Review of data relating to those eligible to teach mathematics or science

Training and Development Agency for Schools

Prepared by

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Glossary

Terminology abbreviations

TDA   Training and Development Agency for Schools

LE   London Economics

QLFS Quarterly Labour Force Survey

TIL   Teaching Information Line

BME   Black and minority ethnic

ILO   International Labour Organisation

Executive summary

Introduction

London Economics were commissioned by the Training and Development Agency for Schools (TDA) to undertake an analysis of the characteristics of the pool of individuals eligible to teach mathematics and science. This report is the culmination of some extensive analysis of a number of data sources containing information on that part of the UK population eligible to teach mathematics and science at secondary school level.

For the purposes of this analysis, we have assumed that individuals are considered eligible to teach if they have a degree-level qualification or higher, and are eligible to teach maths or science if that qualification is a degree-level subject closely related to maths or science. To better assist the TDA in its strategic aims and objectives, we have taken as broad a view of the concept of eligibility as possible. Therefore, the analysis further investigates the characteristics of those individuals eligible to teach maths or science depending on the degree of 'closeness' or 'aptitude' their degree subject is in relation to maths or science.

The key aims and objectives of this analysis were:

- to extend the TDA's knowledge of the demographics of people eligible to teach mathematics and science

- to better understand the wider graduate labour market in the context for individuals eligible to teach mathematics and science, and

- to explore whether people who have expressed an interest in teaching – through contacting the Teaching Information Line (TIL) – are representative of the wider population.

Key findings

- The average age of people eligible to teach maths or science at secondary level – who were not in the profession – was approximately 38, compared to 41 for people with eligible degrees already employed as secondary school teachers. For those without eligible degrees, the average age of non-teachers was 38, compared to 39 for teachers. In contrast, the average age of TIL respondents was between 33 and 37, depending on eligibility and teaching status – approximately three to five years less than the sample of respondents contained in the Quarterly Labour Force Survey (QLFS).

- 61 per cent of non-teachers with eligible degrees are male. This contrasts to 52 per cent of teachers with eligible degrees. The reverse is true for holders of ineligible degrees: 35 per cent of non-teachers are male, compared to 41 per cent of teachers.

  TIL data indicate that, of those with an eligible degree, only 40 per cent were male – irrespective of whether they are currently employed as secondary school teachers or otherwise. This is 21 percentage points less than the population of eligible degree holders outside the profession, and 12 percentage points lower than the population of eligible degree holders inside the profession.

  For those who are not eligible to teach maths or science, only 30 per cent of individuals contacting the TIL are male. This is five percentage points less than the population of non-eligible degree holders outside the teaching profession, and 11 percentage points lower than the population of non-eligible degree holders inside the profession.

- Graduates from black and minority ethnic (BME) backgrounds tend to be more likely to gain degree-level qualifications in subjects conferring eligibility to teach maths or science. For those individuals (who are not teachers) with a degree conferring eligibility to teach maths or science, approximately 15 per cent are from BME backgrounds, compared to about 10 per cent for non-eligible degrees (and 10 per cent for the population as a whole).

  Despite the greater likelihood of people from BME backgrounds gaining qualifications in maths or science subjects, there is less likelihood of them entering the teaching profession compared to people from white backgrounds. The proportion of teachers with eligible degrees from BME backgrounds is just seven per cent (compared to 15 per cent of eligible degree holders). Approximately 10 per cent of all non-eligible degree holders that are not teachers are from BME backgrounds, while the proportion of teachers with non-eligible degrees from BME backgrounds is approximately five per cent.

  A greater proportion of TIL users are from ethnic minorities than are present in the wider population. People from BME backgrounds account for around 25 per cent of TIL respondents, compared to approximately 10 per cent in the QLFS. It is notable that black and Asian people are particularly more likely to be TIL users than would be expected from their share of the population.

- The analysis of the QLFS indicates that individuals with degree-level qualifications – irrespective of the degree subject – cluster in London and the South East. However, this is not the case for teachers – especially those eligible to teach maths or science. The analysis illustrates that there is a dramatically lower proportion of eligible secondary school teachers in London and the South East; however, this may reflect the relatively young age of London's children.

- There are clear distinctions in the highest level of qualification attained between the populations of those eligible to teach maths or science, depending on whether they are teachers. For those eligible to teach maths or science (but who are not teachers), approximately 33 per cent have postgraduate qualifications. For teachers who are eligible to teach maths or science the proportion is significantly higher (averaging 54 per cent). For non-eligible non-teachers, approximately 30 per cent have postgraduate qualifications, while for the population of non-eligible teachers, almost 70 per cent have postgraduate qualifications.

  For teachers, the dominant postgraduate qualification held is the postgraduate certificate in education (PGCE), irrespective of eligibility to teach maths or science. However, for people with eligible degrees and postgraduate qualifications, a substantial proportion either have doctorates or masters-level qualifications.

  Only 30-40 per cent of PGCE holders in the population are currently secondary school teachers.

- Individuals eligible to teach maths or science earn £674 a week if they are not employed as teachers, compared to £554 if they are. This earnings difference is equivalent to a shortfall for teachers of approximately £6,200 a year.

  For graduates with degree-level qualifications that do not make them eligible to teach maths or science subjects in secondary school, average weekly earnings are £530 a week if they are not teachers and £594 a week if they are. Annualising these measures implies that for teachers with non-eligible degrees, there is a £3,300 pay premium associated with being in the profession.

- The usual number of hours worked by survey respondents varies dramatically depending on the respondent's profession. The analysis of the data illustrates that teachers worked substantially longer hours during the survey reference week than those that were not teachers – irrespective of the eligibility to teach maths or science.

  For teachers eligible to teach maths or science, the usual number of hours worked in the reference week stood at 43.7 hours, while for those eligible graduates outside the profession, the usual number of hours worked stood at 41.0 hours. Similarly, for individuals not eligible to teach maths or science, the usual number of hours worked by teachers stood at 42.9 hours, while the usual hours worked by non-teachers was only 37.7 hours.

- We found that people contacting the TIL were disproportionately likely to be female, younger than the representative teacher, less likely to suffer from a work limiting disability and more likely to be from a black or minority ethnic background. It is also important to note that, in general, there is missing information from a large number of responses in the TIL data . Although this is greatest for data relating to ethnic origin, it is still the case that a significant proportion of respondents do not (or are unwilling to) provide information on their most basic personal characteristics, such as age and gender. This limits the usefulness of TIL data.

1   Introduction

1.   London Economics were commissioned by the Training and Development Agency for Schools (TDA) to undertake an analysis of the characteristics of the pool of individuals eligible to teach mathematics and science. This report is the culmination of some extensive analysis of a number of data sources containing information on that part of the UK population eligible to teach mathematics and science at secondary school level.

     For the purposes of this analysis, we have assumed that individuals are considered eligible to teach if they have a degree-level qualification or higher, and are eligible to teach maths or science if that qualification is a degree-level subject closely related to maths or science. To better assist the TDA in its strategic aims and objectives, we have taken as broad a view of the concept of eligibility as possible. Therefore, the analysis further investigates the characteristics of those individuals eligible to teach maths or science depending on the degree of 'closeness' or 'aptitude' their degree subject is in relation to maths or science.

2.   The key aims and objectives of this analysis were:

     ▪   to extend the TDA's knowledge of the demographics of people eligible to teach mathematics and science

     ▪   to better understand the wider graduate labour market in the context for individuals eligible to teach mathematics and science, and

     ▪   to explore whether those who have expressed an interest in teaching – through contacting the Teaching Information Line – are representative of the wider population.

1.1   Background and context

3.   The Training and Development Agency for Schools (TDA) was established in September 2005. Its current strategic aims are to:

     ▪   ensure schools have an adequate supply of good quality newly-qualified teachers

     ▪   enable schools to develop the effectiveness of their support staff

     ▪   enable schools to develop the effectiveness of their teachers and keep their knowledge and skills up to date, and

- support schools to be effective in the management of the training, development and remodelling of their workforce.

4.   The Initial Teacher Training Directorate (ITTD) is a directorate within the TDA. The ITTD deals with recruitment, support to providers, and funding in relation to initial teacher training. Among its targets are the following key performance indicators in terms of new teacher recruitment:

- to achieve 100 per cent recruitment against target for mathematics, and

- to achieve 100 per cent recruitment against target for science.

5.   To meet the ITTD's 100 per cent recruitment targets for mathematics and science teachers, it is essential that the TDA has a thorough understanding of the characteristics of the current teaching profession, as well as the characteristics of those trainees entering the profession, and more generally the wider pool of eligible teachers in maths or science.

6.   In Figure 1 below, we show that there has been a substantial increase in recruitment to initial teacher training of individuals eligible to teach science and maths, with 35 per cent more recruits in 2006/07 compared to 2000/01. The growth rate has been faster in maths than in science; both groups grew by between 500 and 700 recruits between 2000/01 and 2006/07, but this number obscures the fact that the pool of maths recruits was, and is, smaller than that for science.

Figure 1: Recruitment of mathematics and general science teachers at secondary level 2000-2006
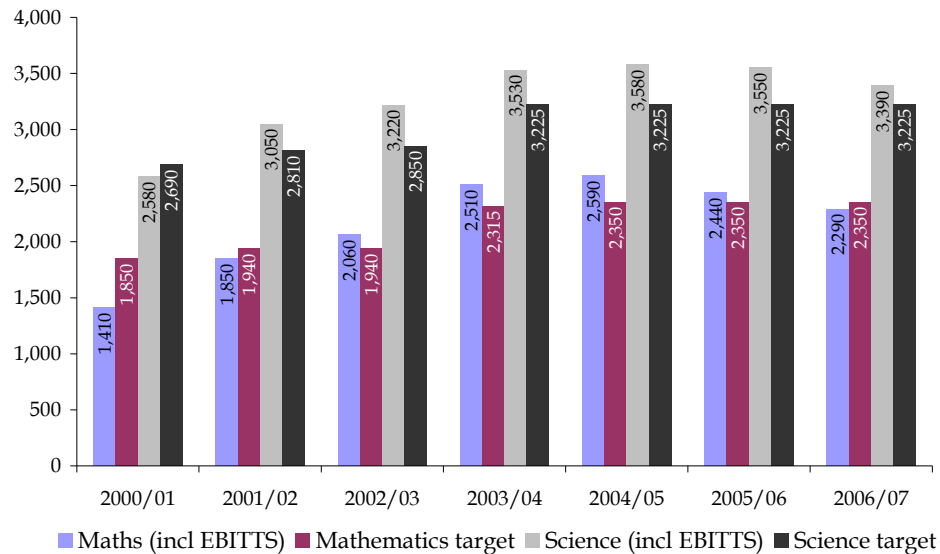
Source: TDA ITT Trainee Numbers Census 2000/01 - 2006/07

7. In mathematics (2006/07), there were 2,350 places available on initial teacher training, and in science the figure was 3,225. The level of recruitment to initial teacher training in mathematics was marginally short of target in 2006/07 (by approximately 2.5%), while recruitment to science initial teacher training exceeded the recruitment target by approximately 5%.

8. In contrast, the overall state of recruitment to initial teacher training (secondary) is relatively healthy, and there has only been a three per cent shortfall in recruitment (17,040 compared to a target of 17,500).

9. The analysis presented in the later sections may provide a detailed understanding of the factors that influence the decision of individuals with degrees that allow them to teach maths or science not to enter, or not to remain, in the profession.

2   Methodological approach

2.1   Data

10. The data underpinning this report are from the Quarterly Labour Force Survey (QLFS). The QLFS is designed to be representative of the whole of the United Kingdom, with each quarter's sample containing information on 60,000 private households. The information contained in the QLFS is unique as it is one of the few data sources containing detailed information on the personal, socio-economic and qualification attainment of respondents, as well as information on employment outcomes, profession held and earnings achieved. In addition to this, the information contained in the QLFS is weighted to ensure that the sample is nationally representative. We provide detailed information on the contents, sampling and collection methodology in the Annex.

11. A second dataset in which the TDA is interested is the Teaching Information Line (TIL). The TIL service helps the TDA to recruit teachers by providing a database containing information on people who may have expressed an interest in teaching at some point during their educational or working career. The database enables TDA to contact or target these individuals, find out if they would like any further information, or to take part in promotional activities, and the subsequent outcomes.

12. In this report, we analyse the information from the TIL database to see if the users of the service are representative of the UK population (as benchmarked by the QLFS), or whether it attracts interest from particular demographic or socio-demographic groups in particular. The assessment of the comparability of the two samples is fundamental to this analysis as it will give the TDA an indication of the relevance and usefulness of the TIL data in a national perspective.

2.2   Classification of eligibility to teach mathematics and science

13. Individuals are considered eligible to teach if they have a degree qualification or higher, and are eligible to teach mathematics or science if that qualification is in a subject related to these.

14. The content of an individual's degree determines which subject or subjects they would be eligible to teach at secondary school, as well as the strength of eligibility (aptitude) to teach those subjects.

15.   Our classification system assigns a teaching subject and strength of eligibility (aptitude) to each individual whose degree makes them eligible to teach maths or science. We are interested in teaching in four subjects: mathematics, physics, chemistry and science. For each of these four subjects, there are three classes of aptitude: Perfect, Strong and Tenuous.

16.   'Perfect' aptitude designates generalist (rather than specialised) degrees that are directly linked to the teaching subject. 'Strong' aptitude signifies a specialised degree that is directly related to the teaching subject, and, as such, is likely to be narrower in scope than the secondary syllabus. A 'Tenuous' aptitude indicates that the degree subject bears some relation to the teaching subject, such as requiring the same background knowledge or technical expertise – however, some additional subject knowledge and training may be required as not all of those classified in this category will be able to go straight into teaching.

17.   Some degrees make an individual eligible to teach multiple subjects. For instance, many engineering degrees confer eligibility to teach physics and mathematics. We do not specify the strength of eligibility to teach these combinations because of the difficulty in identifying the relative strength of the individual subjects.

18.   Thus, individuals fall into one of 16 categories, as specified in Figure 2.

Figure 2: Classification of eligibility to teach mathematics and science
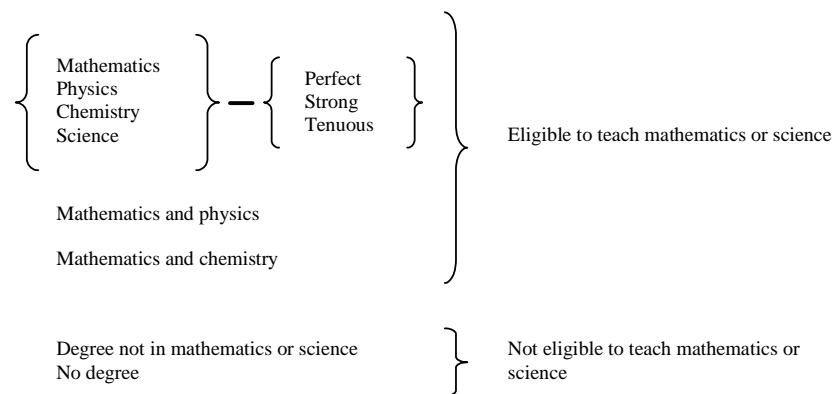
Source: London Economics

19.   To determine the extent of an individual's aptitude to teach maths or science, we classified individuals depending on the subject(s) of their degree. If their degree was in several subjects combined, we classified them according to the subject fields, with more emphasis placed on the main subject field.

20.   For instance, we assumed that those individuals with single subject degrees in an eligible subject (such as mathematics) had a 'Perfect' aptitude to teach mathematics.

21.   We assumed that that individuals who did combined subject degree-level studies in that same subject area (such as mathematics and computer science) had a level of aptitude one level down from those with a single subject degree. Therefore, we assumed that these individuals had a 'Strong' aptitude to teach mathematics at secondary school level.

22.   Where an individual stated that they did a joint degree, and one of the major components was an eligible subject (for instance, mathematics and French), we also assumed that this person was defined as having a 'Strong' aptitude to teach mathematics as long as the eligible component was the main subject of their degree.

23.   Where an individual stated that they did a degree where the eligible subject was a minor component of the degree (for instance, French, economics and statistics), we classified this individual as having a 'Tenuous' aptitude to teach maths at secondary school level.

24.   A detailed classification of degree subjects conferring eligibility, and the degree of aptitude, is presented in the table overleaf.

Table 1: Mapping of degree-level subjects, classified by eligibility to teach mathematics and science (part 1 of 2)

Subject Aptitude	Maths Perfect	Maths Strong	Maths Tenuous	Physics Perfect	Physics Strong	Physics Tenuous	Chemistry Perfect	Chemistry Strong	Chemistry Tenuous
Single subject degree									
Degree subject	Mathematics	Operational research	Management studies	Physics	Astronomy		Chemistry	Pharma-cology, Toxicology and Pharmacy	
		Statistics	Information systems						
		Computer science							
		Software engineering							
		Artificial intelligence							
		Other maths and computing not elsewhere classified							
		Economics							
		Business studies							
		Finance							
		Accounting							
Combined subject degree									
Single subject category		Mathema-tical sciences and computing	Librarianship /information studies						
		Business and financial studies							
Multiple subject categories (main element eligible)		Mathema-tical sciences and computing	Librarianship /information studies						
		Business and financial studies							
Multiple subject categories (minor element eligible)			Mathema-tical sciences and computing						
			Business and financial studies						
			Librarianship /information studies						

Source: London Economics' calculations based on the QLFS

Table 2: Mapping of degree-level subjects, classified by eligibility to teach mathematics and science (part 2 of 2)

Subject	Science	Science	Science	Maths and physics	Maths and chemistry	Non-maths and science	No degree
Aptitude	Perfect	Strong	Tenuous	Not applicable	Not applicable	Not applicable	Not applicable

Single subject degree

Degree subject	Science Perfect	Science Strong	Science Tenuous	Maths and physics	Maths and chemistry	Non-maths and science	No degree
	Medicine/Dentistry	Botany	Opthalmics	Engineering	Chemical engineering	(All other degree subjects)	
	Anatomy, Physiology/Pathology	Other Biological science	Sports science	General engineering			
	Medical technology	Animal science	Psychology	Civil engineering			
	Biological sciences	Agriculture	Food/beverage studies	Mechanical engineering			
	Zoology	Forestry	Other physical sciences	Aerospace engineering			
	Genetics	Agricultural science		Naval architecture			
	Microbiology	Materials science		Electronic engineering			
	Molecular biology	Ocean sciences		Production engineering			
	Pre-clinical veterinary	Environmental sciences		Other engineering			
	Clinical veterinary	Maritime technology					
	Forensic sciences	Industrial Bio-technology					
	Geology	History of science					

Combined subject degree

	Science Perfect	Science Strong	Science Tenuous	Maths and physics	Maths and chemistry	Non-maths and science	No degree
Single subject category	Medicine/Dentistry	Biological sciences		Engineering		(All other subject categories)	
	Subjects allied to medicine	Agricultural science					
		Physical sciences					
Multiple subject categories (main element eligible)	Medicine/Dentistry	Biological sciences		Engineering		(All other subject categories)	
	Subjects allied to medicine	Agricultural science					
		Physical sciences					
Multiple subject categories (minor element eligible)		Medicine/Dentistry	Biological sciences	Physical sciences		(All other subject categories)	
		Subjects allied to medicine	Agricultural science	Mathematical sciences and computing			
		Physical sciences	Physical sciences	Engineering			

Source: London Economics' calculations based on the QLFS

3   Characteristics of those eligible to teach mathematics and science

25.   This section presents a description of the social and economic characteristics of the part of the population eligible to teach mathematics and science at secondary school level. For our analysis, eligibility is defined as those individuals, aged between 21 and 59 years old[1], who have a degree-level or postgraduate qualification in a subject related to maths or science (as defined in the previous section).

26.   As previously discussed, a finer distinction of eligibility is also used, wherein individuals are classified by the subject they are eligible to teach and strength of aptitude that their qualification confers on them to teach that subject.

27.   Comparisons of this group of individuals potentially eligible to teach maths or science are made against the characteristics of non-maths and non-science degree holders (not eligible to teach maths or science), and against those that have no degree (also not eligible to teach maths or science). A further dimension is added to the analysis by comparing the characteristics and outcomes of those that are currently secondary school teachers, and those that are not currently working as secondary school teachers, for each of the eligibility classifications. It is important to note that we do not have information from the Labour Force Survey on whether individuals inside the teaching profession with eligible (or non-eligible) degrees, are actually teaching maths or science subjects. The comparisons between the various groups of individuals are being made according to degree subject and occupation only.

28.   Given the relative complexity of the information presented in the following sections, we provide a brief summary of headline characteristics from the data. Throughout the summary (and the main explanation of the findings), we have concentrated on those results that are statistically significant. A detailed analysis of the characteristics of those eligible to teach maths or science follows.

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[1] We have only selected individuals aged between 21 and 59 for further analysis, although it is clear that there are many individuals aged 60 or above that might consider entering the teaching profession. The decision to limit the analysis to the traditional 'working age' population is because information on earnings for people aged over 60 becomes significantly more volatile and potentially misleading.

3.1 Summary of main comparative statistics

29. The analysis of the characteristics of those eligible to teach maths or science, based on the QLFS, provides a benchmark to assess the representativeness of the TIL data used by the TDA in their role delivering against initial teacher training recruitment needs. Where there are comparable variables in both data sets, we indicated the degree of representativeness of the TIL data relative to the QLFS data.

Age

30. In terms of personal characteristics, we found that the average age of those eligible to teach maths or science at secondary level – who were not in the profession – was approximately 38, compared to 41 for those with eligible degrees already employed as secondary school teachers.

31. For those without eligible degrees, the average age of non-teachers was 38, compared to 39 for teachers. These estimates are averages of the working age population (aged between 21 and 59).

32. In comparison, the average age of TIL respondents was between 33 and 37, depending on eligibility and teaching status, and further analysis implies that the average age of TIL respondents is approximately three to five years less than respondents to the QLFS. This implies that the TIL contains information on individuals that are significantly younger than the population as a whole, but this is unsurprising given the information role of the service.

Gender

33. In terms of gender, the majority of non-teachers with eligible degrees are male (61 per cent). This contrasts to 52 per cent of teachers with eligible degrees. For the wider population of ineligible degree holders, the reverse is true: 35 per cent of non-teachers are male, with 41 per cent of teachers being male.

34. Information from the TIL indicates that of those individuals with eligible degrees, only 40 per cent were male – irrespective of whether they are currently employed as secondary school teachers, or otherwise. This is 21 percentage points less than the population of eligible degree holders outside the teaching profession, and 12 percentage points lower than the population of eligible degree holder inside the profession.

35.   For those that are not eligible to teach maths or science, only 30 per cent of individuals contacting the TIL are male. This is five percentage points less than the population of non-eligible degree holders outside the teaching profession, and 11 percentage points lower than the population of non-eligible degree holders inside the profession.

35.   These findings indicate that the individuals that contact the TIL are significantly younger and are more likely to be female, compared to the population as a whole.

Ethnic origin

36.   The analysis of the QLFS also illustrates that those individuals from BME backgrounds tend to be more likely to gain degree-level qualifications in subjects conferring eligibility to teach maths or science (of those that have degrees). Specifically, for those non-teachers with a degree conferring eligibility to teach maths or science, approximately 15 per cent are from a BME background, compared to about 10 per cent for non-eligible degrees, and 10 per cent for the population as a whole.

37.   Despite the greater likelihood of individuals from BME backgrounds gaining qualifications in maths or science-related subjects, there is a less likelihood of them entering the teaching profession compared to people from white backgrounds. The proportion of teachers with eligible degrees from BME backgrounds is just seven per cent (compared to 15 per cent of eligible degree holders). This outcome is not just limited to those individuals with eligible degrees. Approximately 10 per cent of all non-eligible degree holders that are not teachers are from BME backgrounds, while the proportion of teachers with non-eligible degrees from BME backgrounds is approximately five per cent.

38.   It is not possible to ascertain the outcomes achieved by different ethnic groups due to relatively small sample sizes.

39.   A greater proportion of TIL users are from ethnic minorities than are present in the wider population. This finding is somewhat tentative, since the ethnic background of almost 20 per cent of the graduate users was unclassified in the TIL database. From the usable information, people of BME backgrounds account for around 25 per cent of the user group compared to approximately 10 per cent in the QLFS. It is notable that black and Asian people are particularly more likely to be TIL users than would be expected from their share of the population.

Disability

40. The share of teachers, eligible to teach maths or science, indicating they have a disability is marginally higher than in the population of teachers with non-eligible degrees (though not statistically significantly so). However, for either category of teacher (eligible or non-eligible), the incidence of disability is significantly lower than for those teachers without degrees.

41. For non-teachers, the incidence of disability for the population of individuals eligible to teach maths or science is two to three percentage points lower than for those with a non-eligible degree.

Region of residence

42. The analysis of the QLFS indicates that individuals with degree-level qualifications – irrespective of the subject of degree – cluster in London and the South East. However, this is not the case for teachers – especially those that are eligible to teach maths or science. The analysis illustrates that there is a dramatically lower proportion of eligible secondary school teachers in London and the South East; however, this may reflect the population distribution in London and the fact that the capital possesses an extremely young population. Specifically, although London accounts for 14.5 per cent of children up to the age of four, nationally, it only accounts for 12 per cent of 11-15 year olds.

Education

43. There are clear distinctions in the highest level of qualification attained between the populations of those eligible to teach maths or science, depending on whether they are teachers. For those eligible to teach maths or science (but who are not teachers), approximately 33 per cent have postgraduate qualifications. For teachers who are eligible to teach maths or science the proportion is significantly higher (averaging 54 per cent).

44. For non-eligible non-teachers, approximately 30 per cent have postgraduate qualifications, while for the population of non-eligible teachers almost 70 per cent have postgraduate qualifications.

45. However, these findings mask some important subtleties in the type of postgraduate qualification. For teachers, the dominant postgraduate qualification held is the postgraduate certificate in education (PGCE), irrespective of eligibility to teach maths or science. However, for those with eligible degrees and postgraduate qualifications, a substantial proportion have either doctorates or masters-level qualifications. Only a small proportion of these individuals have PGCEs.

46.   Furthermore, only 30-40 per cent of PGCE holders in the population are currently secondary school teachers.

Earnings

47.   Although we have assessed a number of measures of earnings, we present the main results in relation to gross weekly earnings. Individuals eligible to teach maths or science earn £674 a week if they are not employed as teachers, compared to £554 if they are. This earnings difference is equivalent to a shortfall for teachers of approximately £6,200 a year.

48.   For graduates with degree-level qualifications that do not make them eligible to teach maths or science subjects in secondary school, average weekly earnings are £530 a week if they are not teachers and £594 a week if they are. Annualising these measures implies that for teachers with non-eligible degrees, there is a £3,300 pay premium associated with being in the profession.

Hours worked

49.   In addition to the fact that those individuals with eligible degree-level qualifications earn significantly more outside the teaching profession compared to those inside the profession, it is also the case that the usual number of hours worked by survey respondents varies dramatically depending on the respondent's profession.

50.   The analysis of the QLFS data illustrates that teachers worked substantially longer hours during the survey reference week than those that were not teachers – irrespective of the eligibility to teach maths or science. In particular, for teachers eligible to teach maths or science, the usual number of hours worked in the reference week stood at 43.7 hours, while for those eligible graduates outside the profession, the usual number of hours worked stood at 41.0 hours. Similarly, for individuals eligible to teach maths or science, the usual number of hours worked was 42.9 hours, while for non-eligible non-teachers, this stood at 37.7 hours.

51.   This information, as well as information relating to some of the other variables used in this analysis, is presented in Table 3 overleaf.

Occupational status	Not a secondary school teacher			Secondary school teacher		
Eligibility category **Variable**	**Degree – eligible to teach maths and science**	**Degree – not eligible to teach maths and science**	**No degree**	**Degree – eligible to teach maths and science**	**Degree – not eligible to teach maths and science**	**No degree[2]**
Number	3,352,918	3,750,000	23,700,000	99,461	239,176	38,246
Age (average)	38.11	39.31	40.55	41.07	40.17	47.80
Female (proportion)	39.06	64.50	50.45	47.97	59.18	67.75
Number of children under 16 (average)	0.66	0.64	0.72	0.77	0.67	0.39
Age of youngest dependent child (average)	6.67	7.28	7.46	7.74	7.99	10.25
White (proportion)	84.90	89.82	90.11	91.98	96.54	89.79
Single (proportion)	36.92	36.62	31.46	28.52	30.31	12.19
London (proportion)	19.22	20.77	11.90	11.26	10.07	9.12
Renting (proportion)	17.19	17.91	30.24	9.37	11.54	9.23
No stated disability (proportion)	90.50	87.47	78.46	89.41	90.12	75.90
Postgraduate qualification (proportion)	31.02	29.9	n/a	54.04	68.55	n/a
Weekly earnings (average)	674.17	530.28	365.47	554.41	593.99	607.45
Hours worked (average)	40.95	37.71	37.66	43.69	43.03	42.31
Hourly earnings (average)	17.86	14.92	9.96	16.30	17.07	18.18
Employment rate	88.69	86.53	75.68	n/a	n/a	n/a
Full time (proportion)	85.67	74.89	75.24	88.99	85.78	85.13
Public sector (proportion)	28.50	45.30	20.01	86.50	12.17	13.95
Permanent contract (proportion)	93.20	92.03	95.95	94.28	93.98	90.74

Table 3: Characteristics of various groups within the UK, classified by eligibility to teach mathematics and science

Source: London Economics' calculations based on the QLFS

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[2] For completeness, we have included categories relating to people without degrees. Although a degree-level qualification is required to enter initial teacher training, there are a number of teachers without a formally recognised undergraduate degree working as secondary school teachers.

3.2   Detailed analysis of comparative statistics

52.   The statistics above give a flavour of the similarities and differences between the various categories of individual pertinent to this report. This sub-section examines in more detail the distribution for each variable, including a finer distinction of eligibility than that used above.

### 3.2.1   Explanation of how to interpret the charts in this section

53.   There are two principal types of charts used in this section. The type of chart depends on whether a variable is 'ordinal' or 'cardinal'. An ordinal variable is numeric, meaning that one value can be compared in relative size to another. An example of this would be age. A cardinal variable is categorical; a given category bears no relative intrinsic size to another. An example of this would be region of residence.

54.   For both types of variable, we are interested in the average value for the sample and the spread or distribution of individuals around this average. For ordinal variables, we look at the mean (mathematical average) for the sample, the highest and lowest values, the variation from the mean, and the confidence interval for the mean[3]. For cardinal variables, we look at the relative frequency of occurrence of each category within the sample. Rather than a mean, we look for the mode (the most frequent category) and how other categories compare to that one.

55.   Each chart is used to identify any patterns present in the data for those eligible to teach. Comparisons between individuals with eligible degrees, those with other degrees, and those with no degrees, can reveal where a particular group of the population is over-represented or under-represented. Furthermore, inferences will be made as to whether any difference is due to an individual's subject, graduate status, or opportunity cost (their next best alternative) in terms of alternatives to teaching.

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[3] The true mean for the population in the United Kingdom is not known; we have a sample of respondents to the QLFS, and we use this sample to make estimates about the true (population) mean. Using statistical theory, we estimate the range over which we believe the true mean to lie. This is the confidence interval.

56.   There are two charts for ordinal variables. One illustrates the sample mean and the range of values that the variable takes; the second illustrates the sample mean and the confidence interval. Both take the same form, which is illustrated in Figure 3. The mean is illustrated by a (dark blue) circle and the range or confidence interval is shown by a (light blue) horizontal line. Additionally, a (yellow) box is shown for each category to state how many individuals are in that category (the sample size). The axis for sample size is different from that used for the means and the ranges or confidence intervals, and is not displayed on the chart.

Figure 3: Key for charts for ordinal variables in this report
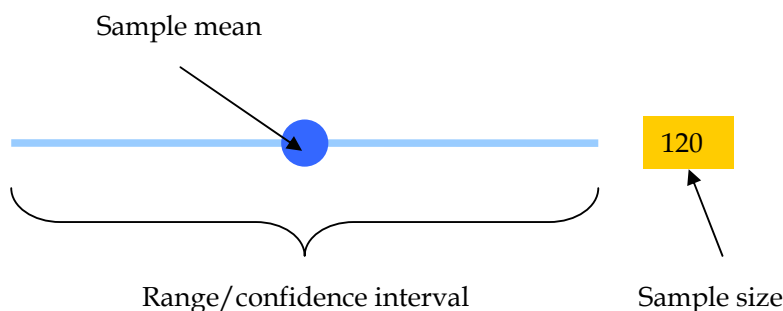
Source: London Economics

57.   The different categories of individuals are arranged vertically, allowing visual comparison against each other.

58.   The charts for cardinal variables are used to compare relative frequencies. In most cases, there are more than two categories. The best way to show the distribution is thus by bar chart. To make comparison across categories easier, we have used overlapping bar charts to illustrate the frequency distributions side by side.

59.   Throughout the report, individuals are categorised by their eligibility to teach maths or science (or not) and by whether they are secondary school teachers (or not). There are four broad categories of individuals according to whether they are eligible to teach maths or science and whether they are teachers. Within those that are eligible, there are subject specialities, and strength of eligibility to teach. For individuals that are not eligible, there are graduates and non-graduates.

60.   For cardinal variables, the arrangement of charts is set in a two-by-two grid, so that comparisons are clear to identify. In the grid, the split according to eligibility is across rows, and the split according to currently being a teacher is across columns. This is shown in Figure 4.

**Figure 4: Mapping of charts for some cardinal variables in this report**

Whether teacher or not

	Eligible non-teacher	Eligible teacher
Whether eligible or not	Not eligible non-teacher	Not eligible teacher

Source: London Economics

Figure 5: Charts used to illustrate cardinal variables in this report

Eligible degree

Non-maths and
science degree

No degree
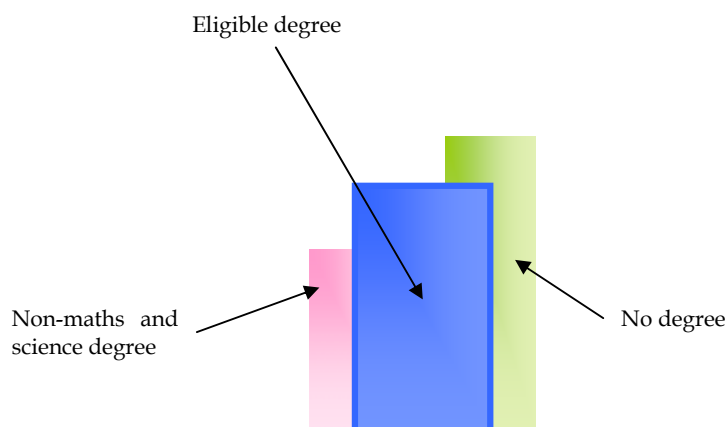
Source: London Economics

61.   In addition to the presentation of the statistical analysis in the form of charts, for completeness, we also provide the equivalent information in table format in Annex 1 at the end of this report.

3.2.2   Demographics

62.   The QLFS contains significant volumes of high-quality data relating to an individual's personal characteristics. In this section, we present the analysis of the data in relation to the following variables:

    1. Age

    2. Gender

    3. Region of residence

    4. Marital status

    5. Ethnic origin

    6. Nationality

    7. Number of children

    8. Age of youngest child

    9. Accommodation (owned outright, rented, etc.)

    10. Any current disability.

Age

63. We have two sets of information on age in this report: individuals' actual ages, and the frequency distribution of individuals by five-year age groups. Figure 6 shows the information on actual age, and Figure 7 shows the information on the distribution by age groups.

64. The average age of non-teachers eligible to teach maths or science is 38. This estimate is based on the average of people who are aged between 21 and 59 who are not working as teachers and who also have the qualifications necessary to be eligible to teach maths or science.

65. It seems that the population of people with these specific skills in maths or science who are not members the teaching profession are younger than those with the equivalent skills who are. Specifically, the average age of teachers who are eligible to teach maths or science is approximately 41 years old. This age variation is further illustrated by the skew apparent in the samples. The mean age of eligible non-teachers is noticeably closer to the lower end of the range, while the mean age of eligible teachers tends to be in the middle, or closer to the upper end of the range, depending on which subject category is being scrutinised.

66. For non-teachers, there is little difference in the age of those that are eligible to teach maths or science, and those that are not eligible. Of those non-teachers with degrees, the average age of individuals eligible to teach maths or science is very slightly younger than that of other degree holders (38 years old compared to 39).

67. Within the group of individuals eligible to teach maths or science, there is some variation in average age, depending on the extent of the aptitude of the degree-level subject to maths or science; however it is quite small. The difference is no more than three years either side of 38, except for a few small sub-samples, such as 'physics: Strong' in non-teachers. The statistics for this are based on a small number of respondents in comparison to the other categories, and could easily be influenced by a single outlier. However, it is interesting to note that the average age of individuals with 'Perfect' aptitude for teaching maths or science is usually higher than those with 'Strong' or 'Tenuous' aptitudes. This may reflect a drift in the courses offered by universities away from classical single subject degree courses, to degrees offering the option to combine subjects.

Figure 6: Mean and range of age by eligibility
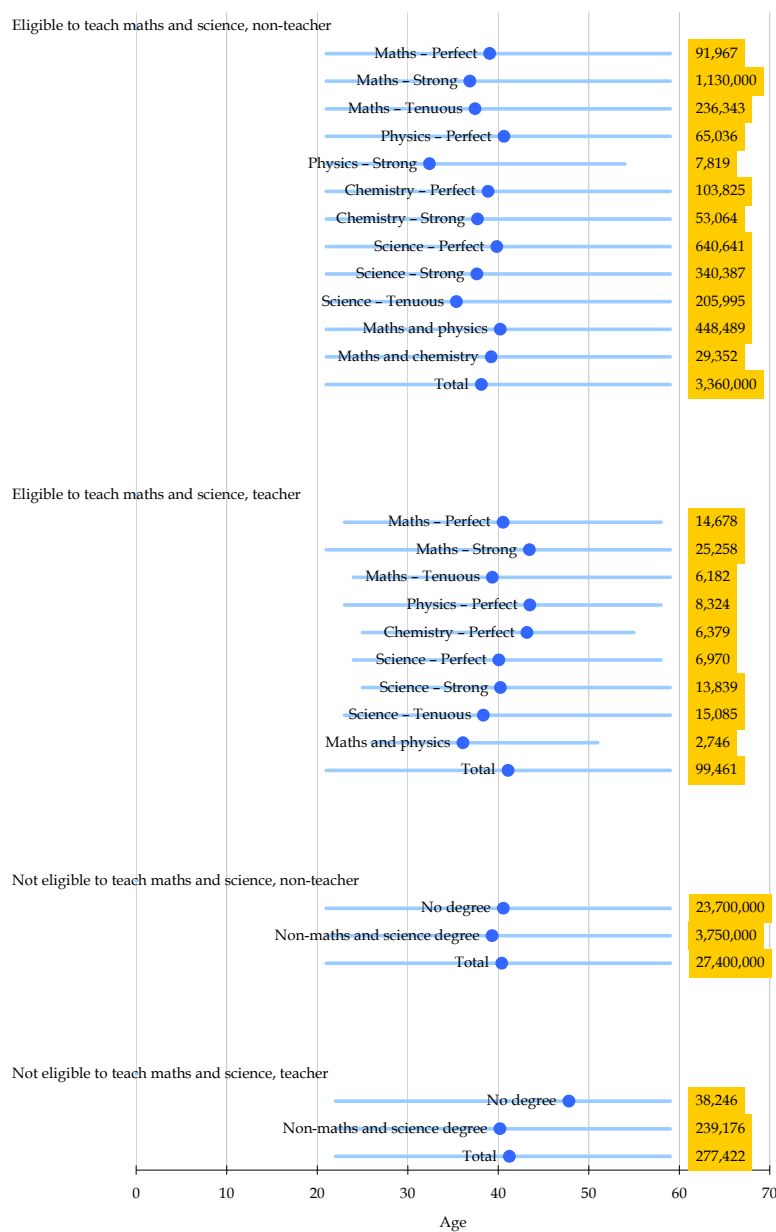
68.   The upper chart in Figure 7 shows that there is a prevalence of young people with degree-level subjects which make them eligible to teach maths or science. This is also true, but to a lesser extent, for other degree holders. The most likely explanation for this is the historical trend increase in university attendance. Although it is not shown in the chart, the age-distribution of individuals eligible to teach maths or science is fairly similar across eligibility categories. In contrast, the distribution of age of non-degree holders is weighted towards the older end of the working age spectrum.

69.   For teachers eligible to teach maths or science, the overall distribution seems to show that teachers are drawn to a greater extent from the older cohorts of the workforce. This can be seen especially in the lower proportions of 25 to 29 year olds and the higher proportion of 35 to 59 year olds. There is an exception in the case of 45 to 49 year olds, which may be a counterbalance to the especially high proportion of teachers in the next age group up.

70.   However, it is interesting to note that the distribution of individuals eligible to teach maths or science who are not teachers is fundamentally different from those individuals with eligible degrees in the profession. The significant difficulties that exist in recruiting eligible maths or science teachers into the profession are highlighted in the data. Although there appears to be sufficient production of graduates eligible to teach maths or science, this does not translate into equivalent rates of recruitment into the profession.

**Figure 7: Frequency distribution of age groups by eligibility**

Non-teacher

Teacher

■ Non-maths and science degree   ■ No degree   ■ All eligible degrees
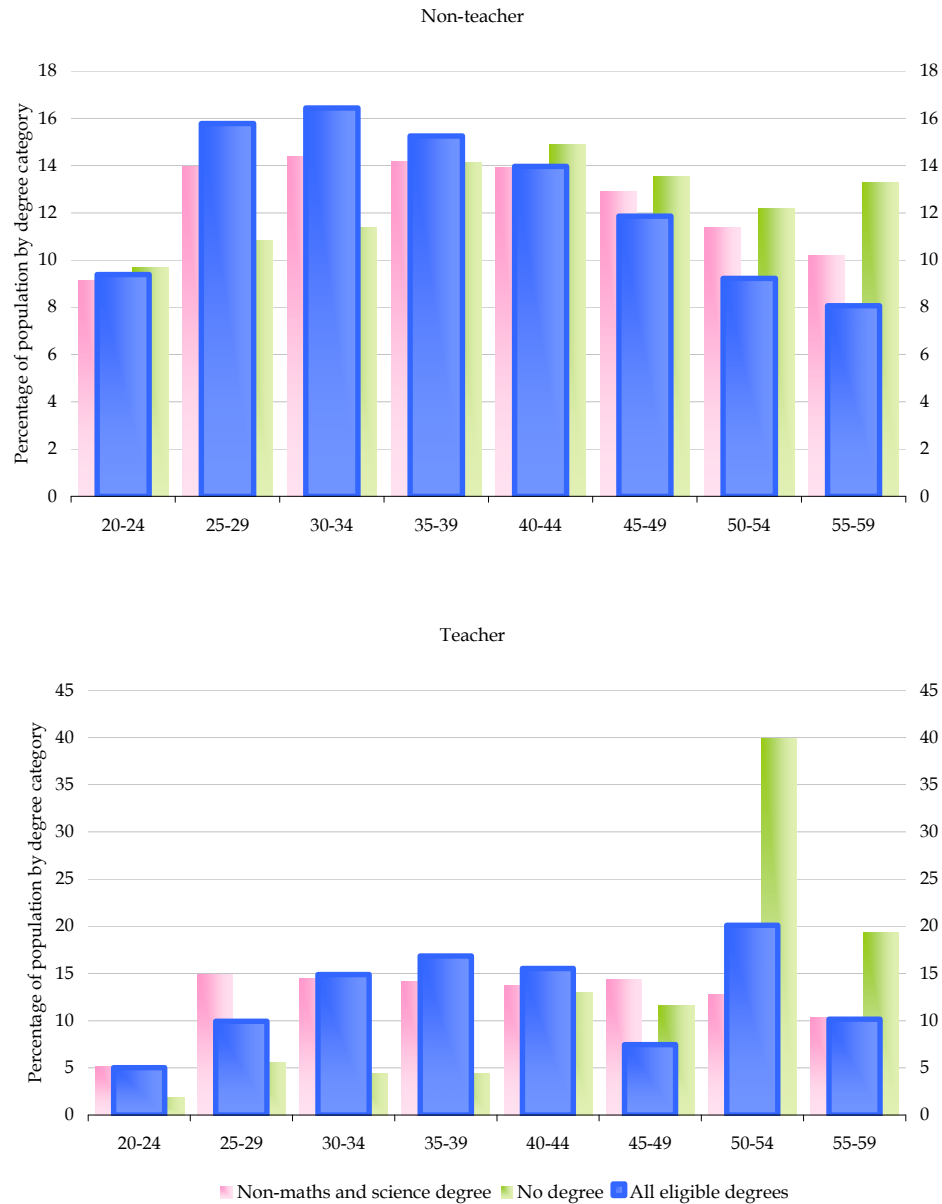
Source: London Economics' calculations based on the QLFS

Age – TIL data

71. The average age of TIL users eligible to teach maths or science is 34.8 years old for non-teachers. The average age of eligible users who are teachers is 37.3 years old. Non-eligible graduate users of the TIL tend to be younger than eligible ones, but within these, teachers again (36.7 years) are generally older than non-teachers (33.3 years). The distributions by age group shown in Figure 8 illustrate how the distribution of TIL users is more heavily skewed in favour of younger individuals than the QLFS data, irrespective of whether they are teachers or not.

72. It is important to note that, in general, there is missing information from a large number of responses in the TIL data. Although this is greatest for data relating to ethnic origin, it is still the case that a significant proportion of respondents do not (or are unwilling to) provide information on their most basic personal characteristics. This limits the usefulness of TIL data.

Figure 8: Frequency distribution of age groups by eligibility in TIL data
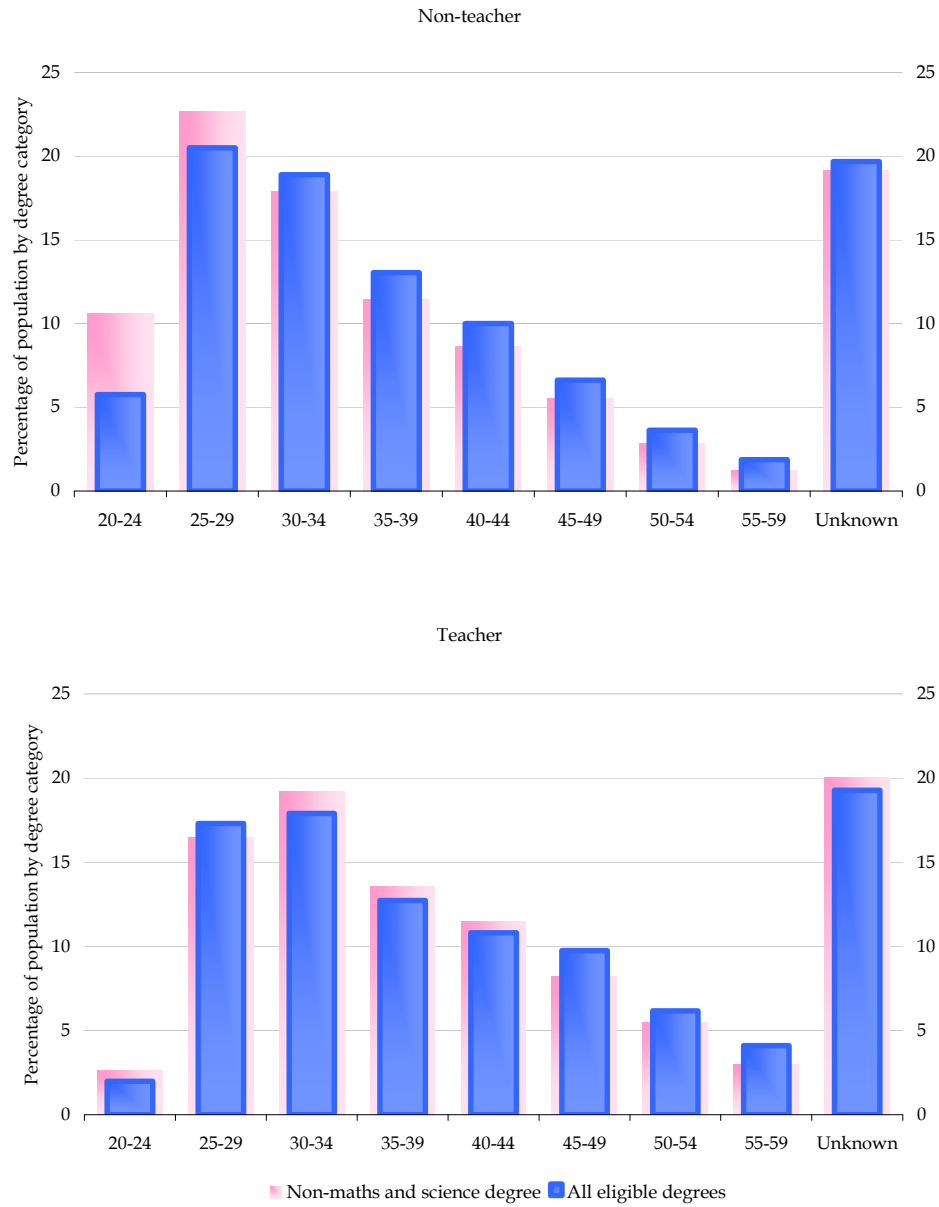
Source: London Economics' calculations based on the TIL database

Gender

73.   Two remarks stand out in an assessment of the gender balance of potential and actual maths or science teachers. The first is that the majority of maths or science degree holders are male – irrespective of whether they are actually teaching or not. The second, however, is that this imbalance is reduced, and in some cases reversed, when describing secondary school teachers with those qualifications.

74.   The charts in Figure 9 show the balance between males and females according to the various eligibility and teaching categories used throughout this report. A downward sloping line indicates a prevalence of males and an upward one a prevalence of females: the steeper the slope, the greater the imbalance.

75.   There are more males than females in all but three of the categories of individuals who are eligible to teach maths or science, but are not teachers, including, importantly, the group as a whole. This contrasts strongly with the gender balance for degree holders in other subjects (non-eligible degree holders), who are predominantly female, and the population as a whole without a degree, which is close to parity.

76.   The change in gender balance between teachers and non-teachers is striking on many levels. The overall picture is given by the slope of the line 'All eligible degrees'. This illustrates a 61:39 split in favour of males that are non-teachers and have degree-level subjects which make them eligible to teach maths or science, but only a 52:48 split in favour of males that are secondary school teachers with subject eligibility. Within the refined eligibility classifications, there are swings in both directions. However, a pattern emerges: nine of the 12 categories in the non-teachers section are male-dominated, with seven of these being more than 60 per cent male. For teachers in eligible subjects, five of nine categories (56 per cent) are male-dominated, with only three of these being more than 60 per cent male.

77.   This pattern of gender balance is not the same for non-eligible degree holders, where 65 per cent of non-teachers are female, but only 59 per cent of teachers.

78.   This finding suggests that there may be a significant difference in the alternative options (the opportunity cost) for men and women to becoming a teacher, depending on whether an individual's degree is in maths or science or not. From the data, it appears to be the case that the opportunity cost for women with eligible degrees may be lower than for men with eligible degrees. The implication is that it may be more cost-effective to target women with eligible degrees to enter (or re-enter) the teaching profession.

Figure 9: Gender balance by eligibility
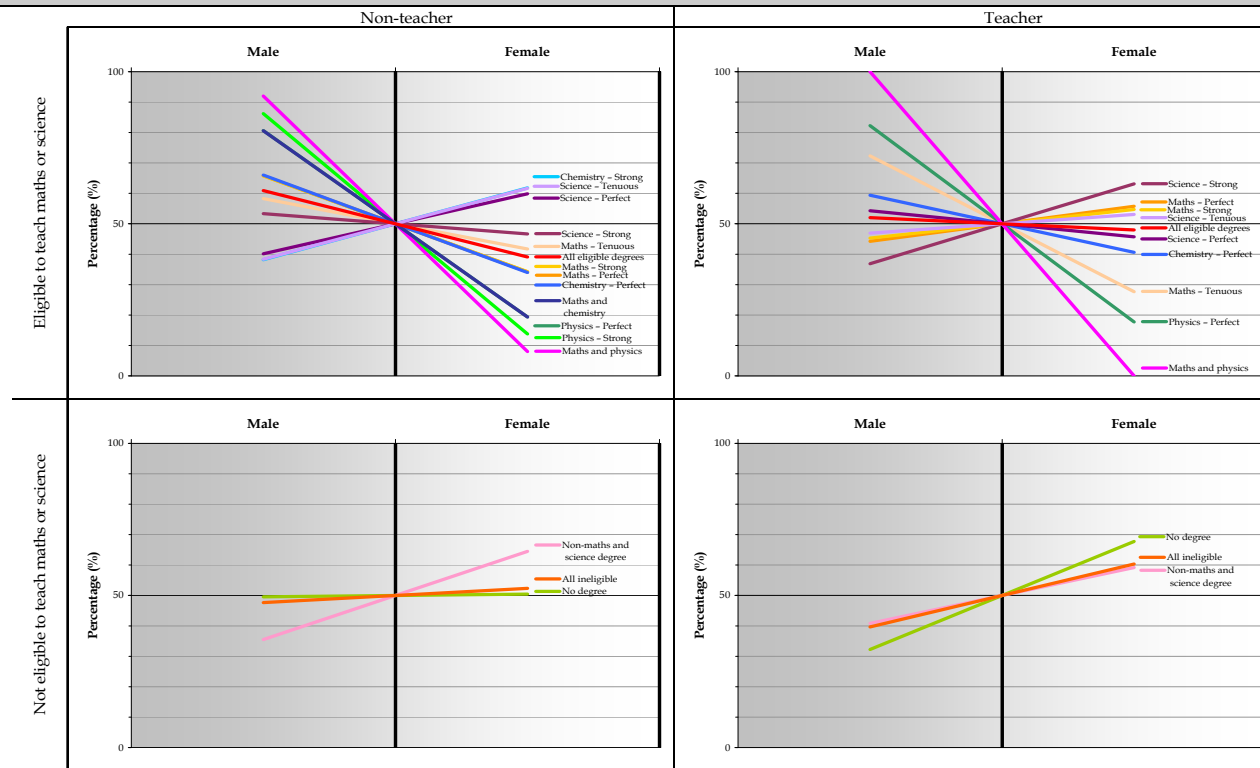
Source: London Economics' calculations based on the QLFS

Gender – TIL data

79.   It is interesting to compare the information from the QLFS to that contained in the Teaching Information Line. Of the 135,769 users with eligible degrees, almost 60 per cent of those contacting the TIL were female (irrespective of whether they were currently teachers or non-teachers). For those not eligible to teach maths or science, the balance was tipped even more in favour of women, with almost 70 per cent being female.

80.   The implication is that, irrespective of the reason, the TIL contains a disproportionate number of women on the database, so extreme care would need to be taken deriving policy conclusions based on TIL data due to the unrepresentative nature of this particular data.

Figure 10: Gender balance by eligibility in TIL data
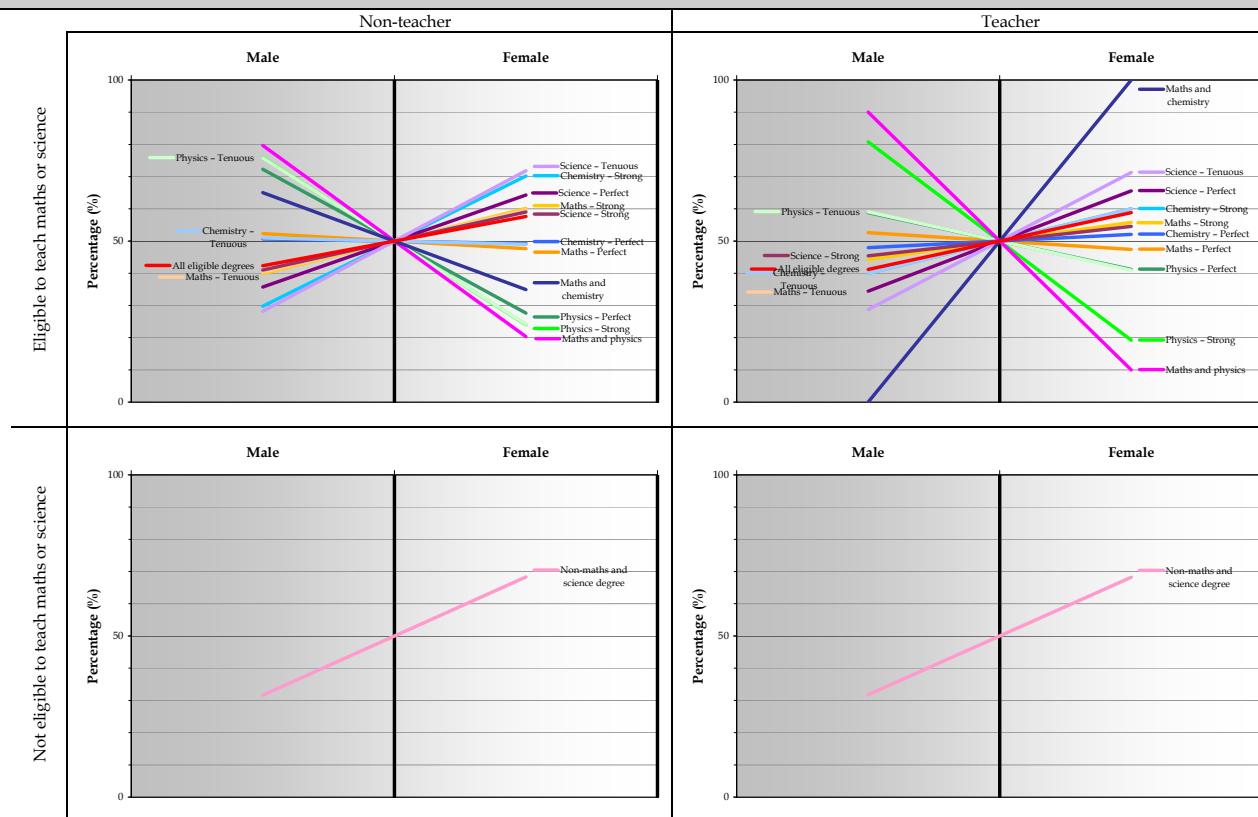
Source: London Economics' calculations based on the TIL database

Ethnicity

81. For graduates from ethnic minorities, there seems to be a slight tendency toward the accumulation of degree-level qualifications in maths or science subjects (compared to other degree-level subjects), relative to individuals with white heritage. Specifically, for those individuals (who are not teachers) with a degree conferring eligibility to teach maths or science, approximately 15 per cent are from BME backgrounds, compared to about 10 per cent for non-eligible degrees. Overall, approximately 10 per cent of the population is from a BME background.

82. However, despite the greater likelihood of individuals from BME backgrounds gaining qualifications in maths or science subjects, there is less likelihood of them entering the teaching profession compared to people from white backgrounds. Specifically, although 15 per cent of all eligible degree holders that are not teachers are from BME backgrounds, the proportion of teachers with eligible degrees from BME backgrounds is just seven per cent. This outcome is not just limited to those individuals with eligible degrees. Approximately 10 per cent of all non-eligible degree holders that are not teachers are from BME backgrounds, while the proportion of teachers with non-eligible degrees from BME backgrounds is approximately five per cent.

Figure 11: Frequency distribution of ethnicity by eligibility

Non-teacher

Teacher
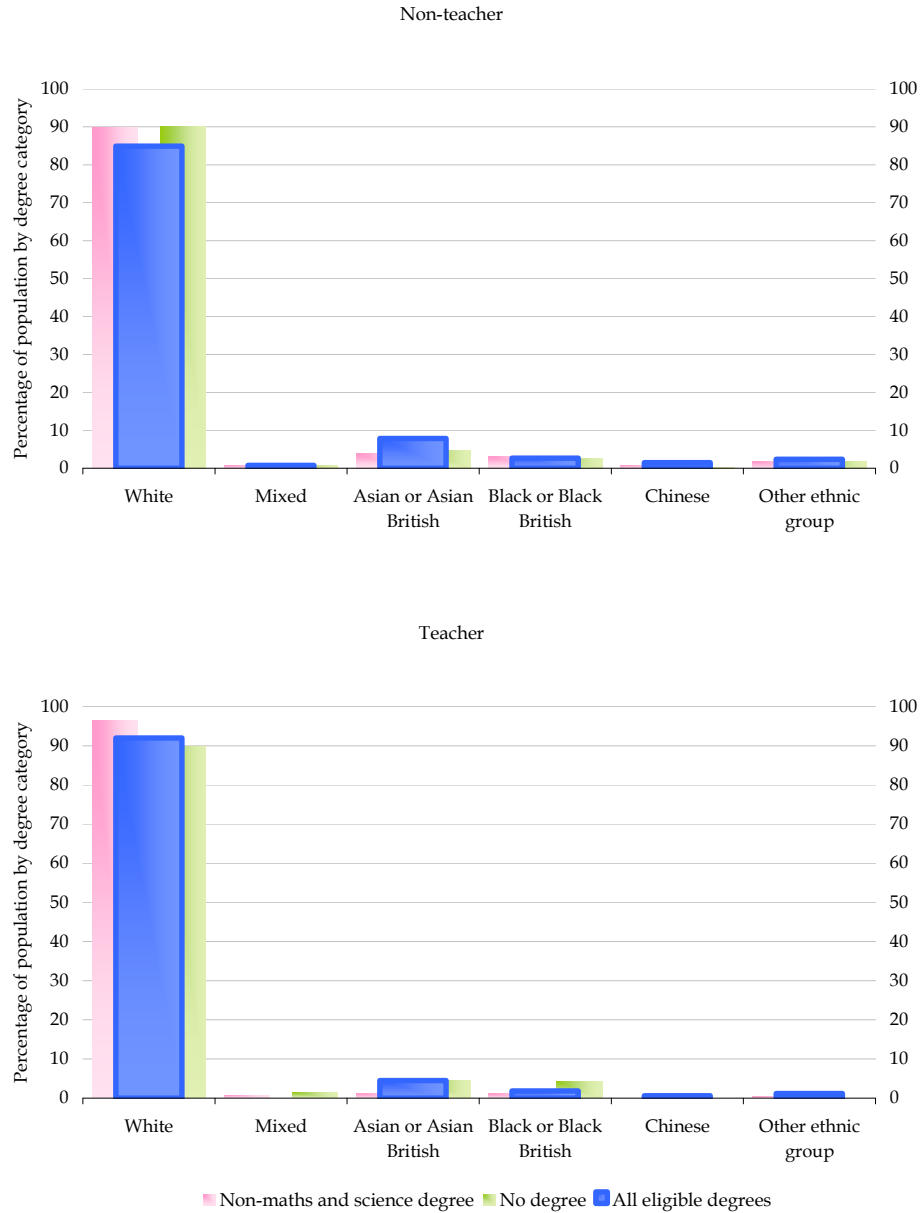
Source: London Economics' calculations based on the QLFS

Ethnicity – TIL data

83.   It appears that a greater proportion of TIL users are from ethnic minorities than are present in the wider population (based on data from the QLFS). This finding is somewhat tentative, since the ethnic background of almost one-fifth of the graduate users was not classified in the TIL database. Nevertheless, some information can be gleaned from the remaining 80 per cent: people from BME backgrounds account for around 25 per cent of the user group compared to approximately 10 per cent in the QLFS. It is notable that individuals describing themselves as Asian/Asian British and Black/Black British are particularly more likely to be TIL users than would be expected from their share of the population.

Figure 12: Frequency distribution of ethnicity by eligibility in TIL data

Non-teacher

Teacher

■ Non-maths and science degree ■ All eligible degrees
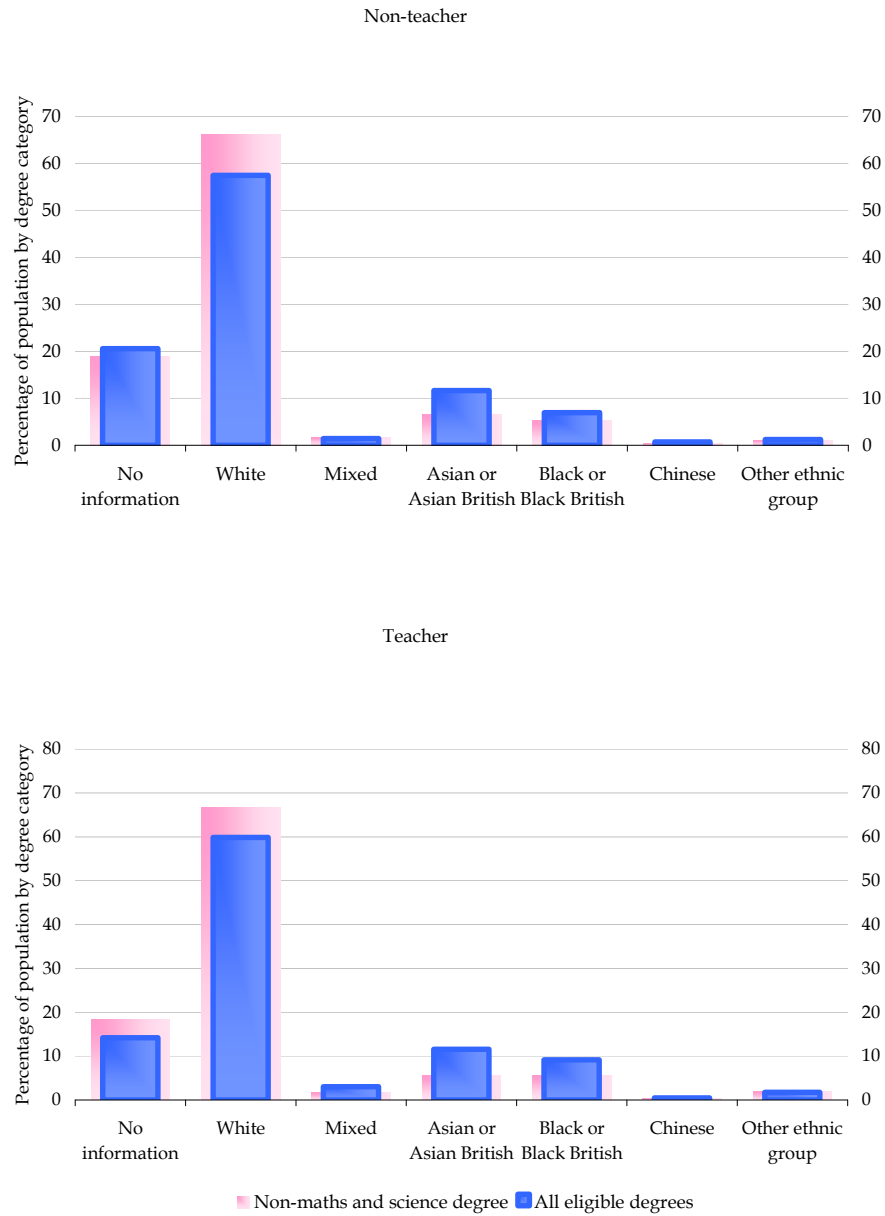
Source: London Economics' calculations based on the TIL database

81.   This increased propensity of individuals from BME backgrounds to contact the TIL has some important implications for policymakers. Given the higher than average likelihood of graduates from BME backgrounds to have eligible degrees, their lower than expected entrance to the teaching profession and high level of interest in entering the profession (represented by high incidence of contact with the TIL), it could be the case that individuals from BME backgrounds might be a category of potential recruits that are relatively easy to reach and persuade to enter the teaching profession.

Disability

82.   The vast majority of individuals have no stated disability according to the data from the QLFS. There is **no** substantial difference in the proportion of 'not-disabled' individuals, irrespective of whether we consider teachers or non-teachers (approximately 90 per cent for each sample). The proportion of individuals claiming that they have some form of disability is 10-15 percentage points higher for those who have no degree-level qualifications, compared to those who have a degree.

83.   The QLFS contains two variables relating to disability: those disabled according to the Disability Discrimination Act[4] and those with a disability that limits their ability to work. It is possible for individuals to fall into (either or) both categories.

84.   For disabled individuals, it is most common for them to be characterised by having both DDA disability and work-limiting disability. The second most common category is DDA disability only. This is true regardless of the respondents' educational qualifications, but is much less pronounced for those with degrees, especially in subjects related to maths or science.

85.   The share of teachers who are eligible to teach maths or science, and indicating that they have a disability, is very marginally higher than in the population of teachers with non-eligible degrees (though not statistically significantly so).

86.   The incidence of disability eligible non-teachers is two to three percentage points lower than for those non-eligible non-teachers.

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[4] According to the Directgov website, 'The Disability Discrimination Act (DDA) defines a disabled person as someone who has a physical or mental impairment that has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities.' (Quote taken from www.direct.gov.uk/en/DisabledPeople/RightsAndObligations/DisabilityRights/DG_4001069 on 12 September 2007.)

Figure 13: Frequency distribution of disability by eligibility

Non-teacher

Teacher

■ Non-maths and science degree ■ No degree ■ All eligible degrees
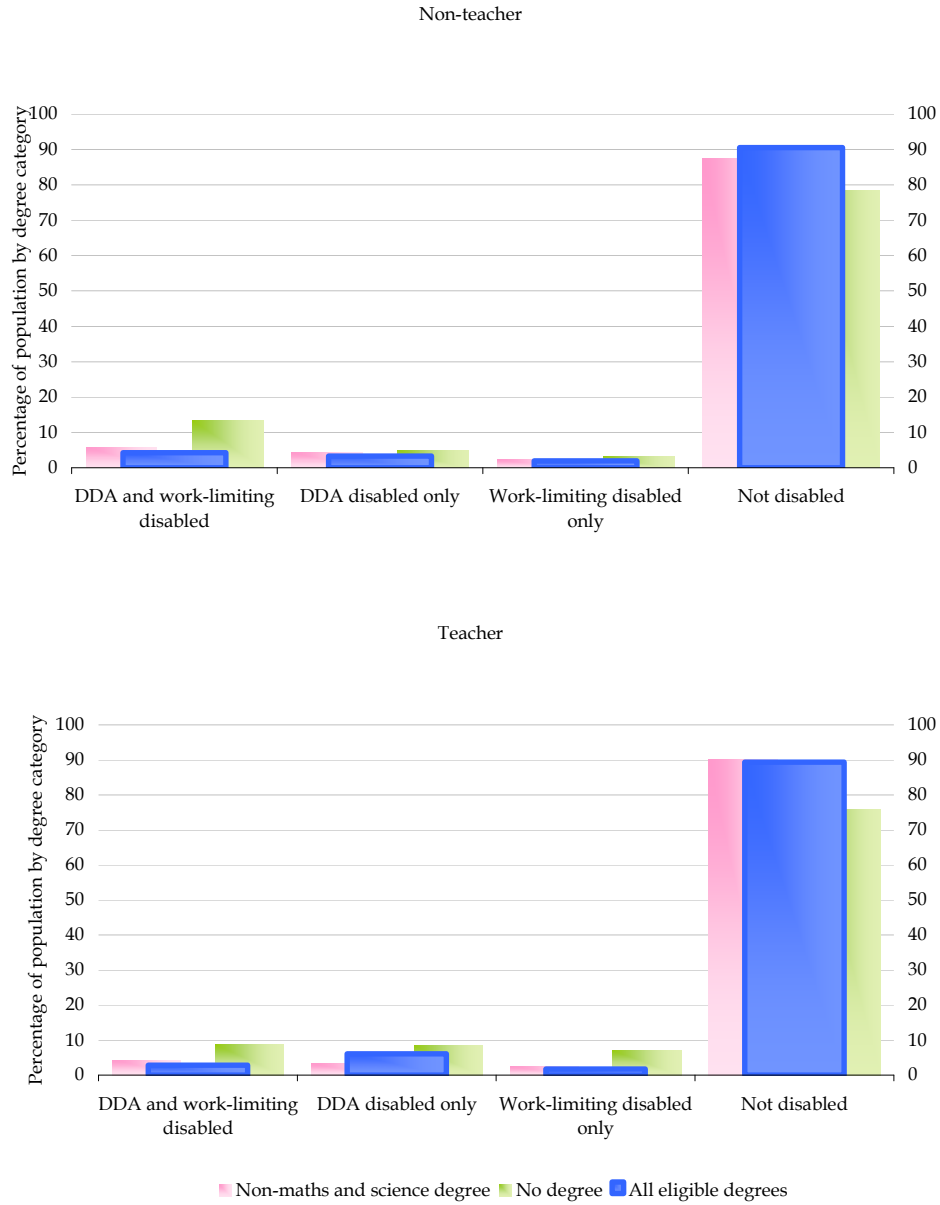
*Source: London Economics' calculations based on the QLFS*

87. Further inspection of the limitations imposed by individuals' (self-reported) disabilities shows that there is no substantial variation in the distribution for those eligible to teach maths or science. Whether considering if the disability limits the kind of paid work or the amount of paid work, or if there is a difference between teachers and non-teachers, the proportions are roughly the same. Figure 14 shows the proportions for each case, with the bars for those without a disability omitted.

Figure 14: Whether disability limits work by limitation and eligibility
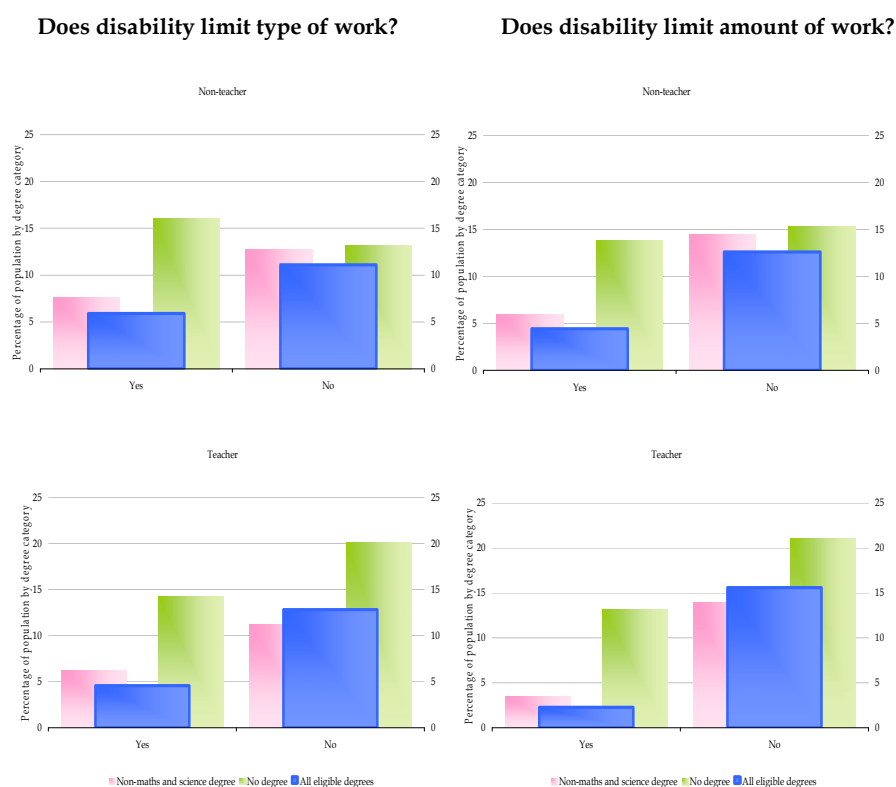
Source: London Economics' calculations based on the QLFS

Disability – TIL data

88.   Disabled individuals make up a very small proportion of individuals contacting the TIL. Just two per cent of graduate TIL respondents stated that they have a disability, in comparison to about 10 per cent in the wider population (according to QLFS data). There is no substantial difference between those with eligible degrees and individuals with other degrees within the TIL data. However, 20 per cent of the users have not stated categorically that they do or do not have a disability, so it is not clear what the true distribution is.

Figure 15: Distribution of disability in TIL data
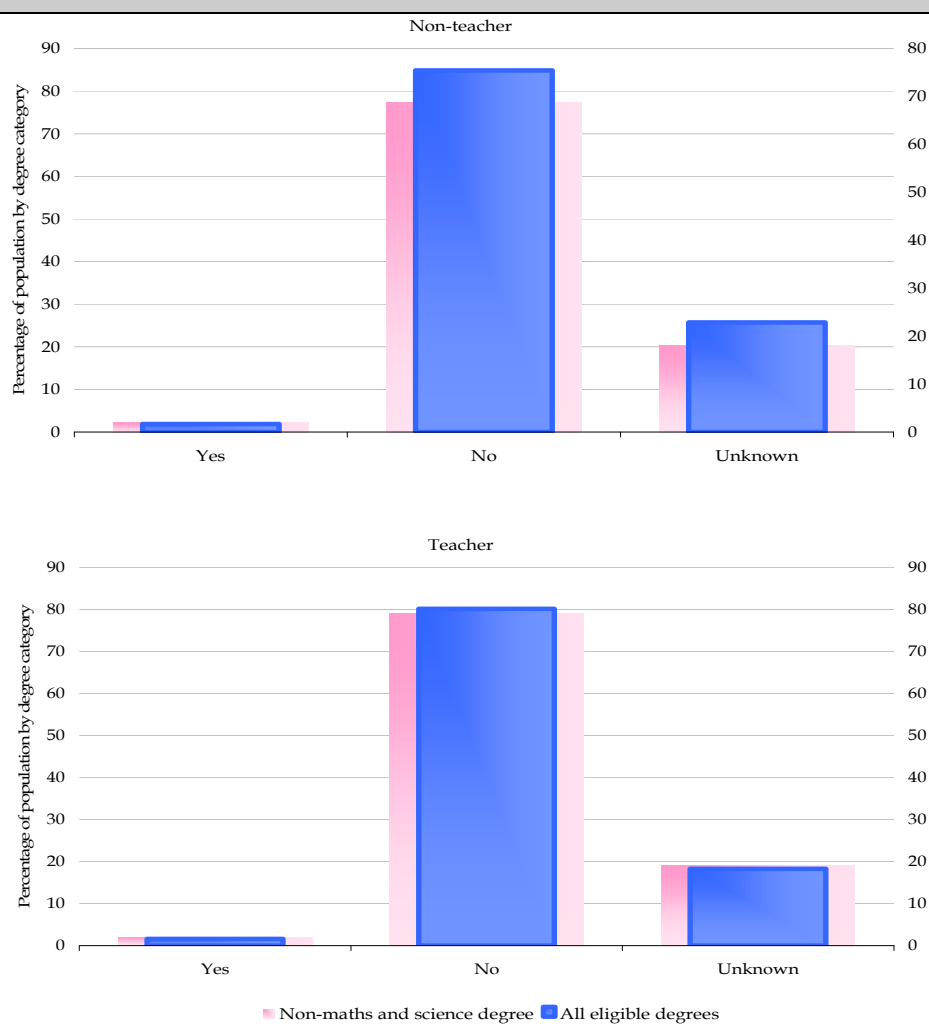
Source: London Economics' calculations based on the TIL database

Nationality

89. Table 4 shows the number of individuals resident in the United Kingdom, according to QLFS data, who are UK nationals and nationals from the five most commonly cited foreign countries. It is clear that foreign nationals in the UK tend not to have degree-level qualifications. For those who do, most do not work in the United Kingdom as teachers. This is especially the case for those with degrees related to maths or science.

Table 4: Nationality by eligibility for six most common nationalities for eligible graduates						
Eligibility category	**UK**	**India**	**China**	**Austr-alia**	**South Africa**	**Poland**
Eligible to teach maths or science						
Non-teacher						
Maths – Perfect	85,786	-	535	-	-	-
Maths – Strong	1,000,000	12,981	10,178	6,189	6,003	10,067
Maths – Tenuous	220,000	1,824	1,013	1,004		
Physics – Perfect	60,952	-	-	-	694	
Physics – Strong	7,106	-	-	-	-	
Chemistry – Perfect	96,267	-	-	665	-	1,107
Chemistry – Strong	45,926	1,003	-	603	-	-
Science – Perfect	570,000	14,529	438	3,903	5,419	1,010
Science – Strong	320,000	2,034		643	1,283	1,459
Science – Tenuous	200,000	571	-	-	701	-
Maths and physics	410,000	5,664	3,857	2,167	529	881
Maths and chemistry	23,562	1,051	-	-	-	-
Teacher						
Maths – Perfect	14,678	-	-	-	-	-
Maths – Strong	25,258	-	-	-	-	-
Maths – Tenuous	6,182	-	-	-	-	-
Physics – Perfect	8,324	-	-	-	-	-
Chemistry – Perfect	5,666	-	-	-	-	-
Science – Perfect	6,970	-	-	-	-	-
Science – Strong	13,839	-	-	-	-	-
Science – Tenuous	13,949	379	-	-	-	-
Maths and physics	2,193	-	-	-	-	-
Not eligible to teach maths or science						
Non-teacher						
No degree	22,000,000	140,000	32,274	51,174	62,905	220,000
Non-maths and science degree	3,500,000	20,709	9,353	8,920	8,593	14,123
Teacher						
No degree	33,321	-	-	505	1,777	-
Non-maths and science degree	230,000	706	-	-	600	-

Source: London Economics' calculations based on the QLFS

90. However, care needs to be taken when considering these results. In some cases, the sample sizes produced by the analysis are particularly small, and in the case of some countries, the rationale for coming to the United Kingdom to work needs to be considered. In particular, in the case of individuals from Australia and South Africa, many individuals entering the country are doing so with the intention of returning to their own country in the medium term and thus, although there may be some success in targeting these individuals, there is a strong possibility that the longer-term gains may be limited.

Region of residence

91. The upper chart in Figure 16 shows that degree holders cluster in London and the South East of England at the expense of northern parts of England and Wales. However, the overall shape of the distribution is quite consistent across all eligibility categories and provides an indication of the entire population distribution.

92. The same cannot be claimed for the distribution of teachers. There seems to be a disproportionate lack of teachers eligible to teach maths or science in the North West, South East of England and in London.

93. The shortfall in teachers is specific to mathematics and science teachers in the North West and South East of England, but is a general one for London. In comparative terms, London is slightly better at attracting teachers eligible to teach maths or science than other teachers.

Figure 16: Region of residence by eligibility

Non-teacher

Teacher

■ Non-maths and science degree   ■ No degree   ■ All eligible degrees
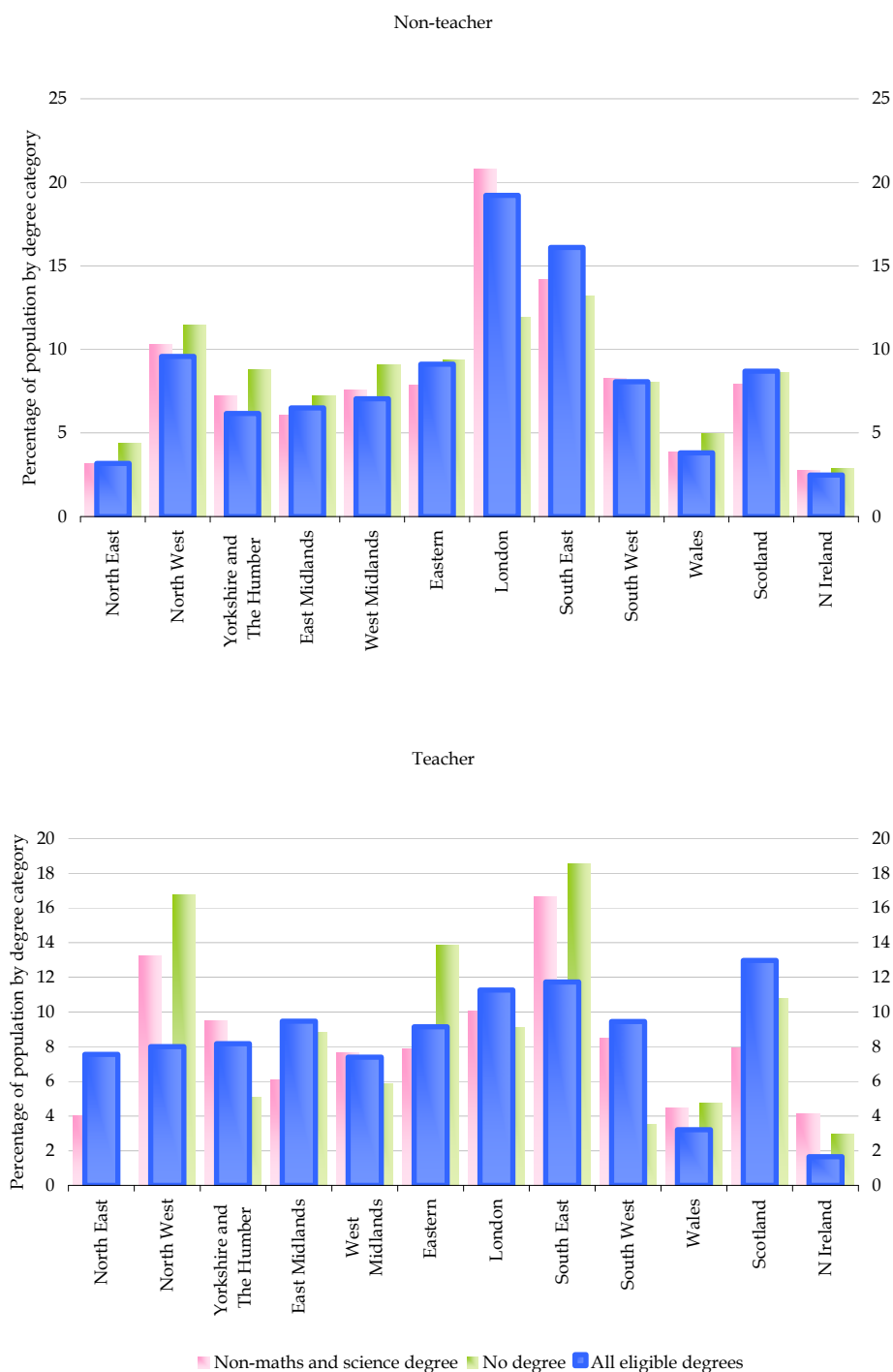
Source: London Economics' calculations based on the QLFS

94.   The shortfall of teachers in London should not be overstated for the moment. It does not require the same proportion of secondary school teachers as its share of the national population. London may have a larger share of the overall population, but there are not as many children of secondary school age in the capital. The chart in Figure 17 shows that the North West and the South East currently require just as many teachers, if not more.

95.   London is, however, characterised by a higher proportion of younger children. If the demographic distribution remains the same over time, London will need to attract a greater share of teachers to meet increasing demand for secondary school teaching. However, given the historical trend of people moving out of London once their children reach the age of schooling (both primary and secondary) it is uncertain whether there is any population bubble that will alter the demand for teachers able to teach maths or science.

Figure 17: Geographical distribution of children in the UK by age group
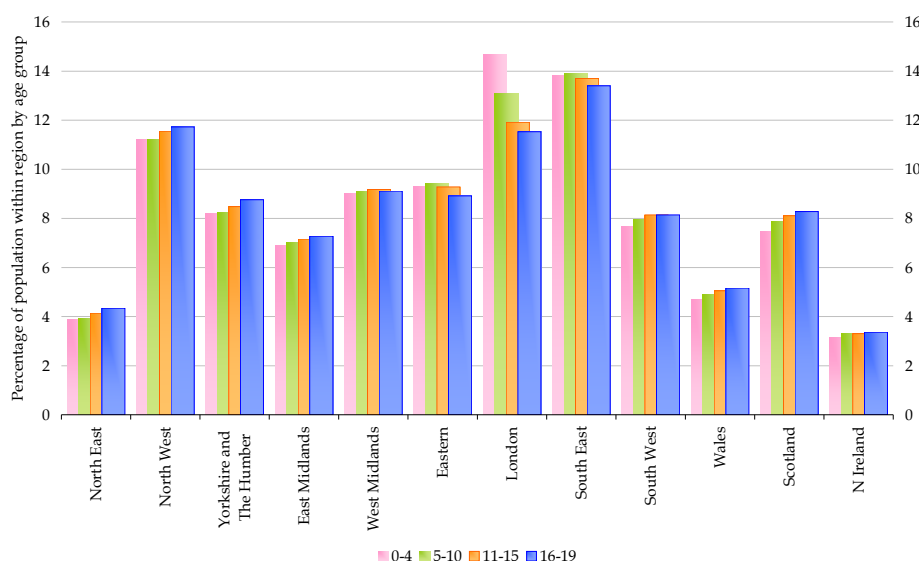
Source: London Economics' calculations based on the QLFS

Residence – TIL data

96.   The distributions of region of residence within the TIL data are very similar, regardless of whether individuals have eligible or ineligible degrees and whether individuals are teachers or not. In fact, there is little difference between the TIL distributions and the QLFS distribution of region of residence. The main aspect that does stand out is use of the TIL service by overseas residents.

Figure 18: Region of residence in TIL data
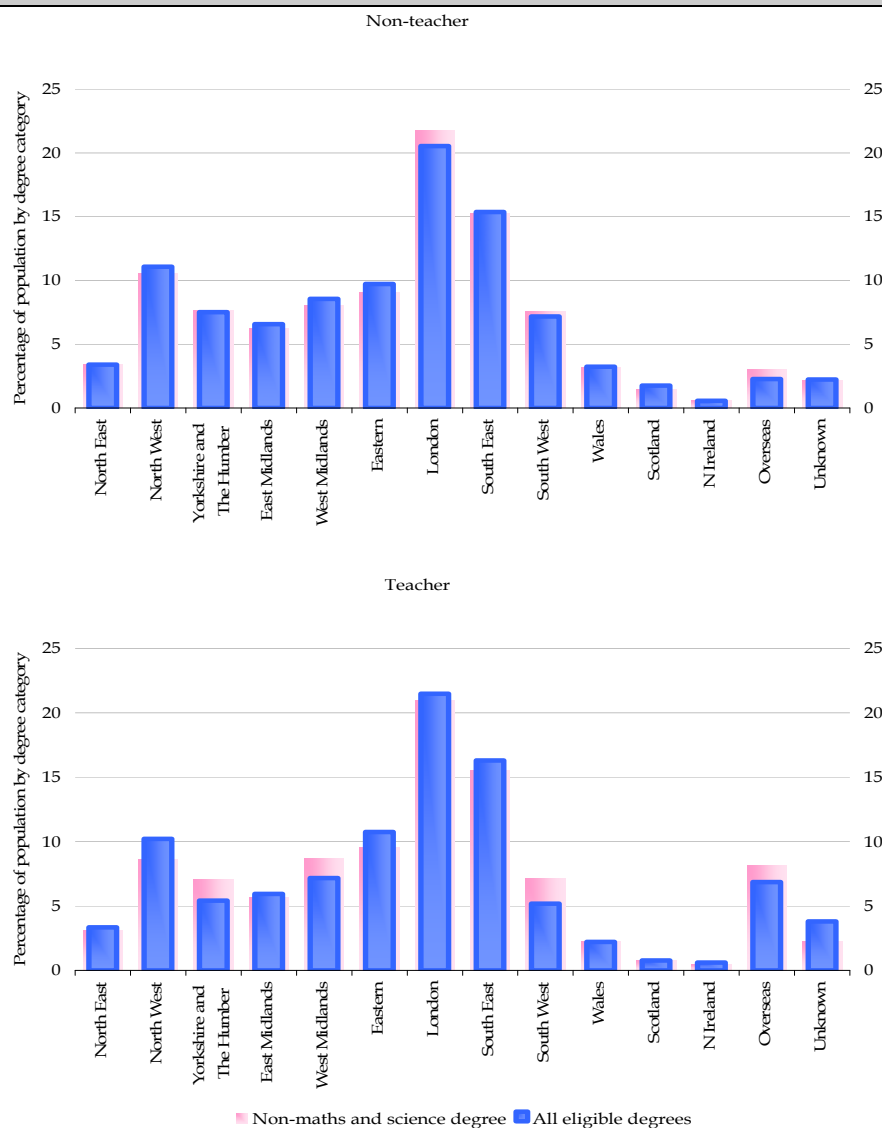
Source: London Economics' calculations based on the TIL database

97. An interesting piece of information that is available only from the TIL database is the preferred location of employment for TIL users. However, fewer than half of TIL users have expressed a preference, suggesting that any findings should be interpreted as indicative only.

98. Nevertheless, a striking feature of the distribution is how much more popular heavily populated areas are with eligible non-teachers than with non-eligible non-teachers in comparison to the relative popularity between eligible and ineligible teachers. This can be seen by how the vertical gap between the bars is much greater for eligible over ineligible in the upper chart, in comparison to the gap in the lower chart (both in Figure 19) for the North West, the South East and London.

99. The gap itself may be as a result of only 31 per cent of non-eligible non-teachers specifying a region, in comparison to 44 per cent of eligible non-teachers. The ranking of response rates is much closer for teachers (54 per cent for eligible and 48 per cent for non-eligible). However, these gaps may be enlightening in themselves, suggesting that eligible graduates are more particular about their location. The shapes of the four distributions are the same, however, suggesting that the relative popularity of the regions is the same.

Figure 19: Preferred region in TIL data
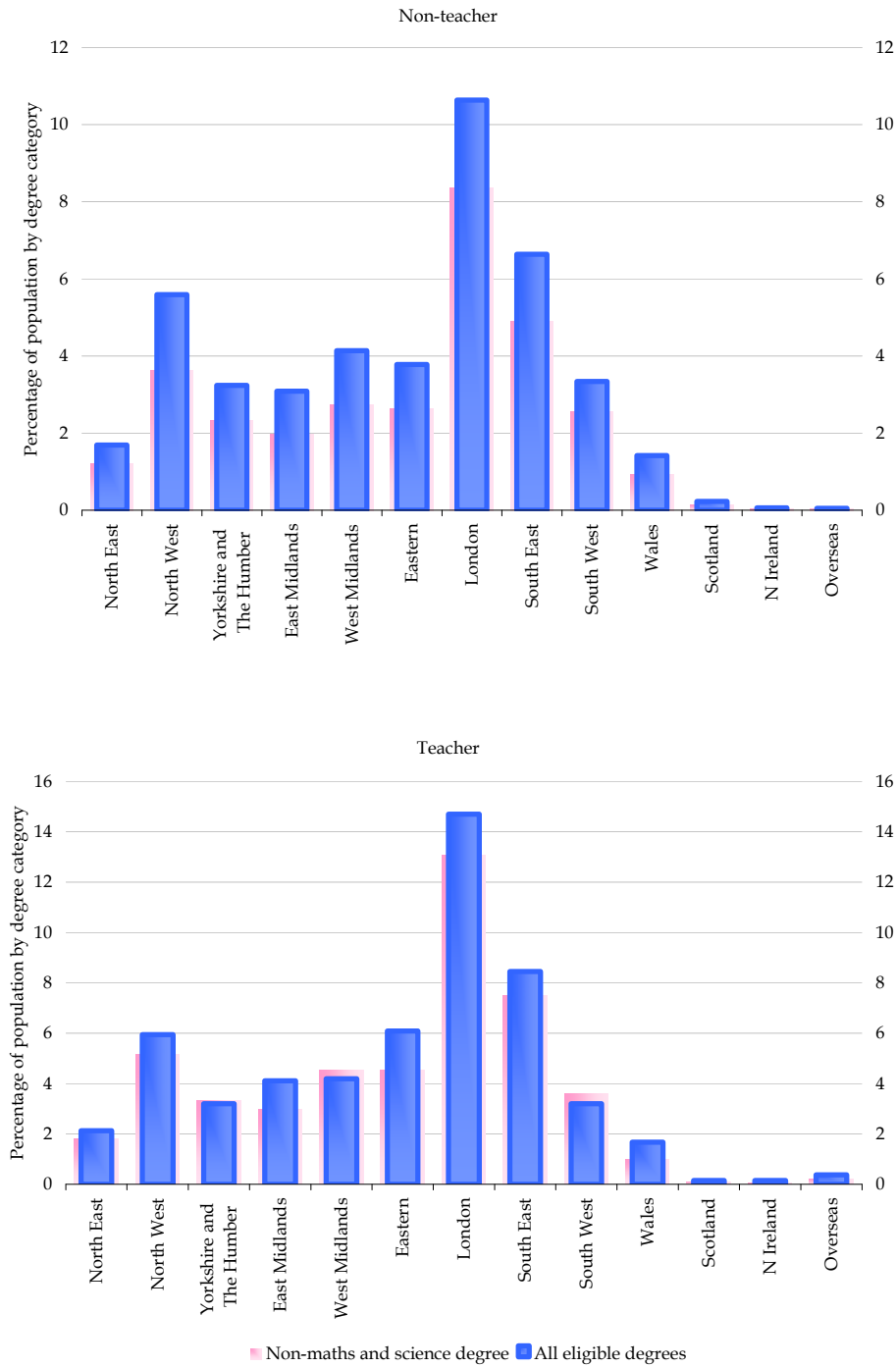
Source: London Economics' calculations based on the TIL database

Accommodation tenure

100. Individuals eligible to teach maths or science who are not teachers tend to be marginally more likely than non-eligible non-teachers to purchase their home with a mortgage. The opposite is the case for teachers. In part this reflects the possibility that individuals with degree-level qualifications in maths or science have greater options (and earn more) outside the profession than those with non-eligible degrees. Figure 20 shows that over 60 per cent have bought their property with a mortgage or a loan and a further 18 per cent own their property outright.

Figure 20: Type of tenancy by eligibility
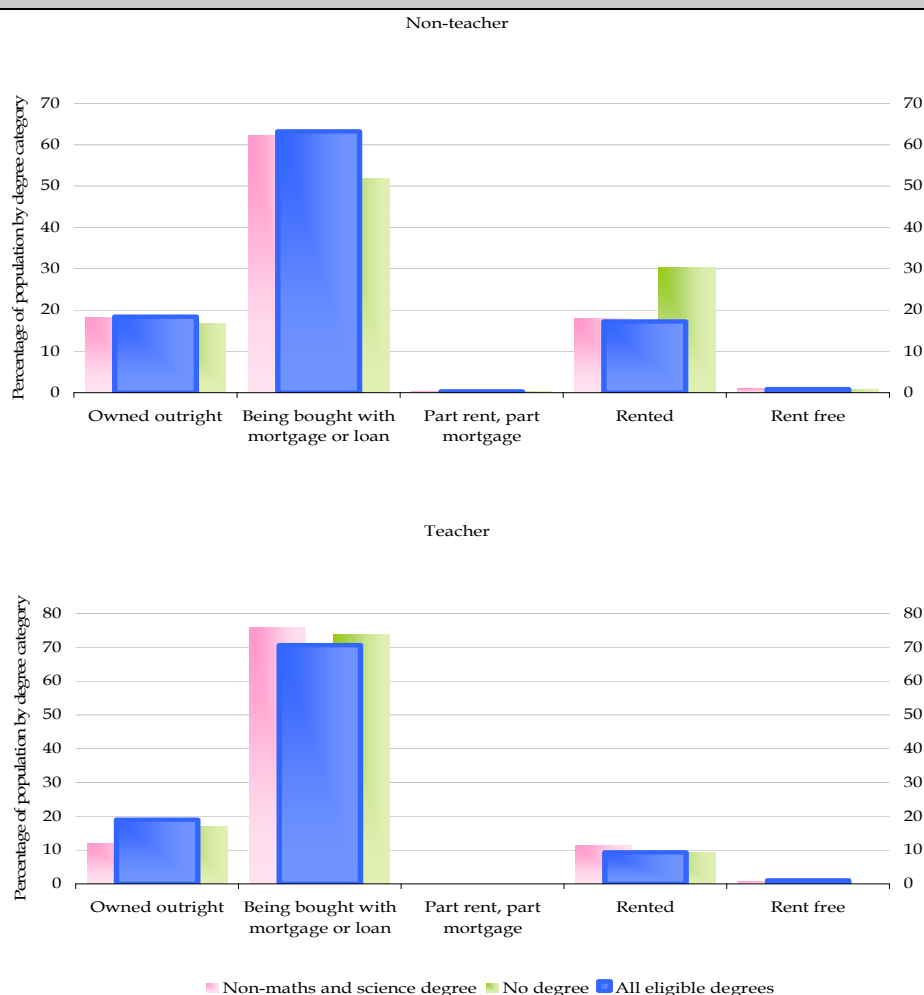
Source: London Economics' calculations based on the QLFS

Marital status

101. Most individuals eligible to teach maths or science are currently married and living with their partner. Almost all of the remainder are single and have never been married. For teachers that are eligible to teach maths or science, the scales are tipped slightly further in favour of married individuals over single ones; however this may reflect the fact that, for those with maths or science degrees, the average age of teachers is a few years older (on average) than non-teachers.

Figure 21: Marital status by eligibility

Non-teacher

Teacher
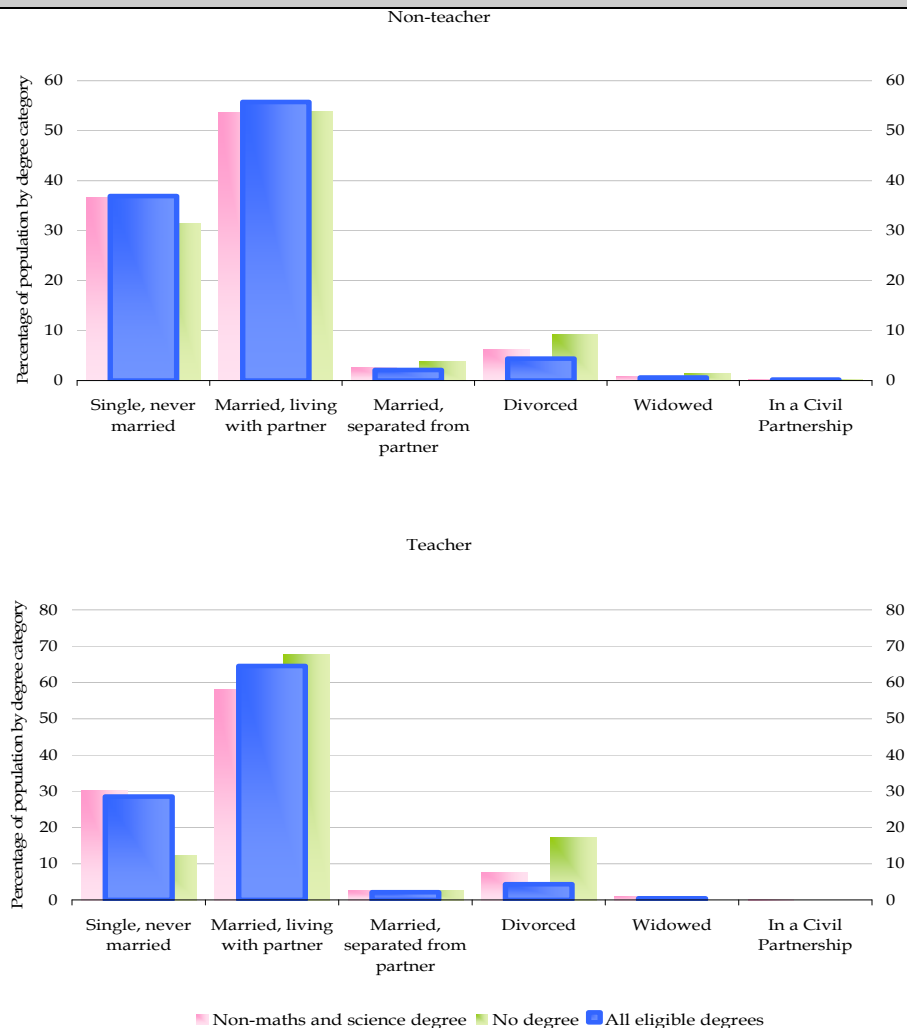
Source: London Economics' calculations based on the QLFS

102. The distribution is broadly the same for other degree holders. However, it is noteworthy that the proportion of single people is lower, and of divorced people is higher, for those who have no degree, irrespective of whether they are a teacher or not.

Number and age of dependent children

103. It is clear from the data illustrated in Figure 22 that most individuals have small families, since the mean number of dependent children is between 0.6 and 0.8 in most cases. The maximum number of children is highest for individuals without a degree who are not teachers. The maximum number of children tends to be less for an individual with a degree and for an individual who is a teacher. The standard deviation, which is provided in the tables in Annex 1, is very close to one for all eligibility categories.

104. Although there is plenty of variation in the age of the youngest dependent child, there does not seem to be a substantial difference between the mean values according to whether an individual has a maths or science degree, nor if that individual is a teacher.

105. The mean age of the youngest child for individuals with maths or science degrees who are not teachers is 6.7 years old. For those with maths or science degrees who are teachers, it is 7.4 years old. It is the same age for those with non-eligible degrees who are not teachers, while it is 8.2 years old for those with non-eligible degrees who are teachers.

Figure 22: Number of dependent children under 16 by eligibility
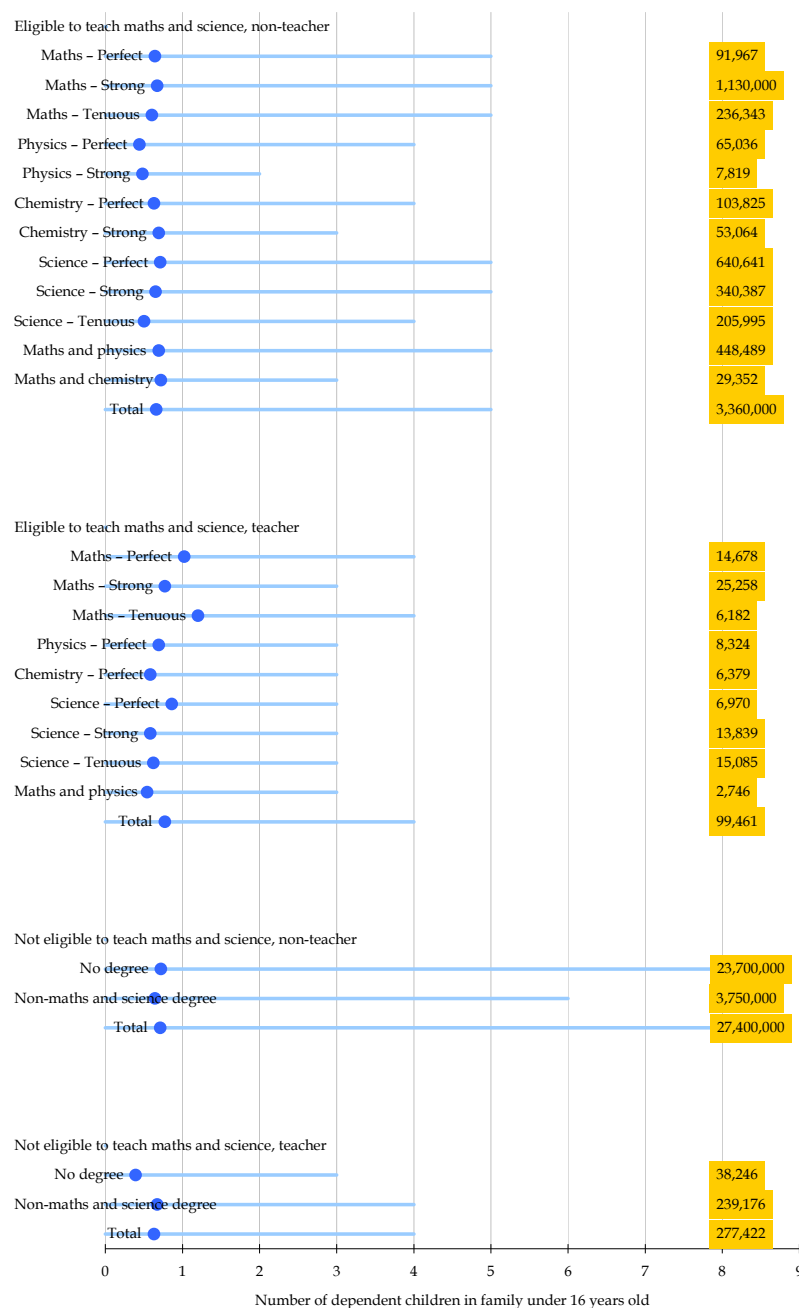
Source: London Economics' calculations based on the QLFS

Figure 23: Age of youngest dependent child under 19 by eligibility

Eligible to teach maths and science, non-teacher

Maths – Perfect	76,306
Maths – Strong	999,658
Maths – Tenuous	211,680
Physics – Perfect	56,043
Physics – Strong	6,671
Chemistry – Perfect	88,041
Chemistry – Strong	47,318
Science – Perfect	544,367
Science – Strong	288,144
Science – Tenuous	172,825
Maths and physics	397,903
Maths and chemistry	24,159
Total	2,910,000

Eligible to teach maths and science, teacher

Maths – Perfect	14,678
Maths – Strong	25,258
Maths – Tenuous	6,182
Physics – Perfect	8,324
Chemistry – Perfect	6,379
Science – Perfect	6,970
Science – Strong	13,195
Science – Tenuous	15,085
Maths and physics	2,746
Total	98,817

Not eligible to teach maths and science, non-teacher

No degree	17,500,000
Non-maths and science degree	3,160,000
Total	20,600,000

Not eligible to teach maths and science, teacher

No degree	37,798
Non-maths and science degree	231,626
Total	269,424

Usual number of hours worked in main job per week

Source: London Economics' calculations based on the QLFS

3.2.3   Education

Highest qualification

106. In this section, we analyse the highest level of qualification possessed by those that are eligible and not eligible to teach maths or science, depending on whether they are currently teachers or otherwise.

107. There are clear distinctions between teachers and non-teachers among those eligible to teach maths or science. Specifically, for non-teachers eligible to teach maths or science, approximately 33 per cent have postgraduate qualifications. For teachers who are eligible to teach maths or science, the proportions are substantially higher (averaging 54 per cent).

108. This same difference is also reflected among individuals who are not eligible to teach maths or science. For non-eligible non-teachers, approximately 30 per cent have postgraduate qualifications, while among non-eligible teachers approximately 70 per cent have postgraduate qualifications. This information is presented in Figure 24 overleaf.

109. However, these findings mask some important subtleties in the type of postgraduate qualification.

110. Teachers are more likely to have postgraduate qualifications than non-teachers – irrespective of whether they are eligible to teach maths or science. Clearly, the dominant postgraduate qualification is the PGCE, irrespective of whether the person is eligible to teach maths or science or otherwise. However, for those non-teachers with postgraduate qualifications who are eligible to teach maths or science, approximately 80 per cent have either doctorate or masters-level postgraduate qualifications. The corresponding figure for eligible teachers is approximately 35 per cent.

111. A similar outcome is illustrated when comparing those that are not eligible to teach maths or science, although to a lesser extent. Sixty one per cent of non-eligible non-teachers have doctorates or masters qualifications, compared to 25 per cent for non-eligible teachers, respectively. This information is presented in Figure 25 and Table 5.

Figure 24: Highest qualifications by eligibility
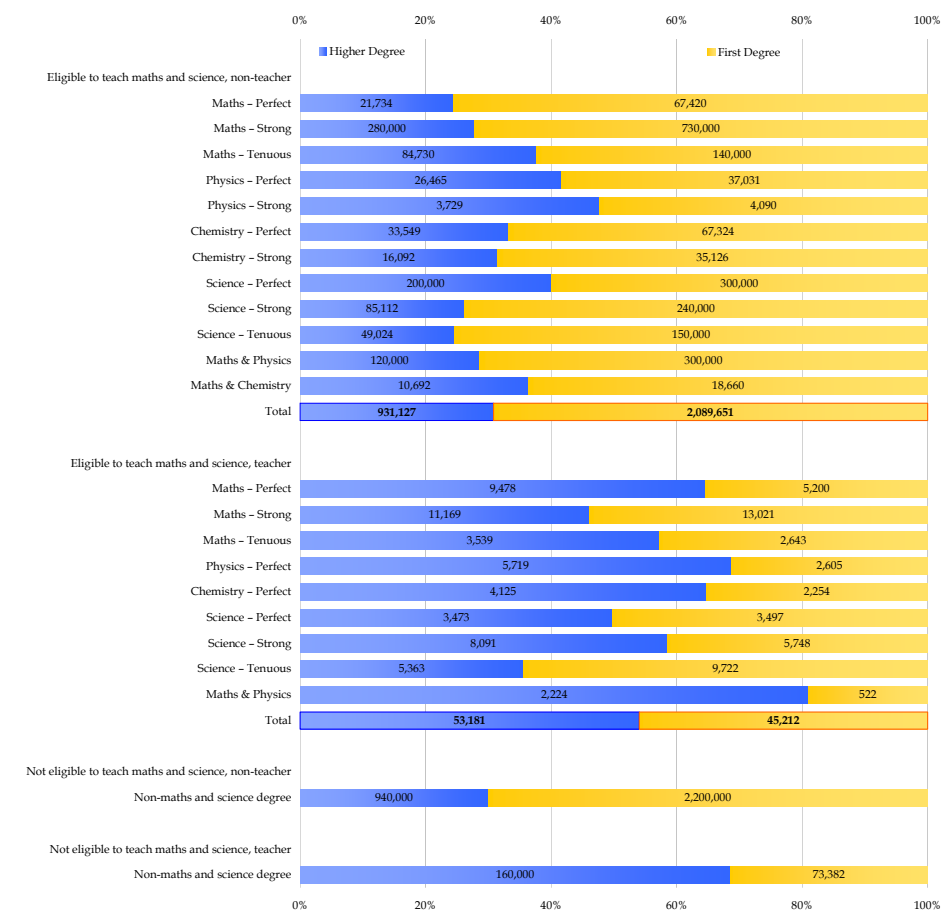
Source: London Economics' calculations based on the QLFS

Figure 25: Type of higher degree by eligibility
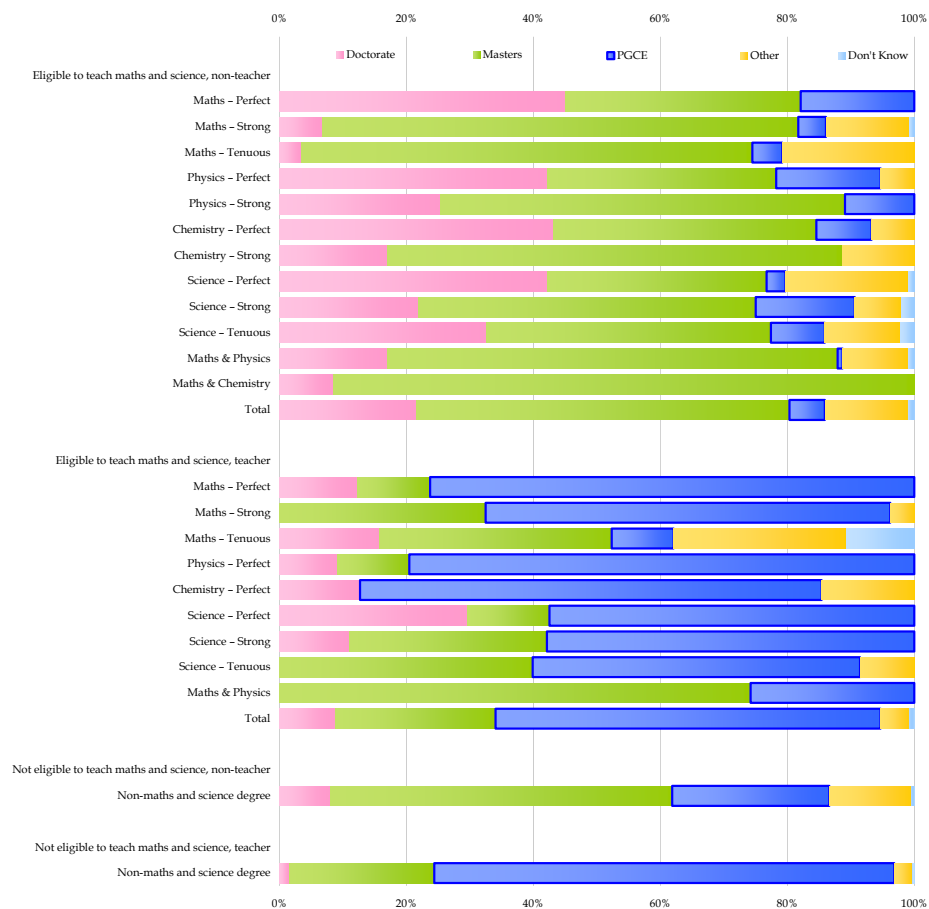
Source: London Economics' calculations based on the QLFS

		Table 5: Type of higher degree held by eligibility			
Eligibility category	**Doctorate**	**Masters**	**PGCE**	**Other**	**Don't know**
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	9,807	8,040	3,887	-	-
Maths – Strong	19,147	210,000	12,181	36,803	2,131
Maths – Tenuous	3,005	60,112	3,995	17,618	-
Physics – Perfect	11,168	9,548	4,351	1,398	-
Physics – Strong	945	2,377	407	-	-
Chemistry – Perfect	14,457	13,917	2,921	2,254	-
Chemistry – Strong	2,729	11,539	-	1,824	-
Science – Perfect	83,279	68,374	5,809	38,172	1,917
Science – Strong	18,673	45,206	13,276	6,228	1,729
Science – Tenuous	15,970	21,991	4,161	5,853	1,049
Maths and physics	20,093	83,693	911	12,262	1,060
Maths and chemistry	919	9,773	-	-	-
Teacher					
Maths – Perfect	1,159	1,094	7,225	-	-
Maths – Strong	-	3,632	7,117	420	-
Maths – Tenuous	556	1,297	345	962	379
Physics – Perfect	528	643	4,548	-	-
Chemistry – Perfect	525	-	2,999	601	-
Science – Perfect	1,029	449	1,995	-	-
Science – Strong	894	2,516	4,681	-	-
Science – Tenuous	-	2,141	2,764	458	-
Maths and physics	-	1,651	573	-	-
Not eligible to teach maths or science					
Non-teacher					
No degree	-	-	-	-	-
Non-maths and science degree	75,061	500,000	230,000	120,000	4,195
Teacher					
No degree	-	-	-	-	-
Non-maths and science degree	2,616	37,819	120,000	4,711	479

Note that care should be taken when comparing the estimates of postgraduate qualification attainment. For instance, there are 12,181 individuals with a 'Strong' aptitude to teach maths that are not teachers who also have a PGCE. This compares to 7,117 teachers with a PGCE whose qualifications classify them as having a 'Strong' aptitude to teach maths. This may seem counter-intuitive; however, as a proportion of their constituent groups, there are relatively few eligible non-teachers with PGCEs compared to the 'equivalent' eligible teachers.
Source: London Economics' calculations based on the QLFS

3.2.4   Economic activity

112. In this section, we present our analysis of the QLFS data relating to the following variables covering economic activity, earnings and employment details:

    1. Economic activity
    2. Income
    3. Hours worked
    4. Full-time/part-time employment
    5. Public or private sector employment
    6. Permanent or temporary contract.

Economic activity

113. Information from the QLFS indicates that just under 90 per cent of graduates are employed, with about nine per cent indicating that they are inactive, and the remainder being unemployed. There is negligible difference between graduates in maths or science and other non-eligible degree-level subjects. Unsurprisingly, graduates are more commonly economically active than non-degree holders. There is no comparison to be made with teachers for this variable since teachers are, by definition, employed.

Figure 26: Economic activity by eligibility

Non-teacher
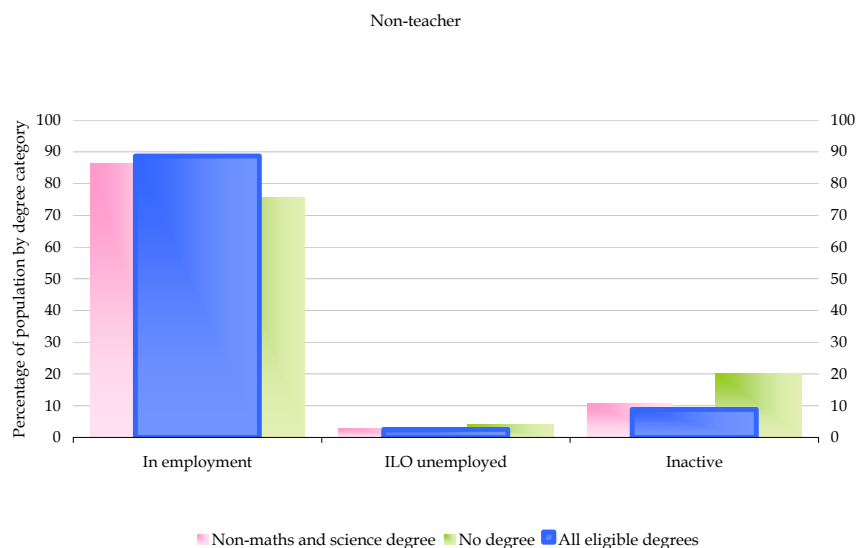
Source: London Economics' calculations based on the QLFS

Income

Gross weekly earnings

114. There are a number of earnings estimates that might be used to compare the economic outcomes of employees. One measure of how much individuals earn is gross weekly earnings. There is a stark contrast between the relative gross weekly incomes of teachers and non-teachers depending on whether the individual is eligible to teach maths and science, or not.

115. Individuals who are eligible to teach maths or science earn significantly more if they are employed outside the profession compared to if they are employed as secondary school teachers. The opposite is the case for those that are not eligible to teach maths or science.

116. Specifically, for those graduates with degrees in maths or science, individuals who are employed in professions outside teaching earn £674 a week, compared to £554 if they are. This earnings difference is equivalent to approximately £6,200 a year in favour of non-teaching professions.

117. For graduates with degree-level qualifications that do not confer eligibility to teach maths or science subjects in secondary school, average weekly earnings stand at £530 a week if they are not teachers and £594 a week if they are. Again, annualising these measures implies that, for teachers with non-eligible degrees, there is a £3,300 pay premium associated with being in the profession.

118. It appears to be the case that the pay differentials illustrated in the data are likely to contribute to the difficulties experienced in recruiting and retaining suitably qualified maths or science eligible graduates in the teaching profession.

Figure 27: Gross weekly earnings in main job by eligibility

Eligible to teach maths and science, non-teacher

Label	Value
Maths – Perfect	70,006
Maths – Strong	843,314
Maths – Tenuous	186,746
Physics – Perfect	47,965
Chemistry – Perfect	101,154
Chemistry – Strong	35,693
Science – Perfect	487,716
Science – Strong	325,894
Science – Tenuous	174,460
Maths and physics	371,326
Maths and chemistry	27,535
Total	2,670,000

Eligible to teach maths and science, teacher

Label	Value
Maths – Perfect	9,074
Maths – Strong	25,861
Maths – Tenuous	2,338
Physics – Perfect	5,921
Chemistry – Perfect	7,588
Science – Perfect	2,782
Science – Strong	14,701
Science – Tenuous	23,680
Maths and physics	5,887
Total	97,832

Not eligible to teach maths and science, non-teacher

Label	Value
No degree	15,400,000
Non-maths and science degree	2,890,000
Total	18,200,000

Not eligible to teach maths and science, teacher

Label	Value
No degree	27,451
Non-maths and science degree	239,478
Total	266,929

Gross weekly pay in main job (£)

Source: London Economics' calculations based on the QLFS

Hours worked

119. In addition to the fact that those individuals with eligible degree-level qualifications earn significantly more outside the teaching profession compared to those inside the profession, it is also the case that the usual number of hours worked by survey respondents varies dramatically, depending on the respondent's profession.

120. The data illustrates that teachers worked substantially longer hours during the survey reference week than non-teachers – irrespective of the eligibility to teach maths or science. In particular, for those teachers who are eligible to teach maths or science, the usual number of hours worked stood at 43.7, while it was 41.0 hours for those eligible graduates outside the profession. Similarly, for those individuals who are non-eligible non-teachers, the usual number of hours worked was 37.7, while for non-eligible teachers, this stood at 42.9 hours.

Figure 28: Number of hours worked in main job a week by eligibility
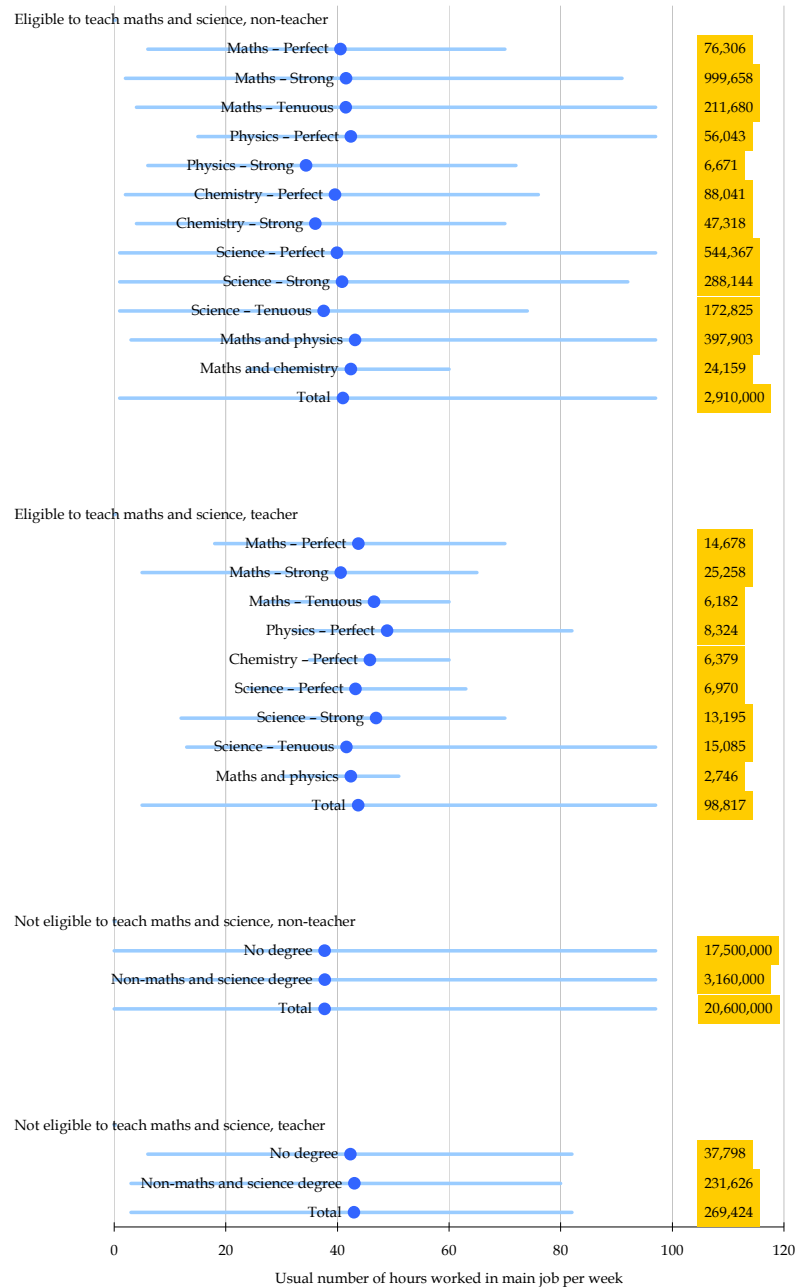
Source: London Economics' calculations based on the QLFS

Characteristics of main job

121.   A greater proportion of teachers tend to be in full-time employment than non-teachers. Individuals eligible to teach maths or science are also more likely to be in full-time employment compared to those that are not eligible to teach maths or science.

Figure 29: Main job full-time or part-time by eligibility

Non-teacher

Teacher

Non-maths and science degree   No degree   All eligible degrees
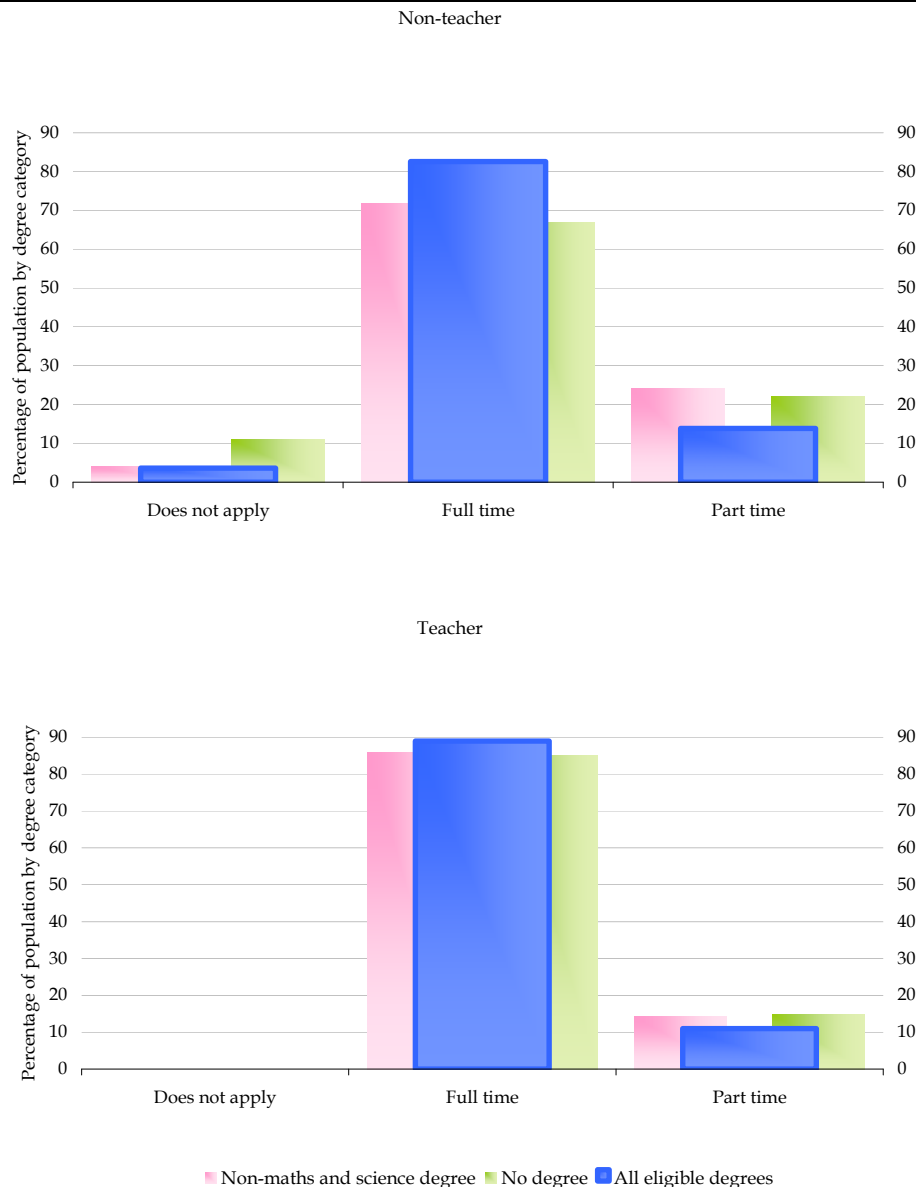
Source: London Economics' calculations based on the QLFS

122. Graduate non-teachers eligible to teach maths or science are more likely to work in the private sector than non-eligible degree holders and non-degree holders[5]. Unsurprisingly, teachers are predominantly employed in the public sector.

Figure 30: Main job in private or public sector by eligibility

Non-teacher

Teacher

■ Non-maths and science degree ■ No degree ■ All eligible degrees
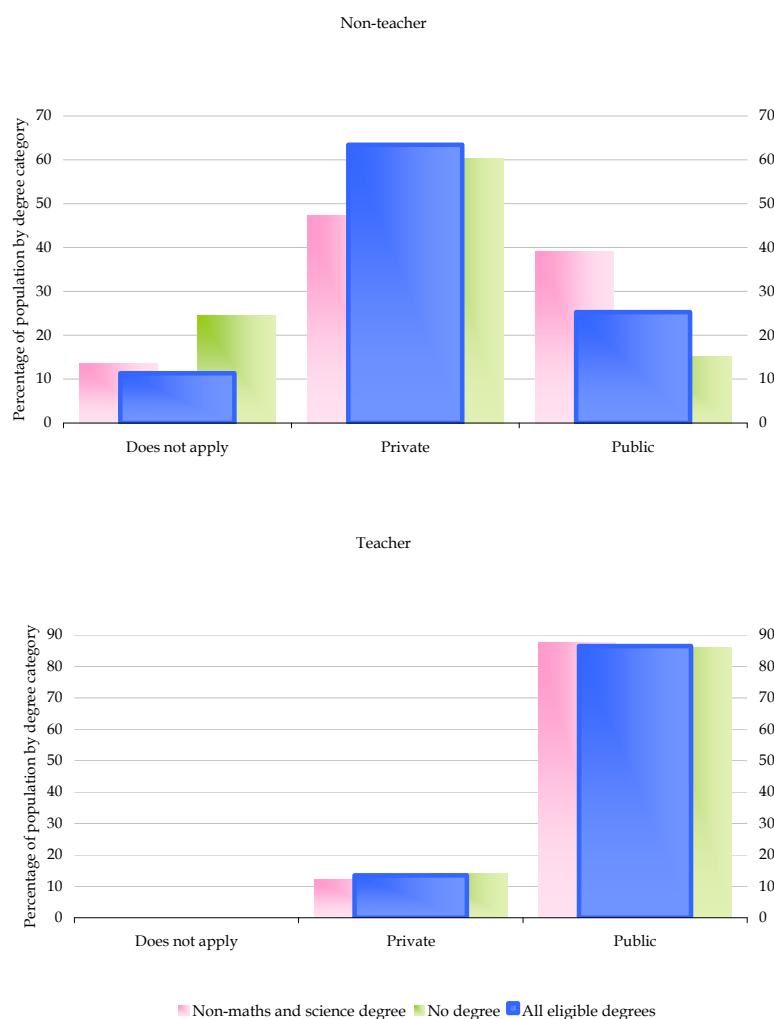
Source: London Economics' calculations based on the QLFS

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[5] We have no information in the Labour Force Survey that clearly identifies individuals who might work in the voluntary and charitable sectors. Individual respondents self-report whether they work in the public or private sectors, and there is no information in the type of school that teachers work in to validate the responses of individual teachers.

123. Finally in this section, we consider the nature of the employment contracts held by those that are eligible to teach maths or science. About 70 per cent of graduates are in permanent employment, irrespective of whether they have degrees in maths or science or in other subjects. This rises to 90 per cent for teachers. There is a slightly less frequent occurrence of permanent employment among non-degree holders.

Figure 31: Main job permanent or temporary by eligibility

Non-teacher

Teacher

■ Non-maths and science degree ■ No degree ■ All eligible degrees
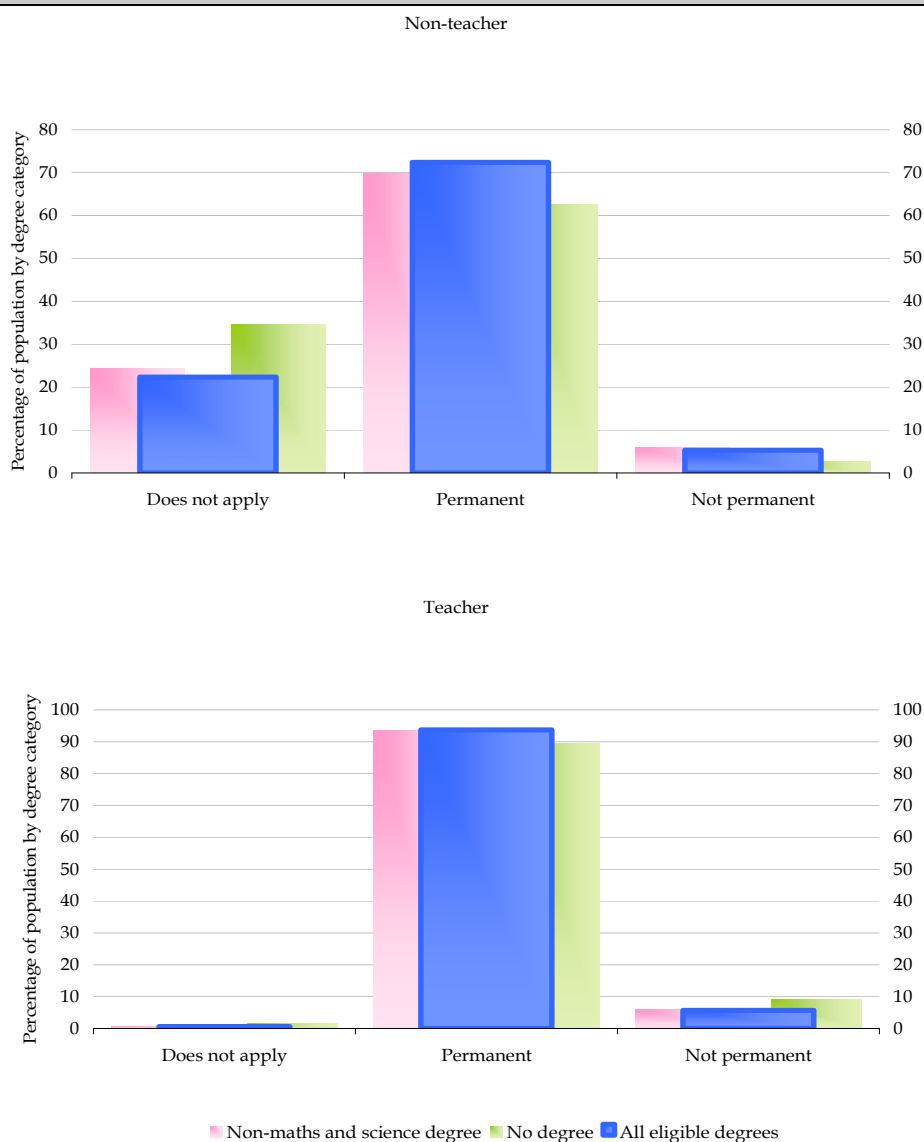
Source: London Economics' calculations based on the QLFS

4   Current occupation of eligible graduates

124.   In this section of the report, we provide some information on the occupations held by those individuals with degree-level qualifications conferring eligibility to teach maths or science.

125.   Table 6, overleaf, shows that the teaching profession – either in the primary, further education or higher education sectors, or in those professions aligned to the teaching profession (such as school inspection) – is the third most popular profession among graduates eligible to teach maths or science. In fact, according to the QLFS, there are over 250,000 individuals eligible to teach maths or science already working as a teaching professional, of which 100,000 are secondary school teachers. There are important implications from this. If there is a drive to recruit more eligible maths or science teachers into the secondary school sector, then it is likely to have some negative effect on the pool of teaching professionals engaged in other education sectors.

126.   In terms of the other popular occupations, the findings indicate that there is a degree of divergence in occupation depending on the fundamental nature of the degree in question. 190,000 individuals with a 'Perfect' aptitude to teach science are employed as health professionals (compared to 25,500 as teaching professionals and 7,000 as secondary school teachers). Similarly, of those that have a 'Strong' aptitude' to teach maths, 250,000 indicate that they are either employed as ICT professionals or as business and statistics professionals. This compares to just fewer than 40,000 that are teaching professionals (of all descriptions) and 25,000 who are employed as secondary school teachers.

127.   For individuals who are classified as being able to teach both physics and maths, 120,000 are employed as engineering professionals (which is relatively unsurprising as the dominant category of degree-level subject to qualify in this category was engineering). This compares to approximately 2,700 individuals who are currently classified as being eligible to teach maths and physics already in the teaching profession as a secondary school teacher, and 8,000 individuals who are employed in the teaching profession more generally. Functional managers[6] are the most common occupation group among individuals eligible to teach maths or science; people with mathematics-related degrees dominate this field.

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[6] Functional managers comprise managers of departments within a company, such as finance, marketing, sales, purchasing, public relations, human resources, information and communications technology, and research and development.

Table 6: Current occupation by eligibility for six most common occupations among eligible graduates						
Eligibility category	Functional managers	Health professionals	Teaching professionals	ICT professionals	Business and statistics professionals	Engineering professionals
Eligible to teach maths or science						
Non-teacher						
Maths – Perfect	12,178	-	12,005	9,694	11,574	1,938
Maths – Strong	190,000	2,101	39,573	120,000	130,000	12,840
Maths – Tenuous	34,145	1,013	14,143	14,389	12,220	1,029
Physics – Perfect	6,738	1,033	2,531	9,692	3,567	5,621
Physics – Strong	-	-	2,215	945	-	-
Chemistry – Perfect	12,617	3,374	6,009	4,329	4,432	2,857
Chemistry – Strong	2,702	29,245	1,592	-	698	-
Science – Perfect	19,428	190,000	25,500	5,560	4,585	4,037
Science – Strong	31,062	6,728	21,130	10,726	6,880	9,365
Science – Tenuous	7,546	30,314	17,955	2,232	4,155	1,223
Maths and physics	37,799	2,092	8,000	32,389	11,558	120,000
Maths and chemistry	4,890	-	465	860	709	8,924
Teacher						
Maths – Perfect	-	-	14,678	-	-	-
Maths – Strong	-	-	25,258	-	-	-
Maths – Tenuous	-	-	6,182	-	-	-
Physics – Perfect	-	-	8,324	-	-	-
Chemistry – Perfect	-	-	6,379	-	-	-
Science – Perfect	-	-	6,970	-	-	-
Science – Strong	-	-	13,839	-	-	-
Science – Tenuous	-	-	15,085	-	-	-
Maths and physics	-	-	2,746	-	-	-
Not eligible to teach maths or science						
Non-teacher						
No degree	620,000	17,736	200,000	200,000	120,000	240,000
Non-maths and science degree	220,000	26,720	480,000	50,193	60,944	19,156
Teacher						
No degree	-	-	38,246	-	-	-
Non-maths and science degree	-	-	240,000	-	-	-

Source: London Economics' calculations based on the QLFS

128.   As explained in the text above, Table 6 shows the aggregate number of individuals in the teaching profession. Table 7 elaborates on these figures, with a breakdown to the occupation level. Of the 150,000 teaching professionals that were not secondary school teachers, there were about 45,000 teaching in each of higher education and primary education, and another 25,000 in further education.

Table 7: Details of those currently in teaching occupations by eligibility							
Eligibility category	HE lecturers	FE lecturers	Inspectors	Secondary school teachers	Primary school teachers	Special needs teachers	Administrators	Other teaching professionals
Eligible to teach maths or science								
Non-Teacher								
Maths – Perfect	2,793	1,789	1,035		2,871			3,517
Maths – Strong	10,355	10,028	714		10,073	1,782	1,951	4,670
Maths – Tenuous	2,624	2,483	431		5,824		877	1,904
Physics – Perfect	985	442			543	561		
Physics – Strong	1,808	407						
Chemistry – Perfect	1,431	1,722	521		938	442		955
Chemistry – Strong	1,109	483						
Science – Perfect	14,702	1,351	379		4,658	1,179	556	2,675
Science – Strong	1,612	3,881	472		10,284	507	533	3,841
Science – Tenuous	4,411	822	886		7,248	2,512		2,076
Maths and physics	4,271	561	463				403	2,302
Maths and chemistry	465							
Teacher								
Maths – Perfect	-		-	14,678	-	-	-	-
Maths – Strong	-		-	25,258	-	-	-	-
Maths – Tenuous	-		-	6,182	-	-	-	-
Physics – Perfect	-		-	8,324	-	-	-	-
Chemistry – Perfect	-		-	6,379	-	-	-	-
Science – Perfect	-		-	6,970	-	-	-	-
Science – Strong	-		-	13,839	-	-	-	-
Science – Tenuous	-		-	15,085	-	-	-	-
Maths and physics	-		-	2,746	-	-	-	-
Not eligible to teach maths or science								
Non-teacher								
No degree	4,631	38,978	2,943		78,860	21,821	17,466	38,685
Non-maths and science degree	65,265	47,318	13,758		240,000	39,443	9,203	66,222
Teacher								
No degree	-		-	38,246	-	-	-	-
Non-maths and science degree	-		-	240,000	-	-	-	-

Source: London Economics' calculations based on the QLFS

4.1   Occupational movement over the last 12 months

129. In this section, we assess the year-on-year occupational flow of secondary school teachers who are eligible to teach maths or science. Again, we use information from the QLFS to assess the current occupation of those individuals stating that they were secondary school teacher last year (flows out of the profession), as well as the occupation one year ago of those that indicated that they are currently secondary school teachers. The results in this section should be treated with caution as the sample sizes are particularly small, reflecting the relatively few individuals eligible to teach maths or science who are in the (secondary school) teaching profession. This is presented diagrammatically in the figure below.

130. There is a relatively small annual movement out of the secondary school teaching profession. 98 per cent of people who were secondary school teachers in Spring 2005 remained so in Spring 2006. Of those that did move, half remained within the wider teaching profession – either moving into the higher education sector or in some other teaching capacity. Of the remaining one per cent, half left the active labour market, although no reason was given. Thus, it is not clear, for instance, if they retired or had home-caring responsibilities. Just 0.5 per cent of teachers in Spring 2005 went into a different profession.

131. Of the 6,000 people that became teachers in the year to Spring 2006, over 80 per cent (roughly 5,000) were not previously in the labour market, and the remainder came from other professions (ICT). Of the 5,000 previously economically inactive, 60 per cent were students, and 25 per cent consisted of those who returned to work following a period looking after their family or home. This information is presented in Figure 33 overleaf.

Figure 32: Annual movements of those teachers eligible to teach maths or science

Spring 2005

Spring 2006

IT professionals — 639

Other professions — 449

Economic inactivity — 4,833

Secondary school teachers (92.044) — 90,080 — Secondary school teachers (96.880)

445 — HE teaching

490 — Teaching professionals not elsewhere classified

500 — Other professions

529 — Economic inactivity
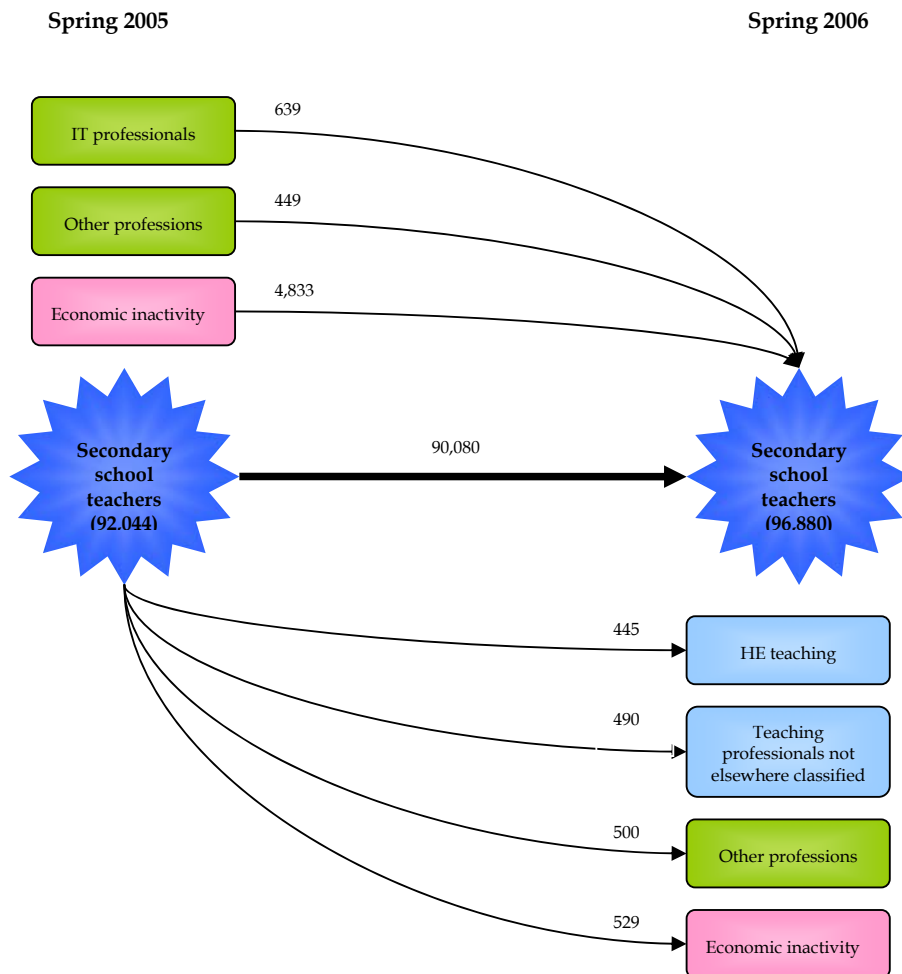
Source: London Economics analysis of QLFS

4.2   Regression analysis

132.   In this section, we have provided some additional information on the determinants of becoming a teacher in the first instance. This compares to the previous sections where we have illustrated various associations or correlations between a number of variables and being a teacher.

133.   To undertake this analysis, we again used information from the QLFS to investigate the influence that a series of factors have on the probability that someone might be employed as a secondary school teacher. The most important finding from this regression, for the purposes of the report, is the influence that studying a mathematics or science degree subject has on the likelihood of becoming a teacher. The full results are presented in Table 8.

134.   The logistic regression below shows that someone who is eligible to teach maths or science is less than half as likely to be a teacher as a graduate who is not eligible to teach maths or science. This is shown by the odds ratio of 0.475. In addition to this finding, the regression analysis affirms some of the previous findings relating to gender and BME status, Specifically, the results illustrate that men are just over 16 per cent less likely than women to be teachers (represented by an odds ratio of 0.839) and that individuals from BME backgrounds are between 15 per cent to 45 per cent less likely than white people to enter the teaching profession. The findings also illustrate individuals who are resident in London are 40 per cent less likely to be in the teaching profession compared to a similar person living in the reference region (South East of England).

Table 8: Results of logistic regression on likelihood of determinants of being a secondary school teacher				
Variable	Odds ratio	Z value	Confidence interval	
Maths/Science degree eligible	0.475	-99.260	0.468	0.482
Age	1.016	50.060	1.016	1.017
Male	0.839	-24.660	0.827	0.851
UK national	1.440	21.780	1.393	1.488
North East	0.842	-9.240	0.811	0.873
North West	0.946	-4.460	0.923	0.969
Yorkshire and The Humber	1.001	0.050	0.975	1.027
East Midlands	0.595	-31.540	0.576	0.614
West Midlands	1.009	0.660	0.982	1.037
Eastern	0.985	-1.100	0.960	1.012
London	0.591	-41.650	0.577	0.606
South West	0.758	-19.960	0.738	0.779
Wales	1.174	9.780	1.137	1.213
Scotland	0.931	-5.580	0.908	0.955
N Ireland	0.790	-9.980	0.754	0.827
Mixed	0.773	-5.480	0.705	0.847
Asian	0.542	-24.800	0.516	0.569
Black	0.859	-6.070	0.818	0.902
Chinese	0.758	-6.170	0.694	0.827
DDA and work-limiting disabled	0.921	-4.580	0.889	0.954
DDA disabled only	1.042	2.590	1.010	1.074
Work-limiting disabled only	0.516	0.012	0.492	0.540

Source: London Economics analysis of QLFS. Number of observations: 1,730,155. Pseudo R squared 0.0422

5   Conclusions

135. This report has aimed to generate a comprehensive and robust evidence base for the Training and Development Agency for Schools, to better inform their ongoing policy formulation and implementation.

136. We believe that the analysis illustrates some interesting features relating to the personal and socio-economic characteristics associated with those that are eligible to teach mathematics or science subjects in secondary school, compared to both eligible teachers in the profession, as well as those not with degrees conferring eligibility to teach maths and science.

137. Although there are a number of findings relating to the personal and socio-economic characteristics of eligible degree holders, from an economic perspective, the most pertinent finding is that individuals with eligible degrees have greater earnings potential outside the profession than inside it, while the opposite is the case for non-eligible degree holders.

138. In addition, London Economics were asked to assess the degree of representativeness of the Teaching Information Line data relative to the nationally representative Quarterly Labour Force Surveys. We found that those contacting the TIL were disproportionately likely to be female, younger than the representative teacher, less likely to suffer from a work-limiting disability, and more likely to be from a black or minority ethnic background.

139. In addition, we found that a significant amount of information was missing from the TIL. For these reasons, care should be taken when using the TIL data to inform and design policy.

Annex 1 Quarterly Labour Force Survey

The first Labour Force Survey in the United Kingdom was conducted in 1973, and was carried out biennially from 1973 to 1983. Between 1984 and 1991, the survey was carried out annually and consisted of two elements:

1. A quarterly survey conducted in Great Britain throughout the year, in which each sampled address is called on five times at quarterly intervals, and which yields about 15,000 responding households in every quarter.

2. A `boost' survey in the quarter March to May, which produces interviews at over 44,000 households in Great Britain and over 4,000 households in Northern Ireland.

During 1991, the survey was developed so that in Spring 1992, for the first time, the data were made available quarterly, with a quarterly sample size approximately equivalent to that of the previous annual data, thus becoming the Quarterly Labour Force Survey. During the period from Spring 1992 to Autumn 1994, interviewing was conducted in Northern Ireland only in the Spring, with no quarterly element. However, in the Winter of 1994/95 a Quarterly Labour Force Survey was introduced to Northern Ireland.

Population: All persons normally resident in private households in Great Britain and Northern Ireland. (From Winter 1994/95, Northern Ireland is included in each quarter. Prior to this, Northern Ireland data were only collected in the Spring quarters.)

Units of observation: Individuals: Families/households

Time dimensions: Partial panel/cohort study: Time series

Sampling procedures: Simple random sample: Four sampling frames are used

For Great Britain south of the Caledonian Canal, the Post Office Address File is used; while for north of the Caledonian Canal, a random sample is drawn from the published telephone directory. The sample of residents in NHS accommodation is also drawn, unclustered, for the whole of Great Britain, using a specially prepared frame. In Northern Ireland, the source of the sample is the Valuation List used for rating purposes, excluding commercial units and known institutions. Households are interviewed on five occasions at quarterly intervals, thereby introducing a panel element to the survey.

Method of data collection: Face-to-face interview: first interview. Telephone interview: subsequent interviews where possible.

Annex 2 Labour Force Survey summary statistics

Table 9: Summary statistics on age (in years) by eligibility

Eligibility category	Individuals	Mean	Standard deviation	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	91,967	39.03	10.19	21	59
Maths – Strong	1,130,000	36.85	9.85	21	59
Maths – Tenuous	236,343	37.42	10.16	21	59
Physics – Perfect	65,036	40.63	11.21	21	59
Physics – Strong	7,819	32.38	10.54	21	54
Chemistry – Perfect	103,825	38.85	10.54	21	59
Chemistry – Strong	53,064	37.69	10.83	21	59
Science – Perfect	640,641	39.83	10.6	21	59
Science – Strong	340,387	37.61	10.49	21	59
Science – Tenuous	205,995	35.35	10.7	21	59
Maths and physics	448,489	40.21	10.14	21	59
Maths and chemistry	29,352	39.20	9.97	21	59
All eligible degrees	**3,360,000**	**38.11**	**10.37**	**21**	**59**
Teacher					
Maths – Perfect	14,678	40.53	9.07	23	58
Maths – Strong	25,258	43.43	9.28	21	59
Maths – Tenuous	6,182	39.33	10.38	24	59
Physics – Perfect	8,324	43.47	10.24	23	58
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	6,379	43.14	10.44	25	55
Chemistry – Strong	-	-	-	-	-
Science – Perfect	6,970	40.06	10.41	24	58
Science – Strong	13,839	40.22	10.98	25	59
Science – Tenuous	15,085	38.33	11.62	23	59
Maths and physics	2,746	36.08	8.14	26	51
Maths and chemistry	-	-	-	-	-
All eligible degrees	**99,461**	**41.07**	**10.37**	**21**	**59**
Not eligible to teach maths or science					
Non-teacher					
No degree	23,700,000	40.55	11.06	21	59
Non-maths and science degree	3,750,000	39.31	10.73	21	59
All ineligible	**27,400,000**	**40.38**	**11.02**	**21**	**59**
Teacher					
No Degree	38,246	47.8	8.87	22	59
Non-maths and science degree	239,176	40.17	10.41	22	59
All ineligible	**277,422**	**41.22**	**10.54**	**22**	**59**

Source: London Economics' calculations based on the QLFS

Table 10: Mean and confidence intervals for age (in years) by eligibility					
Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	3,357,799	38.11	0.0057	38.10	38.12
Eligible degree, teacher	99,461	41.07	0.0329	41.01	41.14
Ineligible degree, non-teacher	3,745,018	39.31	0.0055	39.30	39.32
Ineligible degree, teacher	239,176	40.17	0.0213	40.12	40.21
No degree, non-teacher	23,673,292	40.55	0.0023	40.55	40.55
No degree, teacher	39,504	47.09	0.0483	46.99	47.18
Total	**31,154,250**	**40.14**	**0.0020**	**40.14**	**40.15**

Source: London Economics' calculations based on the QLFS

Table 11: Distribution by age group

Eligibility category	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	Total
Eligible to teach maths or science									
Non-Teacher									
Maths – Perfect	7.03	13.89	17.94	14.91	15.26	9.63	13.89	7.46	100
Maths – Strong	10.53	16.92	18.5	16.88	12.81	11.57	7.28	5.51	100
Maths – Tenuous	11.36	14.69	17.46	15.69	14.33	12.44	7.06	6.97	100
Physics – Perfect	6.06	19.33	9.11	12.74	13.52	11.61	14.06	13.56	100
Physics – Strong	40.44	14.15	7.28	6.87	11.17	13.98	6.13	-	100
Chemistry – Perfect	6.63	16.66	17.83	12	16.87	12.45	7.11	10.43	100
Chemistry – Strong	8.32	24.75	14.27	9.47	9.02	15.76	10.71	7.7	100
Science – Perfect	7.35	14.27	13.64	13.95	14.91	13.61	11.33	10.95	100
Science – Strong	9.68	17.57	17.84	13.11	13.81	11.29	8.57	8.13	100
Science – Tenuous	17.78	21.56	13.14	11.41	14.79	7.46	8.55	5.32	100
Maths and physics	5.87	10.08	16.11	18.42	14.72	11.9	11.6	11.3	100
Maths and chemistry	3.69	19.02	15.02	12.1	16.91	15.07	11.63	6.57	100
All eligible degrees	**9.39**	**15.78**	**16.44**	**15.26**	**13.97**	**11.86**	**9.22**	**8.07**	**100**
Teacher									
Maths – Perfect	3.54	11.93	11.73	16.64	19.81	17.41	15.94	2.99	100
Maths – Strong	3.06	-	10.24	25.41	17.12	8.53	20.99	14.65	100
Maths – Tenuous	8.48	9.25	20.17	26.8	6.13	6.66	7.23	15.27	100
Physics – Perfect	6.91	7.72	-	29.18	6.92	18.02	20.64	10.61	100
Physics – Strong	-	-	-	-	-	-	-	-	-
Chemistry – Perfect	-	7.59	25.13	8.23	13.26	-	37.72	8.07	100
Chemistry – Strong	-	-	-	-	-	-	-	-	-
Science – Perfect	9.15	6.57	27.8	13.14	6.51	5.84	16.87	14.1	100
Science – Strong	-	18.52	20.71	10.33	13.83	2.82	23.66	10.13	100
Science – Tenuous	13.1	19.22	11.09	3.1	26.74	-	18.5	8.25	100
Maths and physics	-	19.01	42.75	18.1	-	-	20.14	-	100
Maths and chemistry	-	-	-	-	-	-	-	-	-
All eligible degrees	**5.03**	**9.95**	**14.89**	**16.87**	**15.52**	**7.46**	**20.11**	**10.16**	**100**
Not eligible to teach maths or science									
Non-teacher									
No degree	9.68	10.84	11.37	14.12	14.91	13.56	12.21	13.3	100
Non-maths and science degree	9.12	13.95	14.38	14.18	13.9	12.9	11.37	10.19	100
All ineligible	**9.6**	**11.26**	**11.78**	**14.13**	**14.77**	**13.47**	**12.1**	**12.88**	**100**
Teacher									
No degree	1.89	5.53	4.37	4.39	12.94	11.59	39.9	19.39	100
Non-maths and science degree	5.19	14.89	14.45	14.19	13.73	14.39	12.8	10.35	100
All ineligible	**4.73**	**13.6**	**13.06**	**12.84**	**13.63**	**14**	**16.54**	**11.59**	**100**

Source: London Economics' calculations based on the QLFS

Table 12: Distribution by gender

Eligibility category	Male	Female	Total
Eligible to teach maths or science			
Non-Teacher			
Maths – Perfect	65.82	34.18	**100**
Maths – Strong	65.73	34.27	**100**
Maths – Tenuous	58.3	41.7	**100**
Physics – Perfect	80.62	19.38	**100**
Physics – Strong	86.21	13.79	**100**
Chemistry – Perfect	66	34	**100**
Chemistry – Strong	38.17	61.83	**100**
Science – Perfect	40.14	59.86	**100**
Science – Strong	53.33	46.67	**100**
Science – Tenuous	38.37	61.63	**100**
Maths and physics	92.02	7.98	**100**
Maths and chemistry	80.6	19.4	**100**
All eligible degrees	**60.94**	**39.06**	**100**
Teacher			
Maths – Perfect	44.2	55.8	**100**
Maths – Strong	45.3	54.7	**100**
Maths – Tenuous	72.31	27.69	**100**
Physics – Perfect	82.27	17.73	**100**
Physics – Strong			
Chemistry – Perfect	59.38	40.62	**100**
Chemistry – Strong			
Science – Perfect	54.25	45.75	**100**
Science – Strong	36.9	63.1	**100**
Science – Tenuous	46.95	53.05	**100**
Maths and physics	100	0	**100**
Maths and chemistry			
All eligible degrees	52.03	47.97	**100**
Not eligible to teach maths or science			
Non-teacher			
No degree	49.55	50.45	**100**
Non-maths and science degree	35.5	64.5	**100**
All ineligible	**47.63**	**52.37**	**100**
Teacher			
No degree	32.25	67.75	**100**
Non-maths and science degree	40.82	59.18	**100**
All ineligible	**39.64**	**60.36**	**100**

Source: London Economics' calculations based on the QLFS

Eligibility category	Does not apply	White	Mixed	Asian or Asian British	Black or Black British	Chinese	Other ethnic group	Total
Table 13: Distribution by ethnicity								
Eligible to teach maths or science								
Non-teacher								
Maths – Perfect	-	93.35	0.57	3.53	-	0.58	1.97	**100**
Maths – Strong	-	81.26	0.77	10.2	3.76	2.25	1.75	**100**
Maths – Tenuous	-	86.06	0.76	6.61	4.41	0.95	1.22	**100**
Physics – Perfect	-	95.06	-	4.34	-	-	0.59	**100**
Physics – Strong	-	90.88	-	-	-	-	9.12	**100**
Chemistry – Perfect	-	85.94	1.03	6.9	2.65	1.3	2.18	**100**
Chemistry – Strong	-	73.56	0.92	11.39	5.39	5.34	3.41	**100**
Science – Perfect	-	82.53	0.92	8.79	2.65	0.78	4.33	**100**
Science – Strong	-	94.05	0.58	2.71	1.01	0.71	0.94	**100**
Science – Tenuous	-	90.51	1.13	4.83	0.81	0.35	2.37	**100**
Maths and physics	-	85.7	0.82	7.23	1.99	1.85	2.42	**100**
Maths and chemistry	-	76.41	-	15.48	-	-	8.11	**100**
All eligible degrees	**-**	**84.9**	**0.79**	**7.84**	**2.67**	**1.46**	**2.35**	**100**
Teacher								
Maths – Perfect	-	91.58	-	4.97	-	-	3.45	**100**
Maths – Strong	-	87.54	-	3.96	3.82	2.21	2.47	**100**
Maths – Tenuous	-	100	-	0	-	-	-	**100**
Physics – Perfect	-	100	-	0	-	-	-	**100**
Physics – Strong	-	-	-	-	-	-	-	**-**
Chemistry – Perfect	-	82.35	-	17.65	-	-	-	**100**
Chemistry – Strong	-	-	-	-	-	-	-	**-**
Science – Perfect	-	93.43	-	6.57	-	-	-	**100**
Science – Strong	-	100	-	0	-	-	-	**100**
Science – Tenuous	-	86.68	-	7.53	5.79	-	-	**100**
Maths and physics	-	100	-	-	-	-	-	**100**
Maths and chemistry	-	-	-	-	-	-	-	**-**
All eligible degrees	**-**	**91.98**	**-**	**4.47**	**1.85**	**0.56**	**1.14**	**100**
Not eligible to teach maths or science								
Non-teacher								
No degree	0.01	90.11	0.63	4.82	2.41	0.27	1.74	**100**
Non-maths and science degree	-	89.82	0.77	3.94	3.11	0.66	1.7	**100**
All ineligible	**0.01**	**90.07**	**0.65**	**4.7**	**2.5**	**0.33**	**1.74**	**100**
Teacher								
No degree	-	89.79	1.49	4.43	4.3	-	-	**100**
Non-maths and science degree	-	96.54	0.65	1.22	1.12	-	0.48	**100**
All ineligible	**-**	**95.61**	**0.76**	**1.66**	**1.56**	**-**	**0.41**	**100**

Source: London Economics' calculations based on the QLFS

<table>
<tr><td colspan="6">Table 14: Distribution by current disability</td></tr>
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Eligibility category	DDA and work-limiting disabled	DDA disabled only	Work-limiting disabled only	Not disabled	Total
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	5.28	2.89	1.69	90.13	**100**
Maths – Strong	3.26	2.63	1.92	92.19	**100**
Maths – Tenuous	2.84	2.34	1.32	93.51	**100**
Physics – Perfect	5.28	2.45	1.39	90.88	**100**
Physics – Strong	-	6.78	-	93.22	**100**
Chemistry – Perfect	4.73	5.32	3.36	86.58	**100**
Chemistry – Strong	5.38	4.56	2.83	87.23	**100**
Science – Perfect	5.41	3.85	1.93	88.81	**100**
Science – Strong	5.38	5.32	2.25	87.04	**100**
Science – Tenuous	5.56	3.42	2.14	88.88	**100**
Maths and physics	4.06	2.72	1.93	91.28	**100**
Maths and chemistry	1.65	-	1.86	96.49	**100**
All eligible degrees	**4.26**	**3.28**	**1.97**	**90.50**	**100**
Teacher					
Maths – Perfect	3.77	2.94	-	93.3	**100**
Maths – Strong	3.55	11.70	-	84.75	**100**
Maths – Tenuous	6.66	-	9.33	84.00	**100**
Physics – Perfect	-	4.69	0	95.31	**100**
Physics – Strong	-	-	-	-	**-**
Chemistry – Perfect	-	8.07	8.25	83.68	**100**
Chemistry – Strong	-	-	-	-	**-**
Science – Perfect	-	-	-	100.00	**100**
Science – Strong	3.5	-	-	96.50	**100**
Science – Tenuous	3.1	7.75	4	85.14	**100**
Maths and physics	-	20.14	-	79.86	**100**
Maths and chemistry	-	-	-	-	**-**
All eligible degrees	**2.83**	**6.05**	**1.72**	**89.41**	**100**
Not eligible to teach maths or science					
Non-teacher					
No degree	13.41	4.92	3.22	78.46	**100**
Non-maths and science degree	5.83	4.36	2.34	87.47	**100**
All ineligible	**12.37**	**4.84**	**3.1**	**79.69**	**100**
Teacher					
No degree	8.7	8.45	6.95	75.9	**100**
Non-maths and science degree	4.29	3.19	2.4	90.12	**100**
All ineligible	**4.9**	**3.91**	**3.03**	**88.16**	**100**

Source: London Economics' calculations based on the QLFS

Eligibility category	Does not apply	Yes	No	Total
Table 15: Do health problems affect the kind of work possible?				
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	83.73	6.98	9.29	**100**
Maths – Strong	85.51	5.01	9.49	**100**
Maths – Tenuous	82.81	3.89	13.29	**100**
Physics – Perfect	81.08	6.67	12.24	**100**
Physics – Strong	79.31	-	20.69	**100**
Chemistry – Perfect	78.7	7.6	13.7	**100**
Chemistry – Strong	80.44	8.21	11.35	**100**
Science – Perfect	80.92	6.7	12.38	**100**
Science – Strong	79.59	7.16	13.25	**100**
Science – Tenuous	81.66	7.7	10.64	**100**
Maths and physics	83.75	5.61	10.64	**100**
Maths and chemistry	93.37	3.51	3.12	**100**
All eligible degrees	**83**	**5.91**	**11.09**	**100**
Teacher				
Maths – Perfect	85.59	3.77	10.64	**100**
Maths – Strong	73.25	3.55	23.2	**100**
Maths – Tenuous	77.87	16	6.13	**100**
Physics – Perfect	94.97	-	5.03	**100**
Physics – Strong	-	-	-	**-**
Chemistry – Perfect	83.68	8.25	8.07	**100**
Chemistry – Strong	-	-	-	**-**
Science – Perfect	86.34	-	13.66	**100**
Science – Strong	92.93	3.5	3.56	**100**
Science – Tenuous	79.85	7.11	13.04	**100**
Maths and physics	79.86	-	20.14	**100**
Maths and chemistry	-	-	-	**-**
All eligible degrees	**82.61**	**4.57**	**12.81**	**100**
Not eligible to teach maths or science				
Non-teacher				
No degree	70.73	16.07	13.2	**100**
Non-maths and science degree	79.52	7.69	12.8	**100**
All ineligible	**71.93**	**14.92**	**13.15**	**100**
Teacher				
No degree	65.69	14.23	20.08	**100**
Non-maths and science degree	82.56	6.26	11.18	**100**
All ineligible	**80.24**	**7.36**	**12.4**	**100**

Source: London Economics' calculations based on the QLFS

Table 16: Do health problems affect the amount of work possible?

Eligibility category	Does not apply	Yes	No	Total
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	83.73	4.66	11.61	**100**
Maths – Strong	85.5	3.53	10.96	**100**
Maths – Tenuous	83.02	3.27	13.72	**100**
Physics – Perfect	81.08	3.46	15.46	**100**
Physics – Strong	79.31	-	20.69	**100**
Chemistry – Perfect	78.7	4.6	16.7	**100**
Chemistry – Strong	80.44	5.61	13.95	**100**
Science – Perfect	80.87	5.83	13.3	**100**
Science – Strong	79.36	6.35	14.29	**100**
Science – Tenuous	81.66	5.36	12.98	**100**
Maths and physics	83.66	3.44	12.9	**100**
Maths and chemistry	93.37	3.51	3.12	**100**
All eligible degrees	**82.97**	**4.43**	**12.61**	**100**
Teacher				
Maths – Perfect	85.59	-	14.41	**100**
Maths – Strong	73.25	3.55	23.2	**100**
Maths – Tenuous	77.87	6.66	15.46	**100**
Physics – Perfect	88.4	-	11.6	**100**
Physics – Strong	-	-	-	**-**
Chemistry – Perfect	83.68	-	16.32	**100**
Chemistry – Strong	-	-	-	**-**
Science – Perfect	86.34	-	13.66	**100**
Science – Strong	92.93	3.5	3.56	**100**
Science – Tenuous	79.85	3.1	17.04	**100**
Maths and physics	79.86	-	20.14	**100**
Maths and chemistry	-	-	-	**-**
All eligible degrees	**82.13**	**2.27**	**15.59**	**100**
Not eligible to teach maths or science				
Non-teacher				
No degree	70.78	13.88	15.34	**100**
Non-maths and science degree	79.5	5.99	14.51	**100**
All ineligible	**71.98**	**12.8**	**15.23**	**100**
Teacher				
No degree	65.69	13.19	21.12	**100**
Non-maths and science degree	82.56	3.51	13.93	**100**
All ineligible	**80.24**	**4.84**	**14.92**	**100**

Source: London Economics' calculations based on the QLFS

Table 17: Distribution by region of residence												
Eligibility category	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	Eastern	London	South East	South West	Wales	Scotland	N Ireland	**Total**
Eligible to teach maths or science													
Non-teacher													
Maths – Perfect	2.38	10.19	7.12	8.83	8.62	9.75	19.33	16.84	8.83	2.5	4.2	1.42	**100**
Maths – Strong	2.63	8.1	5.05	5.66	6.12	9.56	25.12	16.44	6.82	3.28	8.53	2.7	**100**
Maths – Tenuous	2.97	10.54	4.81	4.76	7.68	7.53	20.47	17.25	8.76	3.02	9.8	2.39	**100**
Physics – Perfect	2.8	7.07	4.24	4.79	13.12	14.28	10.25	17.24	10.47	5.18	8.48	2.09	**100**
Physics – Strong	-	16.75	-	16.34	-	13.7	13.29	18.03	7.28	7.41	7.2	-	**100**
Chemistry – Perfect	4.33	11.76	9.88	8.6	5.95	9.05	17.26	14.61	6.49	2.6	7.6	1.87	**100**
Chemistry – Strong	2.53	11.86	9.39	9.67	6.8	4.73	18.92	11.73	3.64	5.26	13.65	1.79	**100**
Science – Perfect	3.49	9.58	6.94	7.8	7.93	9.38	15.48	14.99	7.75	4.02	9.7	2.94	**100**
Science – Strong	2.77	9.97	7.44	5.87	6.04	9.07	15.81	17.39	11.88	4.35	7.97	1.44	**100**
Science – Tenuous	4.98	12.83	8.42	6.29	6.51	6.92	16.68	15.15	8.17	4.97	7.45	1.64	**100**
Maths and physics	3.84	10.03	5.54	7.28	8.22	9.45	14.11	16.13	8.6	4.59	9	3.2	**100**
Maths and chemistry	3.21	15.56	6.76	3.28	4.45	3.28	26.24	17.08	11.01	1.59	7.54	-	**100**
All eligible degrees	**3.18**	**9.59**	**6.17**	**6.51**	**7.05**	**9.12**	**19.22**	**16.1**	**8.07**	**3.81**	**8.7**	**2.48**	**100**
Teacher													
Maths – Perfect	3.35	11.43	12.5	12.17	3.61	7.64	18.27	3.32	6.86	-	20.84	-	**100**
Maths – Strong	7.44	8.08	3.46	9.45	10.88	9.5	9.45	3.66	15.97	1.7	20.42	-	**100**
Maths – Tenuous	12.8	15.71	8.48	0	24.05	9.25	8.99	15.14	-	-	-	5.58	**100**
Physics – Perfect	9.89	6.92	-	12.47	6.14	6.11	-	25	5.92	15.17	12.37	-	**100**
Physics – Strong	-	-	-	-	-	-	-	-	-	-	-	-	**100**
Chemistry – Perfect	14.41	8.23	-	6.69	-	8.97	20.6	16.62	5.71	-	14.49	4.3	**100**
Chemistry – Strong	-	-	-	-	-	-	-	-	-	-	-	-	**100**
Science – Perfect	-	7.93	17.02	14.18	6.57	8.94	-	18.79	13.11	6.7	6.76	-	**100**
Science – Strong	6.21	3.45	16.33	6.79	11.7	5.07	8.24	6.97	10.54	7.48	9.78	7.43	**100**
Science – Tenuous	11.56	7.52	9.59	12.28	-	10.5	20.68	18.33	3.53	-	6	-	**100**
Maths and physics	-	-	-	-	-	37.11	-	41.01	21.89	-	-	-	**100**
Maths and chemistry	-	-	-	-	-	-	-	-	-	-	-	-	**100**
All eligible degrees	**7.55**	**8**	**8.17**	**9.47**	**7.39**	**9.15**	**11.26**	**11.72**	**9.45**	**3.21**	**12.97**	**1.66**	**100**
Not eligible to teach maths or science													
Non-teacher													
No degree	4.4	11.49	8.79	7.23	9.08	9.37	11.9	13.23	8.03	4.99	8.6	2.9	**100**
Non-maths and science degree	3.14	10.3	7.22	6.09	7.55	7.89	20.77	14.17	8.29	3.84	7.96	2.79	**100**
All ineligible	4.22	11.32	8.58	7.07	8.87	9.17	13.11	13.36	8.06	4.83	8.51	2.89	**100**
Teacher													
No degree	0	16.74	5.1	8.82	5.85	13.84	9.12	18.54	3.52	4.75	10.75	2.97	**100**
Non-maths and science degree	4	13.21	9.48	6.1	7.63	7.86	10.07	16.62	8.47	4.49	7.95	4.13	**100**
All ineligible	3.44	13.69	8.88	6.48	7.38	8.69	9.94	16.88	7.79	4.53	8.34	3.97	**100**

Source: London Economics' calculations based on the QLFS

Table 18: Distribution by type of tenancy						
Eligibility category	Owned outright	Being bought with mortgage or loan	Part rent, part mortgage	Rented	Rent free	**Total**
Eligible to teach maths or science						
Non-teacher						
Maths – Perfect	22.89	61.56	-	15.18	0.37	**100**
Maths – Strong	17.25	63.87	0.21	17.59	1.08	**100**
Maths – Tenuous	15.68	67.5	0.99	15.58	0.25	**100**
Physics – Perfect	20.68	53.89	-	23.36	2.07	**100**
Physics – Strong	22.71	25.31	-	51.98	-	**100**
Chemistry – Perfect	18.09	60.49	0.58	20.41	0.43	**100**
Chemistry – Strong	15.37	59.18	-	24.49	0.96	**100**
Science – Perfect	18.87	61.5	0.19	18.5	0.94	**100**
Science – Strong	19.97	61.41	0.98	17.16	0.48	**100**
Science – Tenuous	17.47	64.38	0.34	17.09	0.73	**100**
Maths and physics	19.55	66.95	0.09	12.49	0.91	**100**
Maths and chemistry	26.34	53.98	-	17.94	1.74	**100**
All eligible degrees	**18.35**	**63.25**	**0.33**	**17.19**	**0.87**	**100**
Teacher						
Maths – Perfect	22.83	66.87	-	10.3	-	**100**
Maths – Strong	13.92	79.29	-	4.87	1.91	**100**
Maths – Tenuous	-	100	-	-	-	**100**
Physics – Perfect	23.16	64.01	-	12.83	-	**100**
Physics – Strong	-	-	-	-	-	**-**
Chemistry – Perfect	34.11	54.71	-	11.18	-	**100**
Chemistry – Strong	-	-	-	-	-	**-**
Science – Perfect	20.55	71.59	-	7.86	-	**100**
Science – Strong	19.64	68.95	-	11.41	-	**100**
Science – Tenuous	24.65	57.35	-	14.41	3.6	**100**
Maths and physics	-	81.9	-	18.1	-	**100**
Maths and chemistry	-	-	-	-	-	**-**
All eligible degrees	**18.94**	**70.66**	**-**	**9.37**	**1.03**	**100**
Not eligible to teach maths or science						
Non-teacher						
No degree	16.66	51.95	0.39	30.24	0.75	**100**
Non-maths and science degree	18.34	62.34	0.33	17.91	1.08	**100**
All ineligible	**16.89**	**53.37**	**0.39**	**28.56**	**0.8**	**100**
Teacher						
No degree	17.12	73.65	-	9.23	-	**100**
Non-maths and science degree	11.85	75.92	-	11.54	0.69	**100**
All ineligible	**12.57**	**75.61**	**-**	**11.22**	**0.6**	**100**

Source: London Economics' calculations based on the QLFS

Table 19: Distribution by marital status								
Eligibility category	Single, never married	Married, living with partner	Married, separated from partner	Divorced	Widowed	In a civil partnership	In a civil partnership, separated from partner	Total
Eligible to teach maths or science								
Non-teacher								
Maths – Perfect	36.69	56.51	3.02	3.34	0.43	-	-	100
Maths – Strong	39.61	53.57	2.18	4.05	0.41	0.18	-	100
Maths – Tenuous	39.74	53.61	2.27	4.16	0.22	-	-	100
Physics – Perfect	38.92	56.33	0.77	3.98	-	-	-	100
Physics – Strong	67.41	19.18	-	13.4	-	-	-	100
Chemistry – Perfect	39.84	54.11	0.5	3.48	1.69	0.4	-	100
Chemistry – Strong	34.42	61.77	-	3.8	-	-	-	100
Science – Perfect	32.03	58.24	2.46	6.14	0.74	0.39	-	100
Science – Strong	38.94	53.65	2	4.17	0.81	0.43	-	100
Science – Tenuous	47.32	43.82	1.62	5.4	1.61	0.24	-	100
Maths and physics	28.54	65.63	2.44	2.75	0.64	-	-	100
Maths and chemistry	31.37	61.57	1.43	5.62	-	-	-	100
All eligible degrees	**36.92**	**55.75**	**2.12**	**4.37**	**0.63**	**0.21**	**-**	**100**
Teacher								
Maths – Perfect	29.13	67.51	-	-	3.37	-	-	100
Maths – Strong	13.76	80.53	1.45	4.26	-	-	-	100
Maths – Tenuous	23.86	66.81	-	9.33	-	-	-	100
Physics – Perfect	25.8	68.06	-	6.14	-	-	-	100
Physics – Strong			-		-	-	-	-
Chemistry – Perfect	48.66	51.34	-	-	-	-	-	100
Chemistry – Strong	-	-	-	-	-	-	-	-
Science – Perfect	36.33	50.47	6.44	6.76	-	-	-	100
Science – Strong	30.99	65.5	0	3.5	-	-	-	100
Science – Tenuous	43.06	40.47	8.48	7.99	-	-	-	100
Maths and physics	20.87	79.13	-	-	-	-	-	100
Maths and chemistry	-	-	-	-	-	-	-	-
All eligible degrees	**28.52**	**64.53**	**2.11**	**4.35**	**0.5**	**-**	**-**	**100**
Not eligible to teach maths or science								
Non-teacher								
No degree	31.46	53.83	3.93	9.3	1.39	0.1	-	100
Non-maths and science degree	36.62	53.54	2.63	6.13	0.82	0.25	-	100
All ineligible	**32.16**	**53.79**	**3.75**	**8.86**	**1.31**	**0.12**	**-**	**100**
Teacher								
No degree	12.19	67.9	2.67	17.23	-	-	-	100
Non-maths and science degree	30.31	58.21	2.65	7.72	0.93	0.19	-	100
All ineligible	**27.81**	**59.55**	**2.65**	**9.03**	**0.8**	**0.16**	**-**	**100**

Source: London Economics' calculations based on the QLFS

Table 20: Summary statistics on number of dependent children under the age of 16 by eligibility

Eligibility category	Individuals	Mean	Standard deviation	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	91,967	0.64	1.01	0	5
Maths – Strong	1,130,000	0.67	0.97	0	5
Maths – Tenuous	236,343	0.6	0.97	0	5
Physics – Perfect	65,036	0.44	0.9	0	4
Physics – Strong	7,819	0.48	0.7	0	2
Chemistry – Perfect	103,825	0.63	0.9	0	4
Chemistry – Strong	53,064	0.69	0.99	0	3
Science – Perfect	640,641	0.71	1.01	0	5
Science – Strong	340,387	0.65	1.01	0	5
Science – Tenuous	205,995	0.5	0.85	0	4
Maths and physics	448,489	0.69	0.96	0	5
Maths and chemistry	29,352	0.72	0.94	0	3
All eligible degrees	**3,360,000**	**0.66**	**0.97**	**0**	**5**
Teacher					
Maths – Perfect	14,678	1.02	1.09	0	4
Maths – Strong	25,258	0.77	0.95	0	3
Maths – Tenuous	6,182	1.2	1.48	0	4
Physics – Perfect	8,324	0.69	1.01	0	3
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	6,379	0.58	1.13	0	3
Chemistry – Strong	-	-	-	-	-
Science – Perfect	6,970	0.86	1	0	3
Science – Strong	13,839	0.58	0.97	0	3
Science – Tenuous	15,085	0.62	0.87	0	3
Maths and physics	2,746	0.54	1.16	0	3
Maths and chemistry	-	-	-	-	-
All eligible degrees	**99,461**	**0.77**	**1.05**	**0**	**4**
Not eligible to teach maths or science					
Non-teacher					
No degree	23,700,000	0.72	1.02	0	8
Non-maths and science degree	3,750,000	0.64	0.96	0	6
All ineligible	**27,400,000**	**0.71**	**1.01**	**0**	**8**
Teacher					
No degree	38,246	0.39	0.74	0	3
Non-maths and science degree	239,176	0.67	0.91	0	4
All ineligible	277,422	0.63	0.89	0	4

Source: London Economics' calculations based on the QLFS

Table 21: Mean and confidence intervals for number of dependent children under the age of 16 by eligibility

Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	3,357,799	0.66	0.0005	0.66	0.658
Eligible degree, teacher	99,461	0.77	0.0033	0.76	0.773
Ineligible degree, non-teacher	3,745,018	0.64	0.0005	0.64	0.643
Ineligible degree, teacher	239,176	0.67	0.0019	0.67	0.677
No degree, non-teacher	23,673,292	0.72	0.0002	0.72	0.722
No degree, teacher	39,504	0.38	0.0037	0.37	0.385
Total	**31,154,250**	**0.70**	**0.0002**	**0.70**	**0.705**

Source: London Economics' calculations based on the QLFS

Table 22: Summary statistics on the age of youngest dependent child under the age of 19 by eligibility

Eligibility category	Individuals	Mean	Standard deviation	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	36,692	6.27	5.83	0	18
Maths – Strong	475,273	6.32	5.49	0	18
Maths – Tenuous	86,342	6.08	5.09	0	17
Physics – Perfect	18,138	7.41	6.08	0	18
Physics – Strong	2,782	8.86	2.91	5	13
Chemistry – Perfect	41,804	7.41	4.81	0	16
Chemistry – Strong	22,224	7.35	5.22	0	18
Science – Perfect	276,067	7.35	5.42	0	18
Science – Strong	131,799	6.47	5.7	0	18
Science – Tenuous	72,080	7.69	5.82	0	18
Maths and physics	199,198	6.35	5.51	0	18
Maths and chemistry	14,424	6.16	5.34	0	18
All eligible degrees	**1,380,000**	**6.67**	**5.51**	**0**	**18**
Teacher					
Maths – Perfect	8,673	7.47	4.59	0	15
Maths – Strong	12,918	8.37	5.41	0	17
Maths – Tenuous	2,799	2	1.03	0	3
Physics – Perfect	3,531	5.91	6.63	0	18
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	1,780	8.45	5.97	1	16
Chemistry – Strong	-	-	-	-	-
Science – Perfect	3,338	5.38	4.51	0	13
Science – Strong	5,063	9.02	5.73	1	17
Science – Tenuous	5,760	7.96	5.01	0	14
Maths and physics	1,050	9.9	7.49	2	17
Maths and chemistry	-	-	-	-	-
All eligible degrees	**44,912**	**7.44**	**5.5**	**0**	**18**
Not eligible to teach maths or science					
Non-teacher					
No degree	10,700,000	7.46	5.41	0	18
Non-maths and science degree	1,540,000	7.28	5.56	0	18
All ineligible	**12,200,000**	**7.44**	**5.43**	**0**	**18**
Teacher					
No degree	13,470	10.25	5.85	0	17
Non-maths and science degree	113,541	7.99	6	0	18
All ineligible	**127,011**	**8.23**	**6.02**	**0**	**18**

Source: London Economics' calculations based on the QLFS

Table 23: Mean and confidence intervals for the age of youngest dependent child under the age of 19 by eligibility

Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	1,376,823	6.67	0.0047	6.66	6.68
Eligible degree, teacher	44,912	7.44	0.0260	7.39	7.50
Ineligible degree, non-teacher	1,544,209	7.28	0.0045	7.27	7.29
Ineligible degree, teacher	113,541	7.99	0.0178	7.96	8.03
No degree, non-teacher	10,674,132	7.46	0.0017	7.45	7.46
No degree, teacher	13,470	10.25	0.0504	10.15	10.35
Total	**13,767,087**	**7.37**	**0.0015**	**7.36**	**7.37**

Source: London Economics' calculations based on the QLFS

Table 24: Distribution by reported economic activity				
Eligibility category	In employment	ILO unemployed	Inactive	**Total**
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	87.19	1.36	11.46	**100**
Maths – Strong	89.87	2.67	7.47	**100**
Maths – Tenuous	90.39	2.58	7.03	**100**
Physics – Perfect	86.72	3.89	9.39	**100**
Physics – Strong	85.32	-	14.68	**100**
Chemistry – Perfect	87.68	2.12	10.2	**100**
Chemistry – Strong	90.82	-	9.18	**100**
Science – Perfect	87.2	2.09	10.71	**100**
Science – Strong	86.48	2.51	11	**100**
Science – Tenuous	85.9	3.56	10.54	**100**
Maths and physics	90.88	2.6	6.52	**100**
Maths and chemistry	83.92	1.6	14.48	**100**
All eligible degrees	**88.69**	**2.49**	**8.81**	**100**
Teacher				
Maths – Perfect	100	-	-	**100**
Maths – Strong	100	-	-	**100**
Maths – Tenuous	100	-	-	**100**
Physics – Perfect	100	-	-	**100**
Physics – Strong	-	-	-	**-**
Chemistry – Perfect	100	-	-	**100**
Chemistry – Strong	-	-	-	**-**
Science – Perfect	100	-	-	**100**
Science – Strong	100	-	-	**100**
Science – Tenuous	100	-	-	**100**
Maths and physics	100	-	-	**100**
Maths and chemistry	-	-	-	**-**
All eligible degrees	**100**	**-**	**-**	**100**
Not eligible to teach maths or science				
Non-teacher				
No degree	75.68	4.02	20.3	**100**
Non-maths and science degree	86.53	2.69	10.78	**100**
All ineligible	**77.16**	**3.84**	**19**	**100**
Teacher				
No degree	100	-	-	**100**
Non-maths and science degree	100	-	-	**100**
All ineligible	**100**	**-**	**-**	**100**

Source: London Economics' calculations based on the QLFS

Table 25: Summary statistics on gross hourly earnings (£) in main job by eligibility					
Eligibility category	Individuals	Mean	Standard deviation	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	70,006	19.35	10.31	5.36	73.63
Maths – Strong	839,505	18.54	12.06	0.95	91.11
Maths – Tenuous	186,746	16.87	8.45	1.05	38.46
Physics – Perfect	47,965	18.34	8.26	6.24	40.47
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	100,162	19.04	11.38	3.45	51.97
Chemistry – Strong	35,693	18.14	5.13	5.25	34.14
Science – Perfect	481,458	16.91	10.17	1.46	67.23
Science – Strong	321,601	16.49	10.19	3.13	49.05
Science – Tenuous	172,514	14.59	8.32	2.33	43.42
Maths and physics	369,489	19.76	11.57	1.54	96.1
Maths and chemistry	27,535	22.02	12.36	6.46	54.94
All eligible degrees	**2,650,000**	**17.86**	**10.89**	**0.95**	**96.1**
Teacher					
Maths – Perfect	9,074	18.12	4.43	10.02	23.08
Maths – Strong	25,861	15.37	3.82	9.23	24.03
Maths – Tenuous	2,338	21.14	1.85	18.5	22.43
Physics – Perfect	5,921	13.56	4.93	8	20.89
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	7,588	16.34	2.85	13.08	21.03
Chemistry – Strong	-	-	-	-	-
Science – Perfect	2,782	19.07	1.79	17.3	20.87
Science – Strong	14,701	16.1	3.75	8.4	20.2
Science – Tenuous	23,680	16.16	7.68	3.36	31.75
Maths and physics	5,887	18.08	4.22	13.66	23.07
Maths and chemistry	-	-	-	-	-
All eligible degrees	**97,832**	**16.3**	**5.23**	**3.36**	**31.75**
Not eligible to teach maths or science					
Non-teacher					
No degree	15,300,000	9.96	6.04	0.13	86.5
Non-maths and science degree	2,880,000	14.92	8.76	0.72	80.17
All ineligible	**18,100,000**	**10.74**	**6.79**	**0.13**	**86.5**
Teacher					
No degree	27,451	18.18	6.45	5.55	38.45
Non-maths and science degree	234,709	17.07	5.11	1.29	33.17
All ineligible	**262,160**	**17.19**	**5.28**	**1.29**	**38.45**

Source: London Economics' calculations based on the QLFS

Table 26: Mean and confidence intervals on the gross hourly earnings (£) in main job by eligibility

Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	2,652,674	17.86	0.0067	17.85	17.87
Eligible degree, teacher	97,832	16.30	0.0167	16.26	16.33
Ineligible degree, non-teacher	2,881,864	14.92	0.0052	14.91	14.93
Ineligible degree, teacher	234,709	17.07	0.0105	17.05	17.09
No degree, non-teacher	15,267,031	9.96	0.0015	9.95	9.96
No degree, teacher	27,451	18.18	0.0389	18.11	18.26
Total	**21,161,561**	**11.74**	**0.0017**	**11.74**	**11.75**

Source: London Economics' calculations based on the QLFS

Table 27: Summary statistics on gross weekly earnings (£) in main job by eligibility

Eligibility category	Individuals	Mean	Standard deviation	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	70,006	691.96	385.86	100	2577
Maths – Strong	843,314	698.44	467.13	35	3,462
Maths – Tenuous	186,746	669.79	417.1	23	1,923
Physics – Perfect	47,965	737.14	360.6	237	1,635
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	101,154	695.99	422.83	40	1,923
Chemistry – Strong	35,693	621.35	212.72	21	962
Science – Perfect	487,716	631.34	451.63	20	3,227
Science – Strong	325,894	637.61	430.06	53	2,077
Science – Tenuous	174,460	519.51	326.2	42	2,038
Maths and physics	371,326	757.72	402.33	77	2,308
Maths and chemistry	27,535	838.59	437.64	252	1,923
All eligible degrees	**2,670,000**	**674.17**	**435.3**	**20**	**3,462**
Teacher					
Maths – Perfect	9,074	713.19	155.06	481	923
Maths – Strong	25,861	516	164.04	231	769
Maths – Tenuous	2,338	684.88	142.9	481	785
Physics – Perfect	5,921	488.65	177.64	240	731
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	7,588	618.7	105.75	471	771
Chemistry – Strong	-	-	-	-	-
Science – Perfect	2,782	571.96	53.51	519	626
Science – Strong	14,701	590.56	183.1	158	865
Science – Tenuous	23,680	470.46	153.32	252	769
Maths and physics	5,887	648.96	62.37	550	692
Maths and chemistry	-	-	-	-	-
All eligible degrees	**97,832**	**554.41**	**172.68**	**158**	**923**
Not eligible to teach maths or science					
Non-teacher					
No degree	15,400,000	365.47	250.31	5	3,115
Non-maths and science degree	2,890,000	530.28	356.46	6	2,769
All ineligible	**18,200,000**	**391.55**	**276.53**	**5**	**3,115**
Teacher					
No degree	27,451	607.45	184.02	172	978
Non-maths and science degree	239,478	593.99	218	49	1,327
All ineligible	**266,929**	**595.37**	**214.79**	**49**	**1,327**

Source: London Economics' calculations based on the QLFS

Table 28: Mean and confidence intervals on the gross weekly earnings (£) in main job by eligibility

Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	2,671,809	674.17	0.2663	673.65	674.69
Eligible degree, teacher	97,832	554.41	0.5521	553.33	555.49
Ineligible degree, non-teacher	2,886,673	530.28	0.2098	529.87	530.70
Ineligible degree, teacher	239,478	593.99	0.4455	593.11	594.86
No degree, non-teacher	15,363,112	365.58	0.0639	365.45	365.70
No degree, teacher	27,451	607.45	1.1107	605.27	609.63
Total	**21,286,355**	**430.40**	**0.0683**	**430.26**	**430.53**

Source: London Economics' calculations based on the QLFS

Table 29: Summary statistics on the number of hours worked a week in main job by eligibility

Eligibility category	Individuals	Mean	Standard error	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	76,306	40.51	11.93	6	70
Maths – Strong	999,658	41.5	10.73	2	91
Maths – Tenuous	211,680	41.48	11.93	4	97
Physics – Perfect	56,043	42.37	10.8	15	97
Physics – Strong	6,671	34.36	20.79	6	72
Chemistry – Perfect	88,041	39.54	9.99	2	76
Chemistry – Strong	47,318	36.01	13.1	4	70
Science – Perfect	544,367	39.88	13.55	1	97
Science – Strong	288,144	40.82	13.13	1	92
Science – Tenuous	172,825	37.52	11.96	1	74
Maths and physics	397,903	43.15	10.12	3	97
Maths and chemistry	24,159	42.38	7.36	24	60
All eligible degrees	**2,910,000**	**40.95**	**11.8**	**1**	**97**
Teacher					
Maths – Perfect	14,678	43.72	10.56	18	70
Maths – Strong	25,258	40.57	13.66	5	65
Maths – Tenuous	6,182	46.56	9.2	26	60
Physics – Perfect	8,324	48.87	11.06	32	82
Physics – Strong	-	-	-	-	-
Chemistry – Perfect	6,379	45.81	6.69	35	60
Chemistry – Strong	-	-	-	-	-
Science – Perfect	6,970	43.22	9.78	24	63
Science – Strong	13,195	46.91	10.03	12	70
Science – Tenuous	15,085	41.6	15.48	13	97
Maths and physics	2,746	42.4	8.72	30	51
Maths and chemistry	-	-	-	-	-
All eligible degrees	**98,817**	**43.69**	**12.22**	**5**	**97**
Not eligible to teach maths or science					
Non-teacher					
No degree	17,500,000	37.66	13.06	0	97
Non-maths and science degree	3,160,000	37.71	12.66	0	97
All ineligible	**20,600,000**	**37.67**	**13**	**0**	**97**
Teacher					
No degree	37,798	42.31	13.23	6	82
Non-maths and science degree	231,626	43.03	11.86	3	80
All ineligible	**269,424**	**42.93**	**12.06**	**3**	**82**

Source: London Economics' calculations based on the QLFS

Table 30: Mean and confidence intervals for the usual number of hours worked a week in main job by eligibility

Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	2,913,115	40.95	0.0069	40.94	40.97
Eligible degree, teacher	98,817	43.69	0.0389	43.61	43.77
Ineligible degree, non-teacher	3,158,754	37.71	0.0071	37.70	37.73
Ineligible degree, teacher	231,626	43.03	0.0246	42.98	43.08
No degree, non-teacher	17,501,630	37.67	0.0031	37.66	37.67
No degree, teacher	39,056	42.12	0.0661	41.99	42.25
Total	**23,942,998**	**38.16**	**0.0026**	**38.15**	**38.16**

Source: London Economics' calculations based on the QLFS

Eligibility category	Does not apply	Full - time	Part - time	Total
Table 31: Full-time or part-time job?				
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	5.26	80.91	13.83	**100**
Maths – Strong	2.69	86.32	10.99	**100**
Maths – Tenuous	1.91	85.56	12.53	**100**
Physics – Perfect	4.66	87.71	7.63	**100**
Physics – Strong	7.41	67.13	25.46	**100**
Chemistry – Perfect	4.5	82.89	12.61	**100**
Chemistry – Strong	5.02	67.51	27.47	**100**
Science – Perfect	5.84	72.74	21.42	**100**
Science – Strong	3.33	82.03	14.64	**100**
Science – Tenuous	4.83	73.18	22	**100**
Maths and physics	2.29	91.43	6.29	**100**
Maths and chemistry	5.87	88.7	5.43	**100**
All eligible degrees	**3.62**	**82.57**	**13.81**	**100**
Teacher				
Maths – Perfect	-	96.63	3.37	**100**
Maths – Strong	-	79.13	20.87	**100**
Maths – Tenuous	-	94.42	5.58	**100**
Physics – Perfect	-	94.77	5.23	**100**
Physics – Strong	-	-	-	**-**
Chemistry – Perfect	-	100	-	**100**
Chemistry – Strong	-	-	-	**-**
Science – Perfect	-	86.92	13.08	**100**
Science – Strong	-	96.95	3.05	**100**
Science – Tenuous	-	83.61	16.39	**100**
Maths and physics	-	78.11	21.89	**100**
Maths and chemistry	-			**-**
All eligible degrees	**-**	**88.99**	**11.01**	**100**
Not eligible to teach maths or science				
Non-teacher				
No degree	11.07	66.92	22.02	**100**
Non-maths and science degree	4.05	71.85	24.09	**100**
All ineligible	**10.11**	**67.59**	**22.3**	**100**
Teacher				
No degree	-	85.13	14.87	**100**
Non-maths and science degree	-	85.78	14.22	**100**
All ineligible	**-**	**85.69**	**14.31**	**100**

Source: London Economics' calculations based on the QLFS

Table 32: Private or public sector?				
Eligibility category	Does not apply	Private	Public	**Total**
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	12.81	67	20.19	**100**
Maths – Strong	10.15	74.94	14.91	**100**
Maths – Tenuous	9.75	64.52	25.74	**100**
Physics – Perfect	13.28	57.82	28.9	**100**
Physics – Strong	14.68	49.53	35.78	**100**
Chemistry – Perfect	12.38	66.31	21.31	**100**
Chemistry – Strong	9.18	53.62	37.2	**100**
Science – Perfect	12.88	38.51	48.61	**100**
Science – Strong	13.52	57.48	29	**100**
Science – Tenuous	14.1	50.88	35.02	**100**
Maths and physics	9.15	79.28	11.57	**100**
Maths and chemistry	16.08	79.11	4.82	**100**
All eligible degrees	**11.34**	**63.41**	**25.25**	**100**
Teacher				
Maths – Perfect	-	7.9	92.1	**100**
Maths – Strong	-	11.99	88.01	**100**
Maths – Tenuous	-	-	100	**100**
Physics – Perfect	-	22.96	77.04	**100**
Physics – Strong	-	-	-	**-**
Chemistry – Perfect	-	16.62	83.38	**100**
Chemistry – Strong	-	-	-	**-**
Science – Perfect	-	16.28	83.72	**100**
Science – Strong	-	20.34	79.66	**100**
Science – Tenuous	-	15.39	84.61	**100**
Maths and physics	-	-	100	**100**
Maths and chemistry	-	-	-	**-**
All eligible degrees	**-**	**88.99**	**11.01**	**100**
Not eligible to teach maths or science				
Non-teacher				
No degree	24.45	60.39	15.16	**100**
Non-maths and science degree	13.57	47.27	39.15	**100**
All ineligible	**22.96**	**58.6**	**18.44**	**100**
Teacher				
No degree	-	13.95	86.05	**100**
Non-maths and science degree	-	12.17	87.83	**100**
All ineligible	**-**	**12.41**	**87.59**	**100**

Source: London Economics' calculations based on the QLFS

Table 33: Permanent or temporary job?				
Eligibility category	Does not apply	Permanent	Not permanent	**Total**
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	22.61	74.2	3.19	**100**
Maths – Strong	20.63	75.34	4.03	**100**
Maths – Tenuous	17.19	78.31	4.5	**100**
Physics – Perfect	23.26	69.85	6.89	**100**
Physics – Strong	14.68	61.4	23.92	**100**
Chemistry – Perfect	21.67	72.76	5.57	**100**
Chemistry – Strong	26.15	69.56	4.29	**100**
Science – Perfect	26.32	64.74	8.93	**100**
Science – Strong	25.17	69.47	5.36	**100**
Science – Tenuous	25.62	68.46	5.92	**100**
Maths and physics	19.34	77.6	3.06	**100**
Maths and chemistry	26.51	65.87	7.62	**100**
All eligible degrees	**22.33**	**72.39**	**5.28**	**100**
Teacher				
Maths – Perfect	-	92.51	7.49	**100**
Maths – Strong	2.31	91.31	6.38	**100**
Maths – Tenuous	-	100	-	**100**
Physics – Perfect	-	94.77	5.23	**100**
Physics – Strong	-	-	-	**-**
Chemistry – Perfect	-	100	-	**100**
Chemistry – Strong	-	-	-	**-**
Science – Perfect	-	93.43	6.57	**100**
Science – Strong	-	96.95	3.05	**100**
Science – Tenuous	-	96.88	3.12	**100**
Maths and physics	-	57.98	42.02	**100**
Maths and chemistry	-	-	-	**-**
All eligible degrees	**0.59**	**93.73**	**5.68**	**100**
Not eligible to teach maths or science				
Non-teacher				
No degree	34.67	62.69	2.64	**100**
Non-maths and science degree	24.28	69.69	6.03	**100**
All ineligible	**33.25**	**63.65**	**3.1**	**100**
Teacher				
No degree	1.52	89.37	9.11	**100**
Non-maths and science degree	0.5	93.52	5.98	**100**
All ineligible	**0.64**	**92.95**	**6.41**	**100**

Source: London Economics' calculations based on the QLFS

Eligibility category	First degree	Higher degree	Other degree	Nurs-ing etc	Dip-loma	NVQ level 5
Table 34: Highest qualification by eligibility for six most common qualifications						
Eligible to teach maths or science						
Non-teacher						
Maths – Perfect	67,420	21,734	2,397	-	-	416
Maths – Strong	730,000	280,000	120,000	1,412	-	3,031
Maths – Tenuous	140,000	84,730	13,227	471	536	938
Physics – Perfect	37,031	26,465	1,034	506	-	-
Physics – Strong	4,090	3,729	-	-	-	-
Chemistry – Perfect	67,324	33,549	2,434	518	-	-
Chemistry – Strong	35,126	16,092	1,846	-	-	-
Science – Perfect	300,000	200,000	40,583	91,165	8,720	488
Science – Strong	240,000	85,112	8,881	5,572	573	1,031
Science – Tenuous	150,000	49,024	6,065	910	-	-
Maths and physics	300,000	120,000	31,217	833	-	910
Maths and chemistry	18,660	10,692	-	-	-	-
Teacher						
Maths – Perfect	5,200	9,478	-	-	-	-
Maths – Strong	13,021	11,169	1,068	-	-	-
Maths – Tenuous	2,643	3,539	-	-	-	-
Physics – Perfect	2,605	5,719	-	-	-	-
Chemistry – Perfect	2,254	4,125	-	-	-	-
Science – Perfect	3,497	3,473	-	-	-	-
Science – Strong	5,748	8,091	-	-	-	-
Science – Tenuous	9,722	5,363	-	-	-	-
Maths and physics	522	2,224	-	-	-	-
Not Eligible to teach maths or science						
Non-Teacher						
No degree	-	-	-	451	410,000	45,003
Non-maths and science degree	2,200,000	940,000	130,000	450,000	34,714	5,936
Teacher						
No degree	-	-	-	-	-	-
Non-maths and science degree	73,382	160,000	2,470	-	-	-

Source: London Economics' calculations based on the QLFS

Annex 3 Teaching Information Line summary statistics

Table 35: Summary statistics on age (in years) by eligibility					
Eligibility category	Individuals	Mean	Standard deviation	Min	Max
Eligible to teach maths or science					
Non-teacher					
Maths – Perfect	7,600	35.47	9.20	21	59
Maths – Strong	23,792	34.15	7.74	21	59
Maths – Tenuous	19,843	34.17	7.93	21	59
Physics – Perfect	3,601	35.92	9.31	21	59
Physics – Strong	3,647	37.86	8.64	21	59
Physics – Tenuous	2,246	37.94	8.79	21	59
Chemistry – Perfect	6,073	36.07	8.65	21	59
Chemistry – Strong	688	34.67	7.64	22	58
Chemistry – Tenuous	906	37.27	8.78	21	59
Science – Perfect	12,468	34.05	8.08	21	59
Science – Strong	3,632	34.70	7.96	21	59
Science – Tenuous	32,828	33.96	8.55	21	59
Maths and physics	5,577	38.96	8.81	21	59
Maths and chemistry	661	38.14	9.02	21	59
All eligible degrees	**123,562**	**34.78**	**8.44**	**21**	**59**
Teacher					
Maths – Perfect	114	38.55	9.33	23	57
Maths – Strong	165	36.5	8.31	22	59
Maths – Tenuous	215	37.57	9.02	23	59
Physics – Perfect	51	39.69	9.82	25	59
Physics – Strong	26	41	10.59	26	58
Physics – Tenuous	22	37.94	10.08	26	58
Chemistry – Perfect	48	36.63	8.88	23	57
Chemistry – Strong	5	32.14	8.90	26	48
Chemistry – Tenuous	5	41.42	9.01	33	56
Science – Perfect	122	37.08	9.38	23	58
Science – Strong	22	34.38	7.90	27	56
Science – Tenuous	467	36.76	9.08	21	59
Maths and physics	50	39.41	9.85	24	57
Maths and chemistry	1	29.84	.	30	30
All eligible degrees	**1,313**	**37.31**	**9.14**	**21**	**59**
Not eligible to teach maths or science					
Non-teacher					
Non-maths and science degree	251,893	33.26	8.32	21	59
Teacher					
Non-maths and science degree	3,244	36.73	8.73	21	59

Source: London Economics' calculations based on the TIL database

Table 36: Mean and confidence intervals for age (in years) by eligibility					
Eligibility category	Individuals	Mean	Standard error	95% confidence intervals	
				Lower bound	Upper bound
Eligible degree, non-teacher	123,562	34.78	0.0240	34.73	34.83
Eligible degree, teacher	1,313	37.31	0.2522	36.82	37.81
Ineligible degree, non-teacher	251,893	33.26	0.0166	33.23	33.29
Ineligible degree, teacher	3,244	36.73	0.1533	36.43	37.03
Total	380,012	33.80	0.0136	33.77	33.82

Source: London Economics' calculations based on the QLFS

Table 37: Distribution by age group									
Eligibility category	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	Unk-nown	**Total**
Eligible to teach maths or science										
Non-teacher										
Maths – Perfect	6.43	19.79	16.04	12.07	10.63	7.51	4.83	2.83	19.87	100
Maths – Strong	4.67	21.33	21.2	14.37	9.29	5.29	2.74	1.19	19.91	100
Maths – Tenuous	5.03	22.01	20.42	13.64	9.05	5.71	2.85	1.37	19.93	100
Physics – Perfect	6.66	18.91	16.86	11.5	10.8	8.08	5.11	3.39	18.69	100
Physics – Strong	3.13	12.26	17.19	15.57	14.09	9.84	5.62	3.78	18.51	100
Physics – Tenuous	3.29	12.73	16.83	15.54	14.02	9.31	6.23	3.38	18.66	100
Chemistry – Perfect	3.97	18.48	17.36	14.41	11.41	7.59	4.63	2.9	19.27	100
Chemistry – Strong	3.63	17.73	25.15	15.26	10.32	6.69	2.91	1.31	17.01	100
Chemistry – Tenuous	2.98	14.68	16.89	14.9	12.8	8.83	5.96	2.98	19.98	100
Science – Perfect	6.58	22.02	19.72	11.97	10.03	6.25	2.81	1.15	19.46	100
Science – Strong	4.19	19.74	21.2	12.83	9.75	7.49	3.03	1.18	20.59	100
Science – Tenuous	8.29	22.57	17.93	11.02	9.07	6.31	3.37	1.55	19.89	100
Maths and physics	1.7	11.4	14.67	17.25	14.13	10.2	7.51	4.66	18.47	100
Maths and chemistry	1.82	12.41	17.85	12.56	12.56	11.5	4.08	5.6	21.63	100
All eligible degrees	5.76	20.5	18.9	13.04	10.01	6.62	3.63	1.87	19.68	100
Teacher										
Maths – Perfect	2.63	14.91	17.54	12.28	8.77	10.53	7.89	5.26	20.18	100
Maths – Strong	1.21	18.18	21.82	13.33	11.52	7.88	3.64	1.82	20.61	100
Maths – Tenuous	1.86	16.74	21.86	12.56	12.09	10.23	7.91	2.79	13.95	100
Physics – Perfect	-	21.57	3.92	17.65	15.69	5.88	11.76	7.84	15.69	100
Physics – Strong	-	15.38	15.38	7.69	15.38	11.54	3.85	15.38	15.38	100
Physics – Tenuous	-	31.82	9.09	18.18	4.55	13.64	4.55	9.09	9.09	100
Chemistry – Perfect	4.17	18.75	18.75	12.50	12.50	10.42	2.08	6.25	14.58	100
Chemistry – Strong	-	60.00	20.00	-	-	20.00	-	-	-	100
Chemistry – Tenuous	-	-	20.00	40.00	20.00	-	-	20.00	-	100
Science – Perfect	1.64	18.03	17.21	12.30	9.02	10.66	8.20	3.28	19.67	100
Science – Strong	-	13.64	40.91	4.55	-	9.09	-	4.55	27.27	100
Science – Tenuous	2.78	16.92	16.06	13.28	10.92	9.64	5.57	3.43	21.41	100
Maths and physics	-	12.00	16.00	6.00	10.00	12.00	8.00	8.00	28.00	100
Maths and chemistry	-	-	-	-	-	-	-	-	100.0	100
All eligible degrees	1.98	17.29	17.90	12.72	10.81	9.75	6.17	4.11	19.27	100
Not Eligible to teach maths or science										
Non-teacher										
Non-maths and science degree	10.59	22.69	17.89	11.43	8.63	5.56	2.86	1.22	19.13	100
Teacher										
Non-maths and science degree	2.62	16.49	19.20	13.53	11.50	8.23	5.46	2.96	20.01	100

Source: London Economics' calculations based on the TIL database

Table 38: Distribution by gender			
Eligibility category	Male	Female	**Total**
Eligible to teach maths or science			
Non-teacher			
Maths – Perfect	52.32	47.67	100
Maths – Strong	39.86	60.13	100
Maths – Tenuous	40.36	59.64	100
Physics – Perfect	72.31	27.66	100
Physics – Strong	75.93	24.07	100
Physics – Tenuous	75.82	24.18	100
Chemistry – Perfect	50.7	49.27	100
Chemistry – Strong	29.8	70.2	100
Chemistry – Tenuous	50.99	49.01	100
Science – Perfect	35.69	64.28	100
Science – Strong	40.97	59.03	100
Science – Tenuous	28.16	71.83	100
Maths and physics	79.68	20.32	100
Maths and chemistry	65.05	34.95	100
All eligible degrees	42.36	57.63	100
Teacher			
Maths – Perfect	52.63	47.37	100
Maths – Strong	44.24	55.76	100
Maths – Tenuous	40	60	100
Physics – Perfect	58.82	41.18	100
Physics – Strong	80.77	19.23	100
Physics – Tenuous	59.09	40.91	100
Chemistry – Perfect	47.92	52.08	100
Chemistry – Strong	40	60	100
Chemistry – Tenuous	40	60	100
Science – Perfect	34.43	65.57	100
Science – Strong	45.45	54.55	100
Science – Tenuous	28.69	71.31	100
Maths and physics	90	10	100
Maths and chemistry	0	100	100
All eligible degrees	41.2	58.8	100
Not eligible to teach maths or science			
Non-teacher			
Non-maths and science degree	31.6	68.33	100
Teacher			
Non-maths and science degree	31.78	68.19	100

Source: London Economics' calculations based on the TIL database

Table 39: Distribution by ethnicity							
Eligibility category	No inform-ation	White	Mixed	Asian or Asian British	Black or Black British	Chinese	Other ethnic group	**Total**
Eligible to teach maths or science								
Non-teacher								
Maths – Perfect	18.90	55.94	1.31	13.84	7.39	1.17	1.45	100
Maths – Strong	18.32	56.41	1.40	12.88	8.99	0.87	1.12	100
Maths – Tenuous	17.81	54.65	1.67	14.77	8.92	0.85	1.35	100
Physics – Perfect	20.55	62.01	1.64	8.94	4.58	0.78	1.50	100
Physics – Strong	22.89	52.29	1.26	12.23	8.14	1.01	2.17	100
Physics – Tenuous	15.50	54.93	2.10	15.98	8.94	0.80	1.74	100
Chemistry – Perfect	21.85	54.36	1.42	13.83	6.52	0.89	1.14	100
Chemistry – Strong	21.36	43.46	1.16	22.82	7.85	1.16	2.18	100
Chemistry – Tenuous	18.21	46.02	1.54	22.63	9.71	0.55	1.32	100
Science – Perfect	23.64	59.57	1.21	9.05	5.08	0.49	0.97	100
Science – Strong	27.72	63.43	0.94	2.45	4.76	0.14	0.55	100
Science – Tenuous	21.33	61.39	1.43	9.28	4.98	0.38	1.19	100
Maths and physics	25.21	51.72	1.46	11.33	7.44	1.11	1.74	100
Maths and chemistry	22.54	44.17	1.96	14.98	12.56	1.21	2.57	100
All eligible degrees	20.56	57.43	1.43	11.63	6.97	0.71	1.26	100
Teacher								
Maths – Perfect	7.01	58.76	1.76	14.04	13.16	2.63	2.63	100
Maths – Strong	5.46	61.82	4.85	12.12	14.55	0.00	1.21	100
Maths – Tenuous	21.39	55.82	1.87	12.10	7.45	0.47	0.93	100
Physics – Perfect	13.73	66.66	1.96	13.72	1.96	0.00	1.96	100
Physics – Strong	11.54	46.15	7.70	15.39	19.24	0.00	0.00	100
Physics – Tenuous	13.64	40.92	9.09	13.64	22.74	0.00	0.00	100
Chemistry – Perfect	18.75	49.99	4.16	16.66	10.42	0.00	0.00	100
Chemistry – Strong	40.00	20.00	0.00	40.00	0.00	0.00	0.00	100
Chemistry – Tenuous	20.00	40.00	0.00	40.00	0.00	0.00	0.00	100
Science – Perfect	14.75	65.58	1.64	10.66	6.56	0.00	0.82	100
Science – Strong	13.64	72.73	4.55	4.55	0.00	0.00	4.55	100
Science – Tenuous	15.85	62.95	3.01	8.56	6.85	0.21	2.57	100
Maths and physics	6.00	48.00	4.00	20.00	18.00	2.00	2.00	100
Maths and chemistry	0.00	100.00	0.00	0.00	0.00	0.00	0.00	100
All eligible degrees	14.16	59.86	3.05	11.57	9.14	0.46	1.75	100
Not eligible to teach maths or science								
Non-teacher								
Non-maths and science degree	19.01	66.18	1.60	6.51	5.21	0.40	1.08	100
Teacher								
Non-maths and science degree	18.28	66.77	1.58	5.52	5.70	0.31	1.85	100

Source: London Economics' calculations based on the TIL database

Table 40: Does the user have a disability?				
Eligibility category	Yes	No	Unknown	**Total**
Eligible to teach maths or science				
Non-teacher				
Maths – Perfect	1.45	77.39	21.16	100
Maths – Strong	1.38	78.00	20.63	100
Maths – Tenuous	1.85	77.31	20.87	100
Physics – Perfect	1.80	76.70	21.50	100
Physics – Strong	1.97	72.66	25.37	100
Physics – Tenuous	2.34	79.61	18.03	100
Chemistry – Perfect	1.30	74.46	24.26	100
Chemistry – Strong	1.48	71.80	26.75	100
Chemistry – Tenuous	2.20	75.39	22.41	100
Science – Perfect	1.79	73.40	24.81	100
Science – Strong	1.68	68.89	29.44	100
Science – Tenuous	1.86	74.73	23.39	100
Maths and physics	1.59	69.43	28.99	100
Maths and chemistry	1.35	73.68	24.96	100
All eligible degrees	1.70	75.45	22.86	100
Teacher				
Maths – Perfect	-	71.93	28.07	100
Maths – Strong	1.22	88.48	10.30	100
Maths – Tenuous	2.34	75.81	21.86	100
Physics – Perfect	-	84.31	15.69	100
Physics – Strong	-	80.77	19.23	100
Physics – Tenuous	-	77.27	22.73	100
Chemistry – Perfect	4.16	72.92	22.92	100
Chemistry – Strong	-	60.00	40.00	100
Chemistry – Tenuous	-	80.00	20.00	100
Science – Perfect	0.82	79.51	19.67	100
Science – Strong	-	86.36	13.64	100
Science – Tenuous	2.12	81.16	16.70	100
Maths and physics	2.00	86.00	12.00	100
Maths and chemistry	-	-	100.00	100
All eligible degrees	1.61	80.12	18.28	100
Not eligible to teach maths or science				
Non-teacher				
Non-maths and science degree	2.18	77.40	20.40	100
Teacher				
Non-maths and science degree	2.06	78.95	18.99	100

Source: London Economics' calculations based on the TIL database

Table 41: Distribution by region of residence

Eligibility category	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	Eastern	London	South East	South West	Wales	Scotland	N Ireland	Overseas	Unknown	Total
Eligible to teach maths or science															
Non-teacher															
Maths – Perfect	2.99	9.75	6.08	5.29	6.67	9.83	22.79	16.68	6.88	2.87	2.30	0.57	3.91	3.39	100
Maths – Strong	3.76	11.77	7.96	6.65	9.26	8.81	22.34	13.78	5.54	3.13	1.66	0.79	2.32	2.22	100
Maths – Tenuous	3.20	10.84	7.72	6.35	8.44	9.17	25.25	14.94	5.81	2.61	1.21	0.64	2.14	1.69	100
Physics – Perfect	3.00	10.72	6.22	6.50	7.41	9.78	18.02	17.80	8.05	3.36	2.33	0.50	3.39	2.92	100
Physics – Strong	3.24	10.69	8.17	6.75	8.99	8.50	20.54	15.55	7.79	3.32	1.59	0.16	1.84	2.88	100
Physics – Tenuous	2.49	10.02	6.81	6.68	8.73	10.20	23.37	15.81	7.39	2.49	1.60	0.22	2.17	2.00	100
Chemistry – Perfect	3.97	12.71	9.44	6.97	8.48	9.60	16.81	14.90	5.75	3.57	2.07	0.31	3.28	2.14	100
Chemistry – Strong	3.63	10.61	6.83	7.27	8.72	9.59	23.84	15.70	5.23	2.91	2.76	0.58	0.88	1.46	100
Chemistry – Tenuous	2.54	9.16	7.06	4.64	10.82	10.38	27.48	14.57	5.85	2.32	0.44	-	3.20	1.54	100
Science – Perfect	3.26	11.28	6.81	5.98	7.91	10.51	17.40	16.26	8.71	3.83	2.91	0.38	2.30	2.47	100
Science – Strong	3.85	9.83	7.63	7.32	8.29	11.12	12.09	16.35	13.00	3.94	1.82	0.58	2.23	1.95	100
Science – Tenuous	3.42	11.02	7.55	7.01	8.76	10.38	18.82	15.61	8.10	3.33	1.49	0.56	1.81	2.14	100
Maths and physics	3.42	10.85	6.92	6.78	9.09	9.58	18.31	16.42	8.02	4.23	1.81	0.59	1.72	2.26	100
Maths and chemistry	4.39	10.29	8.02	6.96	8.17	8.32	22.39	16.79	3.93	3.03	1.82	0.61	3.33	1.97	100
All eligible degrees	3.41	11.07	7.52	6.57	8.56	9.72	20.53	15.37	7.17	3.24	1.76	0.57	2.28	2.23	100
Teacher															
Maths – Perfect	1.75	11.40	3.51	3.51	3.51	7.89	22.81	15.79	4.39	2.63	0.88	-	5.26	16.66	100
Maths – Strong	2.42	11.52	6.67	3.03	8.48	7.88	23.64	17.58	4.85	2.42	-	1.21	7.27	3.03	100
Maths – Tenuous	5.12	10.23	6.98	4.65	6.51	11.16	23.26	14.88	4.19	0.93	0.47	1.40	6.05	4.19	100
Physics – Perfect	1.96	17.65	1.96	3.92	7.84	7.84	19.61	15.69	7.84	1.96	1.96	-	11.76	-	100
Physics – Strong	-	-	-	7.69	7.69	11.54	23.08	15.38	11.54	-	-	-	15.38	7.70	100
Physics – Tenuous	-	-	4.55	4.55	13.64	9.09	31.82	13.64	4.55	-	4.55	-	9.09	4.55	100
Chemistry – Perfect	6.25	8.33	4.17	10.42	8.33	8.33	20.83	18.75	8.33	-	-	-	2.08	4.17	100
Chemistry – Strong	-	-	-	20.00	-	-	20.00	40.00	20.00	-	-	-	-	-	100
Chemistry – Tenuous	-	-	20.00	-	-	20.00	20.00	20.00	-	-	-	-	-	20.00	100
Science – Perfect	0.82	13.11	4.10	7.38	5.74	11.48	16.39	22.95	4.92	3.28	0.82	-	6.56	2.46	100
Science – Strong	9.09	9.09	4.55	4.55	9.09	13.64	9.09	13.64	22.73	4.55	-	-	-	-	100
Science – Tenuous	3.85	8.14	5.14	7.92	7.71	13.06	20.77	15.85	4.50	2.57	1.07	0.64	7.28	1.50	100
Maths and physics	4.00	22.00	12.00	2.00	8.00	6.00	26.00	4.00	2.00	4.00	-	-	8.00	2.00	100
Maths and chemistry	-	-	-	-	-	-	-	100.00	-	-	-	-	-	-	100
All eligible degrees	3.35	10.21	5.41	5.94	7.16	10.74	21.48	16.30	5.18	2.21	0.76	0.61	6.86	3.81	100
Not eligible to teach maths or science															
Non-teacher															
Non-maths and science degree	3.42	10.55	7.64	6.22	8.00	9.05	21.77	15.27	7.58	3.18	1.47	0.61	3.05	2.20	100
Teacher															
Non-maths and science degree	3.08	8.60	7.03	5.67	8.66	9.53	20.93	15.54	7.15	2.25	0.80	0.43	8.10	2.22	100

Source: London Economics' calculations based on the TIL database

Eligibility Category	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	Eastern	London	South East	South West	Wales	Scotland	N Ireland	Overseas	Unknown	Total
Table 42: Distribution by preferred region															
Eligible to teach maths or science															
Non-teacher															
Maths – Perfect	1.45	5.42	2.42	2.53	3.00	3.63	11.53	7.07	3.18	1.26	0.29	0.05	0.05	58.12	100
Maths – Strong	1.71	4.81	2.95	2.89	4.08	3.01	10.28	5.49	2.07	1.35	0.24	0.08	0.04	60.99	100
Maths – Tenuous	1.74	5.94	3.75	3.14	4.63	3.97	14.78	7.20	2.86	1.32	0.20	0.07	0.06	50.35	100
Physics – Perfect	1.39	6.08	2.80	3.14	3.11	3.55	8.86	7.30	4.05	1.25	0.25	-	-	58.21	100
Physics – Strong	1.59	5.26	2.99	3.32	4.80	3.59	10.04	5.70	3.62	1.75	0.16	0.05	0.03	57.08	100
Physics – Tenuous	1.25	6.19	3.56	3.29	4.10	4.59	13.85	7.79	4.45	1.20	0.18	-	0.04	49.50	100
Chemistry – Perfect	1.96	6.94	3.98	3.39	4.31	3.51	8.60	6.03	2.96	1.61	0.25	0.02	0.02	56.43	100
Chemistry – Strong	1.89	7.12	3.05	2.47	5.38	5.23	13.81	7.27	2.18	1.02	0.29	-	-	50.30	100
Chemistry – Tenuous	1.32	5.41	3.64	3.42	5.30	4.64	15.01	8.39	2.65	0.55	0.11	-	-	49.56	100
Science – Perfect	1.44	6.05	2.58	2.86	3.61	4.01	8.36	6.67	4.03	1.58	0.34	0.02	0.05	58.41	100
Science – Strong	1.79	4.85	2.97	3.39	3.50	4.38	6.33	7.19	5.86	1.49	0.14	0.08	0.03	58.02	100
Science – Tenuous	1.81	5.53	3.51	3.30	4.27	4.11	9.81	6.90	3.89	1.42	0.21	0.05	0.05	55.15	100
Maths and physics	1.83	5.56	3.03	3.07	4.61	3.60	10.06	6.87	3.94	1.74	0.32	0.09	0.02	55.26	100
Maths and chemistry	1.66	5.90	4.69	3.18	4.69	4.08	14.22	7.56	2.27	1.21	-	0.15	-	50.38	100
All eligible degrees	1.69	5.59	3.24	3.09	4.14	3.78	10.64	6.64	3.34	1.42	0.23	0.06	0.05	56.12	100
Teacher															
Maths – Perfect	0.88	7.89	3.51	3.51	2.63	6.14	18.42	6.14	4.39	1.75	-	-	-	44.74	100
Maths – Strong	2.42	3.64	1.82	3.03	4.85	2.42	18.79	7.27	4.85	3.03	-	-	-	47.88	100
Maths – Tenuous	2.33	5.12	4.65	2.79	3.26	6.51	13.49	6.51	2.79	1.40	-	0.47	0.47	50.24	100
Physics – Perfect	1.96	11.76	1.96	1.96	3.92	7.84	15.69	5.88	3.92	-	-	-	1.96	43.13	100
Physics – Strong	-	3.85	3.85	7.69	3.85	-	15.38	11.54	3.85	-	-	-	-	50.00	100
Physics – Tenuous	-	4.55	-	-	13.64	4.55	9.09	13.64	4.55	4.55	-	-	-	45.46	100
Chemistry – Perfect	4.17	4.17	4.17	4.17	6.25	4.17	10.42	12.50	6.25	-	-	-	2.08	41.66	100
Chemistry – Strong	-	-	-	-	-	-	20.00	-	20.00	-	-	-	-	60.00	100
Chemistry – Tenuous	-	-	-	-	-	20.00	20.00	-	-	-	-	-	-	60.00	100
Science – Perfect	1.64	9.02	1.64	5.74	1.64	7.38	11.48	13.93	1.64	0.82	-	-	-	45.09	100
Science – Strong	4.55	4.55	-	4.55	4.55	4.55	9.09	4.55	18.18	-	-	-	-	45.46	100
Science – Tenuous	2.14	4.93	3.00	5.35	4.71	7.71	14.13	8.99	1.93	1.93	0.43	0.21	0.43	44.11	100
Maths and physics	4.00	14.00	10.00	2.00	6.00	2.00	18.00	4.00	-	2.00	-	-	-	38.00	100
Maths and chemistry	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100
All eligible degrees	2.13	5.94	3.20	4.11	4.19	6.09	14.70	8.45	3.20	1.68	0.15	0.15	0.38	45.63	100
Not eligible to teach maths or science															
Non-teacher															
Non-maths and science degree	1.21	3.63	2.34	1.97	2.73	2.63	8.37	4.89	2.55	0.94	0.14	0.04	0.05	68.51	100
Teacher															
Non-maths and science degree	1.82	5.15	3.33	2.96	4.56	4.56	13.07	7.49	3.61	0.99	0.09	0.06	0.21	52.09	100

Source: London Economics' calculations based on the TIL database

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