Uptake of GCSE subjects 2018

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Introduction

This Statistics Report is the first in a new series produced by the Research Division at Cambridge University Press and Assessment, using publicly available school performance data from the Department for Education (DfE). The aim of the new series is to provide a continuation of the Statistics Reports that were previously produced using National Pupil Database (NPD) data (e.g., Caroll & Gill, 2018) which has become more difficult and time-consuming to access.

This report is focused on the uptake of GCSE (and IGCSE/International GCSE) subjects in England in 2018. The data were downloaded from the DfE's, 'Find and compare schools in England' service (https://www.compare-school-performance.service.gov.uk), and consisted of Key Stage 4 (KS4) results at a school level in all subjects in schools and colleges in England, as well as school characteristics such as school gender, admissions policy, and the number of disadvantaged pupils at the end of KS4. The main difference between the DfE dataset and the NPD dataset is that the DfE data is at school level and the NPD data is at student level. For example, the DfE dataset has no records for a student's personal information, such as gender or home postcode. This means that some of the variables used to split the student population into different categories in previous reports (e.g. by attainment or deprivation) were not available. However, some similar measures were available at school level (e.g. percentage of disadvantaged students in a school), so these were used to split the data into categories instead.

GCSE uptake is defined as the percentage of students at the end of KS4 taking a GCSE subject. The following qualifications were counted for this report: GCSE Full Course, GCSE (9-1) Full Course, GCSE (9-1) Full Course (Science Double Award), GCSE (legacy double award), Edexcel Certificates, Cambridge International Certificate Level 1/Level 2.

Results

GCSE uptake was analysed by different school classifications: school type attainment group, school gender and deprivation level. In the following tables the numbers of students in each of the classifications are presented.

School type

Table 1: GCSE students and schools, by school type.

School type	Number of students	Percent of students	Number of schools	Percent of schools
Academy (comprehensive)	327,135	58.8	2,227	51.7
Academy (secondary modern)	11,596	2.1	76	1.8
Academy (selective)	20,273	3.6	142	3.3
Comprehensive	142,810	25.7	881	20.4
Independent	46,533	8.4	925	21.5
Secondary modern	4,638	0.8	34	0.8
Selective	2,924	0.5	21	0.5

GCSE qualifications are taught at several different school types with varying admission policies. In agreement with previous GCSE uptake reports (Carroll & Gill, 2018), seven school categories were used[1]: Academy (Comprehensive); Academy (Modern); Academy (Selective); Comprehensive; Selective; Independent; and Secondary Modern. Schools were assigned a school type based on their admissions policy and institution type as recorded in the KS4 dataset. Table 1 presents the number and percentage of GCSE students attending each school type.

School attainment

Schools were ranked by their attainment at GCSE, based on the centre mean score per entry in the DfE[2] data. This score was used to divide schools into three groups, representing low, medium and high attainment. Table 2 presents the number of schools and GCSE students in each group, and the minimum, maximum and mean points score for each group. Note that for 376 schools it was not possible to calculate the centre mean score per entry because of the missing data.

Table 2: GCSE students by school attainment group.

Attainment group	Schools	Students	Minimum	Maximum	Mean
Low	1,406	141,704	1.0	4.3	3.5
Medium	1,407	226,170	4.3	5.1	4.7
High	1,407	186,767	5.1	8.8	6.0

School deprivation level

Schools were classified by their deprivation level according to the percentage of students at the end of KS4 who were disadvantaged[3]. This measure was used to divide schools up into three groups, as shown in Table 3. Note that 1,440 schools had no record for the percentage of disadvantaged students in the DfE data.

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[1] School categories are differentiated by school type and selection policy using details recorded in the DfE dataset. For more information on school categories, see the Department of Education's register of educational establishments in England and Wales, available at https://get-information-schools.service.gov.uk/.

[2] Average points per entry is derived by converting each qualification awarded at KS4 into points and dividing the total by the number of qualifications for which a school was entered. For GCSEs graded 9-1, points were equal to the grade (grade 9 = 9 points, etc.). For double award GCSEs graded 99 – 11, points were as follows: 99 = 9, 98 = 8.5, 88 = 8, 87 = 7.5, 77 = 7, 76 = 6.5, 66 = 6, 65 = 5.5, 55 = 5, 54 = 4.5, 44 = 4, 43 = 3.5, 33 = 3, 32 = 2.5, 22 = 2, 21 = 1.5, 11 = 1. For subjects graded with letters, points were as follows: A* = 8.5, A = 7, B = 5.5, C = 4, D = 3, E = 2, F = 1.5, G = 1. Point score scales for legacy double award GCSEs (A*A*-GG) were as follows: A*A* = 8.5, A*A = 7.75, AA = 7, AB = 6.25, BB = 5.50, BC = 4.75, CC = 4, CD = 3.50, DD = 3, DE = 2.50, EE = 2, EF = 1.75, FF = 1.50, FG = 1.25, GG = 1. Note that the maximum points score available was 10.75, which corresponded to Grade A at AS level.

[3] Defined as those who attract pupil premium funding, meaning pupils claiming free school meals at any point in the last six years and pupils in care, or who left care through adoption or another formal route. Previous statistics reports (until those on the 2017 NPD data) inferred students' deprivation level from the Income Deprivation Affecting Children Index (IDACI), based on each student's home address.

Table 3: GCSE students by deprivation group.

Deprivation group	Schools	Students	Min (%)	Max (%)	Mean (%)
Low	1,051	189,589	0.0	18.3	12.0
Medium	1,053	168,521	18.4	32.4	24.9
High	1,052	151,827	32.4	91.2	46.2

School gender

School gender was recorded for each school in the DfE dataset. Table 4 shows the numbers and percentages of students attending each school type.

Table 4: GCSE students by school gender.

School gender	Number of students	Percent
Boys' School	26,339	4.7
Girls' School	40,272	7.2
Mixed School	489,859	88.0

Mean Number of GCSEs taken

Tables 5-8 show the mean number of GCSEs taken by students, according to the different schools' classifications described above. For example, Table 5 shows that students in selective academies took on average 9.8 GCSEs, compared with the students in independent schools who took on average only 4.5 GCSEs. This observation likely reflects that independent schools have a higher uptake of non-accredited qualifications (e.g., some IGCSEs/International GCSEs) [4]. Table 6 shows that students took on average 7.7 GCSEs in the high attainment group, compared with the low attainment group in which students took on average 7.2 GCSEs. Table 7 shows that students from the low deprivation group took on average 8.4 GCSEs, compared with the high deprivation group in which students took on average 7.3 GCSEs. Table 8 shows that at girls' schools, students took on average 7.9 GCSEs, compared with 7.8 GCSEs at boys' schools and 7.6 GCSEs at mixed schools.

Table 5: Mean Number of GCSEs taken, by school type.

School type	Mean no. taken
Academy (comprehensive)	7.8
Academy (secondary modern)	7.7
Academy (selective)	9.8
Comprehensive	7.9
Independent	4.5
Secondary modern	7.5
Selective	9.7

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[4] However, we can't know this for certain, because these non-accredited qualifications are not included in the DfE data.

Table 6: Mean Number of GCSEs taken, by school attainment group.

Attainment group	Mean no. taken
Low	7.2
Medium	7.8
High	7.7

Table 7: Mean Number of GCSEs taken, by deprivation group.

Deprivation group	Mean no. taken
Low	8.4
Medium	7.8
High	7.3

Table 8: Mean Number of GCSEs taken, by school gender.

School gender	Mean no. taken
Boys' School	7.8
Girls' School	7.9
Mixed School	7.6

Uptake of individual GCSE subjects

In the following tables, uptake of individual subjects is presented, according to the different school classifications described above. Subjects with overall uptake of less than 1% are not included. In each table, subjects are ordered by overall uptake (highest first). Thus, English Language had the highest level of uptake, being taken by 95.5% of GCSE students in mixed schools, 87.3% of students in boys' schools, and 89.4% of students in girls' schools.

It is expected that most students take core subjects, such as English, Mathematics and science. However, there are alternatives to GCSEs in these subjects, such as (non-accredited) IGCSE/International GCSEs, BTECs and Cambridge Nationals, that are not included in these tables, so the percentages for these subjects are reduced. For a detailed analysis of uptake of alternative qualifications in English schools see Gill (2016).

Compared to 2017 (Carroll & Gill 2018), uptake is steady or slightly increased for all of Mathematics, English Language and English Literature depending on the school classification group. Table 10 shows that the uptake of the English Language in the independent schools is 10.8% higher than the uptake of Mathematics; at most other school types, uptake for Mathematics is similar to that for English Language. These patterns reflect the fact that many candidates at independent schools take non-accredited qualifications, which do not appear in these tables. Any comparisons to previous years' results should take into account the different data source (DfE data source for this report on uptake in 2018, NPD data source for the Statistics Report before 2018), the various changes in the system, the differing uptake patterns between different school types.

Table 9: Uptake of individual subjects, by school gender (% of GCSE students).

Subject	Boys' school	Girls' school	Mixed school	Overall uptake
English Language	87.3	89.4	95.5	94.7
Mathematics	85.2	84.4	95.1	93.8
English Literature	84.6	88.8	94.3	93.5
Science: Double Award	41.2	48.4	68.2	65.5
History	39.4	43.4	43.7	43.5
Geography	47.8	42.5	42.9	43.1
Religious Studies	45.0	52.8	36.7	38.3
Biology	44.5	38.6	26.6	28.3
Chemistry	43.8	38.4	26.3	28.0
Physics	44.1	37.7	26.1	27.8
French	24.4	28.4	20.2	21.0
Spanish	18.5	23.5	15.0	15.7
Physical Education/Sports Studies	14.9	10.0	15.6	15.2
Business Studies: Single	14.6	9.9	13.4	13.2
Computer Studies/Computing	17.4	8.7	12.6	12.6
Art & Design (Fine Art)	10.0	14.7	10.8	11.1
Drama & Theatre Studies	6.6	14.8	10.1	10.3
Art & Design	5.1	8.5	10.3	9.9
D&T Food Technology	3.1	8.4	8.5	8.3
Information & Communications Technology	8.0	5.9	8.3	8.1
German	12.2	10.4	7.1	7.6
D&T Resistant Materials	11.0	1.8	7.5	7.3
Media/Film/Tv Studies	4.8	4.1	7.2	6.8
D&T Product Design	9.2	4.5	6.5	6.5
Music	7.0	8.2	6.0	6.2
Art & Design (Photography)	1.9	2.3	4.8	4.5
Statistics	5.1	1.8	4.1	4.0
Sociology	0.8	5.1	3.7	3.7
D&T Graphic Products	3.3	2.1	3.6	3.5
D&T Textiles Technology	0.0	5.5	2.6	2.7
Social Science: Citizenship	1.1	3.7	2.6	2.6
Psychology	1.1	2.3	2.6	2.5
Home Economics: Child Development	0.0	1.1	1.7	1.5
Latin	6.6	5.6	0.9	1.5
Economics	6.1	1.6	1.2	1.5
Dance	0.3	2.3	1.5	1.5
Office Technology	1.2	2.0	1.3	1.3
Art & Design (Graphics)	1.3	0.8	1.2	1.2
Art & Design (Textiles)	0.0	2.2	1.1	1.2

Table 10: Uptake of individual subjects, by school type (% of GCSE students).

Subject	Acad.(comp)	Acad.(mod)	Acad.(sel)	Comp	Selective	Ind.	Sec.Mod.
English Language	99.2	99.3	99.9	99.1	99.7	43.0	99.3
Mathematics	99.2	99.2	99.8	99.2	99.7	32.2	99.2
English Literature	98.5	98.7	98.8	98.3	94.8	36.7	98.8
Science: Double Award	71.5	75.2	17.1	72.4	20.7	21.2	74.2
History	45.5	45.5	51.6	45.7	47.2	17.6	40.5
Geography	43.8	42.6	55.3	42.5	60.1	32.9	41.3
Religious Studies	35.8	33.7	46.9	47.0	47.3	25.6	34.3
Biology	26.6	22.9	82.4	25.6	79.0	22.4	24.1
Chemistry	26.4	22.6	82.3	25.5	78.8	21.2	23.8
Physics	26.2	22.2	82.3	25.3	78.9	20.5	23.6
French	20.9	19.4	37.8	20.6	38.3	14.6	13.9
Spanish	15.2	15.0	31.3	15.5	27.7	12.6	13.4
Physical Education/Sports Studies	15.4	14.7	16.5	16.0	14.5	11.3	10.7
Business Studies: Single	14.0	12.9	17.6	12.8	13.9	7.4	6.4
Computer Studies/Computing	13.1	10.8	20.3	12.4	16.4	5.8	15.0
Art & Design (Fine Art)	11.1	9.2	13.4	10.0	16.1	13.2	9.5
Drama & Theatre Studies	10.0	9.7	13.1	9.8	9.8	12.5	7.5
Art & Design	9.9	11.3	5.5	11.2	9.3	7.6	11.3
D&T Food Technology	8.6	9.4	6.8	9.1	8.8	3.9	5.9
Information & Communications Technology	8.7	5.5	6.3	8.4	1.6	4.1	13.1
German	7.3	3.0	26.2	6.5	29.0	4.9	2.4
D&T Resistant Materials	6.9	7.4	6.2	7.7	4.5	8.9	6.6
Media/Film/Tv Studies	7.7	8.7	1.2	7.4	4.9	1.1	6.8
D&T Product Design	6.9	4.3	8.5	6.1	13.6	3.9	5.4
Music	5.9	4.7	10.7	6.0	10.1	7.8	3.8
Art & Design (Photography)	4.8	6.9	1.2	5.0	0.3	1.7	4.6

Subject	Acad.(comp)	Acad.(mod)	Acad.(sel)	Comp	Selective	Ind.	Sec.Mod.
Statistics	4.2	9.5	3.3	3.5	1.9	1.4	21.8
Sociology	3.9	3.8	1.2	4.6	1.0	0.2	2.2
D&T Graphic Products	3.6	3.0	3.5	4.0	3.4	1.0	3.5
D&T Textiles Technology	2.7	2.6	2.9	3.1	3.1	1.5	1.3
Social Science: Citizenship	2.5	4.6	0.3	3.1	0.0	1.6	3.4
Psychology	2.5	4.5	2.4	2.7	0.0	0.8	5.5
Home Economics: Child Development	1.8	2.5	0.0	1.7	0.0	0.1	1.3
Latin	0.4	0.0	5.9	0.3	9.5	11.4	0.0
Economics	1.3	0.3	7.2	1.1	2.8	1.5	0.0
Dance	1.6	2.4	1.2	1.5	0.0	0.6	1.2
Office Technology	1.3	2.6	0.9	1.3	2.4	1.0	2.4
Art & Design (Graphics)	1.3	2.1	0.7	1.2	0.4	0.6	0.6
Art & Design (Textiles)	1.2	2.7	1.0	1.0	0.9	1.2	1.6

Table 11: Uptake of individual subjects, by school attainment (% of GCSE students).

Subject	Low	Medium	High
English Language	98.4	98.9	87.0
Mathematics	98.6	99.0	84.3
English Literature	97.4	98.1	85.2
Science: Double Award	77.5	71.6	49.3
History	43.1	46.0	40.9
Geography	40.0	43.3	45.2
Religious Studies	28.7	39.9	43.8
Biology	19.2	26.4	37.5
Chemistry	18.9	26.2	37.2
Physics	18.7	26.0	37.0
French	15.3	20.6	25.8
Spanish	11.6	14.7	20.2
Physical Education/Sports Studies	11.2	16.5	16.6
Business Studies: Single	8.6	14.4	15.3
Computer Studies/Computing	12.8	12.8	12.2
Art & Design (Fine Art)	10.9	10.6	11.7
Drama & Theatre Studies	6.8	10.2	13.0
Art & Design	11.3	10.0	8.7
D&T Food Technology	7.8	9.0	7.7
Information & Communications Technology	8.9	8.7	6.9
German	3.7	6.8	11.6
D&T Resistant Materials	7.5	7.2	7.2
Media/Film/Tv Studies	6.5	8.5	5.0
D&T Product Design	6.0	6.9	6.4
Music	3.9	5.8	8.4
Art & Design (Photography)	5.7	4.8	3.2
Statistics	5.0	4.1	3.2
Sociology	3.6	4.3	3.0
D&T Graphic Products	2.9	3.8	3.5
D&T Textiles Technology	2.2	2.7	3.2
Social Science: Citizenship	3.5	2.6	1.8
Psychology	2.9	2.7	1.9
Home Economics: Child Development	1.8	1.9	0.9
Latin	0.0	0.2	4.2
Economics	0.3	1.1	2.9
Dance	1.4	1.5	1.5
Office Technology	1.6	1.4	1.0
Art & Design (Graphics)	1.1	1.3	1.1
Art & Design (Textiles)	1.0	1.3	1.2

Table 12: Uptake of individual subjects, by deprivation group (% of GCSE students).

Subject	Low	Medium	High
English Language	99.4	99.2	98.8
Mathematics	99.5	99.3	98.9
English Literature	98.6	98.6	98.1
Science: Double Award	60.4	72.2	77.5
History	47.1	46.2	43.6
Geography	47.6	44.1	39.1
Religious Studies	42.7	39.4	35.2
Biology	38.2	26.0	20.0
Chemistry	38.2	25.8	19.6
Physics	38.1	25.6	19.4
French	25.5	20.9	17.2
Spanish	17.9	14.2	15.5
Physical Education/Sports Studies	19.8	15.6	10.0
Business Studies: Single	18.0	13.0	9.1
Computer Studies/Computing	14.3	13.0	12.0
Art & Design (Fine Art)	11.4	11.2	9.7
Drama & Theatre Studies	12.6	9.4	7.6
Art & Design	9.3	9.7	11.5
D&T Food Technology	10.2	8.8	6.5
Information & Communications Technology	7.7	8.9	9.0
German	12.9	6.2	3.3
D&T Resistant Materials	8.1	7.2	5.8
Media/Film/Tv Studies	7.3	8.2	6.4
D&T Product Design	7.1	6.9	6.0
Music	7.8	5.5	4.5
Art & Design (Photography)	3.9	5.4	5.1
Statistics	3.7	4.7	4.3
Sociology	3.0	4.0	5.1
D&T Graphic Products	4.7	3.6	2.5
D&T Textiles Technology	3.5	2.6	2.2
Social Science: Citizenship	1.8	2.7	3.7
Psychology	2.4	2.7	2.8
Home Economics: Child Development	1.6	2.0	1.4
Latin	1.3	0.3	0.2
Economics	2.4	0.9	1.1
Dance	1.9	1.6	1.1
Office Technology	1.0	1.8	1.2
Art & Design (Graphics)	1.2	1.3	1.2
Art & Design (Textiles)	1.1	1.2	1.2

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