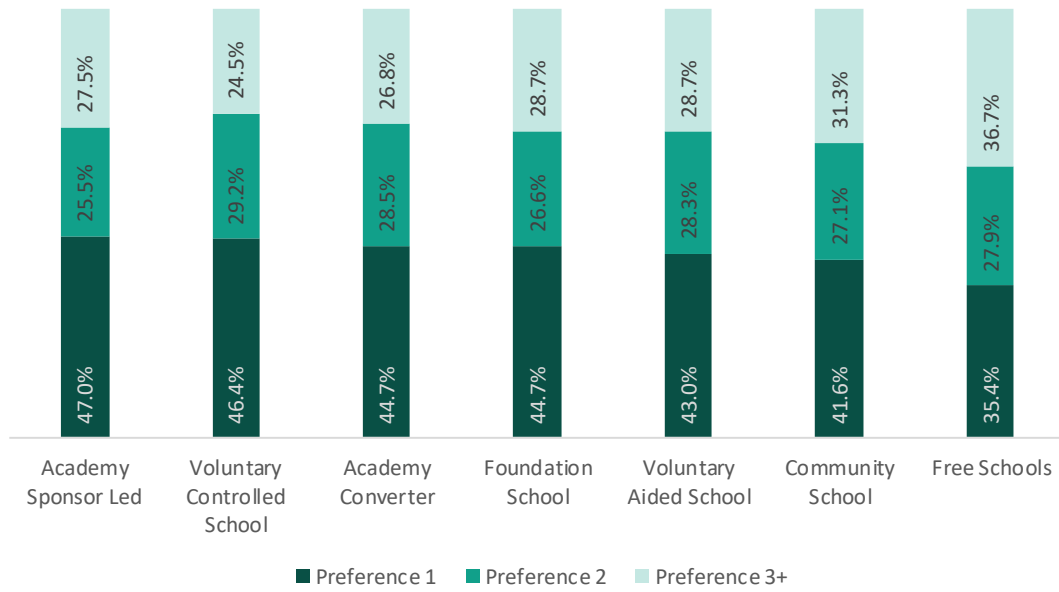
Across all primary schools, there were a total of 1.19 million preferences expressed across 506,000 pupils. 43 per cent were first preference.<sup>22</sup> Of all preferences expressed for a primary free school, just over 35 per cent were a first preference. This was the lowest of any school type. Just under 37 per cent of applications to free schools were as a third preference or below, the highest of any school type (Figure 3.1). The rate of first preferences increases when considering schools outside of London (reflecting that applications in London are more likely to include multiple preferences). When considering schools outside of London, the proportion of preferences that were a first preference was still lower for free schools than for any other school, but was not far behind the equivalent figures for community schools and voluntary aided schools (Figure 3.2).

Across all secondary schools, there were a total of 1.16 million preferences expressed across 487,000 pupils. Just over 40 per cent were first preference.<sup>22</sup> Of all preferences expressed for a secondary free school, just under 29 per cent were a first preference. This was the lowest of any school type. Just over 43 per cent of applications to free schools were as a third preference or below, the highest of any school type (Figure 3.3). The rate of first preferences increases slightly when considering schools outside of London (reflecting that applications in London are more likely to include multiple preferences), however free schools are still the lowest group in terms of the proportion of preferences that were first preference (Figure 3.4).

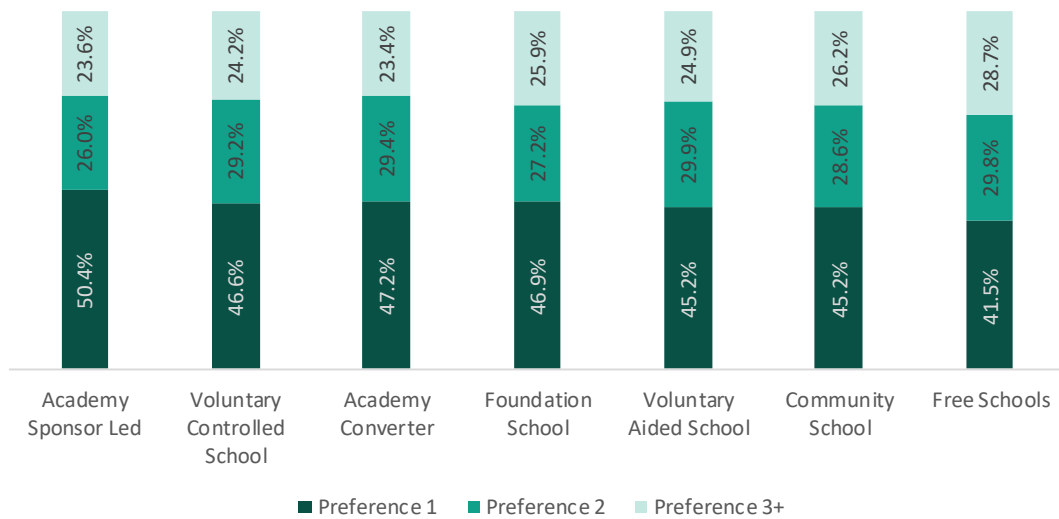
---

<sup>22</sup> These numbers reflect the fact that the applications process is for up to six preferences but many areas do not use this many, and many applications do not submit a full set of preferences.

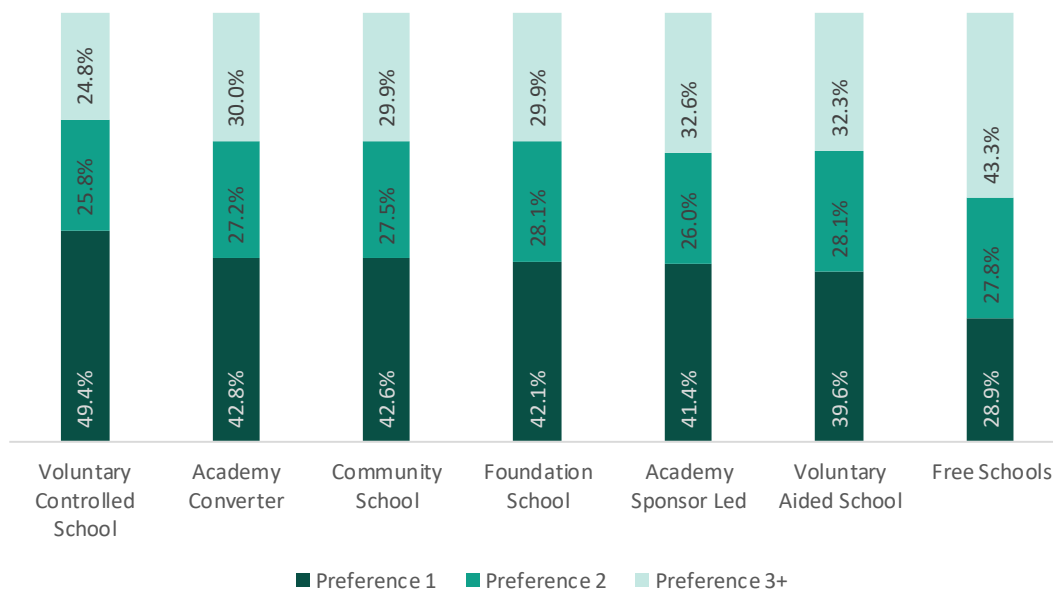
**Figure 3.1: Proportion of applications by order of preference – primary**



**Figure 3.2: Proportion of applications by order of preference – primary schools outside of London**



**Figure 3.3: Proportion of applications by order of preference – secondary**



**Figure 3.4: Proportion of applications by order of preference – secondary schools outside of London**



### Applications to nearest school

The school system in England is diverse, with a range of different school types – e.g. community schools and academies – and schools with a variety of admission arrangements – e.g. selection by academic ability or by faith. Despite this diversity, around half of pupils in England still attend their nearest school.

However, we find that this is significantly lower for free schools. At both primary and secondary level, where the nearest school is a free school, just over a fifth of pupils attend the school (Figures 3.5 and 3.6). This is the lowest of any school type.

This can potentially be interpreted in a number of ways. One way would be to conclude that free schools have, in general, not yet established themselves as ‘the local school’ that parents choose in the absence of a particularly strong preference for another school. The

counter argument to this might be that a free school has been set up to offer a different type of education to that offered by current local schools and is not intended to become the first choice of the majority. Voluntary aided schools also have a relatively low proportion of local pupils attending. These predominantly have a religious designation, in other words they are likely to be offering a different type of school to other local schools.

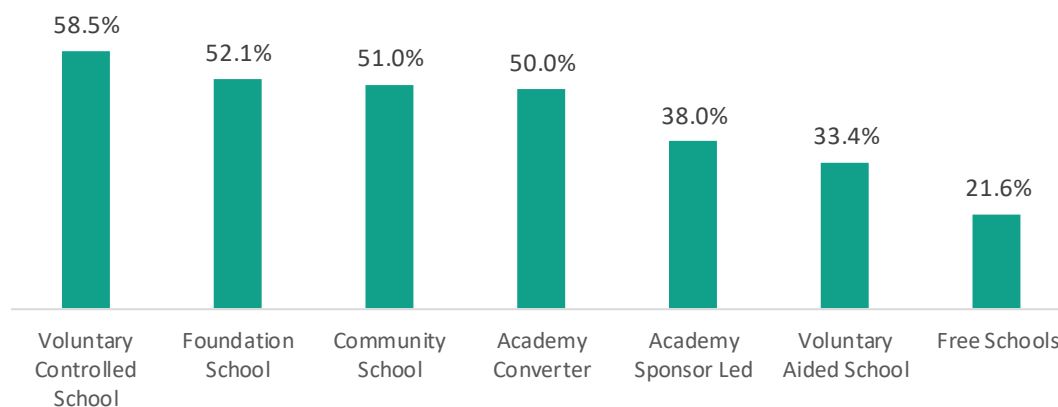
The preference data also suggests that parents are more inclined to submit an application to a free school the longer it has been open. In 2015, primary free schools that had already been open for two or more years attracted applications from around 40 per cent of pupils for whom a free school was their nearest school. For those that had been open for one year this was 31 per cent and for those yet to open it was 22 per cent (Figure 3.7).

At secondary level the disparity between those open the longest and those yet to open was even greater (63 per cent versus 37 per cent, though those open two or three years were around 40 per cent). Furthermore, the increase in preferences is primarily driven by an increase in first preferences (Figure 3.8).

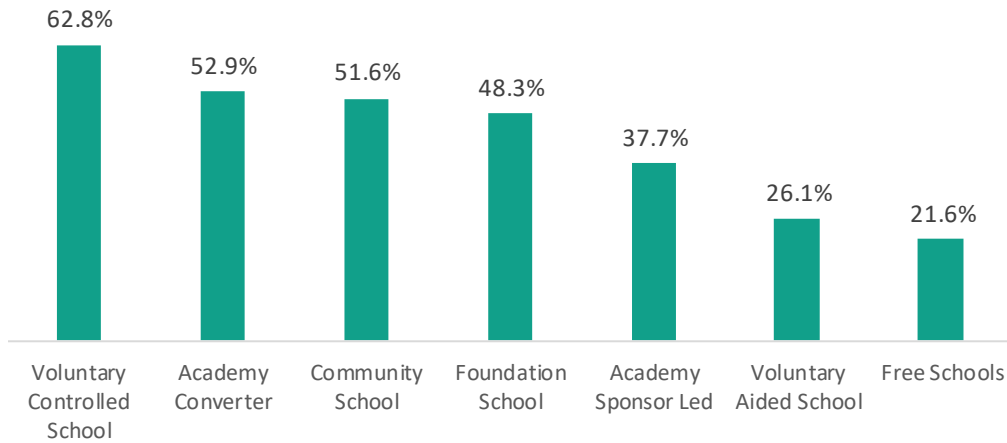
This analysis is based on a relatively small number of schools, particularly in the case of secondary free schools open for four years. It is not possible to track a particular group of schools over time with the data available (i.e. we cannot look at a school in its first year of opening, its second year etc).

However, this relationship should be monitored closely in future years. It suggests that some free schools may take several years to establish themselves within the local community and may experience lower applications in their earlier years which may then improve over time.

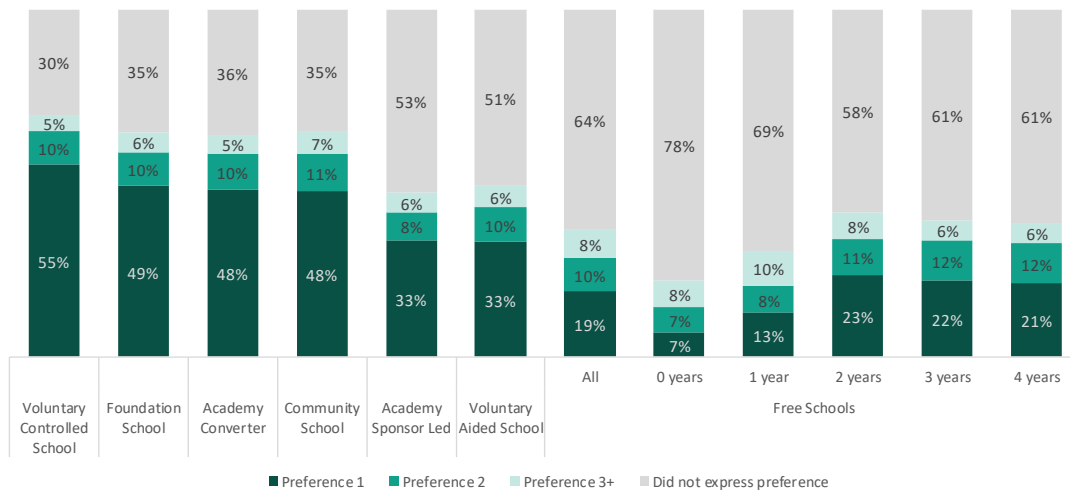
**Figure 3.5: Proportion of pupils attending their nearest school by type of nearest school – primary**



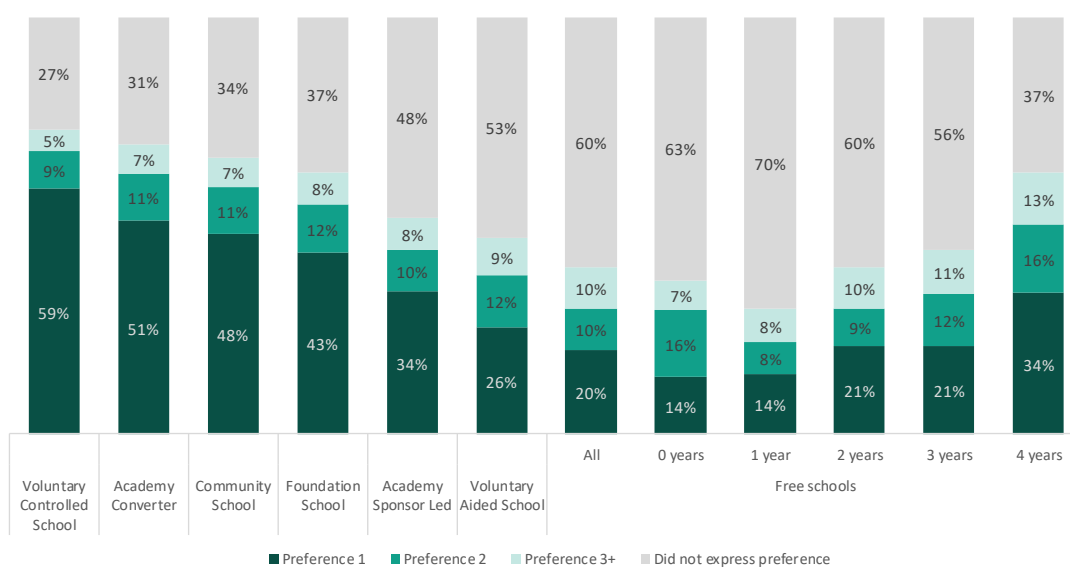
**Figure 3.6: Proportion of pupils attending their nearest school by type of nearest school – secondary**



**Figure 3.7: Proportion of pupils that expressed a preference for their nearest school by school type and free school length of time open – primary**



**Figure 3.8: Proportion of pupils that expressed a preference for their nearest school by school type and free school length of time open – secondary**

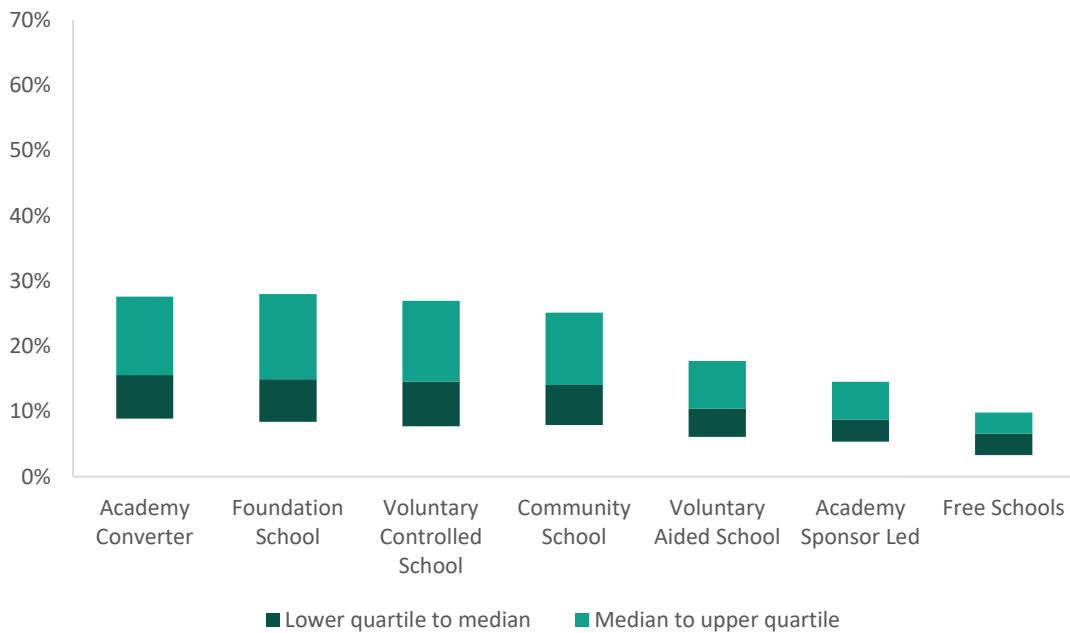


## Schools within reasonable travel distance

Looking beyond pupils whose nearest school is a free school, we find that even amongst those who live within reasonable travel distance of a free school, pupils are less likely to express a preference for this school than they are for any other type of school. For this analysis, we define pupils who live within reasonable travel distance of a school as those who live within the distance travelled by 90 per cent of pupils nationally, split by location of the school (urban or rural), and by phase (primary or secondary).<sup>23</sup> We then calculate the proportion of pupils in this defined area who expressed a preference for the school, compared to all pupils in the area who submitted an application for any school.

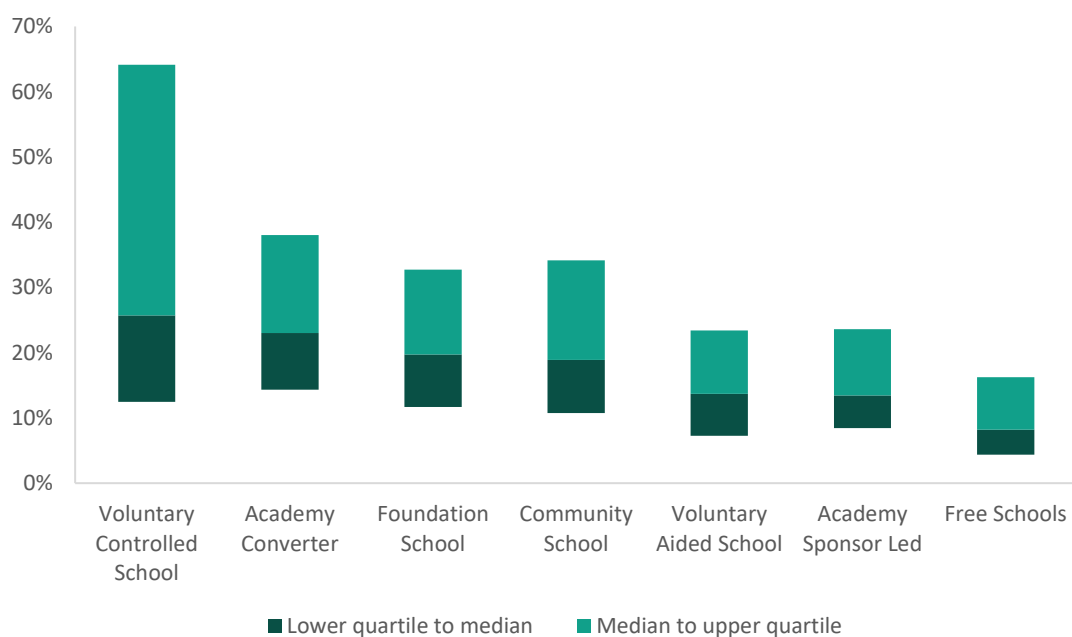
In the charts below, these school-level figures are grouped by school type in order to show for each category the lower quartile, median, and upper quartile of the proportion of pupils who applied to a school within reasonable travel distance. At both primary and secondary level, a lower proportion of pupils living within reasonable travel distance of a free school express a preference for this school (median is 6.6 per cent for primary and 8.2 per cent for secondary).

**Figure 3.9: Proportion of pupils within a reasonable travel distance that applied to a school by school type, 2015 – primary**



<sup>23</sup> For further details see Annex 1.

**Figure 3.10: Proportion of pupils within a reasonable travel distance that applied to a school by school type, 2015 – secondary**



## Summary

The assertion that free schools are popular with parents does not, as yet, appear to be supported by the available data, at least in comparison to other school types. At primary level, just over a third of preferences to free schools were as a first preference. This was the lowest of any school type. This is though, distorted slightly by the prevalence of free schools in London where the effects are larger. Outside of London the prevalence of first preferences for free schools was still lower than for any other school type, but was not far behind the rates seen for community schools and voluntary aided schools. There was no such London effect for secondary free schools. These were well behind other school types in and out of London.

In general, free schools have not yet established themselves as the preferred local school. Nationally, half of pupils attend their nearest school. Where the nearest school is a free school, just 22 per cent of pupils at both primary and secondary level attend that school. However, some context is required for these statistics. Free schools can be set up precisely because groups want to offer something different from what is available from other local schools. That being the case, these schools may never expect to be the ‘default’ local school for many.

There is also some indication that patterns of applications and preferences may change over time. It is not unreasonable to assume that some schools will take time to establish the local reputation required in order to attract applications. The analysis presented here suggests that the longer a free school has been open, the greater the proportion of local pupils that will apply. This increase is seen in particular in the expression of first preferences.

Whilst in most cases these rates remain behind those of other schools this analysis does suggest that pupil applications and numbers on roll may be lower in the first years of

opening and then improve. This has implications when considering the short and long-term viability of a school.



## Part 4: Performance of free schools

### Background

Free schools are subject to the same public accountability system as other state-funded schools. They are subject to inspections from Ofsted and, where they have them, results are published in the school performance tables.

As the first free schools opened, the then responsible Minister Lord Hill said *“What parents want is the chance to send their children to a good local school with high standards. These new free schools are designed to achieve exactly that and we are committed to opening many more in the next few years.”*<sup>24</sup>

That inevitably leads to the question, are free schools delivering a high standard of education? It is too early to answer that question conclusively. Many of the free schools that are now open will not yet have been inspected by Ofsted and the majority have not yet had results published in school performance tables. Given the frequently adopted model of opening with the youngest year group and building up over time, many free schools will not have results until several years after opening. Another intention of the free schools programme is to introduce competition and raise standards in nearby schools. Given the relatively early state of the programme, and that the preference data suggests that free schools are not, as yet, matching the popularity of other schools, we consider it highly unlikely that we would see these effects yet.

In this section, we examine what we can conclude from the performance data available to date.

### Ofsted grades

Free schools are subject to the same inspection framework as other state-funded schools. Historically, new schools, including free schools, became eligible for inspection during their second year of opening – generally from their fifth term. From the 2015/16 academic year this was revised so that schools would not usually be inspected until their third year.

By the end of the 2016/17 academic year, 216 free schools had received at least one Ofsted inspection (out of a total of 355 opened or closed free schools).

In general, free schools open with one, or two, year groups and then grow as pupils move through the school. Therefore, their first inspection occurs when the school is only partially full and before other externally moderated assessments such as Key Stage 2 or GCSE. The Ofsted inspection is a judgement of the quality of provision being provided at that point and not when the school is operating across all year groups. Historically, this has tended to make Ofsted judgements more volatile for new openers than for well-established schools. For example, of the primary schools that opened between 2002 and 2010 and had received two inspections by September 2012, 58 per cent received a different outcome at their second

---

<sup>24</sup> Department for Education, *New free schools are a popular choice for parents*, September 2011 <https://www.gov.uk/government/news/new-free-schools-are-a-popular-choice-for-parents>

inspection than their first compared to 50 per cent of all primary schools with two inspections over the same period.<sup>25</sup>

Direct comparisons with other schools are also complicated by reforms to the Ofsted inspection framework. The inspection framework was revised in 2012 and this also affected the frequency of inspections. Those schools previously rated as satisfactory (and more recently requires improvement) would be inspected again more quickly than those rated as good. Schools rated as outstanding would not be inspected again unless Ofsted's risk assessment approach identified a serious decline in standards.

All free school inspections have been carried out against the new framework, however it is not fair to compare them only to other schools that have been assessed against this framework since the risk based approach mean that such schools will be disproportionately lower performing schools. Instead, we make the comparison against the latest inspection outcome for all schools regardless of when they were inspected. This approach is consistent with statistics published by Ofsted.

Looking at the latest inspection outcomes for all open free-schools (Figure 4.1) we find that:

- Primary free schools have a similar propensity to be good or outstanding as other school types but the proportion that are rated as outstanding is nearly double that of all state-funded primary schools. This is however based on a small number of schools (83) as well over a third of primary free schools have not yet been inspected;
- Ofsted grades suggest little difference between secondary free schools and other state-funded schools. They are equally likely to be rated as good/outstanding with free schools marginally ahead when considering outstanding alone; and
- Amongst the small number of special and alternative-provision free schools just over a half have been inspected. They are much less likely than other state-funded special and alternative provision schools to be rated as outstanding.

The latest inspection outcome data for all open free schools does not fully reflect the inspection of all free schools since some closed post-inspection. We identified three primary and three secondary free schools which closed post-inspection. All of these schools had been rated as inadequate or requires improvement. However, their inclusion would not affect the conclusions drawn above (see Figure 4.2).

Furthermore, data on the latest inspection outcomes for other state-funded schools fails to take into account the fact that when a school is closed to become a sponsored academy it loses its inspection history (and will not appear in the data until it has an inspection as a sponsored academy). As these schools are on average likely to be lower performing, their exclusion is likely to inflate the results for all state-funded schools slightly (though they represent a small proportion of all schools).

---

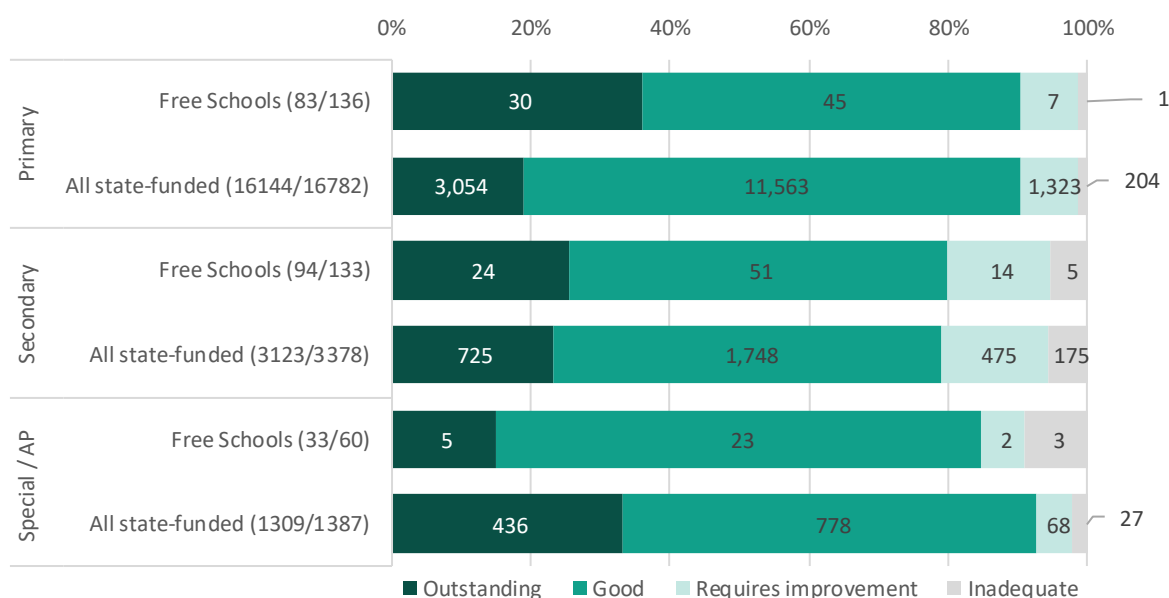
<sup>25</sup> EPI analysis of Ofsted inspection outcomes and Edubase open dates. Refers to 69 primary schools which appeared to be genuinely new (rather than from a change in school status). Inspection period covers 2005 to 2012 and chosen to reflect a broadly consistent inspection framework.

As the number of free schools opening in any given academic year is relatively small there is understandably some fluctuation in the proportion that are rated good or outstanding at their first inspection (Figure 4.3).

Amongst primary free schools, 83 per cent of those that opened in 2011/12 were rated as good or outstanding in their first inspection, whereas over half of those that opened the following year were found to be requiring improvement or inadequate. The 2013/14 and 2014/15 openers had similar good/outstanding rates to national averages – but were more likely to be rated as outstanding.

Of the first group of secondary free schools, none were rated as outstanding at their first inspection and the proportion rated as good or outstanding was also relatively low (though it would have only taken one school rated as required improvement to be rated as good to address this difference). Since then, the proportion rated as outstanding, or good/outstanding, at their first inspection has been higher and stable.

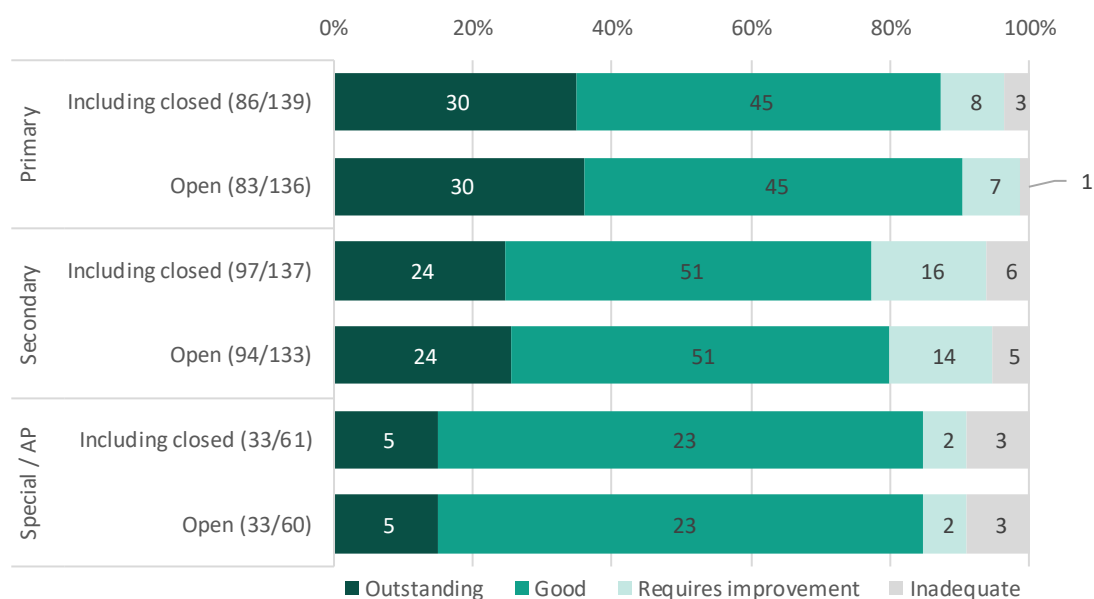
**Figure 4.1: Latest inspection outcome for free schools and all state-funded schools by phase, August 2017<sup>26</sup>**



Numbers in parenthesis show (number of schools with inspection / total number of schools)

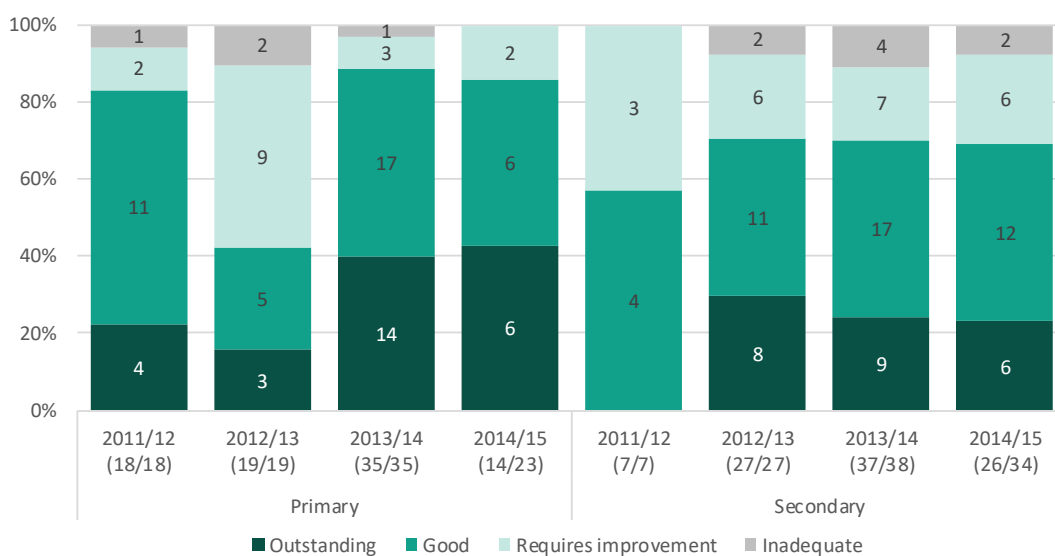
<sup>26</sup> Secondary includes all through schools and middle deemed secondary. Excludes 16-19 provision. Primary includes middle deemed primary.

**Figure 4.2: Latest inspection outcome for open free schools and all free schools including closed by phase, August 2017<sup>27</sup>**



Numbers in parenthesis show (number of schools with inspection / total number of schools)

**Figure 4.3: First inspection outcome for free schools by year of opening**



Numbers in parenthesis show (number of schools with inspection / total number of schools)

## Attainment and progress

At this stage, it is difficult to draw robust conclusions about the performance of free schools in national curriculum assessments and public examinations (e.g. GCSEs). The majority of free schools do not yet have pupils that have reached the end of key stage. In this section, we consider the performance data that is currently available and how it might be interpreted.

<sup>27</sup> Excludes 16-19 provision

## Primary schools

In 2017 there were 36 free schools with pupils at the end of Key Stage 2 (a total of 1,240 pupils). These schools are unlikely to be representative of the programme as a whole. Free schools that are genuinely new provision and are filling year groups from the bottom would not yet have pupils in year 6 (unless junior schools, filling within each key stage, or filling to capacity for some year groups). A disproportionate number are former independent schools.

Analysis of Key Stage 2 results is further complicated by the introduction of a new curriculum and assessment arrangements. 2016 was the first year that pupils were assessed under these new arrangements. The new assessments had an 'expected' standard broadly equivalent to a level 4B under the old arrangements and in 2016 the proportion reaching this 'expected' standard was much lower than in previous years. There were large increases in 2017 as schools adapted to the new assessments.

In both years, the proportion of pupils that reached the expected standard in each of reading, writing and mathematics in free schools was relatively low. In 2017, 54 per cent of pupils in free schools reached this threshold; slightly ahead of sponsored academies but well behind converter academies and local authority schools (Figure 4.4).

This relatively low performance is also seen when considering progress measures.<sup>28</sup> Free schools were the lowest performing school group in writing and mathematics and had a similar score to sponsored academies in reading but were well behind converter academies and local authority schools (Figure 4.5(i-iii)).

The position is very different at the end of Key Stage 1 (age 7). Figure 4.6 shows that in 2017 pupils in free schools were more likely to achieve the expected standard in each of reading, writing and mathematics than in other school types. This was also on a much wider set of schools – a total of 123 free schools were included in the analysis.

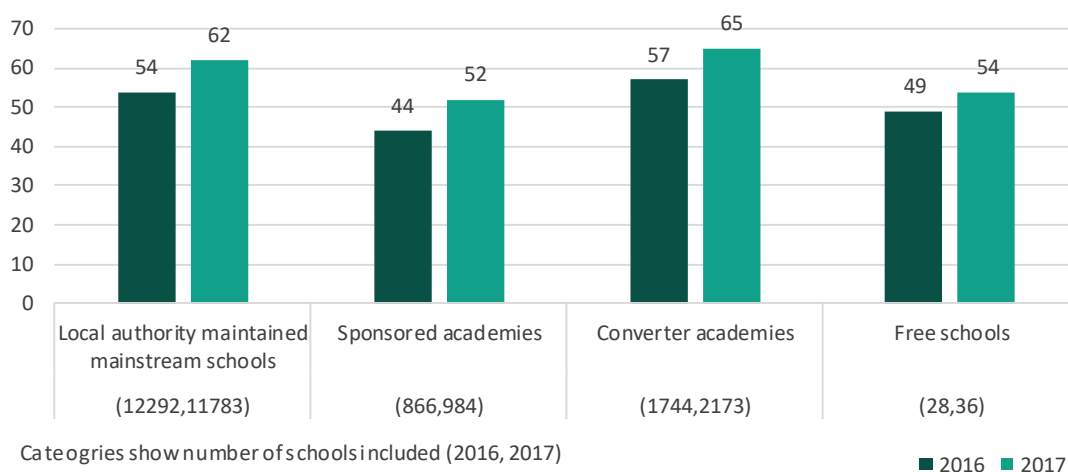
Neither of these sets of analyses provide a strong basis on which to judge the effectiveness of the free schools programme in the primary phase. The schools with results at the end of Key Stage 2 are small in number and unlikely to be typical of the programme as a whole – for example, 12 of the 28 schools with results were former independent schools. As such, they are not 'new schools' in the way that free schools more generally are. Furthermore, as independent schools they would not previously have had to take part in national curriculum assessments (though some independent schools do).

The results at the end of Key Stage 1 are good and derived from a larger number of schools, but come with the caveat that they do not control for level of development on entry to the school or other pupil characteristics. Nor do they give any consideration of the reliability of teacher assessments.

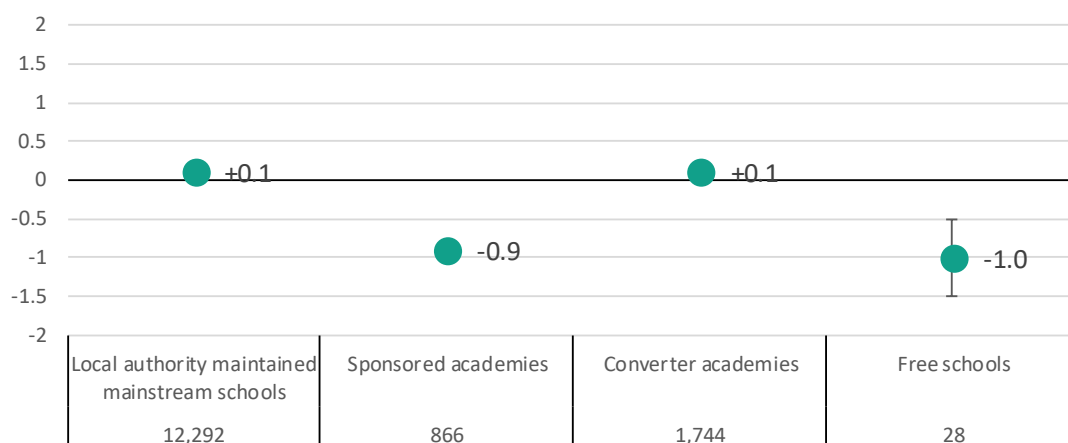
---

<sup>28</sup> Progress data for 2017 is not yet available and so this refers to 2016.

**Figure 4.4: Proportion of pupils that achieved the expected standard in reading, writing and mathematics at Key Stage 2 in 2016 and 2017 by school type<sup>29,30</sup>**



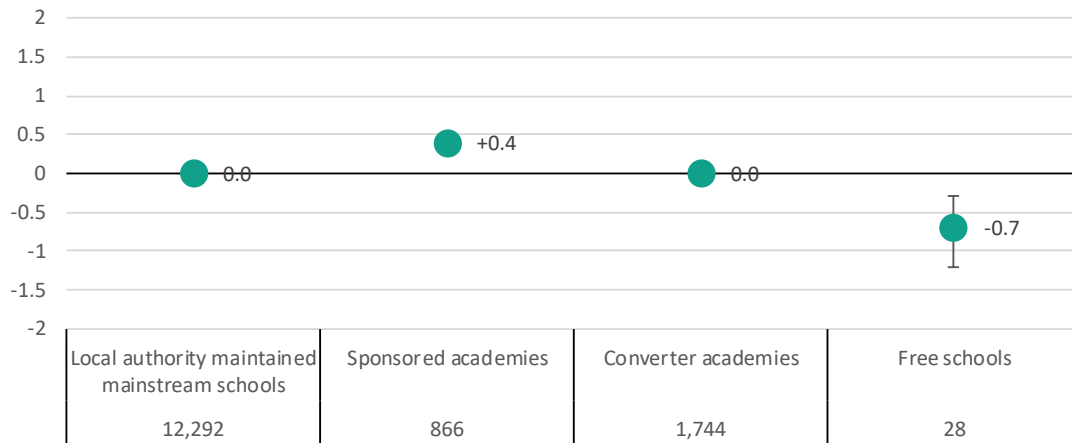
**Figure 4.5(i): Progress in Key Stage 2 reading by school type, 2016<sup>29</sup>**



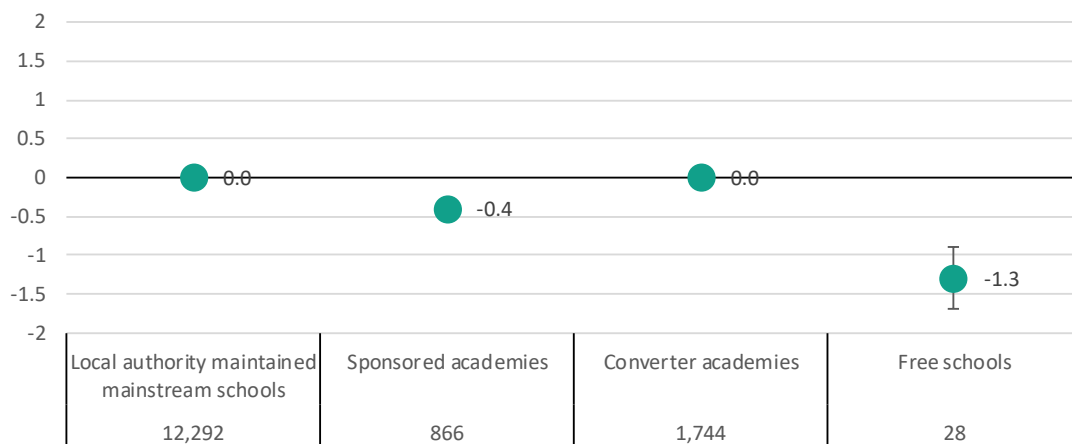
<sup>29</sup> Department for Education, *National Curriculum Assessments: Key Stage 2, 2016 (Revised)*, December 2016  
<https://www.gov.uk/government/statistics/national-curriculum-assessments-key-stage-2-2016-revised>

<sup>30</sup> Department for Education, *National Curriculum Assessments: Key Stage 2, 2017 (Provisional)*, September 2017  
<https://www.gov.uk/government/statistics/national-curriculum-assessments-key-stage-2-2017-provisional>

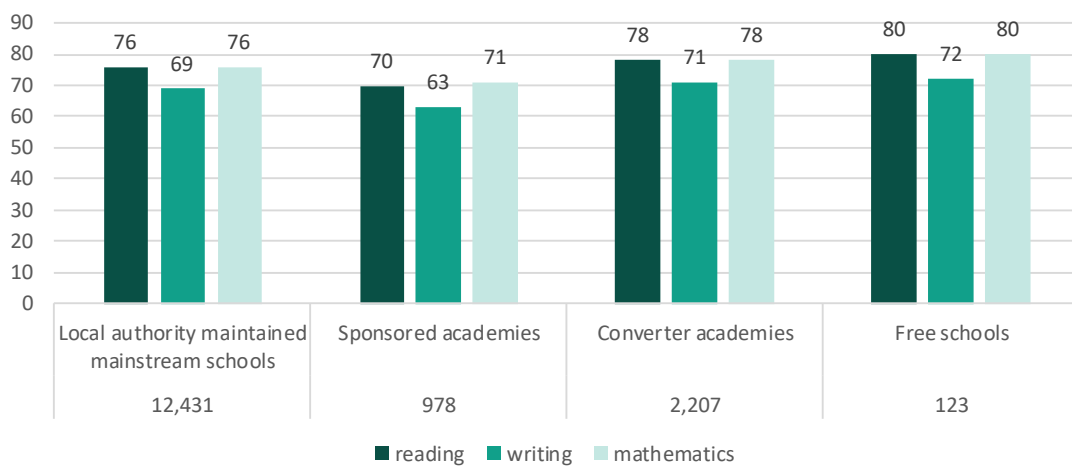
**Figure 4.5(ii): Progress in Key Stage 2 writing by school type, 2016<sup>29</sup>**



**Figure 4.5(iii): Progress in Key Stage 2 mathematics by school type, 2016<sup>29</sup>**



**Figure 4.6: Proportion of pupils that achieved the expected standard in each of reading, writing and mathematics at Key Stage 1 in 2017 by school type<sup>31</sup>**



<sup>31</sup> Department for Education, *Phonics screening check and Key Stage 1 assessments: England 2017, September 2017*  
<https://www.gov.uk/government/statistics/phonics-screening-check-and-key-stage-1-assessments-england-2017>

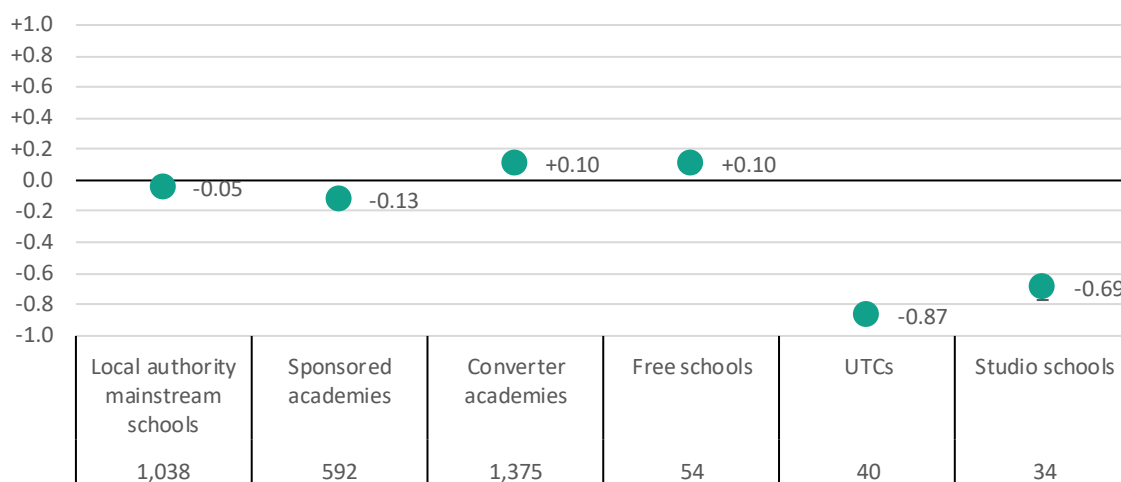
## Secondary schools

There are a range of performance indicators available at the end of Key Stage 4. Here we largely focus on Progress 8 but include further outcome measures later on in this section.

Progress 8 is the Department for Education’s new headline measure for school performance at the end of secondary school. It measures performance across eight subjects (English, mathematics, three other EBacc subjects and three other subjects) after controlling for pupil prior attainment. A school’s Progress 8 measure is a score centred around zero. A positive score means that pupils made more progress than pupils with similar prior attainment nationally.

**In 2017, the 54 free schools that had pupils at the end of Key Stage 4 achieved an average Progress 8 score of +0.10. Amongst the major school groups this was the joint highest Progress 8 score alongside converter academies (Figure 4.7).**<sup>32</sup> This means that, on average, pupils achieve a tenth of a grade higher in each subject than pupils with similar prior attainment nationally. The relative performance of sponsored and converter academies is likely to reflect the origins of these schools rather than the effectiveness of these programmes.

**Figure 4.7: Progress 8 by school type 2017 (provisional)**<sup>33</sup>



Categories show the number of schools included

At this stage, the aggregate Progress 8 scores of free schools are particularly volatile. Not only is the group small, the results are affected by the types of schools included (e.g. a mix of genuinely new schools and former independents).

In Figure 4.8 we show the published aggregate scores in 2016 and 2017. The average Progress 8 scores for local authority schools, sponsored academies and converter academies are relatively stable (as Progress 8 is a relative measure it is possible that the underlying

<sup>32</sup> In the published statistics local authority mainstream schools are treated as one group and includes community, foundation, voluntary aided and voluntary controlled schools. There is variation in the performance between these groups.

<sup>33</sup> Department for Education, *GCSE and equivalent results 2016 to 2017 (provisional)*, October 2017 <https://www.gov.uk/government/statistics/gcse-and-equivalent-results-2016-to-2017-provisional>



performance in these schools has changed). However, the score for free schools has moved from average to significantly above average between 2016 and 2017. Within each group there are a wide range of school scores and this means that within groups with a small number of schools the overall averages are particularly sensitive to the set of schools included.

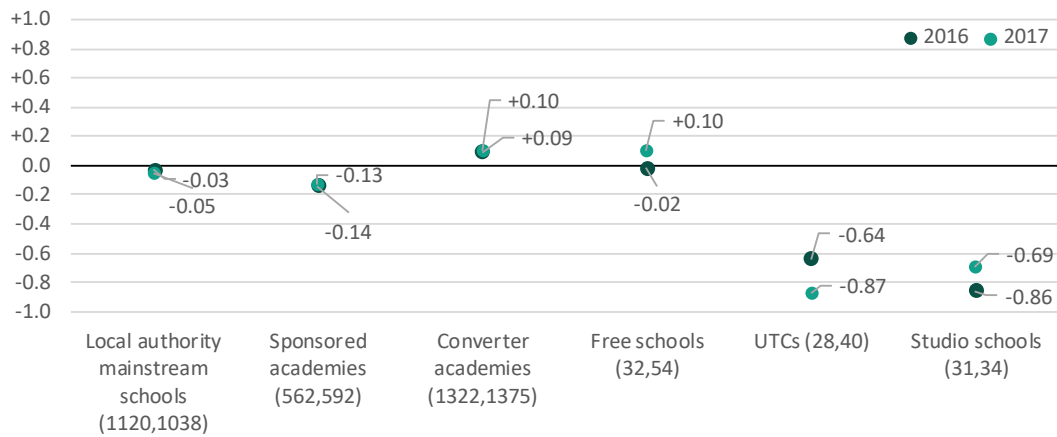
Figure 4.9 plots the Progress 8 scores of individual free schools split by the year of opening. This illustrates a number of things:

- There appears to be some variation in outcomes by year of opening, though it should be remembered that the number of schools in any group is small and the variation within each group is wide;
- Pupils in schools that opened in 2012/13 achieved, on average, slightly better outcomes than those that opened in 2011/12. This would appear to be consistent with the earlier analysis of Ofsted grades; and
- Schools that had results published for the first time this year (the grey dots) are more likely to have positive Progress 8 scores than other schools. The improvement in Progress 8 scores for free schools this year results from the range of schools included rather than a shift in performance.

A further consideration is the potential effect that London has on the published free schools data. Part 1 of this report showed that there are a disproportionate number of free school places in London and attainment in London is, on average, higher than elsewhere in the country (in 2016, the proportion of free school pupils that were in London was actually below the proportion of all pupils, though this was reversed in 2017). Figure 4.10 plots the average Progress 8 score by school type in London and elsewhere in 2017.

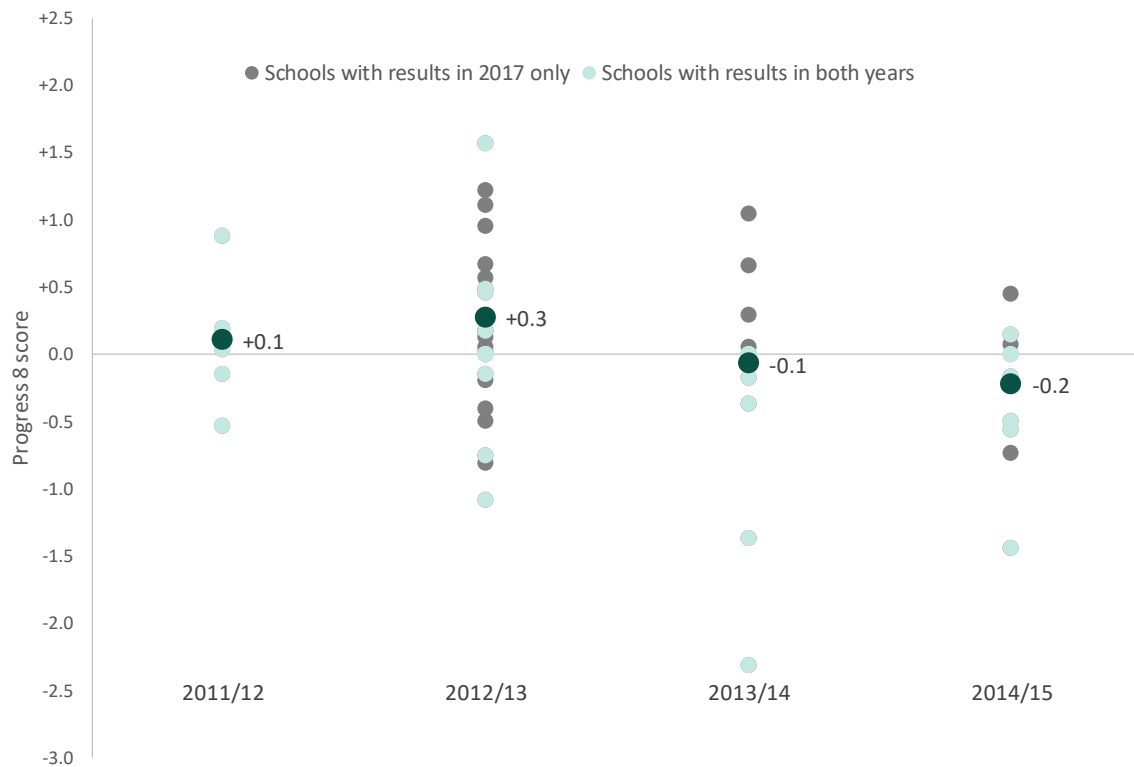
As with other school types, free schools in London achieve higher results than free schools elsewhere (analysis is based on only 9 free schools in London but the result is statistically significant). Outside of London, free schools achieve comparable results to converter academies and higher result than sponsored academies and local authority schools. In other words, the relative performance of free schools is not a simple London effect. They maintain their relative position elsewhere in the country too.

**Figure 4.8: Progress 8 by school type 2016 and 2017<sup>34,35</sup>**



Categories show the number of schools included (2016, 2017)

**Figure 4.9: Progress 8 scores in free schools by year of opening and number of years with results**



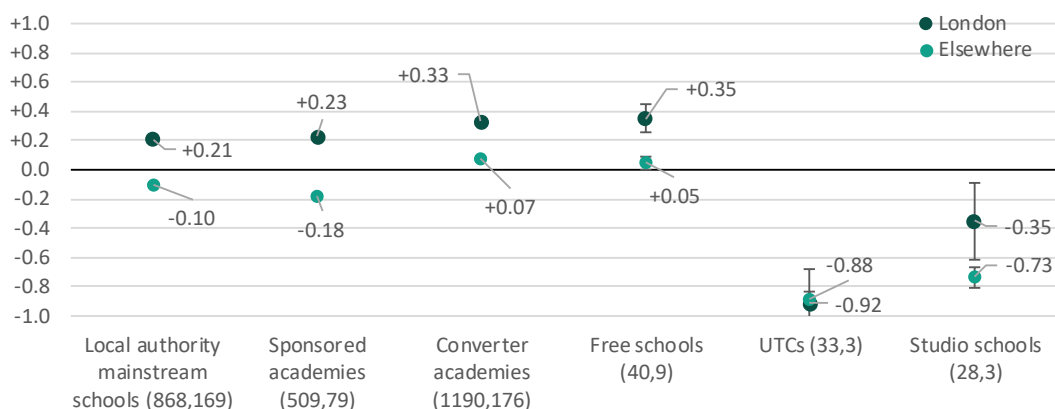
<sup>34</sup> Department for Education, Revised *GCSE and equivalent results in England: 2015 to 2016*, January 2017

<https://www.gov.uk/government/statistics/revised-gcse-and-equivalent-results-in-england-2015-to-2016>

<sup>35</sup> Department for Education, *GCSE and equivalent results 2016 to 2017 (provisional)*, October 2017

<https://www.gov.uk/government/statistics/gcse-and-equivalent-results-2016-to-2017-provisional>

**Figure 4.10: Progress 8 scores by school type – London and elsewhere<sup>36</sup>**



Categories show the number of schools included (elsewhere, London)  
 Vertical bars show 95% confidence intervals (not visible where confidence interval is small)

Progress 8 controls for pupil’s prior attainment and so is fairer than looking at attainment alone. However, there are a range of other school and pupil characteristics that are associated with the progress that pupils make. These include whether the pupil is from an economically disadvantaged background, their ethnic group, and whether they have a first language that is other than English.

In order to control for this, we identify a group of Key Stage 4 pupils that have similar characteristics to those that attended a free school. We start by identifying all pupils that are within reach of a free school (a free school is one of the six nearest secondary schools to them) and construct a statistical model to calculate their propensity to attend a free school given a range of other characteristics. We then apply that model to pupils across the country to match pupils who did attend a free school, with those that did not but had a similar modelled probability of doing so.<sup>37</sup>

This analysis is derived from the National Pupil Database and is limited by the types of data items that it contains. These characteristics do not capture the range of circumstances that determine whether a parent would choose one school over another.

We currently only have the pupil level data required for this at Key Stage 4 in 2016. We know that there are differences in outcomes between 2016 and 2017 and so it will be important to repeat this analysis once more pupil level data (for further years and for different key stages) becomes available.

Figure 4.11 shows the characteristics of the Key Stage 4 cohort of free schools in 2016 alongside all state-funded mainstream schools and the group of pupils that are ‘similar’ to those that attended free schools.

<sup>36</sup> Note that the school numbers here are lower than the preceding analysis. This is because the analysis here is derived from published school level data rather than the individual pupil data used in the Department for Education’s statistical first releases. It has not been possible to include all relevant schools as in some cases the number of pupils was small and the data was therefore suppressed.

<sup>37</sup> The approach is described in more detail in Annex 2.

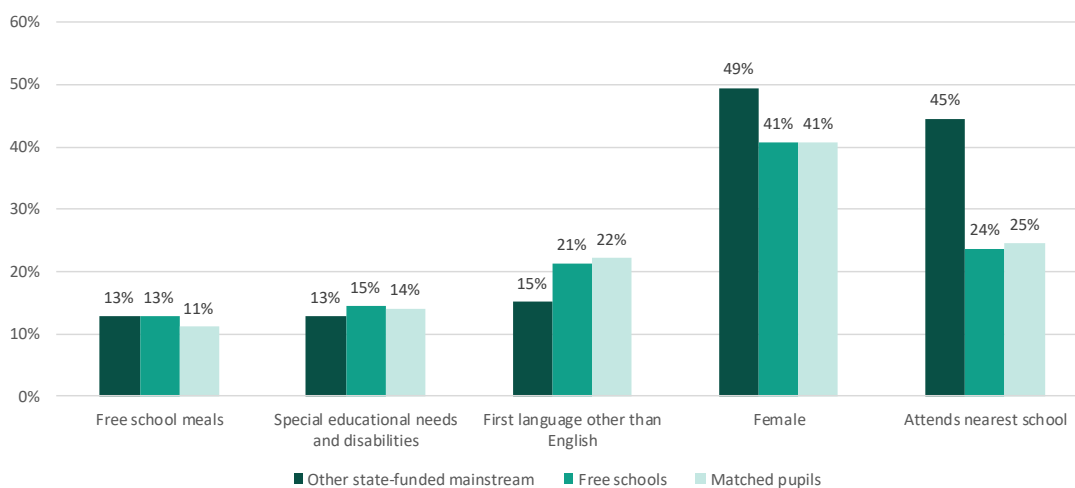
The effect of adopting this approach has been to control for differences between free schools and other schools in terms of:

- the rate of first language other than English which is higher in free schools;
- the proportion of pupils that are male which is lower in free schools; and
- the proportion of pupils attending their nearest school which is much lower in free schools.

The last of these *may capture some* aspect of parental engagement in school choice since this may reflect choosing a particular school rather than simply attending the nearest school.

The effect of adopting this approach of pupil matching has been less successful in terms of the proportion of pupils eligible for free school meals which is slightly lower in the matched group. The effect of this may be to increase attainment in the comparison group (since lower levels of disadvantage are correlated with higher attainment).

**Figure 4.11(i): Characteristics of pupils in other state-funded mainstream schools, free schools, and a group of similar pupils. Key Stage 4 2016**



**Figure 4.11(ii): Characteristics of pupils in other state-funded mainstream schools, free schools, and a group of similar pupils. Key Stage 4 2016**

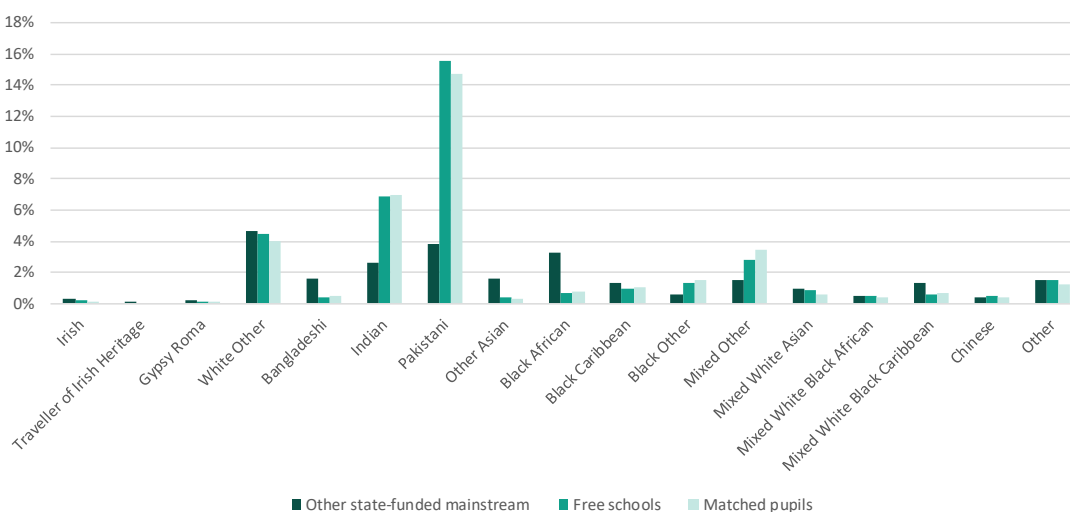


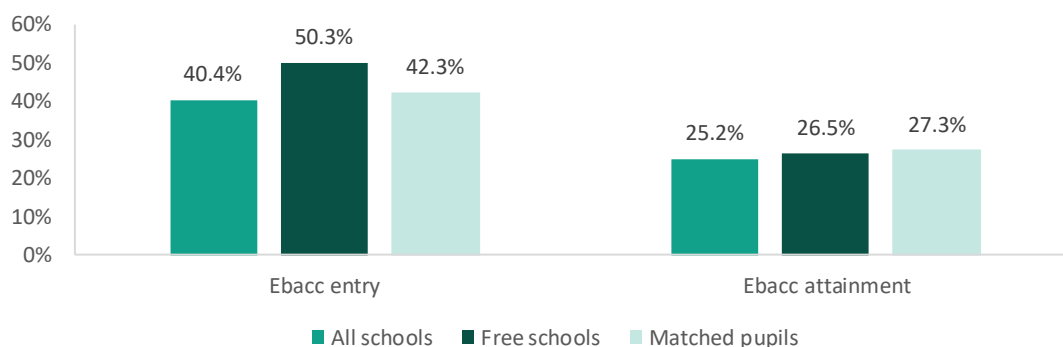
Figure 4.12 shows performance across a range of metrics for pupils in free schools, other state-funded mainstream schools and amongst the group of pupils that were ‘similar’ to those in free schools. It shows that in 2016:

- Attainment 8 scores are marginally lower in free schools than in the comparison group.
- Progress 8 scores in free schools and in the comparison group are the same.
- Pupils in free schools were more likely to enter the EBacc than similar pupils in other schools – 50.3 per cent vs 41.5 per cent. But the proportion that achieved the EBacc was slightly lower in free schools than similar pupils in other schools – 26.5 per cent versus 27.3 per cent.

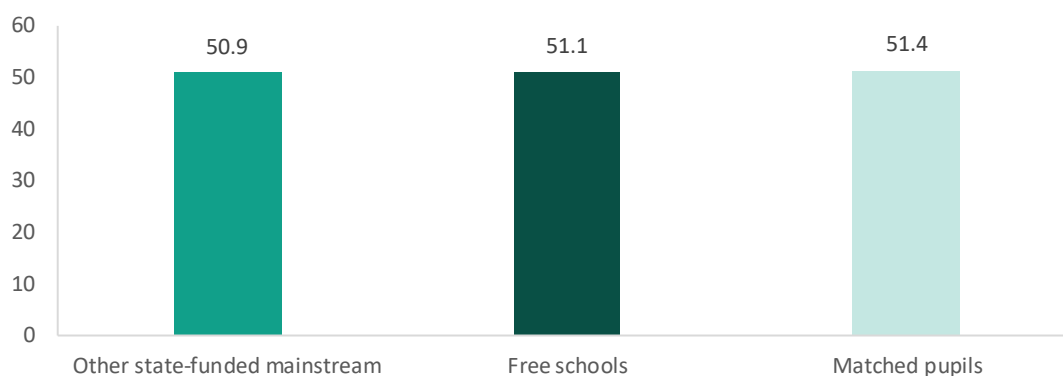
In other words, in terms of Attainment 8 and the EBacc, results in free schools were slightly lower in free schools than in a group of similar pupils but these differences were small. The difference in Attainment 8 scores (of 0.3) between free schools and a group of similar pupils is equivalent to under a third of a grade in one GCSE subject.

It is important to stress again that this is based on a relatively small number of schools with results in 2016 and the differences are sensitive to the exact specification of the model. The non-contextualised results for 2017 suggest higher performance for free schools. We will repeat this analysis when the 2017 pupil level data becomes available from the Department for Education.

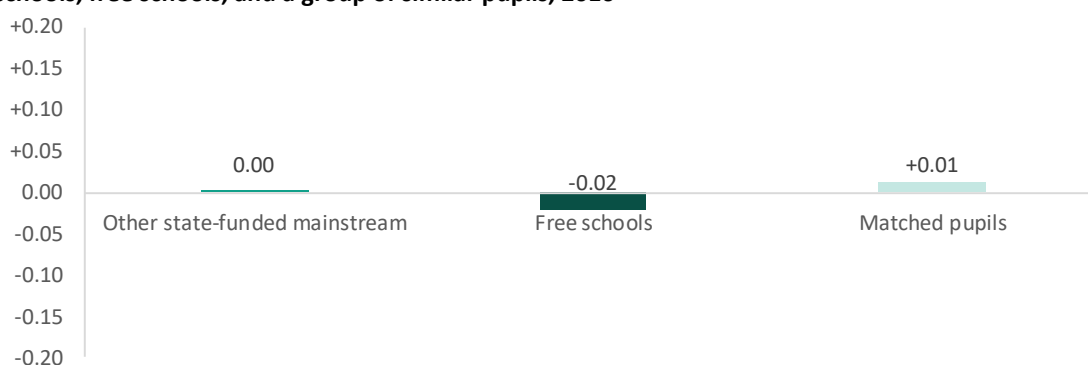
**Figure 4.12(i): EBacc entry and attainment at the end of Key Stage 4 in other state-funded mainstream schools, free schools, and a group of similar pupils, 2016**



**Figure 4.12(ii): Attainment 8 scores at the end of Key Stage 4 in other state-funded mainstream schools, free schools, and a group of similar pupils, 2016**



**Figure 4.12(iii): Progress 8 scores at the end of Key Stage 4 in other state-funded mainstream schools, free schools, and a group of similar pupils, 2016**



## Summary

This section considered two approaches to assessing the performance of free schools. The first through an exploration of Ofsted grade, the second looking at attainment and progress measures. Both present a mixed picture for the free schools programme to date and both currently have serious limitations as to the extent to which they can be taken to be a measure of the effectiveness of the programme.

In comparison to other schools: primary free schools are much more likely to be rated as outstanding; special and alternative provision free schools are less likely to be rated as outstanding; and there is not much difference for secondary free schools.

However, large numbers of free schools are yet to be inspected. Those that have been inspected have often had an inspection whilst growing (i.e. before they have all year groups in place). These inspections will reflect the quality of provision at that point, rather than when they are fully established. Historic data also suggests that Ofsted outcomes for new openers are more volatile than those for established schools. Over time we may see a different profile of Ofsted outcomes for free schools. In particular, the more recent openers have, on average, achieved higher outcomes than the early adopters.

It is a similarly mixed picture when considering attainment and progress data. Outcomes in free schools at the end of primary (Key Stage 2) are relatively poor but these statistics are derived from a small number of schools which are likely to be atypical of the programme as a whole – almost half are former independent schools rather than new provision. The results at the end of Key Stage 1 are good and derived from a larger number of schools but do nothing to control for the intakes of those schools.

At the end of secondary, results appear better in 2017 than in 2016 with Progress 8 scores in free schools matching those in converter academies – historically higher performing schools. This again does not control for the different profile of pupil characteristics seen in free schools. Of particular concern is the higher proportion of pupils for whom English was not their first language that is seen in free schools. This is because these pupils, on average, tend to make more progress than pupils with similar prior attainment nationally.

An initial ‘similar pupils’ analysis was only possible on the 2016 data which covers only a small number of schools. It is important that this type of analysis is carried out on later cohorts and at other key stages before commenting on the effectiveness of free schools. In

addition, this report has made no attempt to scrutinise participation, attainment and destinations post-16.

## Conclusion

Free schools are a growing part of the school system. The first schools opened in September 2011 and by the end of the 2016/17 academic year there were 347 open free schools; they are found in every region of England. But they have often been a divisive issue within the education system.

The analysis presented in this report demonstrates strengths and weaknesses in the arguments on both sides of that debate.

It supports the claim that free school growth has been greatest in the areas most in need of new school places, but we also find significant numbers in areas where there is already an excess number of places. The programme has been less successful in reaching those areas most in need of high quality provision.

Given the regional bias in the location of free schools – with many of these early openers operating in high performing London – this may be addressed by focusing the programme in lower performing regions in the future. It is important to recognise that this will always need to be balanced against the expected demand for new places, particularly in London and the South East. Similarly, as the free schools programme is demand led, it relies on the Department for Education receiving applications in the areas that need new schools. Therefore more needs to be done to encourage applications in those areas.

This analysis also supports the claim that a large number of free school places have been created in areas of high disadvantage, but the free school meal rates in free schools are in line with national averages. This suggests that free schools are not necessarily attracting disadvantaged pupils in the proportions that might be expected given the communities that they serve. This is particularly the case for primary free schools. More needs to be done to understand the drivers for this and ensure that free schools do not lead to increased social segregation in the system.

The assertion that free schools are popular with parents does not, as yet, appear to be supported by the available data, at least in comparison to other school types. In general, free schools have not yet established themselves as the preferred local school. However, free schools can be set up precisely because groups want to offer something different from what is available from other local schools. That being the case, these schools may never expect to be the 'default' local school for many and other parents may be willing for their children to travel to reach a free school.

There is also some indication that patterns of applications and preferences may change over time. It is not unreasonable to assume that some schools will take time to establish the local reputation required in order to attract applications. The analysis presented here suggests that the longer a free school has been open, the greater the proportion of local pupils that will apply. This increase is seen in particular in the expression of first preferences.

Whilst in most cases these rates remain lower than those of other schools it does suggest that pupil applications and numbers on roll may be lower in the first years of opening and



then improve. This has implications when considering the short and long-term viability of a free school.

There is insufficient data to reach robust conclusions on the effectiveness – good or bad – of free schools in terms of Ofsted outcomes and pupil attainment and progress. Both present a mixed picture and both currently have serious limitations as to the extent to which they can be taken to be a measure of the effectiveness of the programme.

Large numbers of free schools are yet to be inspected. Those that have been inspected have often had an inspection whilst growing (i.e. before they have all year groups in place) and these inspections will reflect the quality of provision at that point, rather than when they are fully established. Over time we may see a different profile of Ofsted grades for free schools. In particular, the more recent openers have, on average, achieved higher grades than the early adopters.

Attainment and progress in free schools at the end of primary (Key Stage 2) is relatively poor, but these statistics are derived from a small number of schools which are likely to be atypical of the programme as a whole – almost half are former independent schools rather than new provision.

Provisional 2017 Progress 8 data showed the 54 free schools achieving a tenth of a grade higher in each subject than pupils with similar prior attainment nationally. Progress 8 measures do not control for the different profile of pupil characteristics seen in free schools. Of particular significance is the higher proportion of pupils for whom English was not their first language that is seen in free schools. This is because these pupils, on average, tend to make more progress than pupils with similar prior attainment nationally. It may be this effect that is being observed rather than a free schools effect.

An initial ‘similar pupils’ analysis was only possible on the 2016 data which covers only a small number of schools. It is important that this type of analysis is carried out on later cohorts and at other key stages before commenting on the effectiveness of free schools.

In addition this report has made no attempt to scrutinise participation, attainment and destinations post-16.

## Annex 1: Estimating the number of school places in small area geographies

This report estimates the provision of school places in small areas of the country known as lower layer super output areas (LSOAs). There are just over 30,000 such areas in England each having a population between 1,000 and 1,500.

However, data on schools in England is rarely published at this level. Instead it is generally available at either top-tier local authority level, of which there are 152 in England, or at individual institution level. For much of our analysis the top-tier authority is simply too large and even relatively small authorities can have distinct areas within them.

We therefore derive estimates of the number, quality and demand for places in these small areas using a variety of datasets.

### Reasonable travel distances

Underpinning the analysis is an estimate of the catchment area of individual schools. There is no comprehensive dataset setting out the catchment area of each school in England, instead we include all LSOAs that are within a 'reasonable travel distance' of the school. This is estimated by calculating the distance currently travelled by pupils to schools across England and finding the distance which captures 90 per cent of pupils (i.e. 90 per cent of pupils travel this distance or less). This is split by school phase and area type. The area type is defined by the location of the school.

These distances are set out in Figure A1 and are derived from the National Pupil Database (Key Stage 2 and Key Stage 4 2016).

**Figure A1.1: Reasonable travel distances by school phase and location**

	Primary	Secondary
Urban - conurbation	1.7	3.3
Urban - city / town	1.7	4.8
Rural - hamlet / village / town	3.8	7.5

We consider that this method is preferable to examining the areas from which each school currently draws its pupils for two reasons. Firstly, it enables us to apply the same methodology to new schools which do not yet have sufficient pupil data to make an estimate. Secondly, using existing entry patterns would mean 'locking-in' any bias in school intakes – e.g. pupils being drawn from the more affluent areas of a town – rather than the areas that a school *could* be drawing from.

This method is, however, based on straight line travel distances and does not take account of geographic obstacles (e.g. rivers) or transport links (e.g. bus routes). This method may not, for an individual school, fully reflect the areas within reach, but it nevertheless provides a good basis when taken in aggregate.

The result of this analysis is, for each school, a list of LSOAs that are within a reasonable travel distance.

## School places in small area geographies

The number of places offered by a school, or the school capacity, is collected and published by the Department for Education through the School Capacity Survey. The analysis in this report uses data from May 2011 and May 2016.

In order to translate this institution level data to area based measures, we divide the number of places provided by the school equally between all of the LSOAs that are within a reasonable travel distance of that school. This data is then aggregated at LSOA level to get a total number of school places in an area (this can be split by school type).

## Demand for new places in small area geographies

Whilst estimates of 'basic need' (the need for new school places) are published by the Department for Education they are only available at local authority level. As set out above there is likely to be variation in different areas within the same authority. Instead we produce our own estimates at LSOA level by looking at school capacity in May 2011 (calculated as above) and applying the local authority growth estimates to each LSOA. By doing this we are applying the same population uplift to each LSOA but taking account of the position in relation to school places at a smaller geography. 2011 is chosen as this is just before commencement of the free schools programme. In essence we are trying to recreate the information that would have been available at the start of the programme to consider how well the programme has responded to it.

## Quality of school places in small area geographies

In order to measure the quality of provision in small geographical areas we link the school capacity data with a school's Ofsted grade (taken at the same point). We are then able to split the number of places by the number that are in outstanding, good, satisfactory (now requires improvement) and inadequate schools. We calculate an average Ofsted score for the area by assigning a value of 1 to each outstanding place, 2 to each good place and so on. Areas are then ranked by this overall average.

## Annex 2: Identifying a group of similar pupils

A group of 'similar pupils' to those in free schools is identified through a propensity score matching approach. Using 2016 Key Stage 4 data from the National Pupil Database:

- We identified pupils from state-funded mainstream schools that could have reasonably attended a free school. For this purpose we identified those pupils for whom a free school was one of their six nearest secondary schools.
- For those pupils we calculate a logistic regression model in which attending a free school is the dependent variable with independent variables covering gender, ethnicity, eligibility for free school meals, prior attainment, and whether they attended their nearest school.
- The same model is then applied to all pupils in state-funded mainstream schools so that each pupil has a modelled propensity of attending a free school (as if each pupil is within reach of a free school).
- We then match each pupil in a free school with five other pupils who had a similar propensity to attend.

The outputs for the logistic regression are set out below. Overall, the model does not provide a strong predictor of whether a pupil attends a free school (i.e. there remain factors that drive attendance that are not captured by the model).<sup>38</sup> However, the characteristics of the resulting comparison group do more closely match those of free schools than the population as a whole.

---

<sup>38</sup> A range of more complex models including additional factors, such as first language, were tested but not found to significantly improve the model. Therefore, the relatively simple model was used.

**Figure A2.1: Logistic regression model for predicting attendance at a free school if a free school is one of the six nearest schools.**

	B	S.E.	Wald	df	Sig.	95% C.I. for EXP(B)		
						Exp(B)	Lower	Upper
Constant	-3.4	0.2	214.5	1	0.00	0.03	-	-
FSM	-0.2	0.1	3.5	1	0.06	0.85	0.72	1.01
SEN	0.2	0.1	5.1	1	0.02	1.23	1.03	1.46
White British								
White Irish	0.0	0.6	0.0	1	0.94	1.05	0.33	3.36
Traveller of Irish Heritage	-17.8	-	0.0	1	1.00	0.00	-	-
Gypsy Roma	-1.4	1.0	2.0	1	0.16	0.25	0.03	1.76
White Other	0.2	0.1	1.2	1	0.27	1.17	0.88	1.56
Bangladeshi	-0.8	0.4	3.8	1	0.05	0.44	0.20	1.00
Indian	1.2	0.1	114.2	1	0.00	3.26	2.63	4.05
Pakistani	0.9	0.1	130.3	1	0.00	2.52	2.15	2.96
Other Asian	-1.3	0.5	6.6	1	0.01	0.27	0.10	0.73
Black African	-1.5	0.4	15.9	1	0.00	0.22	0.10	0.46
Black Caribbean	0.0	0.3	0.0	1	0.89	0.95	0.49	1.87
Black Other	1.5	0.3	33.2	1	0.00	4.33	2.63	7.12
Mixed Other	0.7	0.2	14.4	1	0.00	2.09	1.43	3.06
Mixed White Asian	-0.6	0.4	2.1	1	0.15	0.57	0.27	1.22
Mixed White Black African	0.4	0.4	1.0	1	0.31	1.49	0.69	3.23
Mixed White Black Caribbean	-0.2	0.3	0.5	1	0.49	0.80	0.42	1.51
Chinese	0.5	0.4	1.5	1	0.23	1.67	0.73	3.85
Other	0.1	0.3	0.1	1	0.81	1.07	0.62	1.84
Female	-0.3	0.1	34.9	1	0.00	0.71	0.63	0.79
Attends nearest school	-0.3	0.1	31.6	1	0.00	0.71	0.63	0.80
KS2 prior attainment	0.0	0.0	5.3	1	0.02	1.02	1.00	1.03

**Figure A2.2: Classification table from logistic regression model (pupils predicted as attending free school by model)**

		Predicted attended free school		Percentage Correct
		No	Yes	
Attends free school	No	17354	8155	68.0
	Yes	564	729	56.4

Cut value is 0.050

**Figure A2.3: Characteristics of Key Stage 4 pupils in 2016 in state-funded mainstream schools, free schools, and in a group of similar pupils**

	Other state- funded mainstream	Free schools	Matched pupils
Free school meals	13%	13%	11%
Special educational needs and disabilities	13%	15%	14%
First language other than English	15%	21%	22%
Female	49%	41%	41%
Attends nearest school	45%	24%	25%
Key Stage 2 prior attainment	27.58	27.66	27.70
Irish	0%	0%	0%
Traveller of Irish Heritage	0%	0%	0%
Gypsy Roma	0%	0%	0%
White Other	5%	4%	4%
Bangladeshi	2%	0%	0%
Indian	3%	7%	7%
Pakistani	4%	16%	15%
Other Asian	2%	0%	0%
Black African	3%	1%	1%
Black Caribbean	1%	1%	1%
Black Other	1%	1%	2%
Mixed Other	1%	3%	3%
Mixed White Asian	1%	1%	1%
Mixed White Black African	1%	0%	0%
Mixed White Black Caribbean	1%	1%	1%
Chinese	0%	0%	0%
Other	2%	1%	1%