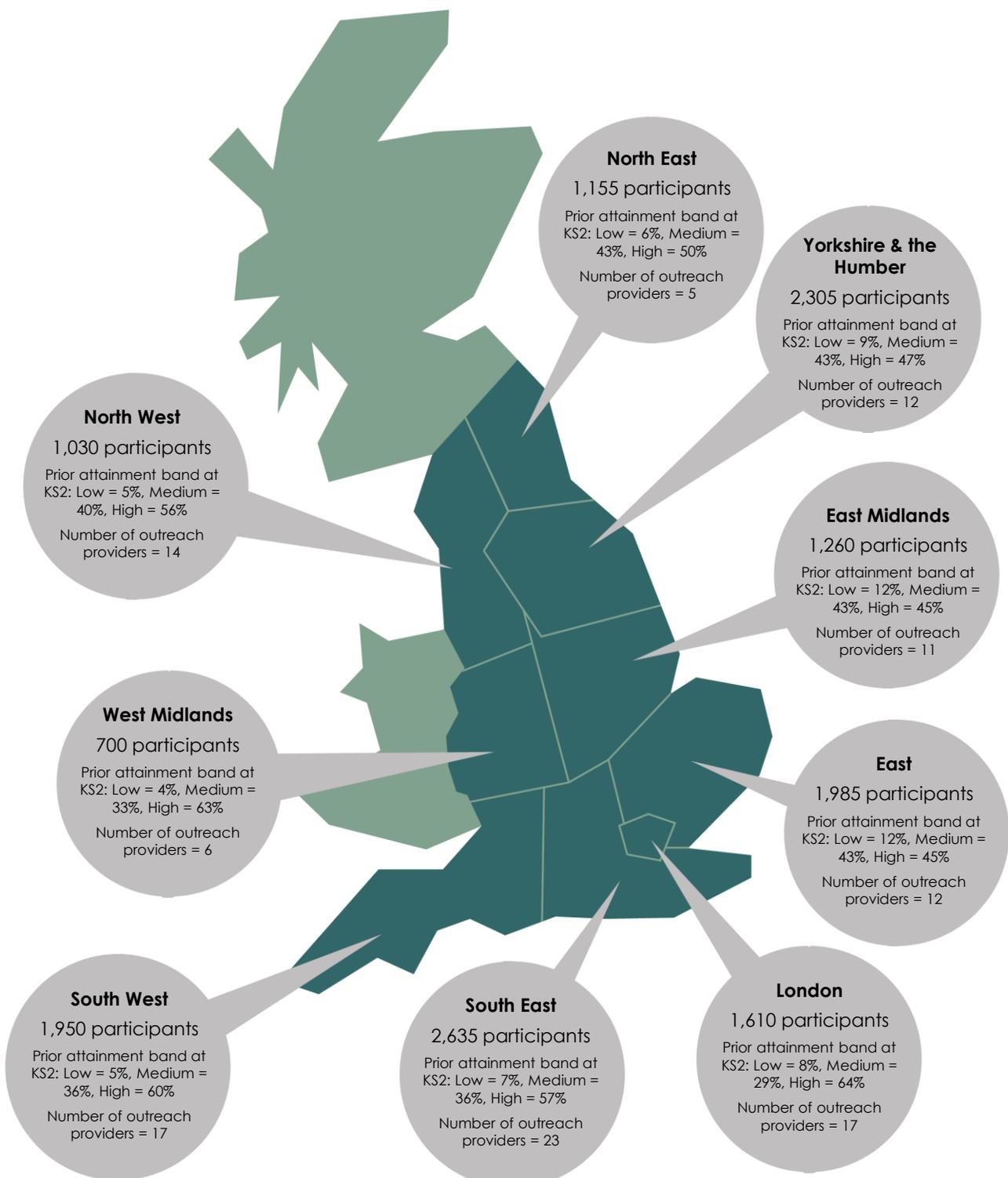


This infographic shows the Key Stage 4 (KS4) performance of outreach participants engaged by HEAT's member organisations, broken down by region. Participants are allocated to a region based on the location of their school. On average 13 HEAT members have delivered outreach within each region (with no fewer than five in a region) and so any differences observed cannot be linked to a specific HEAT member. This report complements the All HEAT Subscribers report (HEAT 0027).

The map below summarises the outreach participants included in this analysis by region. The number of participants and profile of their prior attainment at Key Stage 2 (KS2) is given. The number of outreach providers delivering within the region and recording data with HEAT is also shown.

All participants took part in an intensive package of activities before sitting their KS4 exams in 2017/18



N.B. National average prior attainment band at KS2 for those who took KS4 exams in 2017/18: Low = 18%, Medium = 39%, High = 43%

Here we look at the **percentage of participants who were awarded English and Maths GCSEs with a strong 9-5 pass**. The average percentage of participants in each region achieving at this level is compared with participants' school averages within the region.

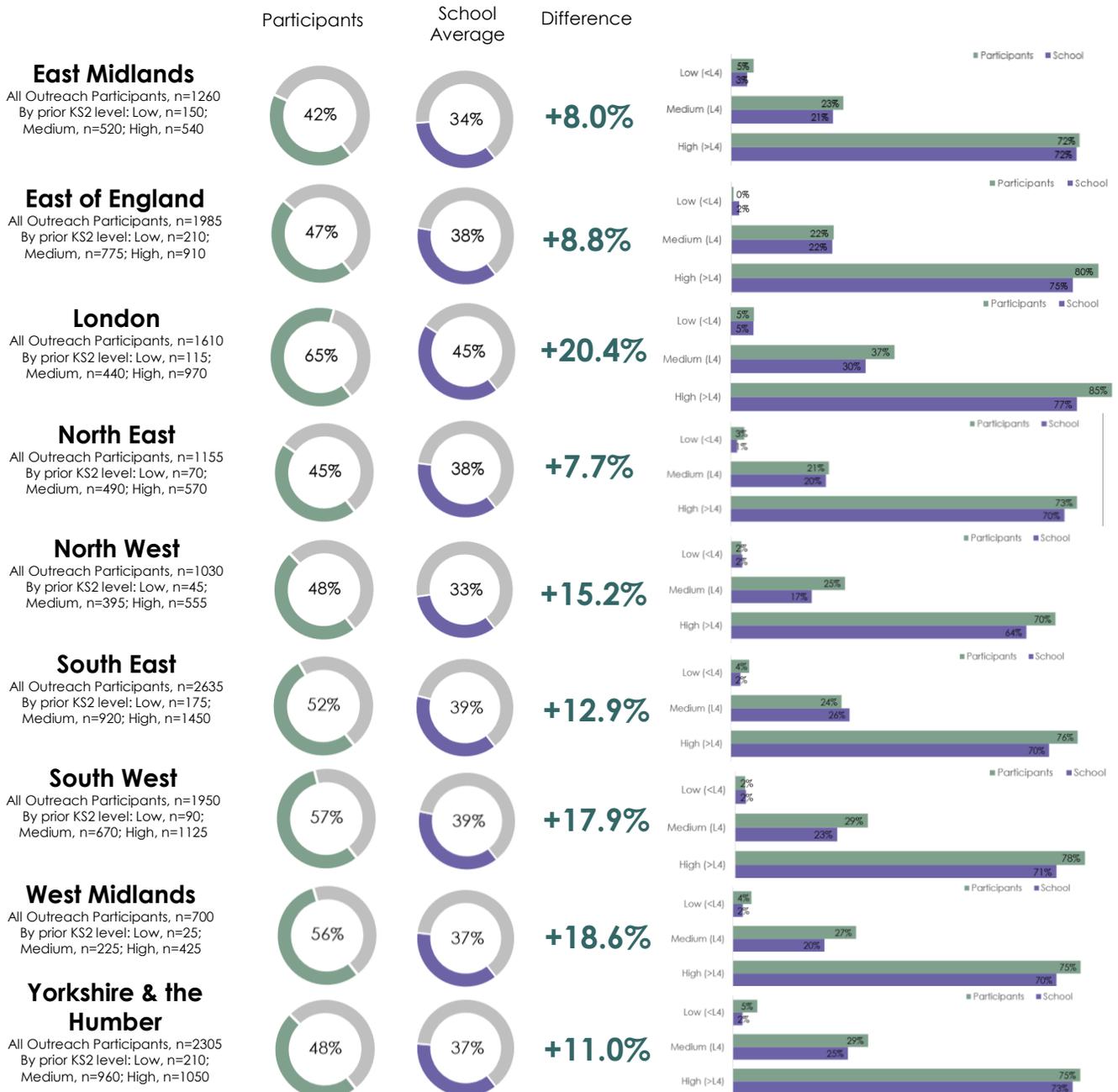
The figures on the left examine the **KS4 achievement of participants in absolute terms**. The bar charts on the right consider achievement in relation to prior attainment at Key Stage 2 (KS2). Controlling for prior attainment at KS2 helps remove some selection bias that may result from targeting. However, this comparison cannot control for further influencing factors like participants' motivation or engagement in their education.

All participants took part in an intensive package of activities *before* sitting their KS4 exams in 2017/18

Percentage of students awarded English and Maths at Level 2 (GCSE only) with a strong 9-5 pass

Absolute Attainment

By Prior Attainment Level at KS2



Next we look at the average **Attainment 8 scores** of participants compared with their school average. Attainment 8 measures the achievement of pupils across 8 subjects including Maths and English (both double weighted). Each individual grade a pupil achieves is assigned a point score. Below, scores are broken down by prior attainment at KS2 (Low/Medium/High bands). The purple boxes show the difference between the outreach participant and school scores. All participants took part in intensive outreach activities before sitting their KS4 exams.

Average Attainment 8 Scores (Average grade across eight subjects)

East Midlands

All Outreach Participants, n=1260
By prior KS2 level: Low, n=150;
Medium, n=520; High, n=540

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 27.4 | 24.3 | 3.0 |
| Medium KS2 attainment (L4) | 42.7 | 39.6 | 3.1 |
| High KS2 attainment(>L4) | 60.7 | 56.5 | 4.1 |

This means that on average medium attaining participants achieved...

...**3.1 grades** higher when compared with medium attaining pupils in their schools

East of England

All Outreach Participants, n=1985
By prior KS2 level: Low, n=210;
Medium, n=775; High, n=910

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 29.0 | 25.7 | 3.3 |
| Medium KS2 attainment (L4) | 43.6 | 40.3 | 3.3 |
| High KS2 attainment(>L4) | 64.3 | 58.9 | 5.5 |

...**3.3 grades** higher when compared with medium attaining pupils in their schools

London

All Outreach Participants, n=1610
By prior KS2 level: Low, n=115;
Medium, n=440; High, n=970

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 28.4 | 27.9 | 0.5 |
| Medium KS2 attainment (L4) | 46.2 | 42.7 | 3.6 |
| High KS2 attainment(>L4) | 69.3 | 60.2 | 9.1 |

...**3.6 grades** higher when compared with medium attaining pupils in their schools

North East

All Outreach Participants, n=1155
By prior KS2 level: Low, n=70;
Medium, n=490; High, n=570

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 29.5 | 24.3 | 5.2 |
| Medium KS2 attainment (L4) | 42.3 | 38.7 | 3.6 |
| High KS2 attainment(>L4) | 61.3 | 56.6 | 4.7 |

...**3.6 grades** higher when compared with medium attaining pupils in their schools

North West

All Outreach Participants, n=1030
By prior KS2 level: Low, n=45;
Medium, n=395; High, n=555

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 29.0 | 25.1 | 3.9 |
| Medium KS2 attainment (L4) | 43.8 | 38.4 | 5.4 |
| High KS2 attainment(>L4) | 61.7 | 55.6 | 6.1 |

...**5.4 grades** higher when compared with medium attaining pupils in their schools

South East

All Outreach Participants, n=2635
By prior KS2 level: Low, n=175;
Medium, n=920; High, n=1450

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 30.8 | 24.4 | 6.4 |
| Medium KS2 attainment (L4) | 44.4 | 41.1 | 3.3 |
| High KS2 attainment(>L4) | 63.5 | 57.1 | 6.4 |

...**3.3 grades** higher when compared with medium attaining pupils in their schools

South West

All Outreach Participants, n=1950
By prior KS2 level: Low, n=90;
Medium, n=670; High, n=1125

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 29.9 | 24.7 | 5.2 |
| Medium KS2 attainment (L4) | 46.5 | 40.0 | 6.5 |
| High KS2 attainment(>L4) | 64.0 | 58.0 | 6.0 |

...**6.5 grades** higher when compared with medium attaining pupils in their schools

West Midlands

All Outreach Participants, n=700
By prior KS2 level: Low, n=25;
Medium, n=225; High, n=425

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 36.3 | 25.7 | 10.6 |
| Medium KS2 attainment (L4) | 46.0 | 39.7 | 6.3 |
| High KS2 attainment(>L4) | 65.8 | 57.8 | 7.9 |

...**6.3 grades** higher when compared with medium attaining pupils in their schools

Yorkshire & the Humber

All Outreach Participants, n=2305
By prior KS2 level: Low, n=210;
Medium, n=960; High, n=1050

| | All Outreach Participants | School Average | -/+ Difference |
|----------------------------|---------------------------|----------------|----------------|
| Low KS2 attainment (<L4) | 28.8 | 24.9 | 3.9 |
| Medium KS2 attainment (L4) | 44.7 | 40.5 | 4.1 |
| High KS2 attainment(>L4) | 61.4 | 58.1 | 3.3 |

...**4.1 grades** higher when compared with medium attaining pupils in their schools

Next we look at the performance of **disadvantaged pupils**. Here we use the Department for Education's definition of a disadvantaged pupil – this being all pupils entitled to Free School Meals.

The figures below show the difference between participants' Progress 8 scores and the average Progress 8 scores for disadvantaged pupils in the school. Progress 8 scores for all participants are also given for comparison.

Progress 8 is calculated for each pupil by comparing achievement –Attainment 8 score – with the average Attainment 8 score of all pupils nationally who had similar prior attainment at KS2. The greater the Progress 8 score, the greater the progress made by the pupil compared with the average for pupils with similar prior attainment. Scores can be converted to grades by multiplying by 10 .

Progress 8 Scores – differences between participant and school averages

Disadvantaged Participants

All Outreach Participants

This means that when taking account of prior attainment, on average disadvantaged participants achieved...

East Midlands
All Outreach Participants, n=1260
Disadvantaged Outreach Participants, n = 200 (16%)

+0.16

...**1.6 grades** higher when compared with their schools

+0.22

East of England
All Outreach Participants, n=1985
Disadvantaged Outreach Participants, n = 220 (11%)

+0.36

...**3.6 grades** higher when compared with their schools

+0.29

London
All Outreach Participants, n=1610
Disadvantaged Outreach Participants, n = 325 (20%)

+0.39

...**3.9 grades** higher when compared with their schools

+0.48

North East
All Outreach Participants, n=1155
Disadvantaged Outreach Participants, n = 235 (20%)

+0.26

...**2.6 grades** higher when compared with their schools

+0.29

North West
All Outreach Participants, n=1030
Disadvantaged Outreach Participants, n = 220 (21%)

+0.36

...**3.6 grades** higher when compared with their schools

+0.27

South East
All Outreach Participants, n=2635
Disadvantaged Outreach Participants, n = 280 (11%)

+0.30

...**3.0 grades** higher when compared with their schools

+0.33

South West
All Outreach Participants, n=1950
Disadvantaged Outreach Participants, n = 250 (13%)

+0.39

...**3.9 grades** higher when compared with their schools

+0.51

West Midlands
All Outreach Participants, n=2000
Disadvantaged Outreach Participants, n = 115 (16%)

+0.41

...**4.1 grades** higher when compared with their schools

+0.37

Yorkshire & the Humber

All Outreach Participants, n=2305
Disadvantaged Outreach Participants, n = 370 (16%)

+0.25

...**2.5 grades** higher when compared with their schools

+0.28

Who is getting pre-16 outreach?

- **Students within the 'Low' KS2 attainment band (<Level 4) are under-represented in pre-16 outreach across all regions.** Nationally, 18% of pupils achieve a 'Low' band at KS2, yet regionally between 4% and 12% of outreach participants are within this band. The East Midlands and East of England have some of the highest engagement of Low KS2 attainers. The West Midlands, South West and North West engage the lowest proportions of students from this prior attainment band.
- **Outreach delivered in London, the West Midlands and the South West disproportionately engaged students with 'High' prior attainment at KS2 (>Level 4).** These regions may be lacking pre-16 outreach opportunities for lower and medium attaining students.
- DfE Performance Table data tells us that 93% of all students with 'High' KS2 attainment go on to achieve at least five strong passes at GCSE. As this attainment benchmark is known to be the strongest predictor of later progression to HE, it could be argued that these students are already 'on track' to succeed. In contrast only 54% of Medium attainers and 7% of Low attainers at KS2 go on to achieve five strong passes at GCSE. Thus it is arguably these students who are most in need of the additional support that good quality outreach can offer.
- **Recommendation:** HEAT members should ensure pre-16 outreach opportunities for lower and medium attaining students are in place across the country.

What are the KS4 outcomes of students who participated in pre-16 outreach?

- The KS4 attainment of outreach participants **is consistently higher than the school average across all regions.** However, there are variations by region.
- Participants from **the West Midlands emerge with particularly strong KS4 performance.**
- Although participants from the West Midlands had higher prior attainment at KS2 than other regions, **performance improvements remained true even after controlling for prior attainment** (although sample sizes were close to the suppression threshold for the low attainment band).
- **Recommendation:** Further evaluation that meets the requirements of causal evidence is needed to understand the relationship between outreach and improved attainment at KS4. Local evaluations could be designed to control for additional observed and unobserved variables that are not possible to account for in this analysis.
- **Recommendation:** HEAT will carry out a scoping exercise to show users how to record data for control or comparator groups on the database. HEAT will ensure reporting mechanisms are in place to provide members with the aggregated KS4 results for both groups once the data are available from the DfE.

What are the features of the outreach delivered in the West Midlands?

In order to explore the outreach experience of students engaged in the West Midlands, we next put a spotlight on that cohort and examine the features of the outreach delivered in the region. Data for all regions are provided overleaf.

- **A larger number of contact hours per student.** On average the students in the West Midlands received 32 contact hours compared with the average of 25. However, it should be noted that the West Midlands ranked second in terms of contact hours, with participants from Yorkshire & the Humber receiving the largest average of 39.
- **A larger proportion of students engaged in multiple years.** In the West Midlands, 34% of participants engaged in activities in more than one academic year, compared with the average across all regions of 24%. However, students from the South West, East Midlands and the South East were more likely to re-engage year on year (between 54% and 55%).
- **A larger proportion of students took part in a 'Skills & Attainment' activity,** classified according to HEAT's Activity Typology. On average, 51% of students in the West Midlands participated in a Skills & Attainment activity compared with the average across all regions of 42%. Of all activity types, Skills & Attainment activities are most closely associated with attainment-raising, defined as activities 'to increase knowledge, skills and understanding'. These activities can be used to help students with their attainment through revision sessions, study skills and support with the school curriculum. However, detailed theories of change have not yet been developed to set out the *mechanisms* by which these activities can help improve students' attainment.
- Although less so than the Skills & Attainment activity type, **a larger proportion of students had participated in a Summer School.** On average, 29% of students in the West Midlands participated in a Summer School compared with the average of 23%. However, Summer Schools were most prevalent in the North West and North East with 51% and 42% of participants engaging in this type of activity respectively.
- The location of activities, specifically whether they were on or off campus, and the number of activities were also examined, but no patterns were found.
- **Recommendation:** There is a need to improve our understanding of the underlying causal mechanisms whereby participating in outreach leads to increased attainment. These mechanisms should be mapped out using a theory of change approach, and always considered in the context of the support pupils are already receiving from their schools.

The following tables provide the outreach activity data that was used to inform the 'spotlight' on the West Midlands provided on the previous page. Data are given below for all regions.

All participants included in this analysis took part in an intensive package of activities before the age of 16.

Average contact hours of participants in each region

| Region | Average contact hours |
|--------------------------|-----------------------|
| East Midlands | 26 |
| East of England | 17 |
| London | 25 |
| North East | 13 |
| North West | 17 |
| South East | 30 |
| South West | 22 |
| West Midlands | 32 |
| Yorkshire and the Humber | 39 |
| Total | 25 |

Percentage of participants in each region who took part in a Skills & Attainment activity

| Region | % engaged in Activity Type: Skills & Attainment |
|--------------------------|---|
| East Midlands | 70% |
| East of England | 45% |
| London | 17% |
| North East | 28% |
| North West | 37% |
| South East | 46% |
| South West | 47% |
| West Midlands | 51% |
| Yorkshire and the Humber | 40% |
| Total | 42% |

Percentage of participants in each region who took part in Mentoring

| Region | % engaged in Activity Type: Mentoring |
|--------------------------|---------------------------------------|
| East Midlands | 36% |
| East of England | 48% |
| London | 23% |
| North East | 42% |
| North West | 25% |
| South East | 16% |
| South West | 45% |
| West Midlands | 38% |
| Yorkshire and the Humber | 57% |
| Total | 37% |

Percentage of participants in each region who took part in more than one activity (please note all participants took part in HEAT's definition of an intensive package of activities*)

| Region | % engaged in more than one activity |
|--------------------------|-------------------------------------|
| East Midlands | 90% |
| East of England | 87% |
| London | 37% |
| North East | 67% |
| North West | 57% |
| South East | 87% |
| South West | 88% |
| West Midlands | 73% |
| Yorkshire and the Humber | 84% |
| Total | 77% |

Percentage of participants in each region who took part in activities in more than one academic year

| Region | % engaged in multiple years |
|--------------------------|-----------------------------|
| East Midlands | 54% |
| East of England | 28% |
| London | 14% |
| North East | 23% |
| North West | 10% |
| South East | 54% |
| South West | 55% |
| West Midlands | 34% |
| Yorkshire and the Humber | 44% |
| Total | 37% |

Percentage of participants in each region who took part in a Summer School

| Region | % engaged in Activity Type: Summer School |
|--------------------------|---|
| East Midlands | 9% |
| East of England | 13% |
| London | 25% |
| North East | 42% |
| North West | 51% |
| South East | 18% |
| South West | 18% |
| West Midlands | 29% |
| Yorkshire and the Humber | 22% |
| Total | 23% |

Percentage of participants in each region who took part in an activity based on an HE campus

| Region | % engaged in an activity based on campus |
|--------------------------|--|
| East Midlands | 55% |
| East of England | 48% |
| London | 47% |
| North East | 42% |
| North West | 71% |
| South East | 76% |
| South West | 76% |
| West Midlands | 60% |
| Yorkshire and the Humber | 43% |
| Total | 58% |

HEAT's definition of an intensive package of activities is as follows:

- 1+ Summer School **or** 1+ HE Subject Insight **or** 1+ Mentoring
- 2+ Skills & Attainment **or** 2+ HE Campus Visits
- 1+ Skills & Attainment **and** 1 HE Campus Visit
- 3+ General HE Information / Exhibition **and** 1+ Skills & Attainment
- 3+ General HE Information / Exhibition **and** 1+ HE Campus Visit