

# Omnibus survey of pupils and their parents or carers: wave 6

**Technical report** 

**Summer 2019** 

# **Authors – Ipsos MORI**

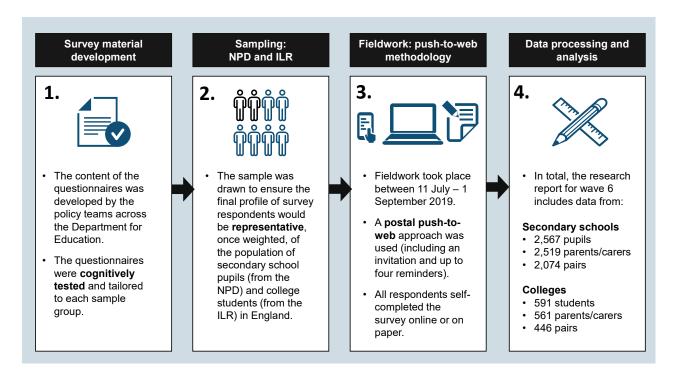


# **Contents**

Contents	3
Technical Report	4
Methodology overview	4
Fieldwork dates and response by wave	6
Sampling	7
School pupils and their parents/carers (NPD)	7
College students and their parents/carers (ILR)	8
Questionnaire	9
Fieldwork	10
Data processing	12
Cleaning	12
Removing respondents	14
Data analysis	14
Types of analysis reported	15
Sample profile	15
Response rates	17
School pupils and their parents/carers	17
Online completion rates by device	21
Weighting	21
School pupils and their parents/carers (NPD)	21
College students and their parents/carers (ILR)	23
Effective base size and margins of error by wave	24

# **Technical Report**

This report outlines the methods used for the Summer 2019 wave of the omnibus survey of pupils and their parents/carers (a summary is provided below), which was conducted by Ipsos MORI on behalf of the Department for Education (DfE). The findings from this wave of the survey can be found in the separate research report.



# **Methodology overview**

This wave of the omnibus survey of pupils and their parents/carers surveyed a nationally representative sample of young people at secondary schools and colleges in England. A postal push-to-web approach was adopted, using the National Pupil Database (NPD) as a sampling frame for secondary school pupils (at state-funded schools<sup>1</sup>), and the Individualised Learner Records (ILR) as a sampling frame for college students. A postal push-to-web approach is consistent with previous waves. However, the inclusion of 16-18 year olds attending colleges from the ILR sampling frame was added at wave 4.

A postal push-to-web approach means respondents were contacted by post and asked to take part in the survey online. This approach is used because the NPD is the only available sampling frame for young people attending secondary schools in England, but it only contains postal contact addresses (not email addresses or telephone numbers). The ILR does contain email addresses, but this is only

<sup>&</sup>lt;sup>1</sup> This includes middle-deemed secondary schools, academies, grammar schools, City Technology Colleges, maintained and non-maintained special schools, and hospital special schools.

available for a subsample of the ILR population. As such, a postal push-to-web approach offers the possibility of inviting a national sample of young people at secondary schools and colleges to take part in the survey online.

Fieldwork for this wave took place between 11 July - 1 September 2019. The initial invitation mailing was addressed to the parent/carer of the named young person. The purpose of the mailing was to invite them to take part in the survey and to ask them to pass on a letter inviting their child to also take part. Non-respondents were sent up to four reminders, including a paper questionnaire with the second reminder. A paper questionnaire was provided as an alternative mode of data collection, which led to a boost to the overall survey response.

In each household, two separate questionnaires were administered: one to the school pupil or college student, and one to their parent/carer. All respondents self-completed the questionnaire.

An incentive was offered to school pupils eligible for free school meals (FSM) and their parents/carers, where both the school pupil and the parent/carer completed the survey. They each received a £10 Love2Shop voucher shortly after the close of fieldwork.

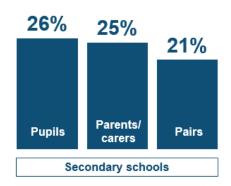
In total, the research report includes data from:

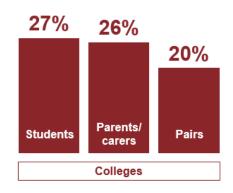


- 2,567 pupils
- 2,519 parents/carers

- 591 students
- 561 parents/carers

The final response rate for this wave can be summarised as follows:





# Fieldwork dates and response by wave

Details of the fieldwork dates and response for each wave of the research are provided below:

Table 1: Fieldwork dates and response by wave

Wave	Fieldwork Dates	Number of completed paired questionnaires	Response rate
Wave 1	4 <sup>th</sup> July – 22 <sup>nd</sup> August 2016	1,723 paired parent/carer and pupil questionnaires	22%
Wave 2	23 <sup>rd</sup> November 2016 – 16 <sup>th</sup> January 2017	1,595 paired parent/carer and pupil questionnaires	23%
Wave 3	11 <sup>th</sup> July – 30 <sup>th</sup> August 2017	1,504 paired parent/carer and pupil questionnaires	21%
Wave 4	27 <sup>th</sup> November 2017 - 31 <sup>st</sup>	2,590 <sup>2</sup> paired parent/carer and school pupil questionnaires	22%
wave 4	January 2018	206 paired parent/carer and college student questionnaires	10%
Wave 5	2 <sup>nd</sup> July – 28 <sup>th</sup> August 2018	2,265³ paired parent/carer and school pupil questionnaires	
		317 paired parent/carer and college student questionnaires	16%
		2,567 school pupil questionnaires	26%
Wave 6	11 <sup>th</sup> July – 1 <sup>st</sup> September 2019	2,519 parents/carers of school pupil questionnaires	25%
		2,074 <sup>4</sup> paired parent/carer and school pupil questionnaires	21%

<sup>&</sup>lt;sup>2</sup> Please note that at wave 4, an incentive experiment ran alongside the main fieldwork. This included a boost sample of SEN status and/or FSM eligible school pupils, drawn from the NPD. The completed paired questionnaires in the incentive experiment and main fieldwork were reported together.

<sup>3</sup> Please note that at wave 5, households where school pupils were eligible for FSM were incentivised.

<sup>&</sup>lt;sup>4</sup> Please note that at wave 6, households where school pupils were eligible for FSM were incentivised.

Wave	Fieldwork Dates	Number of completed paired questionnaires	Response rate
		591 college student questionnaires	27%
		561 parents/carers of college student questionnaires	26%
		446 paired parent/carer and college student questionnaires	20%

# Sampling

#### School pupils and their parents/carers (NPD)

To ensure consistency with previous waves, the sample of secondary school pupils (and one of their parents/carers) included in the survey was taken from the NPD. Pupils in state-funded secondary schools in England (including middle-deemed secondary schools, academies, grammar schools, City Technology Colleges and special schools<sup>5</sup>) were included in the survey. School pupils who are home educated or attending independent schools (not covered by NPD) were not included.

#### Sample selection

The latest available version of the NPD was used to obtain the sample (the academic year 2018/2019 extract). DfE first provided an anonymised dataset with unique IDs for each pupil (known as the Pupil Matching References (PMR) in the NPD) and the measures required for the sampling. Ipsos MORI used this to select the sample, and returned the sampled PMRs to DfE to extract the contact information from the NPD. Having received the contact information, Ipsos MORI checked for any families that appeared more than once (due to more than one child being selected) and replaced any duplicates with a family sampled at random from the reserve sample.

The sample was drawn to ensure the final profile of survey respondents would be representative, once weighted, of the population of school pupils in years 7 to 13 in England.

The sampling frame was stratified by the following NPD variables:

School year by eligibility for FSM

<sup>5</sup> Including maintained and non-maintained special schools, hospital special schools and academies.

- Gender
- Age
- Local Authority (LA)
- Major ethnic group
- Provision types under the SEN Code of Practice
- Income Deprivation Affecting Children Indices (IDACI) rank

The first level of stratification consisted of school year by FSM eligibility. As incentives were offered to pupils eligible for FSM, which would increase the response rate in that group, the sample was designed so that the predicted participating sample for the FSM group was in proportion. Within each school year, 1,444 pupils were sampled in total, of which 139 were eligible for FSM. A reserve sample with the same design was also selected.

Appropriate weighting was applied to ensure that pupils eligible for FSM were in their correct proportion for analysis.

## College students and their parents/carers (ILR)

In line with wave 5, a sample was also drawn from the ILR to reach more 16-18 year olds outside of the school setting.

College students in their first and second year of learning (i.e. school years 12 and 13) for the academic year 2018/19 were identified in the ILR and an anonymised sampling frame was sent to Ipsos MORI. College students that had declined to be contacted by post were also removed at this stage.

Duplicates were identified using the unique IDs for each student (known as the Learner Reference Number in the ILR) so that each college student only appeared once in the sampling frame. The sampling frame was stratified by the following ILR variables:

- Age
- Gender
- Learner aims (academic/technical)
- Eligibility for FSM
- Major ethnic group
- Learning difficulties or disabilities/health problems

A systematic stratified sample of 2,200 college students was sampled, with 1,100 in each age group. An additional reserve sample of 1,800 was also sampled using the same design.

The sample of Learner Reference Numbers was sent to the ILR team to extract the contact details. Again, the sample was checked for duplicate families and any identified were replaced at random from the reserve sample.

#### Questionnaire

DfE sent Ipsos MORI provisional questions and then worked with Ipsos MORI to develop the questionnaires.

The questionnaires covered key topics for DfE, including:

- Grade reform, including changes to GCSE grading and Progress 8
- Subject and qualifications choice, including GCSEs and the English Baccalaureate
- Character, mental health and wellbeing
- Special educational needs and disabilities (SEND)
- Bullying and behaviours in schools/colleges
- Careers and aspirations, including career opportunities and guidance, jobs or careers in STEM and non-academic routes

The questionnaires were tailored to ensure the questions asked were relevant to the sample group – that is, whether they were a secondary school pupil or college student, and whether they were the young person or the parent/carer.

Some questions were included in both the young person's questionnaire and the parent/carer's questionnaire. Where both the young person and one of their parents/carers responded, this allowed for paired analysis – that is, providing the ability to explore whether the young person and their parent/carer provide the same or a different answer to a specific question.

Both questionnaires were cognitively tested by trained Ipsos MORI researchers. Ipsos MORI conducted 10 pairs of interviews – that is, 10 interviews with a young person (aged 11-18 years) attending a secondary school or college, and 10 interviews with one of their parents/carers (20 interviews in total). The researcher spent 30 minutes with each person (30 minutes with the young person, and 30 minutes with the parent/carer). Quotas were set on parent's gender, child's

school/college year, child's gender, child's ethnicity, child's special educational need (SEN) status, parent's social grade and location (London or Coventry) to ensure a spread of demographic profiles were included. All interviews were conducted face-to-face in the families' homes, and respondents were given an incentive (£40 per pair) to thank them for their time.

#### **Fieldwork**

Fieldwork took place between 11 July - 1 September 2019. The stages of fieldwork largely followed the methodology established in previous waves of the survey. However, from wave 4, targeted reminders were added to maximise the response rates among those eligible for FSM and those with special educational needs (SEN) provision.

### Stage 1

The survey was launched on a single web-link. The unique log-in generated for each respondent routed them to the correct version of the questionnaire.

Ipsos MORI sent an invitation letter to the 'parent/carer of [named child]', introducing the survey and inviting them and their named child to take part online. These letters included details of the study; instructions on how to take part; and contact details for DfE and Ipsos MORI for any further questions.

The study was branded as 'The Pupil and Parent/Carer Snapshot Survey'. The invitation explained that the survey was being conducted by Ipsos MORI on behalf of the DfE; that respondents had been selected at random from a database held by DfE; and that their responses would be kept strictly confidential.

The invitation included a separate letter to pass to the named child if the parent/carer consented to their child taking part. For those who were in the incentive group (i.e. FSM eligible school pupils and their parents/carers), the invitation letters emphasised the opportunity to receive two £10 vouchers – one for the school pupil and one for the parent/carer – only if both submitted a response.

#### Stage 2

Ipsos MORI sent a reminder mailing to all addresses where only one response from the household had been received, or where no response had been received from the school pupil/college student *and* their parent/carer.

The reminder mailings were tailored based on whether a response had already been received, and whether this was from the young person or their parent/carer:

- Where neither the young person or their parent/carer had responded, a reminder mailing was addressed to the parent/carer. This mailing included a reminder letter for the parent/carer, and a reminder letter for the parent/carer to share with their child.
- Where only the young person had responded, a reminder mailing was addressed to the parent/carer. This mailing included a reminder letter for the parent/carer only.
- Where only the parent/carer had responded, a reminder mailing was addressed to the parent/carer. This mailing included a thank you letter for the parent/carer, and a reminder letter for the parent/carer to share with their child.

All reminder letters contained information about the survey, and how they could take part using the web-link and log-in details provided.

#### Stage 3

Ipsos MORI sent an additional reminder mailing to all addresses where only one response from the household had been received, or where no response had been received from the school pupil/college student *and* their parent/carer.

These reminder mailings were tailored using the same approach as stage 2. However, the mailings at stage 3 also contained paper versions of the questionnaires, alongside freepost return envelopes. Each paper questionnaire was personalised with the name of the young person, or 'parent/carer of [named child]'.

All reminder letters contained information about the survey, and how they could take part by either completing the paper questionnaire and returning this in the provided envelope, or online using the provided web-link and log-in details.

#### Stage 4

In a bid to boost response rates among lower-responding groups, a third reminder was administered in the form of a postcard. These postcards were sent to non-responding ILR households, and non-responding households where the school pupil was eligible for FSM and/or flagged as in receipt of SEN provision.

Like the previous reminder mailings, the postcard mailings were tailored based on whether a response had already been received, and whether this was from the young person or their parent/carer. A similar approach to stages 2 and 3 was used:

• Where neither the young person or their parent/carer had responded, a postcard was addressed to the parent/carer. This postcard encouraged the

parent/carer to take part, and then asked them to pass the postcard on to their child.

- Where only the young person had responded, a postcard was addressed to the parent/carer.
- Where only the parent/carer had responded, a postcard was addressed to the parent/carer. This postcard thanked the parent/carer for taking part, and asked them to share the postcard with their child.

The postcard presented an opportunity to engage with respondents in a more visually appealing format. All postcards reminded respondents of their online log-in details, but also that they could still complete and return the paper version of the questionnaire if they preferred. For data privacy, the postcards were sent in envelopes.

An email reminder was also administered to non-responding college students where an email address was available on the ILR sampling frame. The email included a direct link to make it easier for them to take part in the survey.

#### Stage 5

A fourth and final reminder mailing was sent to non-responding households in the two lowest responding sample groups<sup>6</sup>: households where the school pupil was flagged as in receipt of SEN provision, and college students and their parents/carers. This mailing took the form of reminder letters, and used the same approach as stages 2 and 3. Similarly, all reminder letters contained information about the survey, and how they could take part by either filling in their paper questionnaire and returning this in the provided freepost return envelope, or by completing it online using the provided web-link and log-in details.

# **Data processing**

# Cleaning

The online survey was designed and scripted to ensure respondents were only routed to questions that were relevant to them. Where possible, this logic was applied to the paper responses, meaning that some responses were altered post-fieldwork (e.g. removing a response to a question that the respondent should have skipped). Where a respondent did not provide an answer to a question that they

<sup>&</sup>lt;sup>6</sup> Please note that these sample groups have consistently been the two lowest responding populations across waves 4-6 (since the introduction of the ILR sample group and the incentive).

should have completed in the postal questionnaire, they have been coded into the response category 'not stated'.

#### School pupils and their parents/carers

At the end of the survey, school pupils and their parents/carers were asked for permission for their survey responses to be linked with information held in the NPD (about the school pupil). Where consent was given, their postcode was then used to define the following subgroups for analysis:

- Whether they live inside or outside London
- Region
- Whether they live in a rural or urban area
- Income Deprivation Affecting Children Indices (IDACI) quintiles, with the first quintile representing the most deprived and the fifth quintile representing the least deprived<sup>7</sup>

Answers given in the survey itself were used to define the following subgroups for analysis:

- Pupil's year group and key stage
- Pupil's gender
- Free school meal (FSM) entitlement
- Special educational needs (SEN) status
- Pupil's ethnicity

In the survey, pupils were asked to identify which of the following response codes best described their gender: 'male', 'female', or 'in some other way'. Reported differences by gender are based on this self-identification. However, due to the small sample size, pupils that identified 'in some other way' in the survey are not included as a separate subgroup in subgroup analysis by gender. Their responses are included as part of the overall analysis, or analysis by other subgroups.

Please note, where possible the school pupil's survey response was used. Where this was unavailable (either because the school pupil did not take part, or the

<sup>&</sup>lt;sup>7</sup> The IDACI quintiles are based on the IDACI dataset, which is published by the Ministry for Housing, Communities and Local Government. IDACI is a relative measure of socio-economic deprivation: an IDACI 'score' is calculated for a lower super output area (LSOA) based on the characteristics of households in that area. The IDACI score of a given area does not mean that every child living in that area has particular deprivation characteristics; it is a measure of the likelihood that a child is in a household experiencing socio-economic deprivation. To produce the quintiles, the IDACI scores were ranked and divided into five evenly sized groups.

question was only included in the parent/carer survey<sup>8</sup>), the parent/carer's response was taken.

#### College students and their parents/carers

Answers given in the survey itself were used to define the following subgroups for analysis:

- Student's year of learning
- Student's gender (male and female only)
- Student's qualification type: A Levels or Technical/Vocational

Due to the small sample size, students that identified 'in some other way' in the survey are not included as a separate subgroup in subgroup analysis by gender. Their responses are included as part of the overall analysis, or analysis by other subgroups.

Please note, where possible the college student's response was used. Where this was unavailable (because the college student did not take part), the parent/carer's response for their child's year of learning and gender was taken.

# **Removing respondents**

In 18 cases, there was a large discrepancy between the answer given in the parent/carer survey and the information held in the NPD in terms of school year. These respondents were excluded from the results due to concerns that the parent/carer was not answering the survey in relation to the named child drawn in the sample.

In addition, a small number of respondents (five school pupils, four parents/carers of school pupils and one parent/carer of a college student) were excluded from the results for completing the online survey too quickly<sup>9</sup>.

# **Data analysis**

Throughout the report, we have compared two proportions using independent samples t-tests. This means there is no overlap between the two samples being compared (for example, the proportion of females who provided a particular answer compared with the proportion of males who provided that answer). Weighting has been applied to all cases to make them representative of their sample population

<sup>&</sup>lt;sup>8</sup> This includes questions on pupil FSM entitlement, pupil SEND status and pupil's ethnicity.

<sup>&</sup>lt;sup>9</sup> Based on the survey completion times, the cut-off was set at 4 minutes.

(i.e. NPD for school pupils and ILR for college students). As such, the independent samples t-tests have been applied to weighted data throughout.

All reported differences are statistically significant at the 95% confidence level, unless otherwise specified. This means, if we ran this survey 100 times, each time with a different sample of people, the survey results would be similar to what we would see if the whole population was asked the survey question, 95 out of 100 times.

# Types of analysis reported

Overall, the research report conveys findings in two ways:

- **1. Overall response** this is based on the total number of respondents who answered the question.
- **2.** Paired response this is based on households where both the pupil/college student and one of their parents/carers have answered the survey.

In most places, the overall response is reported. The exceptions to this are:

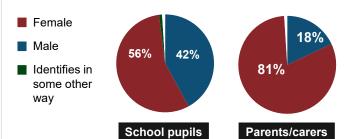
- Paired analysis: This is where both the young person and their parent were
  asked the same survey question, and the analysis looks at whether the young
  person and their parent/carer provide the same answer to this question.
  Please note, where one or both did not provide an answer, or answered 'don't
  know' or 'don't want to answer', the pair have been excluded from this
  analysis.
- Trend analysis: previous waves of the survey have reported the findings for paired responses only. For comparability, where the same question has been asked to the same audience, the findings are based on paired responses only. In some places, questions asked at previous waves have been amended so trend analysis is no longer possible this decision was taken on the basis that it would not be possible to determine whether any reported changes are due to change over time or the change to the question wording.

# Sample profile

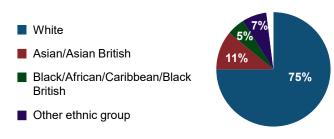
The infographics below summarise the (unweighted) profiles of the respondents who took part in the Summer 2019 wave.

## Sample profile: Secondary school respondents

Respondents were more likely to identify as female...



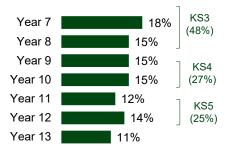
Parents/carers identified their child's ethnicity as...



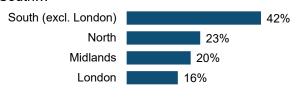
**15%** of parents/carers (who took part online) identified their child as having a special educational need or disability (SEND)

**13%** of parents/carers identified their child as being eligible for free school meals (FSM)

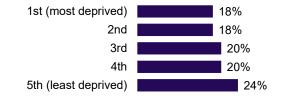
Pupils in year 7 were most likely to take part...



Pupil responses were most commonly from the South...



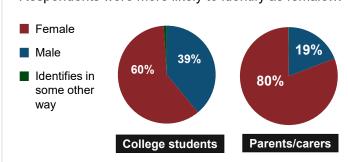
Pupil responses were most commonly from the least deprived IDACI quintile...



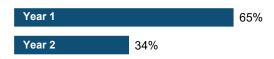
Base: All school pupils (2,567), all parents/carers of school pupils (2,519), parents/carers who took part online only (1,884). Region and IDACI are based on those who gave NPD data linkage consent only (1,872). Where pie charts do not sum to 100, this is due to not stated responses.

# Sample profile: College respondents

Respondents were more likely to identify as female...



Students in their first year of learning were more likely to take part...



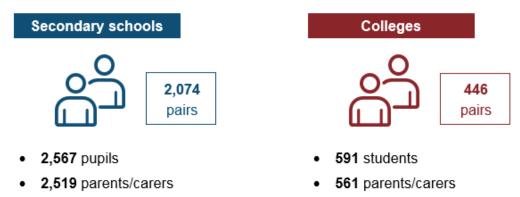
Students studying A levels were more likely to take part...



Base: All college students (591), all parents/carers of college students (561). Where pie charts do not sum to 100, this is due to not stated responses.

# **Response rates**

In total, the research report for this wave includes data from:

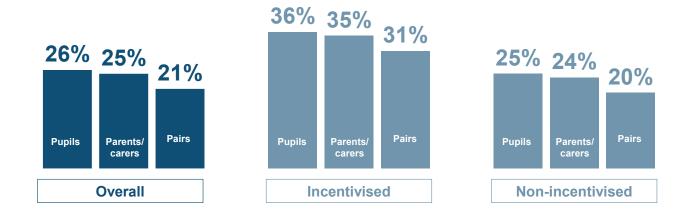


The following response rate figures are based on final, unweighted data.

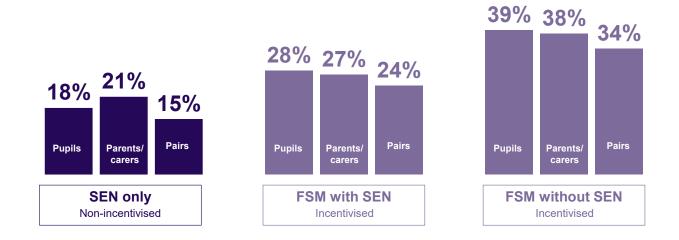
# School pupils and their parents/carers

#### **Overall response**

The following chart displays the overall response for this wave, and the response rate split by incentivised (i.e. households where the pupil was eligible for FSM based on the NPD) and non-incentivised (i.e. all other households).

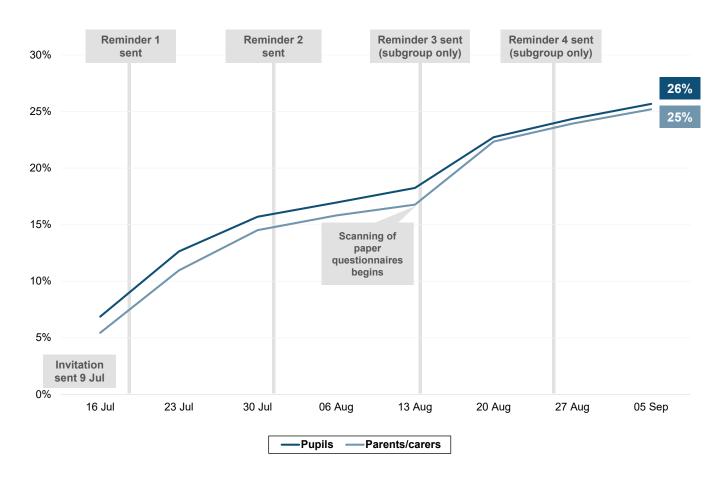


As shown in the chart below, the incentivised subgroup can be split further into those eligible for FSM with SEN, and those eligible for FSM without a SEN. This chart (below) also displays the SEN only response – though please note that unlike the FSM subgroups, the SEN only subgroup was not offered an incentive to take part.



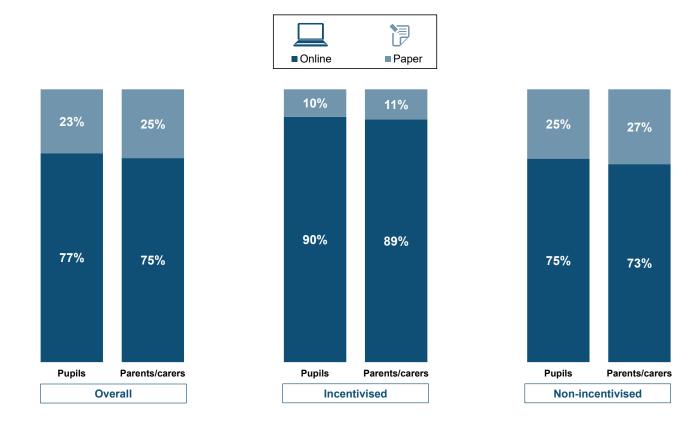
#### **Cumulative response rate**

Fieldwork took place between 11 July - 1 September 2019. The following chart displays the cumulative response rate (on a weekly basis) for the duration of this fieldwork period.



#### Response rate by mode

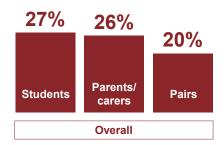
The following chart displays the proportion of responses by mode.



# College students and their parents/carers

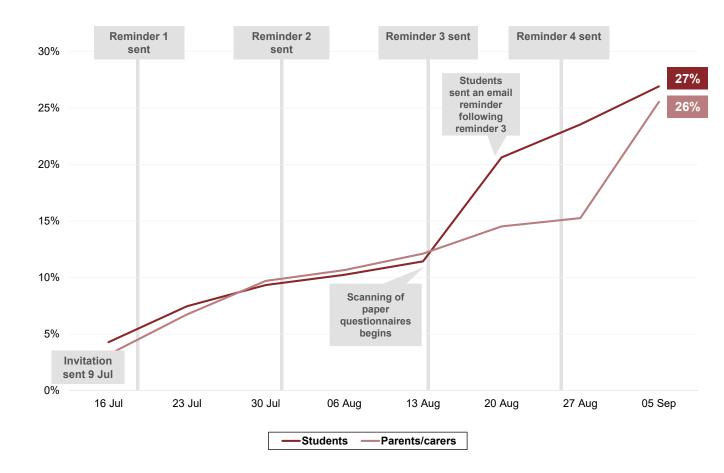
#### **Overall response**

The overall response for this wave can be summarised as follows:



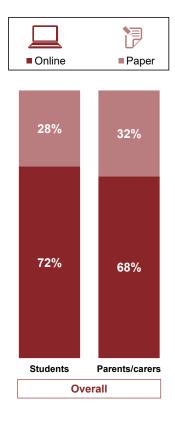
#### **Cumulative response rate**

Fieldwork took place between 11 July - 1 September 2019. The following chart displays the cumulative response rate (on a weekly basis) for the duration of this fieldwork period.



# Response rate by mode

The following chart displays the proportion of responses by mode.



# Online completion rates by device

The online survey was designed to be device-agnostic, allowing respondents to complete the questionnaire on a desktop computer/laptop, smartphone or tablet device with ease. The infographic below summarises the online completion rate by device.

Desktop	Tablet	Smartphone
Overall: 47%	Overall: 14%	Overall: 39%
	Secondary schools	
School pupils: 45% Parents/carers: 50%	School pupils: 13% Parents/carers: 17%	School pupils: 42% Parents/carers: 33%
	Colleges	
College students: 43% Parents/carers: 49%	College students: 6% Parents/carers: 16%	College students: 51% Parents/carers: 35%

# Weighting

#### School pupils and their parents/carers (NPD)

The NPD data has been weighted to allow us to conclude that the responses are nationally representative of young people in secondary schools in England. The data is not representative of parents/carers of school pupils nor paired households as the survey data is weighted based on pupil characteristics only.

The survey data was weighted to correct for the disproportionate sampling by eligibility for FSM in the design and for non-response bias.

This was done by producing calibration weights<sup>10</sup> in Stata that, when applied, adjust the characteristics of the responding sample so that they matched the population estimates for the following:

- Gender
- School year by eligibility for FSM

<sup>&</sup>lt;sup>10</sup> Deville, J.C. & Särndal, C.E. (1992). Calibration Estimators in Survey Sampling. *Journal of the American Statistical Association*, *82*, 376-381.

- Region
- Major ethnic group

These population estimates were derived directly for all pupils that were eligible for the survey in the National Pupil Database, the database from which the sample was originally selected (see Table 2 for the population totals). Note that the weighting was based on characteristics of the pupils only, as the NPD does not hold information about parents.

Separate weights were generated for the three analysis datasets: pupils, parents/carers and the paired dataset.

Table 2: Population totals (derived from the NPD)

Characteristic	Type of characteristic	Target	%
Punil's gondor	Female	1,643,380	49.3
Pupil's gender	Male	1,690,435	50.7
	Year 7	516,376	15.5%
	Year 8	502,913	15.1%
School year	Year 9	495,114	14.9%
(not FSM	Year 10	487,959	14.6%
eligible)	Year 11	474,556	14.2%
	Year 12	200,751	6.0%
	Year 13	181,333	5.4%
	Year 7	98,655	3.0%
	Year 8	92,941	2.8%
	Year 9	88,333	2.6%
School year (FSM eligible)	Year 10	83,764	2.5%
	Year 11	78,020	2.3%
	Year 12	18,698	0.6%
	Year 13	14,402	0.4%
Major ethnic	White	2,438,144	73.1
group	BAME	895,671	26.9
	East Midlands	289,588	8.7
Region	East of England	378,009	11.3
	London	532,205	16.0

North East	154,395	4.6
North West	437,202	13.1
South East	525,644	15.8
South West	312,119	9.4
West Midlands	373,187	11.2
Yorkshire and the Humber	331,466	9.9

Weighting the sample to compensate for the design of the study and for non-response reduces the precision of survey estimates. This is measured by the design effect, which is a measure of the relative loss in precision. The design effects due to weighting for the NPD achieved sample were: 1.14 for the pupil dataset, 1.16 for the parent dataset and 1.15 for the paired dataset.

# College students and their parents/carers (ILR)

The ILR data has been weighted to allow us to conclude that the responses are nationally representative of young people in colleges in England. The data is not representative of parents/carers of college students nor paired households as the survey data is weighted based on student characteristics only.

The ILR sample was also weighted using calibration weighting to population estimates for: gender, school year and major ethnic group. These population totals were estimated from the full ILR sampling frame, the database from which the sample was originally selected (see Table 3 for the population totals).

Separate weights were generated for the three analysis datasets: students, parents/carers and the paired dataset.

Table 3: Population totals (derived from the ILR)

Characteristic	Type of Characteristic	Target	%
Student's	Female	36,159	55.7
gender	Male	28,703	44.3
Student's	First	34,217	52.8
year of learning	Second	30,645	47.2
Major ethnic group	White	51,321	79.1
	BAME	13,541	20.9

The design effects due to weighting for the ILR achieved sample were: 1.03 for the student dataset, 1.02 for the parent dataset and 1.03 for the paired dataset.

# Effective base size and margins of error by wave

Applying weights to the data, while tending to make the quoted figures more representative of the population of interest, can reduce our ability to make statistical inferences. As such the 'effective' base size<sup>11</sup>, which is used in any statistical testing, is smaller than the unweighted base size. This effect has been taken into account in determining whether or not differences described throughout the report are statistically significant. Therefore, while the base sizes noted throughout this report are the actual base size, the statistical analysis is based on the effective base.

Results from any survey are estimates, and there is a margin of error associated with each figure quoted. Essentially, the smaller the sample size, the greater the uncertainty. In this report, only findings with sufficient sample sizes have been included. For the sample of school pupils and parents/carers, only subgroups comprising of 100 or more respondents are commented on in this report. Given the smaller sample size of college students and parents/carers, only subgroups comprising of 50 or more respondents are commented on in this report.

Table 4 below illustrates the effective base size and margins of error by wave.

Table 4: Effective base size and margins of error by wave

Wave	Target group	Unweighted sample size	Effective base size	Margin of error at 95% confidence level <sup>12</sup>
Wave 1	Paired parent/carers and school pupils	1,723	1,501	+/-2.5%
Wave 2	Paired parent/carers and school pupils	1,595	1,352	+/-2.7%
Wave 3	Paired parent/carers and school pupils	1,504	1,316	+/-2.7%

<sup>&</sup>lt;sup>11</sup> The effective base size refers to the base (or sample) size once adjustments have been made to reduce the likelihood of the statistics producing significant results simply because the weighting has made adjustments to the data.

<sup>&</sup>lt;sup>12</sup> This is the margin of error for a figure of 50%. Margins of error reduce as figures tend towards either 100% or 0%. As such, the quoted margin of error is the largest that would apply to any data based on the total samples of parents/carers or pupils/students. Please note that in the wave 1 and 2 reports, the margins of error were rounded to 3%.

Wave 4	Paired parent/carers and school pupils	2,590	2,146	+/-2.1%
	Paired parent/carers and college students	206	187	+/-7.2%
Wave 5	Paired parent/carers and school pupils	2,265	1,998	+/-2.2%
	Paired parent/carers and college students	317	298	+/-5.7%
Wave 6	School pupils	2,567	2,247	+/-2.1%
	Parents/carers of school pupils	2,519	2,178	+/-2.1%
	Paired parent/carer and school pupils	2,074	1,807	+/-2.3%
	College students	591	572	+/-4.1%
	Parents/carers of college students	561	552	+/-4.2%
	Paired parent/carer and college students	446	432	+/-4.7%



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