The academic wellbeing and attitudes to learning of Key Stage 2 pupils following the pandemic

An analysis of academic wellbeing and attitudes to learning in Key Stage 2 pupils at mainstream state schools in England. This study looks at the differences in performance by year group, gender, disadvantage and region.

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Introduction

This report analyses survey responses from Key Stage 2 children in English schools using the *Wellbeing and Attitudes to Learning: Survey and Strategies*. This online survey is provided by RS Assessment from Hodder Education. The report uses aggregate results from pupils in primary schools across three time periods from 2018–2022.

The survey is taken online by pupils and consists of 41 Likert scale questions that assess children across four dimensions and 12 sub-dimensions. The dimensions are **positivity**, **motivation**, **self-efficacy**, and **resilience and persistence**. Surveys were compared between a trial conducted in schools in 2018 (pre-pandemic) and surveys conducted in schools during the 2020–21 and 2021–22 academic years.

This is the first analysis of the data collected since September 2020 and focuses on the differences by year group, gender, region and disadvantage level among pupils in England. The analysis of survey responses from such a large number of children provides a valuable opportunity to understand broad differences between groups and look for early indications of trends that may assist with providing targeted support to children.

Each child's mean score for a given dimension is allocated to one of three zones: green, amber or red. Throughout this paper the analysis identifies the percentage of children in each wellbeing zone. Children whose scores fall into the green zone are demonstrating satisfactory responses for that dimension, those whose scores are in the amber zone may have some vulnerability in that dimension, and scores in the red zone indicate that these children are most in need of action to support their academic wellbeing.

This report focuses primarily on overall trends, differences between groups of children and changes over time, looking in particular at disparities or changes greater than 5 Percentage Points. Please see Appendix (page 22) for a more detailed explanation of the methodology.

This report is the latest publication from a research project funded by the Nuffield Foundation. Our previous report, published in October 2022, reviewed the changes to attainment in grammar, punctuation and spelling (GPS), reading and maths among primary school children. This and other prior research can be found at **risingstars-uk.com/nuffield**.

21,000+
primary school pupils

145
schools

Positivity
Self-esteem
Optimism
Satisfaction
Class climate
School belonging

Motivation
Intrinsic motivation
Extrinsic motivation
Support

Self-efficacy
Academic self-efficacy
Emotional self-efficacy
Interpersonal self-efficacy

Resilience and persistence

Key Findings

- Since the pre-pandemic period the proportion of children whose responses were satisfactory fell across **all dimensions** of academic wellbeing, as shown in Figure 1.
- **Year 3** saw the largest reductions in satisfactory responses across every dimension.
- Compared to the pre-pandemic period, **self-efficacy** has had the largest decrease in children with satisfactory responses. The majority of children now report feeling some vulnerability in self-efficacy.
- A higher percentage of **girls** than boys are responding that they feel motivated, positive and resilient at school.
- Since the pandemic a higher percentage of **boys** report that they have a strong sense of self-efficacy than girls.
- Schools in the **North of England** consistently have more children with satisfactory responses across all dimensions.
- The proportion of children on **free school meals** does not appear to make a large difference to any dimension of academic wellbeing reported by pupils at the school.

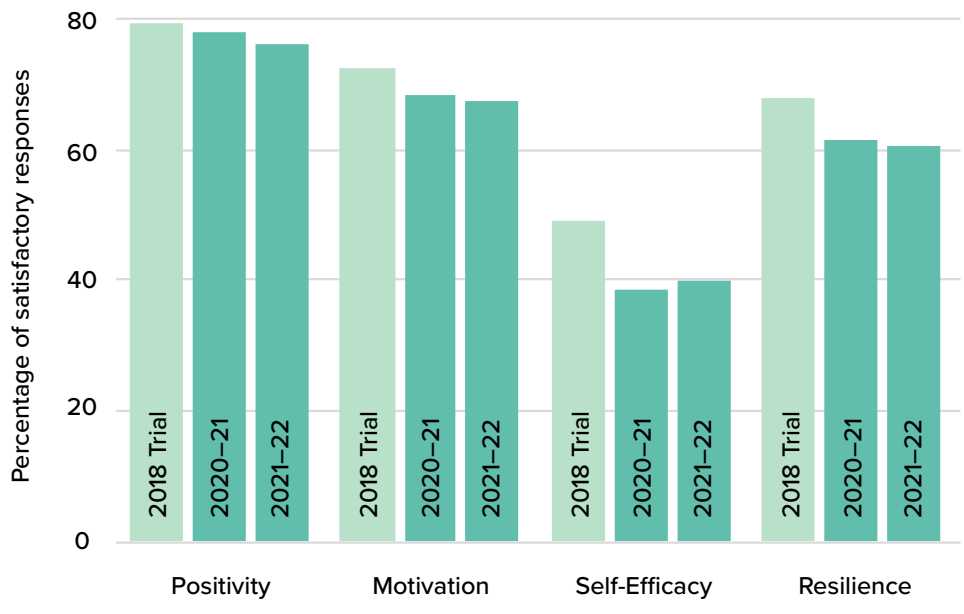


Figure 1: Change in the proportion of responses in the green zone for each dimension over time

How academic wellbeing is assessed

Wellbeing and Attitudes to Learning: Survey and Strategies by RS Assessment from Hodder Education was developed in collaboration with Coventry and Nottingham Trent Universities. Based on evidence and research into the factors that influence a child's academic wellbeing, the survey was designed with the aim of supporting children's wellbeing in school and thus their future academic attainment too. It was trialled on a sample of approximately 4000 children aged 7–11 in England in spring 2018.[1]

Throughout this report references to 2018 data refer to the trial data. While trial data was deliberately collected from a nationally representative sample of schools, the live data (the 2020–21 and 2021–22 school years) could only be collected from schools who had purchased the *Wellbeing and Attitudes to Learning* survey. There is therefore a slight difference in the pupil composition between the children who completed the survey during the trial and children who completed surveys during the 2020–21 and 2021–22 school years. For this reason, care needs to be taken when comparing the datasets. The trial data has been included in this report as it is a large dataset that allows us to compare current trends to a more general pre-pandemic benchmark. It is displayed in lighter colours in figures. For more information, please see Appendix (page 22).

Each child's mean score for the dimension is allocated to one of three zones which were based on the responses from the trial: green, amber or red. Where responses fall into the green zone, this indicates that the child exhibits the dimension in question. For example, children whose motivation responses fall into the green zone are demonstrating satisfactory motivation and are therefore motivated. The figures in this report show the distributions of responses between the three zones in terms of the percentage of pupils whose responses fall into each zone.

Each of the four dimensions in the survey is explored in turn in the following sections.

"[We can] track children over time and not only address any areas of concern but hopefully evidence that children are enjoying school and that they're motivated and happy in themselves."

- Andrew Darlington, Associate Headteacher, Lime Tree Primary Academy

[1] The data presented in this report does not use include surveys from the 2019–20 school year because due to national lockdowns there was insufficient data to analyse.

Positivity

The **positivity** dimension covers a child's tendency towards their **self-esteem**, their **satisfaction with the academic / school environment**, and their **optimism**. See Appendix (page 22) for background on all dimensions in the survey.

Figure 2 shows the distribution of responses across the zones by year group for the 2018 trial and 2020–21 and 2021–22. For all three time periods the proportion of children who are positive about school decreases as the children progress through Key Stage 2, with Year 6 displaying the smallest proportion of children who feel positively about school. Similar results are often seen in wellbeing research.[2]

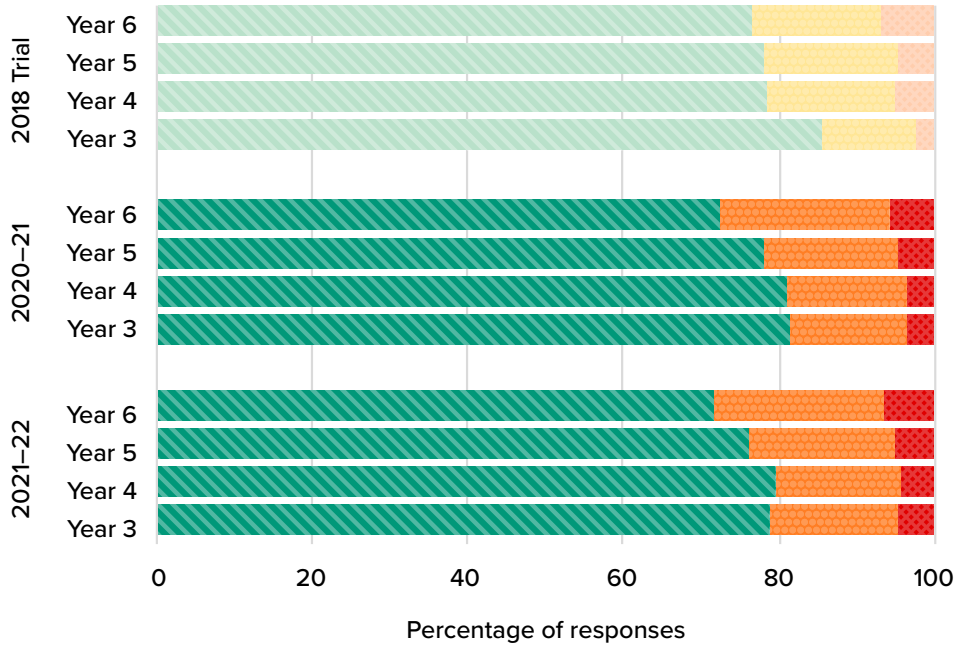


Figure 2: Change in zone distribution between year groups over time for Positivity

Example questions:

"I feel welcome at this school."

"I think I will be happy at school in the future."

[2] H. W. Marsh, R. G. Craven, R. G., & R. Debus, (1998), *"Structure, stability, and development of young children's self-concepts: A multicohort-multioccasion study"*, Child Development, 69(4), 1030-1053.

Figure 3 shows changes over time for each year group. Year 3 showed the highest levels of positivity before the pandemic but also the largest fall since then with more children reporting some vulnerability or reporting not feeling positive about school compared to pre-pandemic levels (a rise of 7 Percentage Points).

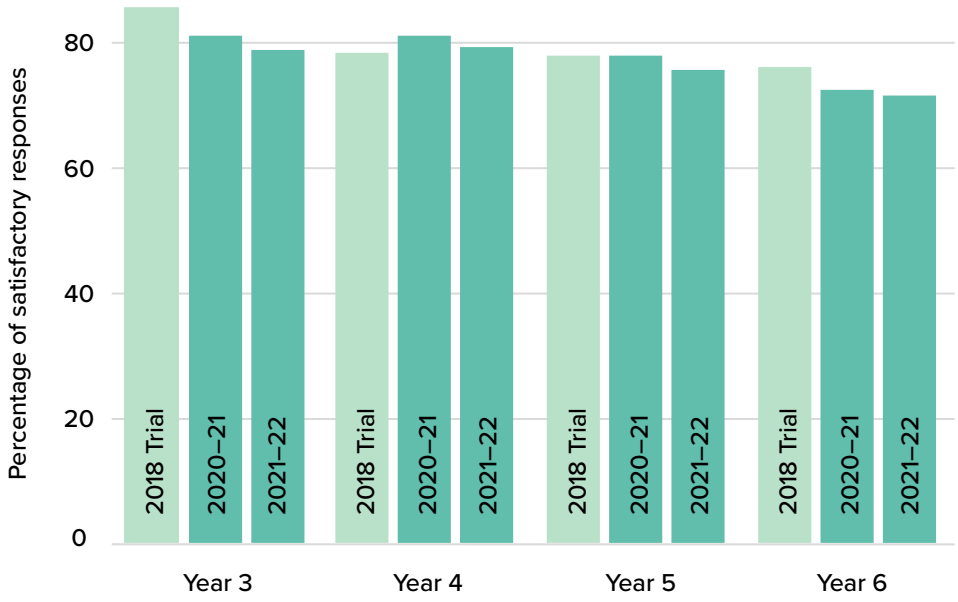


Figure 3: Change in green zone distribution over time by year groups for Positivity

Figure 4 breaks down responses by gender and year. Across all years, more girls than boys report feeling positive about school. However, the gender difference has reduced over time, dropping from 7 Percentage Points in 2018, to just over 5 Percentage Points in 2020–21 to less than 5 Percentage Points in 2021–22.

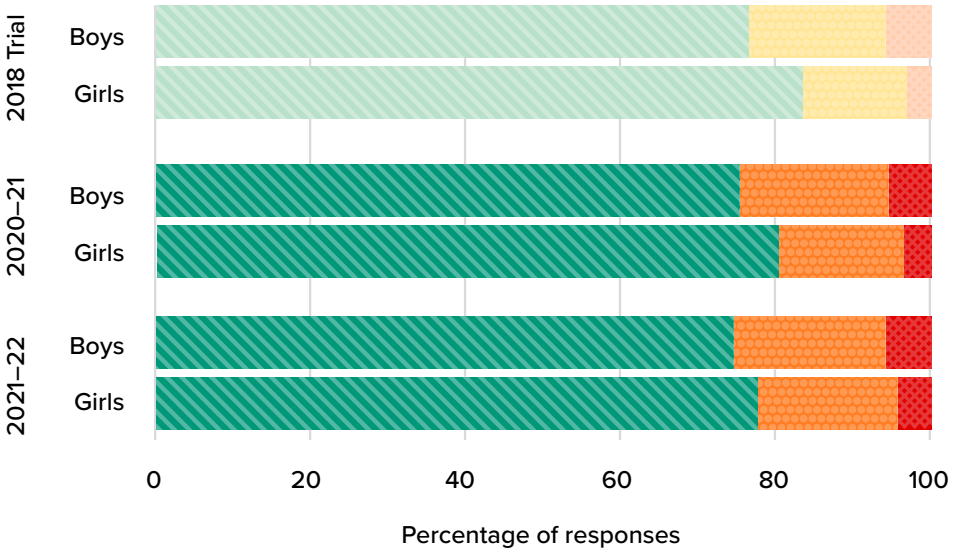


Figure 4: Change in zone distribution between gender over time for positivity

Across all years, more girls report feeling **positive** about school than boys

Figure 5 shows how these responses have changed over time, and in particular how the proportion of girls in the green zone has decreased since the pre-pandemic period.

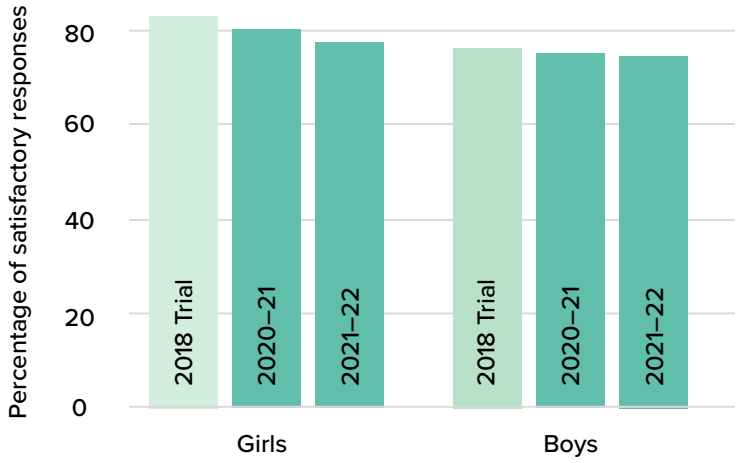


Figure 5: Change in green zone distribution over time by Gender for Positivity

Previous analyses[3] have shown that school type and location can affect changes in attainment therefore we have analysed the academic wellbeing data using the same approach. Firstly, we have used the percentage of children eligible for free school meals (FSM) as an indicator of disadvantage for the schools. The three categories are schools with high proportions of FSM (more than 35%), medium proportions (20–35%) and low proportions (less than 20%).

Figure 6 shows the zone distribution using this breakdown comparing 2020–21 and 2021–22[4], however there are no clear trends from year to year or between groups of schools.

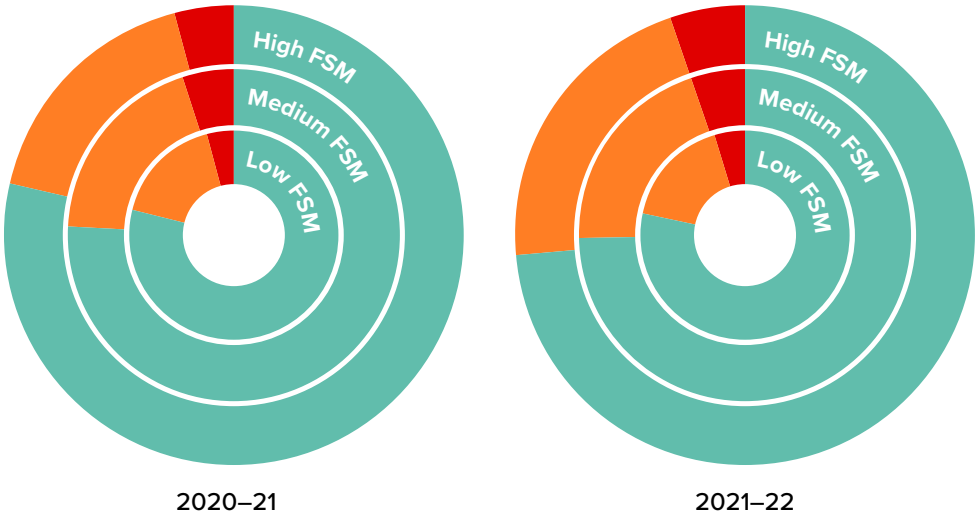


Figure 6: Change in zone distribution by disadvantage over time for positivity

[3] Our previous attainment analyses and white papers are available at risingstars-uk.com/nuffield

[4] It was not possible to group the 2018 trial pupils by the proportion of free school meals (FSM) or the region where their school is as the trial data was anonymised

Girls' **positivity** has dropped more than boys' in recent years

Free school meals
There are no clear trends between disadvantage and **positivity**

In order to look at geographical trends and maintain a sufficiently large number of pupils in each group to be representative, the nine English regions have been divided into North (North East, North West, Yorkshire & The Humber, East Midlands and West Midlands) and South (East of England, London, South East and South West). Figure 7 shows the difference between these two regional groups, showing that while slightly more children were positive about school in the North in 2020–21 (80% compared to 76% in the South) this has increased to approximately a 6 Percentage Point difference in 2021–22.

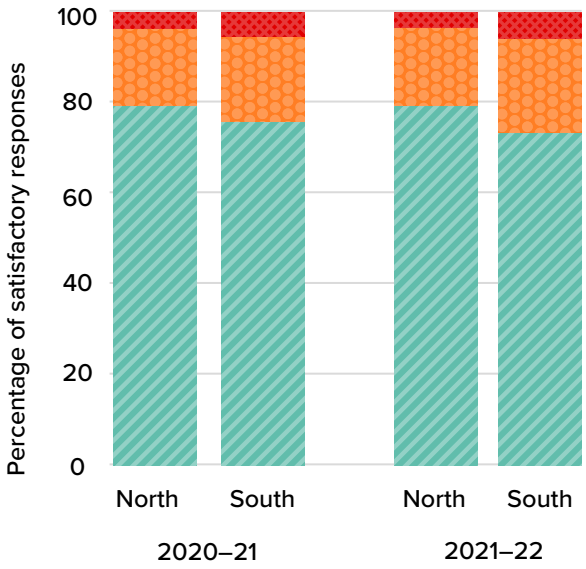
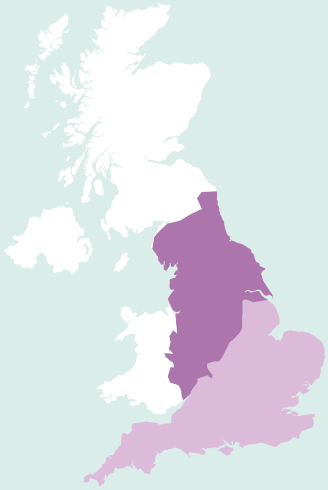


Figure 7: Change in zone distribution by region over time for positivity

Overall, the majority of children (more than 75% on average) are positive about school. This can be seen in Figure 1. Although this number has dipped slightly between 2020–21 and 2021–22 and since the pre-pandemic 2018 trial, it remains consistently high and the fluctuation over time is less than 5 Percentage Points. This is encouraging sign. Maintaining a high level of positivity is important for children's overall wellbeing and academic attainment.[5] Strategies to maintain and increase positivity in the classroom include tackling bullying, fostering a positive and safe class climate and building a culture of academic optimism.

Children in the North are more **positive** than children in the South of England



[5] J. Zhou, E. S. Huebner & L. Tian, (2021), *"The reciprocal relations among basic psychological need satisfaction at school, positivity and academic achievement in Chinese early adolescents"*, Learning and Instruction, Volume 71,101370.

Motivation

The **motivation** dimension provides information about what drives a child's academic behaviour, it consists of **task value**, **intrinsic motivation** and **extrinsic motivation** in the context of academic achievement, it also considers the potential impact of **support**.

Figure 8 shows how the zone distribution of children's responses to questions about motivation have changed over time. As with positivity, the percentage of children who feel motivated at school consistently drops as children get older. There are fewer upper Key Stage 2 children demonstrating satisfactory responses to the motivation questions in every time period. The difference between the proportion of motivated children in Years 3 and 6 has also changed over time. Compared to 2018, fewer children in Year 6 responded that they are motivated, the difference reduced from 20 Percentage Points to 12 Percentage Points in 2022. This closing of the gap between year groups is primarily driven by a fall in reported motivation among Year 3 pupils.

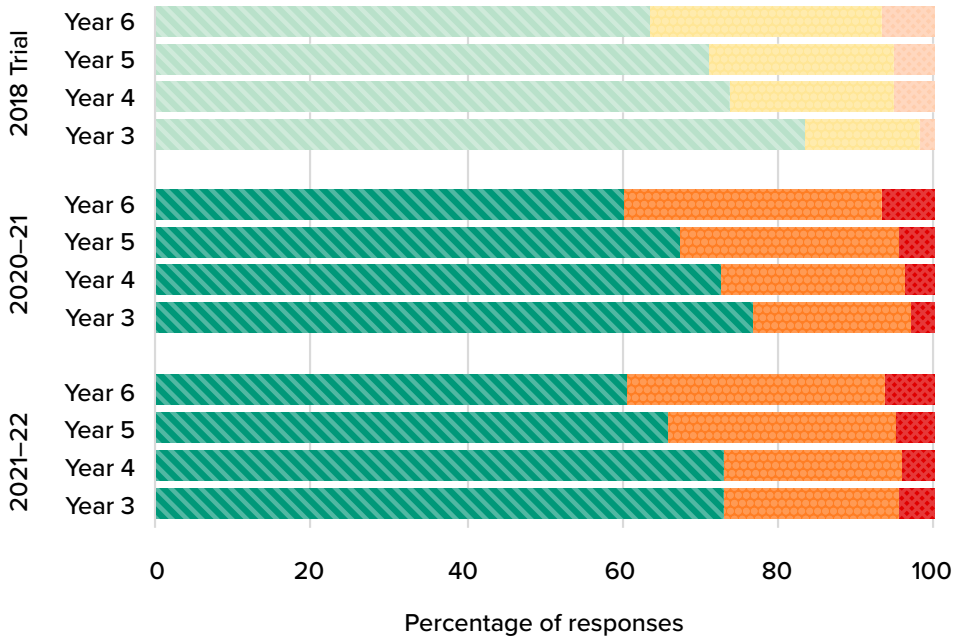


Figure 8: Change in zone distribution between year groups over time for motivation

Example questions:

"Schoolwork is important for my future."

"When I find things difficult at school I ask my teacher for help."

Figure 9 more clearly shows how the Year 3 children have answered over time. As the years passed fewer children reported feeling motivated, with approximately 11 Percentage Points fewer children in Year 3 appearing in the green zone in 2021–22 compared to 2018. By comparison the drop for Year 6 was less than half of this (below 5 Percentage Points).

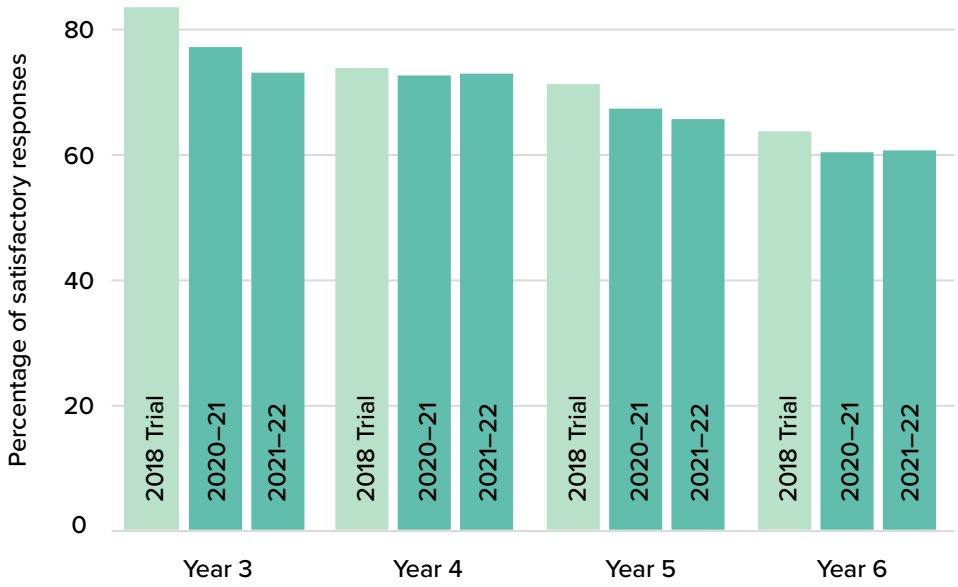


Figure 9: Change in green zone distribution over time by year groups for motivation

Figure 10 shows the differences by gender. More girls than boys reported feeling motivated at school. Although the proportion for girls has dropped over time, it remains higher than for boys.

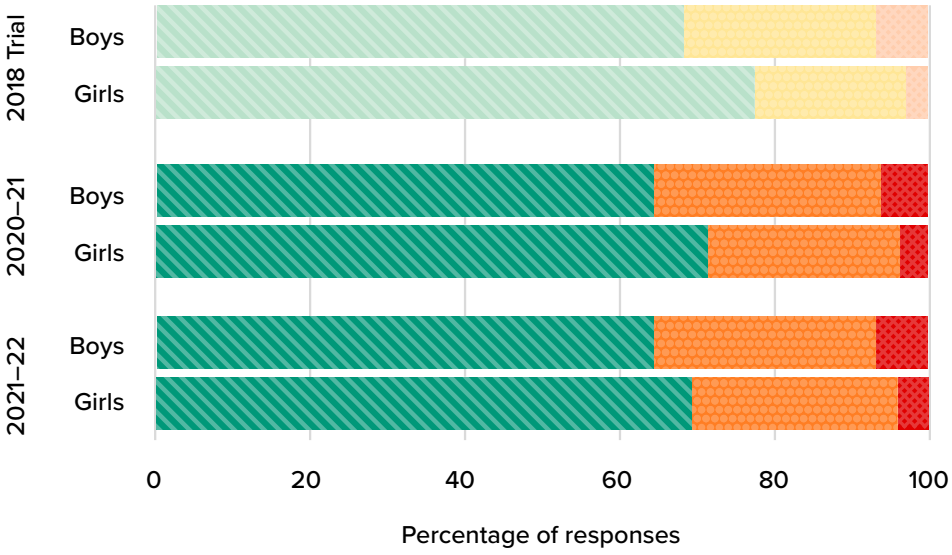


Figure 10: Change in zone distribution between gender over time for motivation

Across all years, more girls report feeling **motivated** at school than boys

Figure 11 looks at the trend over time. It shows the proportion of children of both genders who reported satisfactory responses has steadily fallen over time. Over the periods shown, the proportion of girls demonstrating a satisfactory level of motivation fell by approximately 8 Percentage Points which is more than the reduction for boys.

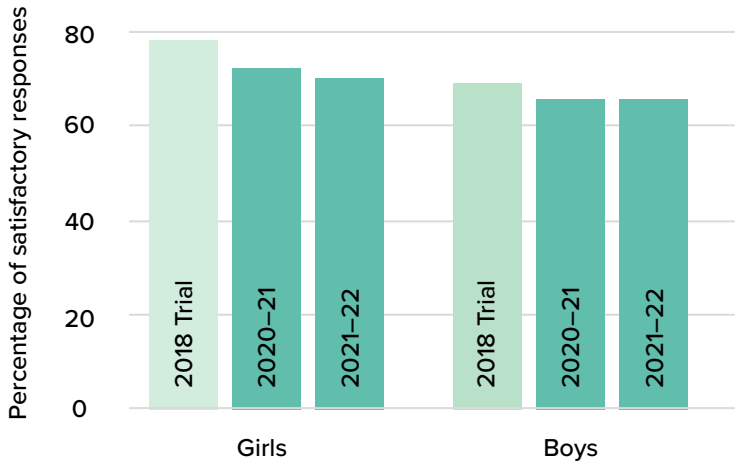


Figure 11: Change in green zone distribution over time by gender for motivation

Figure 12 shows motivation results by disadvantage level (see page 7 for FSM breakdowns). This figure shows that in each period analysed there is not a large difference in responses between children at schools with different levels of disadvantage.

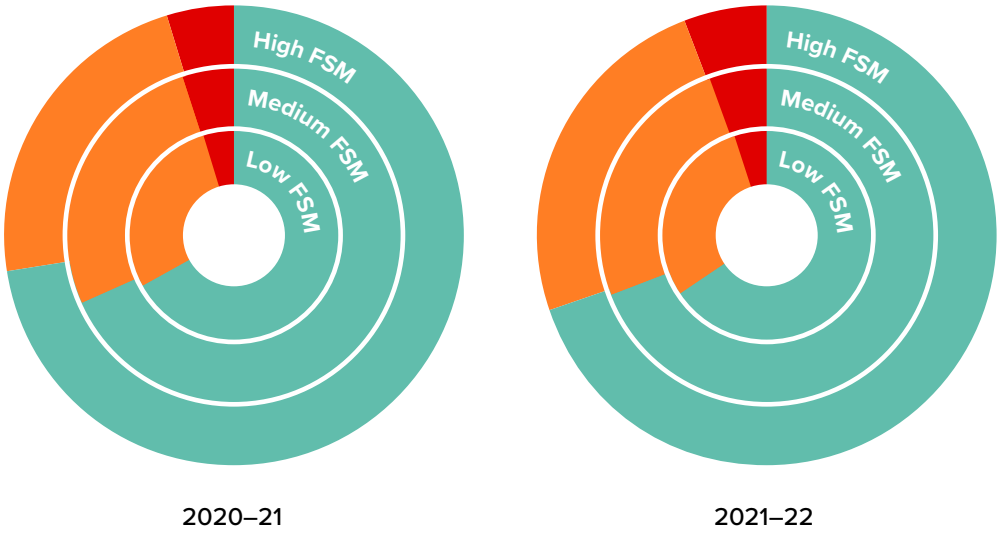


Figure 12: Change in zone distribution by disadvantage over time for motivation

Girls' **motivation** has dropped more than boys' in recent years

Free school meals
There are no clear trends between disadvantage and **motivation**

Figure 13 shows regional trends. Compared to their peers in the South, more children in schools in the North responded that they are motivated at school.

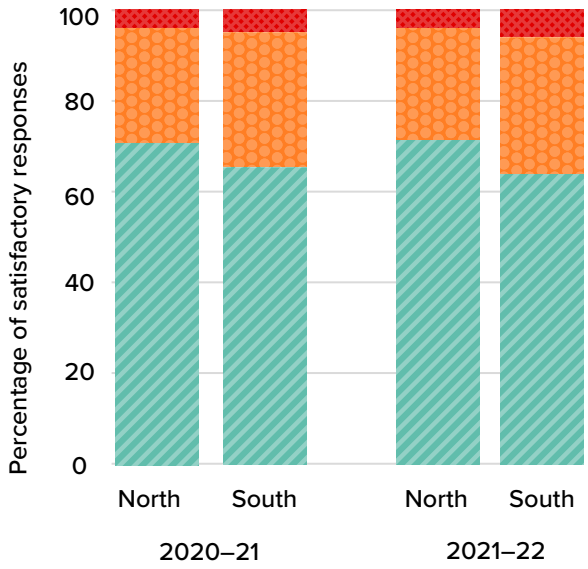
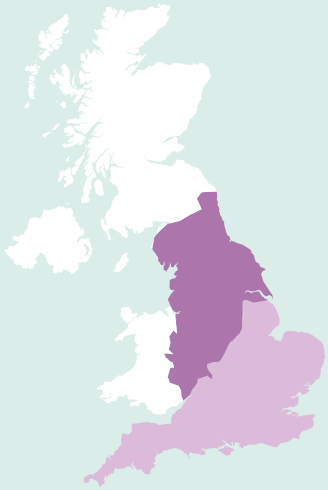


Figure 13: Change in zone distribution by region over time for motivation

Overall, the largest proportion of children's responses fell into the green category indicating their responses to questions on motivation are satisfactory and children are, on the whole, feeling motivated in school. Motivation can be maintained by reviewing how rewards and praise are used by teachers to encourage learning, setting intermediate tasks for children to achieve and encouraging autonomy in the classroom.

Children in the North are more **motivated** in school than children in the South of England



Self-efficacy

Perceived **self-efficacy** is defined as children's beliefs about their capability to succeed in particular situations and pursue their goals. This is different from a child's sense of self-esteem, which refers to a child's opinions about their own self-worth and is incorporated into the positivity dimension discussed earlier. Self-efficacy is assessed by looking at children's **academic self-efficacy**, **emotional self-efficacy** and **interpersonal self-efficacy**.

Figure 14 shows similar trends as the other dimensions: there are fewer Year 6 pupils than Year 3 pupils in the green zone. The self-efficacy dimension is unique in the sense that the majority of responses fell into the amber or red zones, indicating the children collectively showing vulnerability in this dimension.

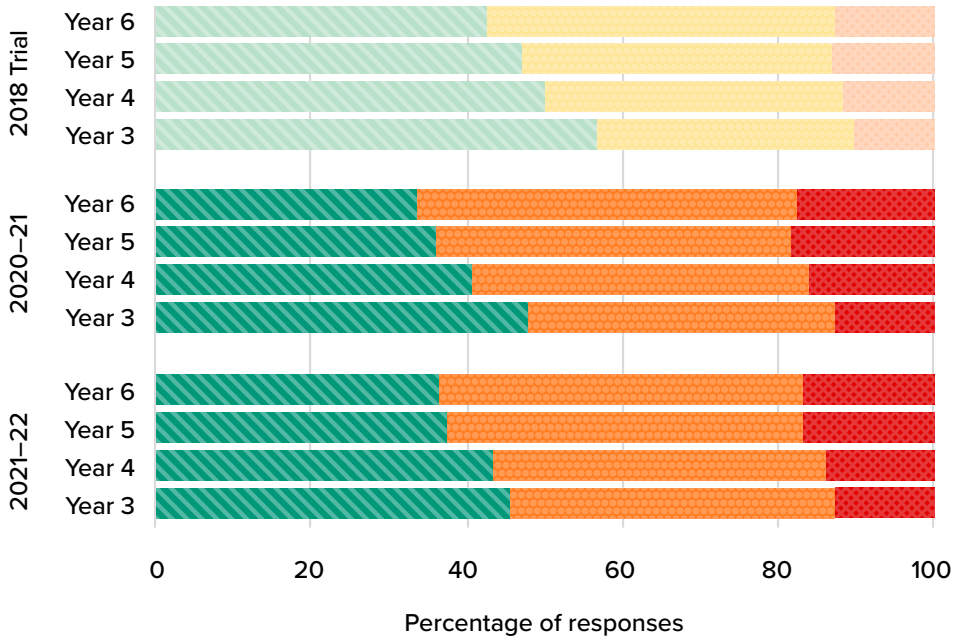


Figure 14: Change in zone distribution between year groups over time for self-efficacy

Example questions:

"How well can you stay calm when you don't get something right at school?

"How well can you get along with all of your classmates?"

Figure 15 shows the change from the 2018 trial to recent years by year group. There were large (greater than 5 Percentage Point) drops across all years. As before, Year 3 showed the largest change with 11 Percentage Points fewer children displaying satisfactory self-efficacy (saying they feel capable) in 2021–22 compared to the trial. The fluctuations between 2020–21 and 2021–22 are small and do not show a consistent trend.

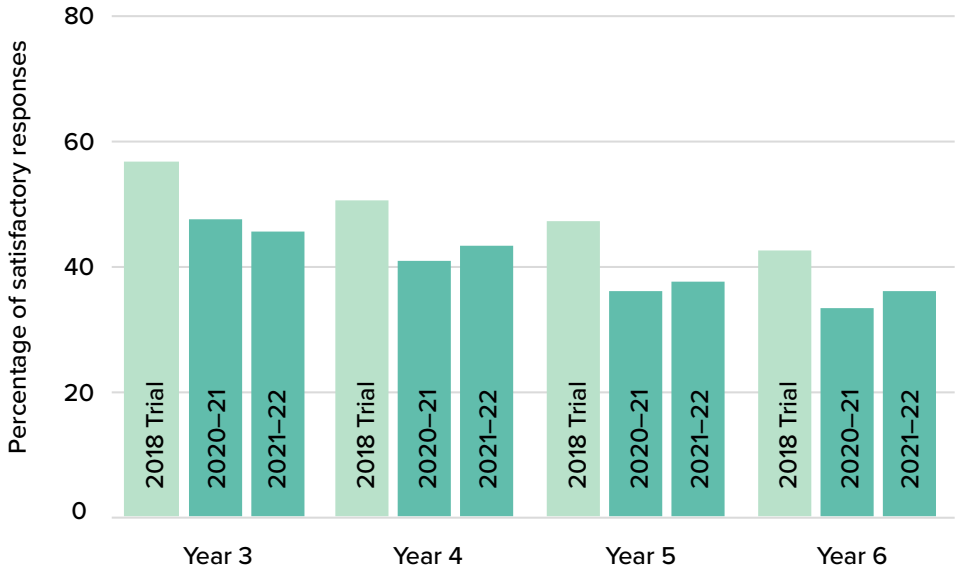


Figure 15: Change in green zone distribution over time by year groups for self-efficacy

Self-efficacy is the only dimension where the proportion of boys in the green zone is larger than that of girls, shown in Figure 16. This trend was not observed during the 2018 trial and only appeared in the last two years, indicating that it may be a consequence of the pandemic. However, this cannot be confirmed without monitoring the longer-term trend.

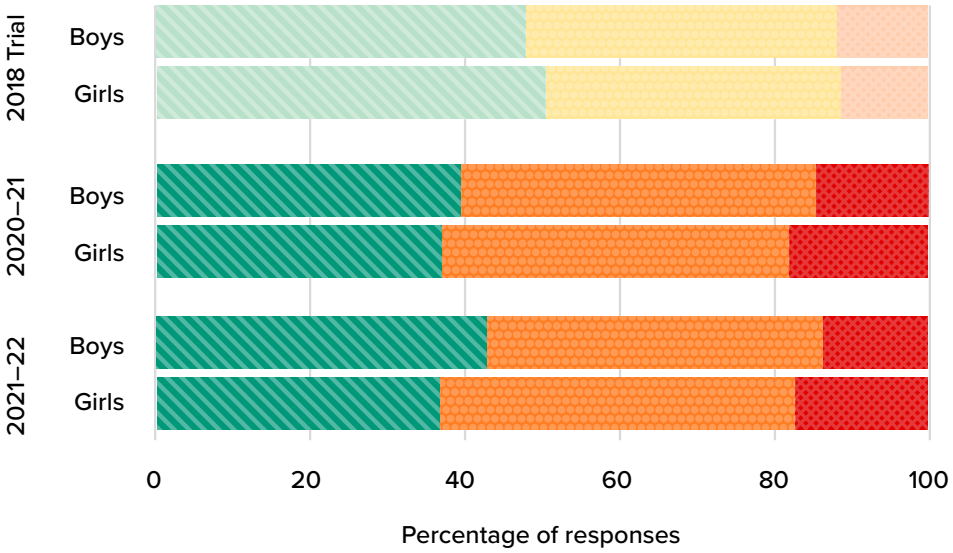


Figure 16: Change in zone distribution between gender over time for self-efficacy

Boys have reported greater **self-efficacy** than girls in recent years which was not the case in the 2018 trial

Figure 17 shows there has been a drop between the 2018 trial and 2021–22 in the proportion of both boys and girls who believe they are capable. However, girls showed a larger drop (approximately 14 Percentage Points fewer) than boys (5 Percentage Points).

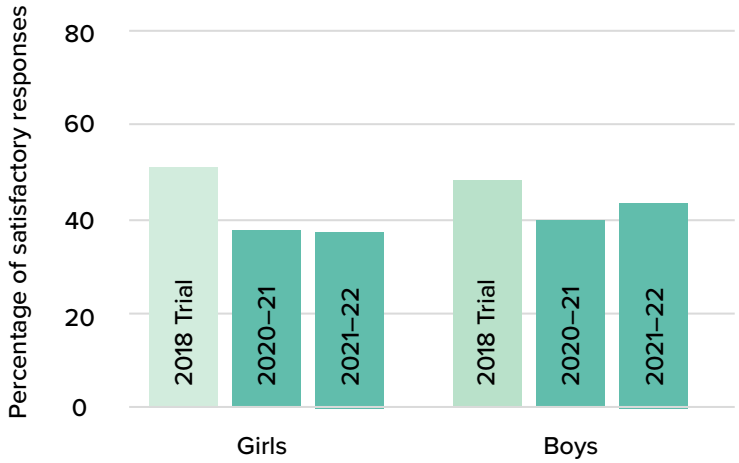


Figure 17: Change in green zone distribution over time by gender for self-efficacy

Figure 18 shows trends by in-school disadvantage level. As with the other dimensions the differences between pupils at schools with different levels of FSM percentages are small.

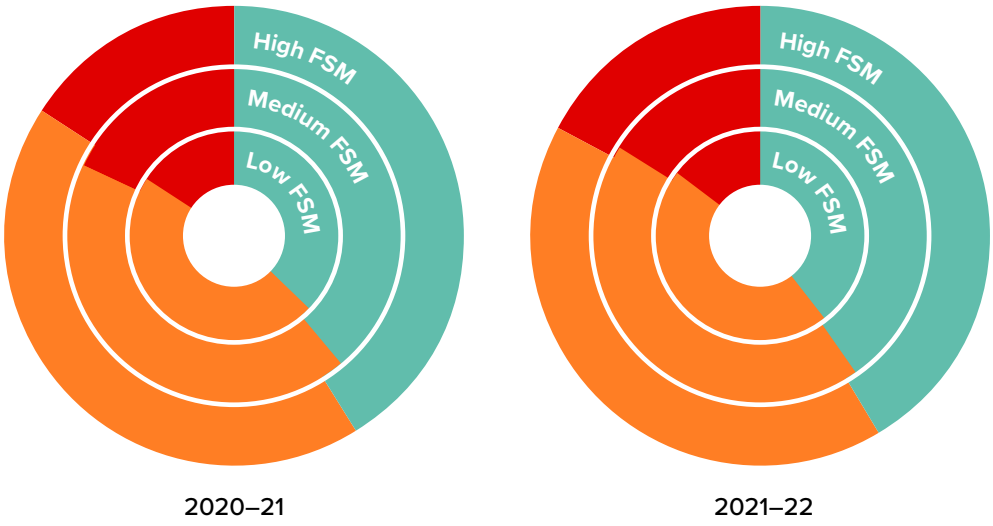
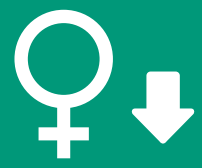


Figure 18: Change in zone distribution by disadvantage over time for self-efficacy



Girls' **self-efficacy** has dropped more than boys' in recent years, while boys have reported a slight increase in the last year

Free school meals
There are no clear trends between disadvantage and **self-efficacy**

Figure 19 shows regional differences. Children in the North believe that they are more capable than children in the South, in particular for 2021–22 where more children, 8 Percentage Points more, responded in the green zone in the North than the South. This was consistent across both time periods analysed, but it will need to be monitored further to determine whether this is a longer-term trend.

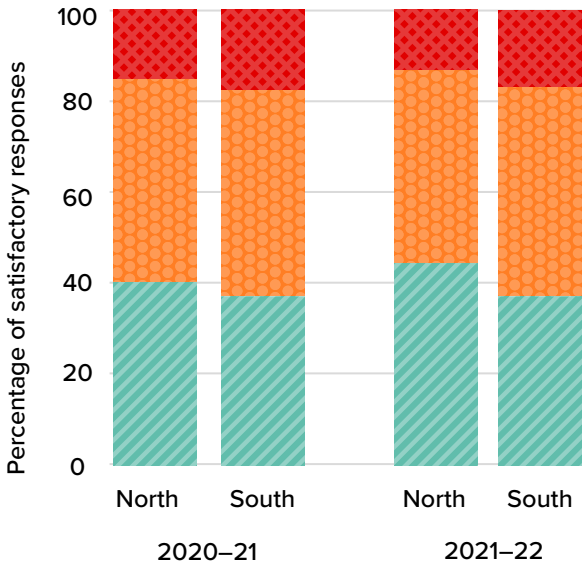
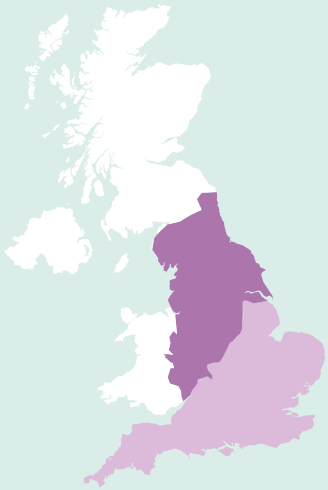


Figure 19: Change in zone distribution by region over time for self-efficacy

The lower proportions responding with satisfactory answers for self-efficacy indicates this is an area in need of improvement for children throughout Key Stage 2. All children could benefit from taking part in strategies to improve self-efficacy. Although it is difficult to attribute the drop in self-efficacy to the pandemic alone, it is likely to be part of the reason for the reduction in satisfactory responses since the 2018 trial. Fewer children feel capable of managing challenging and difficult situations than before the pandemic. This may be driven by the isolation from peers that occurred during lockdown, as peer-modelling of success is thought to influence perceptions of self-efficacy. Some strategies that can be used to improve self-efficacy in a school context include focusing on strengths, setting achievable goals, sharing positive academic experiences and learning relaxation techniques for when children feel overwhelmed.

Children in the North report greater **self-efficacy** than children in the South of England



Resilience and persistence

Resilience and persistence explores how well children respond to both success and failure in a school setting and the emotions that are associated with both experiences. Figure 20 shows how the zone distribution of children's responses to questions about resilience and persistence have changed over time. As we have seen in the other dimensions, Year 3 shows the highest proportion of children with satisfactory responses, and Year 6 shows the lowest proportion.

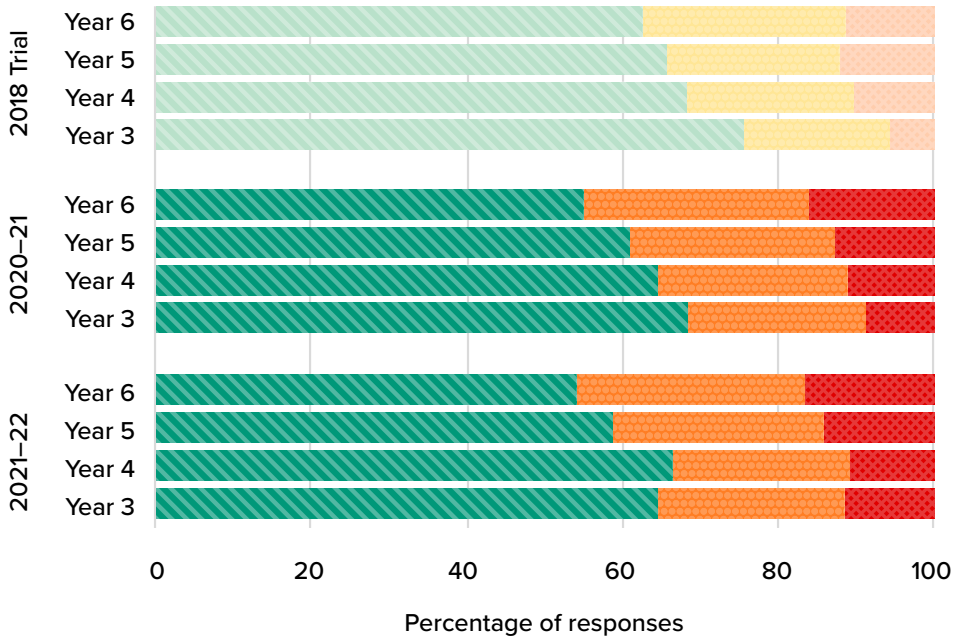


Figure 20: Change in zone distribution between year groups over time for resilience and persistence

Example question:

"If my schoolwork isn't right I keep trying until I fix it."

"If something doesn't work out right, I still believe in myself."

Figure 21 shows that the largest change was from the 2018 trial period to 2021–22, with only small differences across Key Stage 2 between the 2020–21 and 2021–22 periods. Considering the impact for each year group individually, both Year 3 and Year 6 showed fewer children reporting they feel resilient to academic stresses at school since the trial, although Year 3 dropped by more than Year 6 (11 Percentage Points compared to 8 Percentage Points). The fluctuations in Year 4 did not show a consistent trend across the three periods analysed.

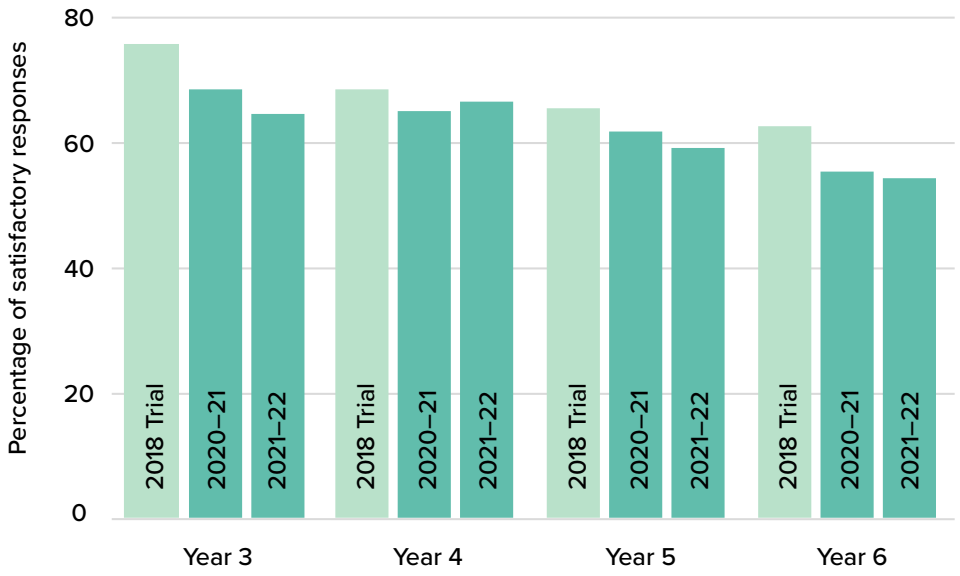


Figure 21: Change in green zone distribution over time by year groups for resilience and persistence

When it comes to gender, as seen in the motivation and positivity dimensions, girls have a higher proportion of responses in the green zone than boys both in the 2018 trial and in 2020–21. However, by 2021–22 the gap of 7 Percentage Points between the genders seen in the trial was largely eradicated. This is shown in Figure 22.

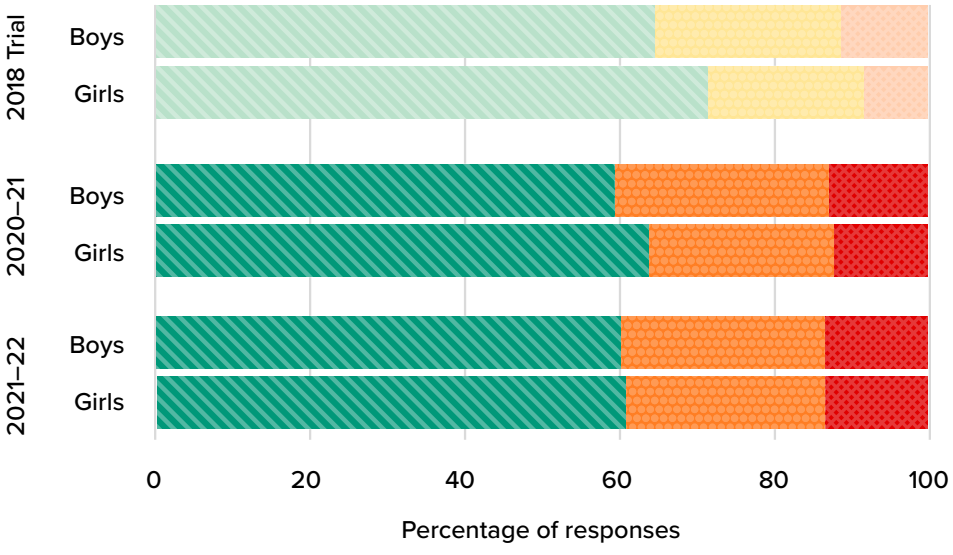


Figure 22: Change in zone distribution between gender over time for resilience and persistence

Across all years, more girls report feelings of **resilience and persistence** than boys, though the gap is closing

Figure 23 more clearly shows that over time the proportion of boys answering that they feel resilient fell initially and then increased very slightly. By comparison, the drop in the proportion of girls who felt resilient at school fell further, dropping by 11 Percentage Points between the 2018 trial and 2021–22.

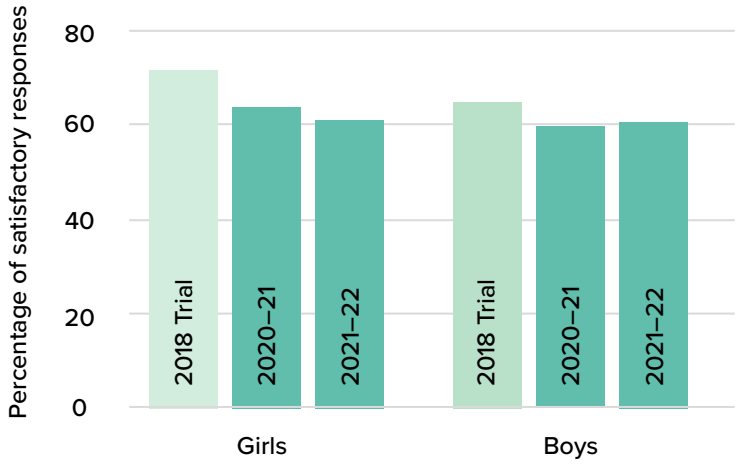


Figure 23: Change in green zone distribution over time by gender for resilience and persistence

Figure 24 shows the difference in distribution of responses between children at schools with different levels of disadvantage. As with the other dimensions, the differences between the types of schools were not large and did not show any consistent trends.

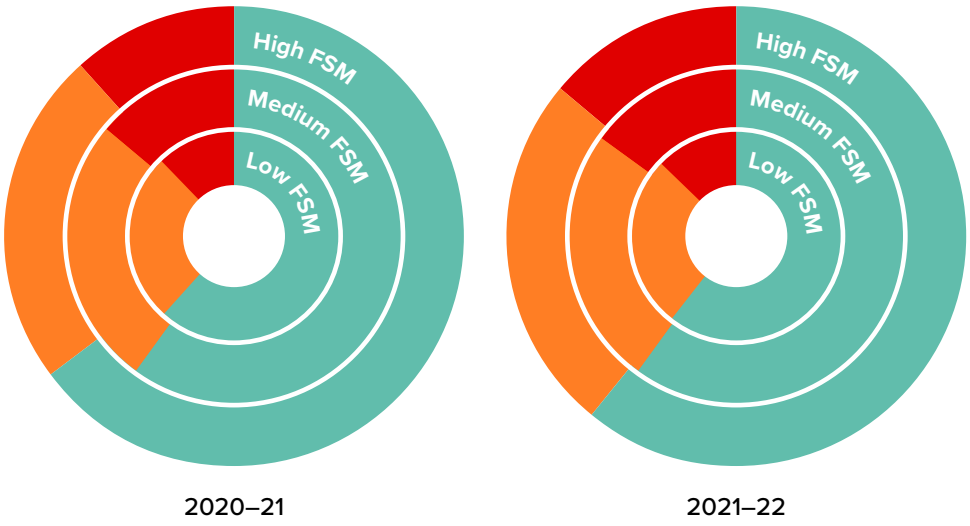
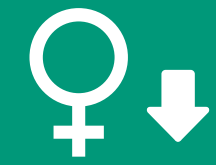


Figure 24: Change in zone distribution by disadvantage over time for resilience and persistence



Girls' **resilience and persistence** has dropped more than boys' in recent years

Free school meals
There are no clear trends between disadvantage and **resilience and persistence**

Figure 25 shows differences by region. As with the other dimensions, higher proportions of children in the North gave satisfactory responses in the resilience and persistence dimension compared to their peers in the South. Furthermore, this gap appears to be widening. During the most recent period, the difference in the proportions of children indicating they feel resilient is 6 Percentage Points.

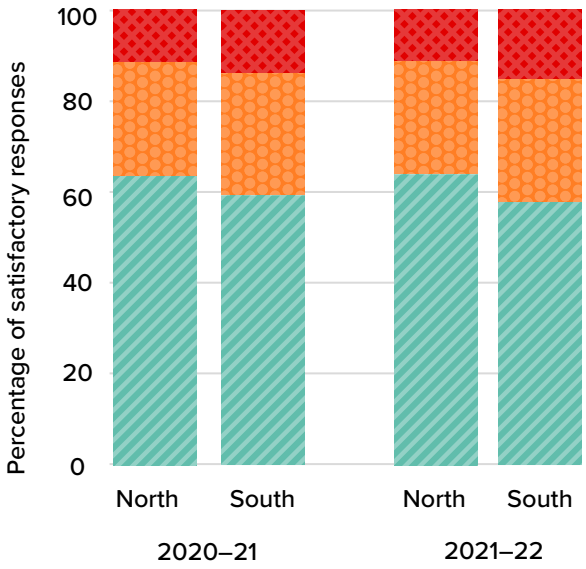
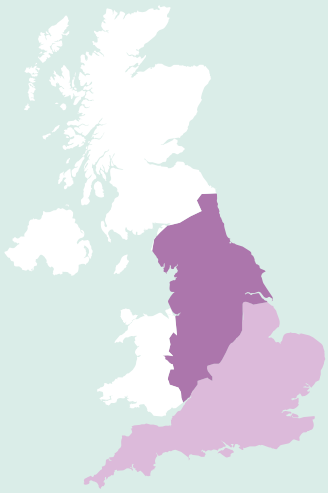


Figure 25: Change in zone distribution by region over time for resilience and persistence

The proportions of satisfactory responses for resilience and persistence were high regardless of whether children were grouped by geography, gender, school year or disadvantage level. Although there has been a decrease in children feeling resilient since the 2018 trial, changes between the last two school years were small and it is not currently possible to identify a clear trend. Resilience and persistence can be improved by teaching children relaxation techniques and by developing secure relationships and a nurturing culture at school.

Children in the North report greater **resilience and persistence** than children in the South of England



Conclusion

Although the majority of children provide satisfactory responses to questions about motivation, positivity and resilience and persistence, self-efficacy (the perception that they are capable of learning or performing to a particular standard) appears to be something that many children feel vulnerable about. This is apparent across all school years and in all areas of England. Across all dimensions, the proportions of children reporting satisfactory scores were lower in the 2020–21 and 2021–22 school years than the pre-pandemic trial in 2018.

Self-efficacy was the dimension with the lowest proportion of children reporting satisfactory scores prior to the pandemic, and had the largest drop over time which means that now the majority of children surveyed feel some vulnerability about their capability to learn. This implies that while self-efficacy in general appears to be an area that requires additional attention in schools. The large reduction itself may be an impact of the pandemic and caused by the extended periods of time children spent home-learning learning isolated from peer role models. If this is the case then it is a temporary trend that will improve over time. However, strategies should be put into place in schools to improve this.

It is important to maintain a high level of satisfaction across all dimensions, to ensure that children are satisfied in their school environment and motivated to learn. To do this, the difference between the school years and boys and girls is also something that needs to be monitored at a class level. This will help to ensure all children in a school are thriving and to help them reach their long-term academic potential in Key Stage 2 and beyond.

“ ...there may be children that have all green areas at one stage of the year and then it might pick up that they’re moving to amber or red... [this could be] an early warning sign for us and a point to put in some intervention sooner. ”

- Andrew Darlington, Associate Headteacher, Lime Tree Primary Academy

Appendix

About us

RS Assessment from Hodder Education, is a leading provider of assessments, surveys and diagnostic profilers for Early Years through to KS3 and beyond. In addition to providing the Wellbeing and Attitudes to Learning Survey and Strategies its standardised termly tests – GAPS, PIRA, PUMA and NTS Assessments – are trusted by more than 6,000 primary schools to accurately measure and predict pupil progress.

SchoolDash is an education data analytics company, providing dashboards, maps, analysis and other statistics about schools in England.

Nottingham Trent University is the Times and Sunday Times Modern University of the Year (2023) with six campuses across Nottingham, Nottinghamshire and London supporting more than 33,000 students.

About the report

In considering differences between groups of schools or pupils it is important to bear in mind that the variation within each group is invariably much greater than any differences between groups. As a result, simply knowing (for example) the region in which a pupil attends school, or the percentage of children receiving free school meals at their school, provides little indication about his or her academic wellbeing. Nevertheless, these aggregate trends are important in understanding our education system, and we hope that they prove useful.

We have previously analysed aggregate, anonymous attainment test data to reveal national trends across schools in England, including variations by pupil age, season of birth and gender, as well as by subject and even individual topics within each subject. See **risingstars-uk.com/nuffield** for these previous analyses. To protect the confidentiality of the institutions and individuals concerned, results have been analysed and presented in an anonymised, aggregate form.

All data has been processed in line with the *Wellbeing and Attitudes to Learning* terms and conditions, which can be found at **risingstars-uk.com/wellbeing-terms-and-conditions**.

Background to Wellbeing and Attitudes to Learning: Survey and Strategies

In 2012, the Department for Education in the UK published research[6] that examined how dimensions of children's wellbeing at ages 7–13 are linked to concurrent and later educational outcomes at ages 11–16. They found that children with higher levels of emotional, behavioural, social and school wellbeing, have higher levels of academic achievement and are more engaged in school, on average.

[6] L. Morrison Gutman & J. Vorhaus, (29th November 2012), *"The Impact of Pupil Behaviour and Wellbeing on Educational Outcomes"*, Department for Education, UK Government, https://www.gov.uk/government/publications/the-impact-of-pupil-behaviour-and-wellbeing-on-educational-outcomes.

Improving academic attainment goes hand in hand with improving and monitoring pupil wellbeing. As a result, RS Assessment worked with Coventry and Nottingham Trent Universities to design a product to focus on those children in upper primary who were aged 7–11, with the aim of supporting their wellbeing at school and thus positively impacting their academic attainment in the future. The *Wellbeing and Attitudes to Learning: Survey and Strategies* was launched in 2019 and the product is made up of a pupil survey, reporting and evidence-based strategies. The survey looks at pupils' positivity, motivation, self-efficacy and resilience and persistence, and each dimension is comprised of multiple sub-dimensions, bar resilience and persistence. For every sub-dimension there are either three or four survey items with five responses on a scale from strongly disagree to strongly agree. A child's score for each of the sub-dimensions is the mean of all the corresponding item responses. The dimension score is the mean of the subdimension scores.

The survey was trialled on a representative sample in spring 2018 (see page 24), and based on the data collected three zones were derived: red, amber and green zones. For every dimension, each pupil's mean score can be allocated to one of these three zones. Responses which fall in the green zone indicate satisfactory responses, amber indicate some vulnerability and red a cause for concern. These zones allow teachers to identify the different wellbeing needs in their school. It allows them see how their pupils' scores compare relative to our sample of schools, as well as allowing them to look at how their year groups or classes compare, and how pupils compare relative to one another.

Positivity dimension background

Overall, research[7] shows that the dimension of **positivity** is critically significant to pupil wellbeing and pivotal in pupil adjustment to their academic experience. The more positive children are the better the overall **school (class) climate** is found to be, and the better a school climate is the more positive pupils become. In this way children's positivity helps to create a learning environment that will benefit all pupils at school.

Other aspects of the positivity dimension include **self-esteem** which has been included as a key positive impact in socio-emotional learning programmes and is associated with adaptability, and **school belonging**. **Optimism**, which mediates the relationship between anxiety and learning strategies, is associated with higher achievement and, more broadly, promotes positive pupil outcomes. The last aspect is **satisfaction**, which is associated with adaptability, goals and self-efficacy.

Motivation dimension background

Motivation is important in relation to learning activities, academic performance and adjustment and wellbeing. In the survey, children answer questions about task value (**support**), their **intrinsic motivation** (when behaviour is driven by genuine enjoyment of a task) and **extrinsic motivation** (when behaviour is driven by rewards and appreciation) in the context of academic achievement.

[7] A select bibliography of the research used to construct the Wellbeing survey can be found at https://www.risingstars-uk.com/nuffield-project and additional research can be found in C Wood, C Tramontano, S Hemsley, (2022), *"Self-efficacy in the Classroom: The Roles of Motivation, Positivity and Resilience"*, In: MS Khine, T Nielsen (eds), Academic Self-efficacy in Education, Springer, Singapore.

Motivation is a complex psychological construct related to aspects from the other dimensions, such as the learner's perception of likely success or failure, which is linked to the positivity dimension, and their perceived autonomy which falls under self-efficacy.

Self-efficacy dimension background

Self-efficacy has been largely linked to achievement and performance, with a focus on domains such as self-regulated learning. However, our research also highlights the importance of positive and negative emotions, as well as the importance of interpersonal relationships in school life. Therefore, pupils are not only required to manage their academic tasks and learning activities (**academic self-efficacy**), but to also manage the positive and negative emotions elicited by academic life – their **emotional self-efficacy** – as well as the relationships with teachers, peers and parents – their social / **interpersonal self-efficacy**.

These three sets of self-efficacy beliefs, academic, emotional and interpersonal, don't necessarily move together, and it is likely children will perceive themselves as differently self-efficacious, thus highlighting the need for tailored actions and tailored questions when the survey was developed.

Resilience and Persistence dimension background

Resilience and persistence is a complex concept as it is not just an internal personality trait, but for the purposes of the survey it is operationalised as how well children respond to academic success and failure, and the emotions that are associated with both experiences. It is relevant to both pupils' educational experiences and their wellbeing. This is a singular dimension with no associated sub-dimensions.

Coverage and representativeness of survey responses

The analysis presented here was is conducted on a sample of mainstream state primary schools in England. For us to have confidence in our statistical analysis it is vital we have a large and representative enough sample. For this reason, for any analysis of pupil, regional or school groups the minimum number of survey responses in any group was 1000.

The trial was conducted in 2018 and the wellbeing survey was launched in December 2019, due to the school closures caused by the pandemic the data for the 2019–20 period was too small to be used in this analysis.

The trial was carried out with a nationally representative sample of approximately 4,000 pupils in 25 schools in 2018, these results have been used as a benchmark to compare with the 2020–21 cohort of 10,000 pupils at 65 schools and the 2021–22 cohort of 8,000 pupils at 55 schools. Representativeness and coverage analysis involved looking at school types, regional distribution, KS2 attainment, disadvantage, gender and age distribution. An analysis of the types of schools included in 2020–21 and 2021–22 was similar. For these two

periods, similar proportions of children were represented in regions, Key Stage 2 attainment and disadvantage levels and major school types were included. The 2018 trial data included a slightly different distribution of schools from a regional and disadvantage perspective, however it contained similar proportions of girls and boys and children in Years 3–6 to the 2020–21 and 2021–22 datasets. The greatest difference between the three datasets was that the 2020–21 and 2021–22 periods contained a higher proportion of children reaching the expected standard in reading, maths and writing in the 2019 National Tests (the most recently available at school level) than the 2018 trial period. To check the impact of this, additional analysis was conducted where the data was reweighted to reduce the impact of children attending schools with higher-than-expected Key Stage 2 attainment. This analysis did not change any of the conclusions that could be drawn from the data and since all the other metrics we reviewed were in line with national averages, and each time period includes a sufficiently large number of pupils (over 3,000 pupils), the overall differences were considered sufficiently small to allow for a comparison of trends between the 2018 trial data and the unadjusted data collected from schools between 2020 and 2022.

Some caution must nevertheless be applied when comparing the datasets given the different circumstances the data was collected under and the composition of the cohorts. For this reason, the trial data is displayed separately through this report, and it is recommended to use it solely as an indicative pre-pandemic benchmark to look at trends in particular when considering gender and age.

This report analyses data collected over the course of a short period of time during which there was disruption in learning due to national lockdowns. Therefore although it gives us some insight into how children across England who took the *Wellbeing and Attitudes to Learning* survey feel about their academic wellbeing, we recommend contextualising these results in the wider context of other similar reports and the overall national picture.

Inclusion Criteria

For the 2018 trial, children only completed the survey once. For the 2020–21 and 2021–22 periods some children had taken the survey multiple times so we only included the first fully completed survey taken by a child in each academic year. A child's response to the wellbeing survey can vary depending on many external factors not measured by the survey, including the time of year the survey is completed and how a child may be feeling on a particular day. The entire academic year was aggregated in the analysis to generate a sufficiently large sample size for sub-group analysis, and predominantly to mitigate the impact of fluctuations that could be caused by this. The impact of termly fluctuations was checked by analysing the percentage of children moving between the three zones each term. Since they were small (a fluctuation of 1.67 Percentage Points on average between the zones) it was considered acceptable to group the three school terms into one academic year. This level of fluctuation is what has informed the threshold for what we consider a large change in the data (greater than 5 Percentage Points).

Dimensions and Sub-dimensions

Pearson Correlation between dimensions shows moderate (values between 0.5 and 0.7) to strong correlation (values greater than 0.7) between dimensions as can be seen in Figure 26. Analysis of Variance (ANOVA) demonstrated highly significant results for each dimension which means that although the dimensions are correlated, they are significantly different from one another. Additionally, Pearson correlation between subdimensions and the dimensions they build up into showed a strong positive correlation which is what we would expect given the survey design.

	Dimension			
Dimension	Positivity	Motivation	Self-efficacy	Resilience
Positivity	1.0	0.7	0.6	0.7
Motivation	0.7	1.0	0.5	0.6
Self-efficacy	0.6	0.5	1.0	0.6
Resilience and Persistence	0.7	0.6	0.6	1.0

Figure 26: Pearson correlation table showing correlations between dimensions in the wellbeing survey

Additional data from prior research reports (white papers), such as children's attainment over time, can be accessed through an online dashboard. For more information about our research please visit: **risingstars-uk.com/nuffield**.

Acknowledgements

We would like to thank our Advisory Board for their comments and advice during the writing of this report.

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. It also funds student programmes that provide opportunities for young people to develop skills in quantitative and scientific methods. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation.
www.nuffieldfoundation.org

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