

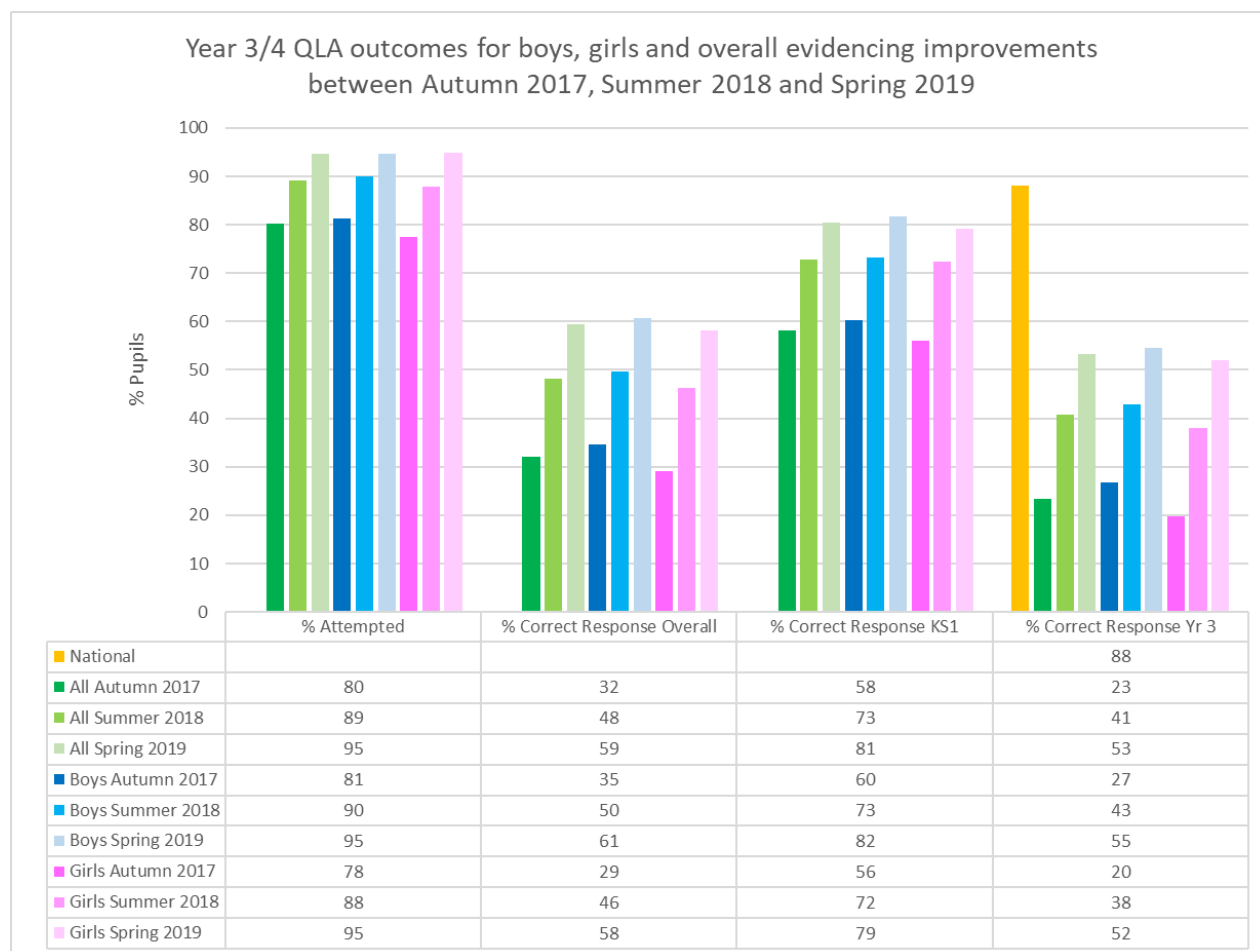
## Sheringham Teaching School SSIF Project: An analysis of the impact of the project in improving outcomes/diminishing the gender gap for girls in mathematics between Autumn 2017 and Spring 2019.

### Analysis:

- Pupils in Year 3 and Year 5 completed the same mathematics paper three times. Once as an initial baseline assessment in the Autumn term 2017, a second time in the Summer term 2018 and finally in the Spring term 2019 where the pupils moved on to be working in the year group above.
- The mathematics paper contained a range of past SATS questions with a similar weighting across strands as published in the KS2 Mathematics Test Framework for test developers published for the National Curriculum Tests in 2016.
- A full question level analysis was completed for all pupils, boys and girls.
- Summary documents and knowledge of the national average for each question (sourced from the Question Level Analyses held in the DfE's Analysing School Performance (ASP) enabled direct comparison between schools, all pupils, boys and girls and also against national averages where they are available.
- The report below analyses pupils' outcomes in the mathematics test referred to above across the duration of the project to determine the impact of the project on girls in mathematics. It does not seek to directly attribute improvements to the project but to provide factual evidence of improvements within these 2 cohorts of pupils.
- Further evidence of the impact of the project could be obtained by comparing the SATs results for the current Year 6 involved within the project (when taken in the week commencing 13<sup>th</sup> May 2019 and published on 9<sup>th</sup> July 2019) to Norfolk and National outcomes.

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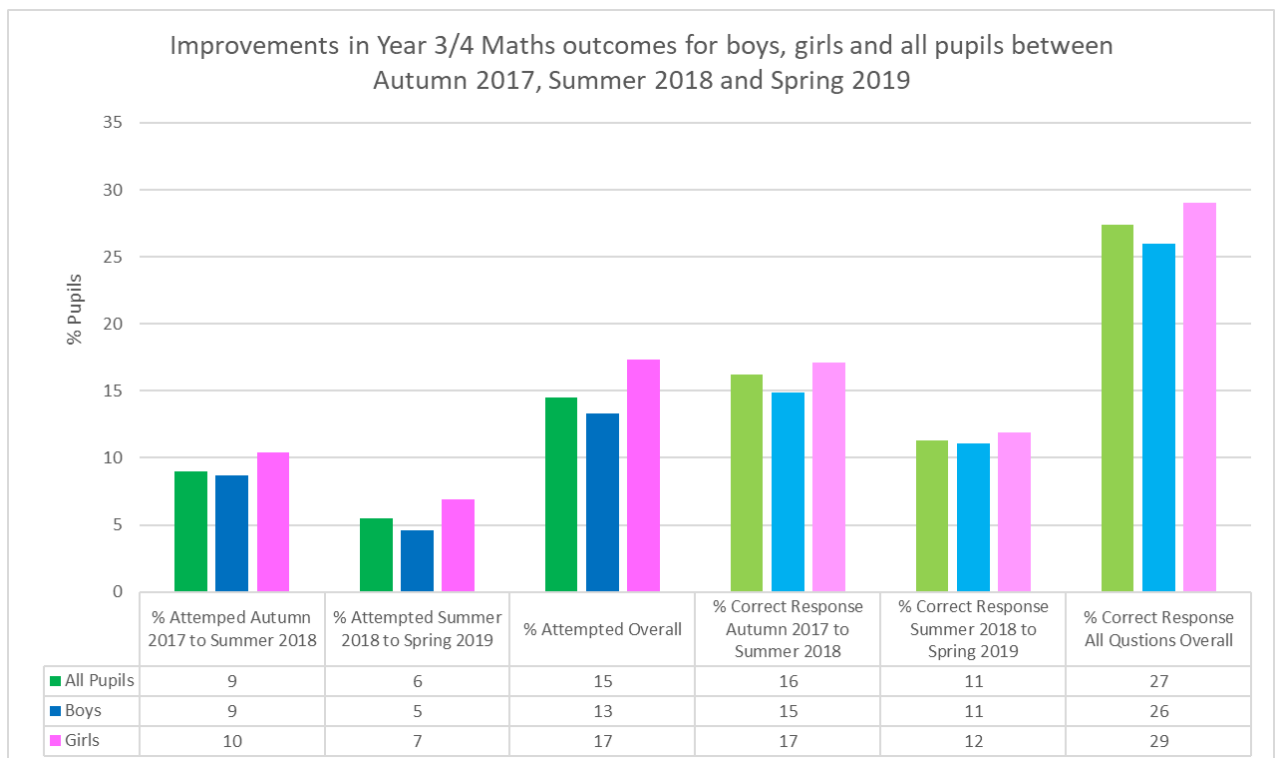
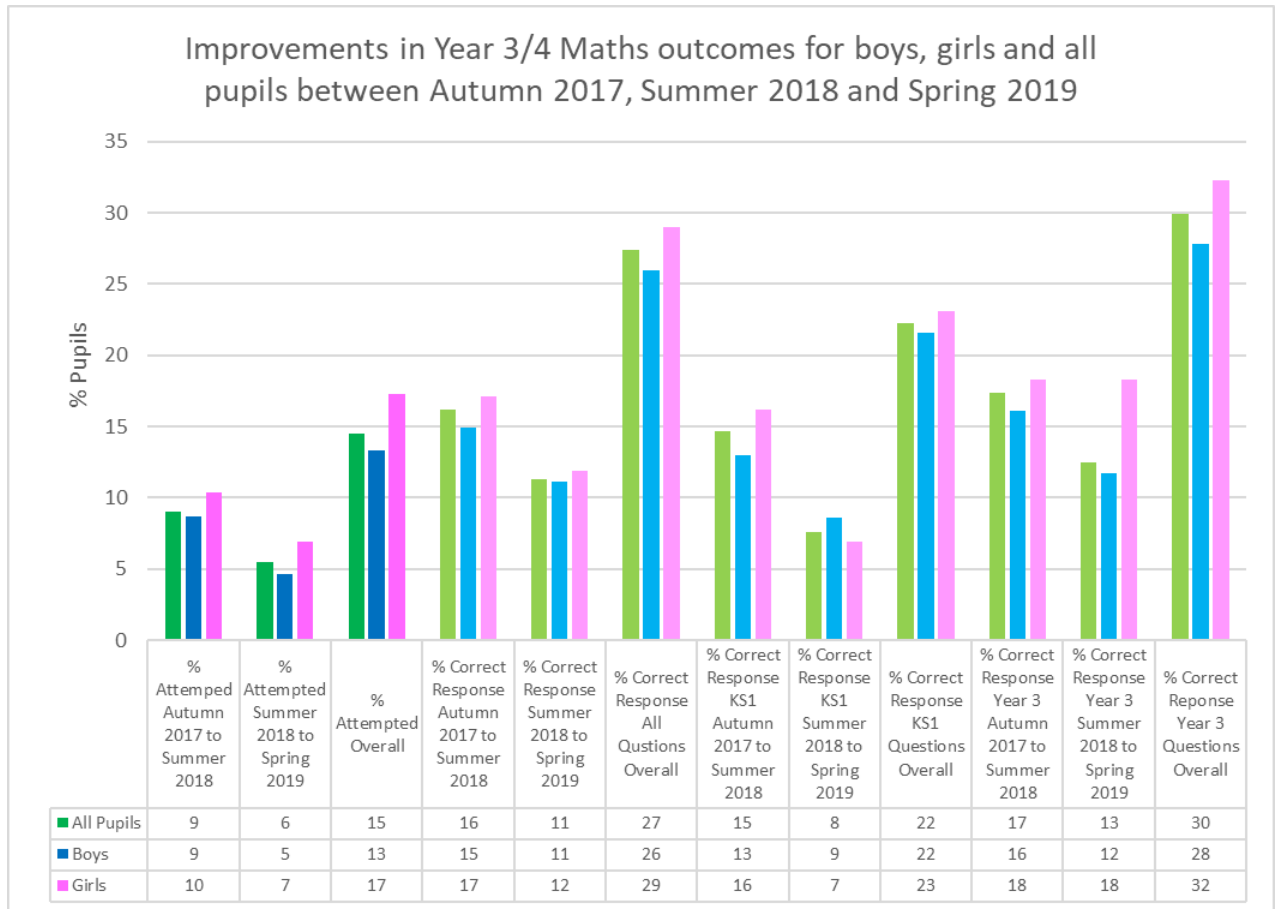
## Year 3/4



### Findings for the 1181 Year 3/4 pupils captured within the project:

- Over the duration of the project, the average proportion of pupils attempting questions improved from 80% in Autumn 2017 to 95% in Spring 2019.
- The improvement in the proportion of pupils attempting questions was stronger for girls, who had lower starting points resulting in even parity at the end of the project.
- The overall proportion of pupils achieving correct responses improved by 29%. From a low baseline of 32% in Autumn 2017.
- Boys continue to outperform girls in terms of correct responses by 3% overall, by 3% on the KS1 questions and by 3% on the Year 3 questions.
- However, the average starting point for girls overall was 6% lower than for boys and stronger overall improvements for girls in comparison to boys, especially in answering the Year 3 questions, reduced this significant gap to 3% during the duration of the project.
- The proportion of pupils achieving the correct responses although improving solidly overall, remains 35% below the national end of Year 6 KS2 SATs average.

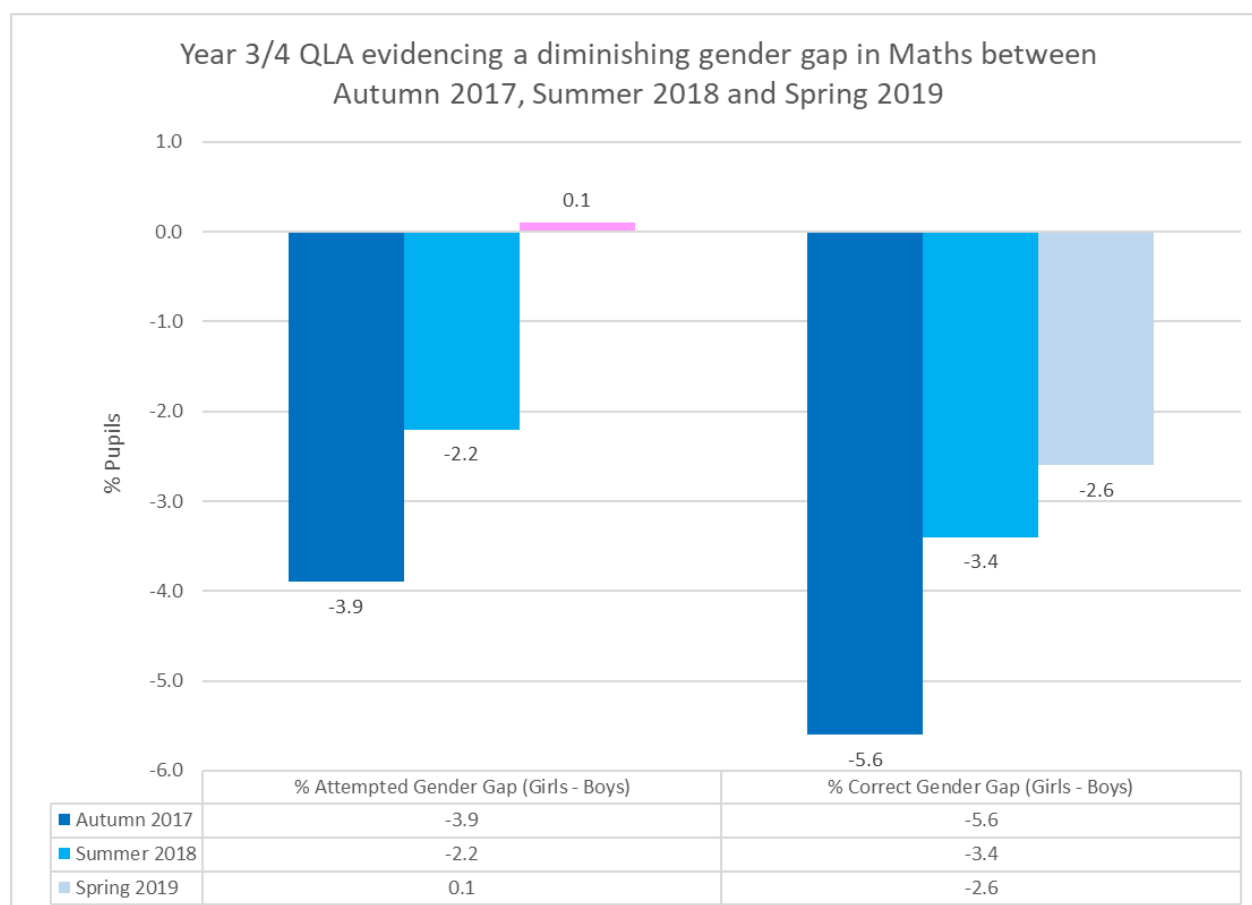
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### Analysis of improvements in Year 3/4:

- During the course of the project, the proportion of girls attempting questions improved more than that of boys between Autumn 2017 and Summer 2018, Summer 2018 and Spring 2019 and therefore across the whole period of the project.
- The proportion of girls achieving correct responses also improved more than that of boys between Autumn 2017 and Summer 2018 and to a slightly lesser degree between Summer 2018 and Spring 2019, this time period being shorter.
- Girls improvement in correct responses was stronger than boys over both periods overall for all questions, for KS1 questions and for Year 3 questions. The only exception to this was between Summer 2018 to Spring 2019 where boys made slightly stronger improvements in their correct responses to KS1 questions.

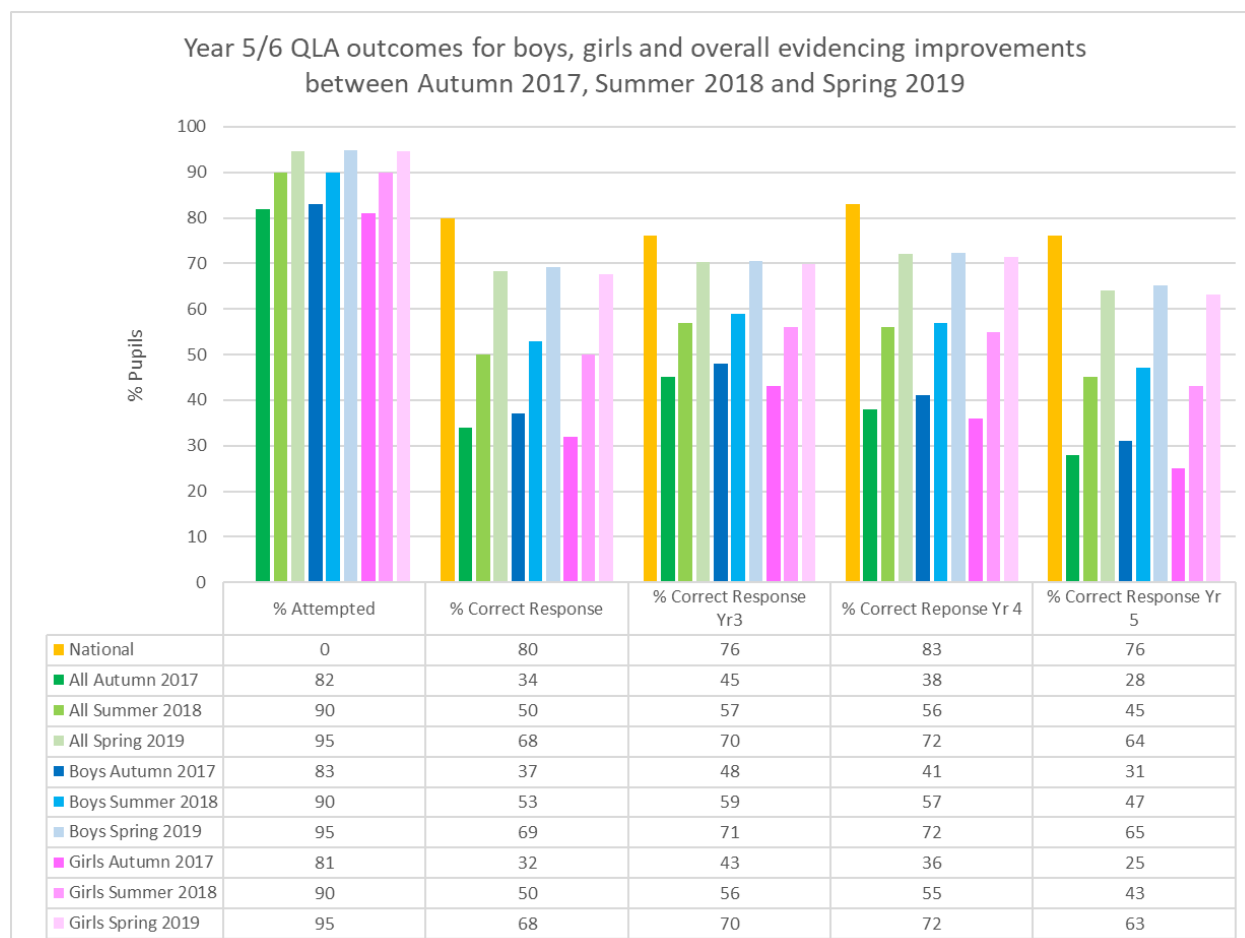


### Analysis of the gender gap in mathematics for Year 3/4:

- At the start of the project there was a 3.9% gender gap in favour of boys in terms of the proportions of pupils attempting questions. This gap closed incrementally during the course of the project to 0.1% in favour of girls at the end of the project.
- Autumn 2017 initial assessments indicated that the proportion of boys achieving correct responses was 5.6% higher than that of girls. This gap also diminished incrementally during the course of the project to 2.6%, girls improving 3.0% more than boys.

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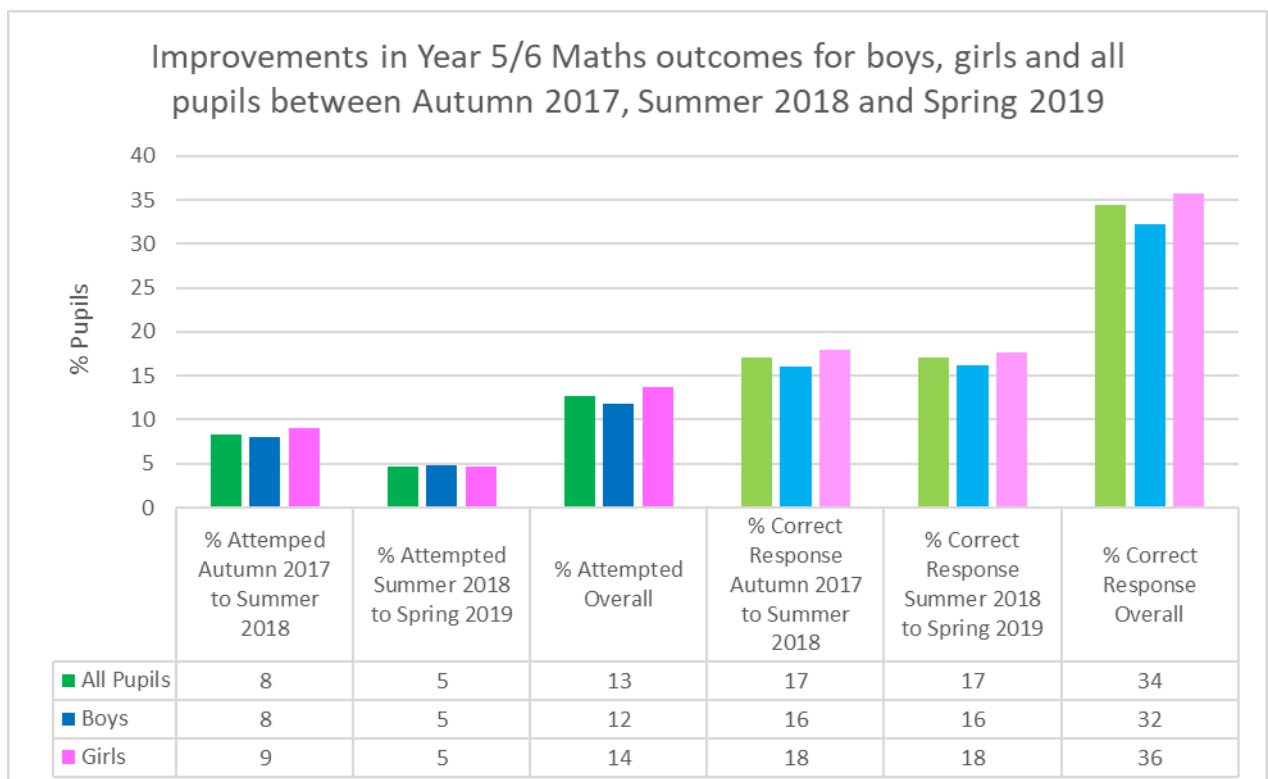
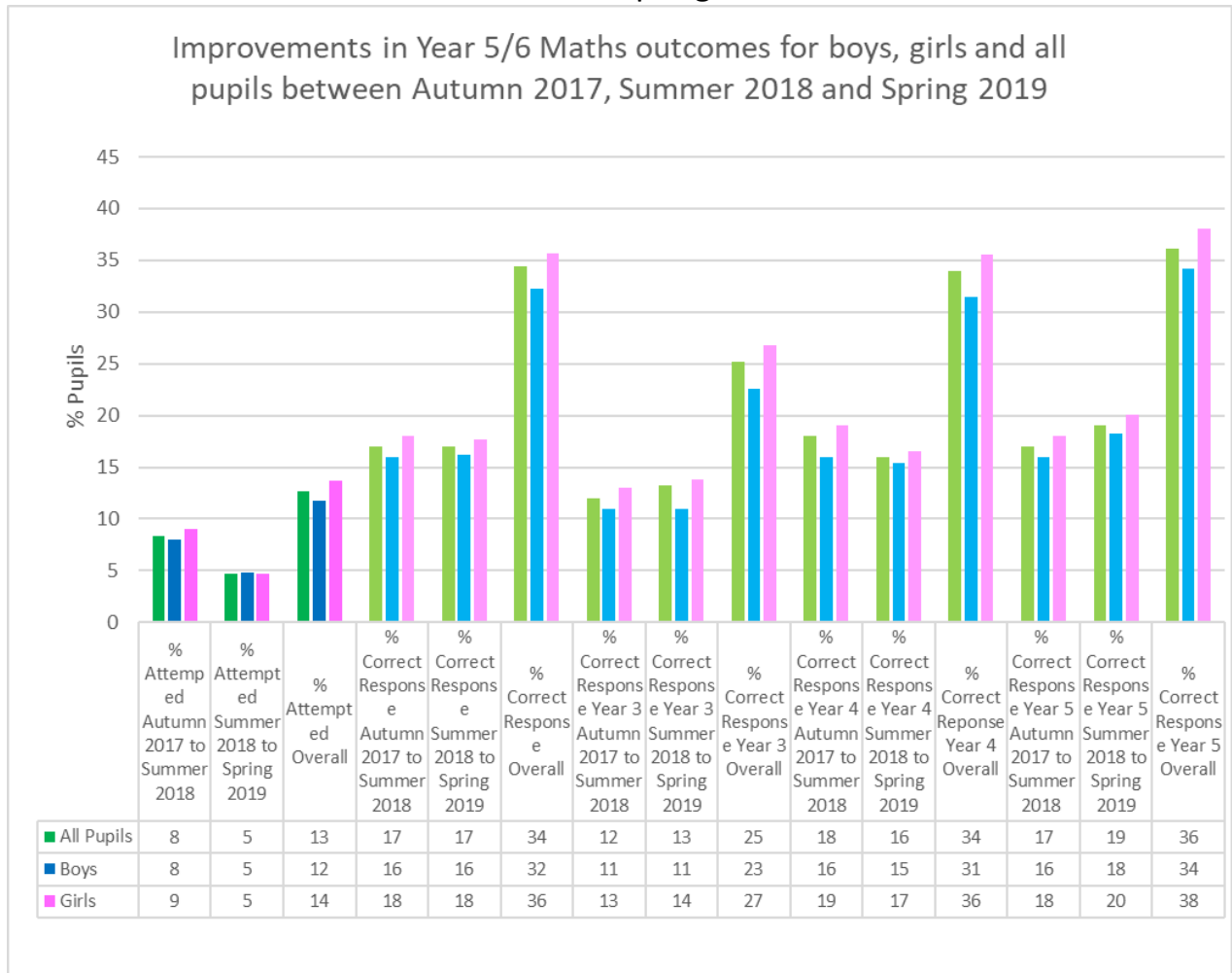
## Year 5/6



### Findings for the 1290 Year 5/6 pupils captured within the project:

- Over the duration of the project, the average proportion of pupils attempting questions improved from 82% in Autumn 2017 to 95% in Spring 2019.
- The improvement in the proportion of pupils attempting questions was slightly stronger for girls, who had lower starting points resulting in even parity at the end of the project.
- The overall proportion of pupils achieving correct responses doubled from a very low baseline of 34% in Autumn 2017 to 68% in Spring 2018. Despite this strong improvement, the proportion of pupils achieving correct responses remained 12% below the national average of 80% in these questions albeit at the end of Year 6 within children's SATs. This is a significant gap for schools to close with limited time (approximately one term) remaining before this Year 6 are due to take their SATs.
- Boys continue to outperform girls in terms of correct responses by 1% overall and by 2% in the Year 5 questions. However, there was parity between boys and girls in terms of correct responses for both the Year 4 and Year 3 questions.
- At the start of the project, there was a 5% gender gap in favour of boys' correct responses. Stronger overall improvement for girls in comparison to boys is evidenced in a significant reduction in the gender gap to 1% at the end of the project.

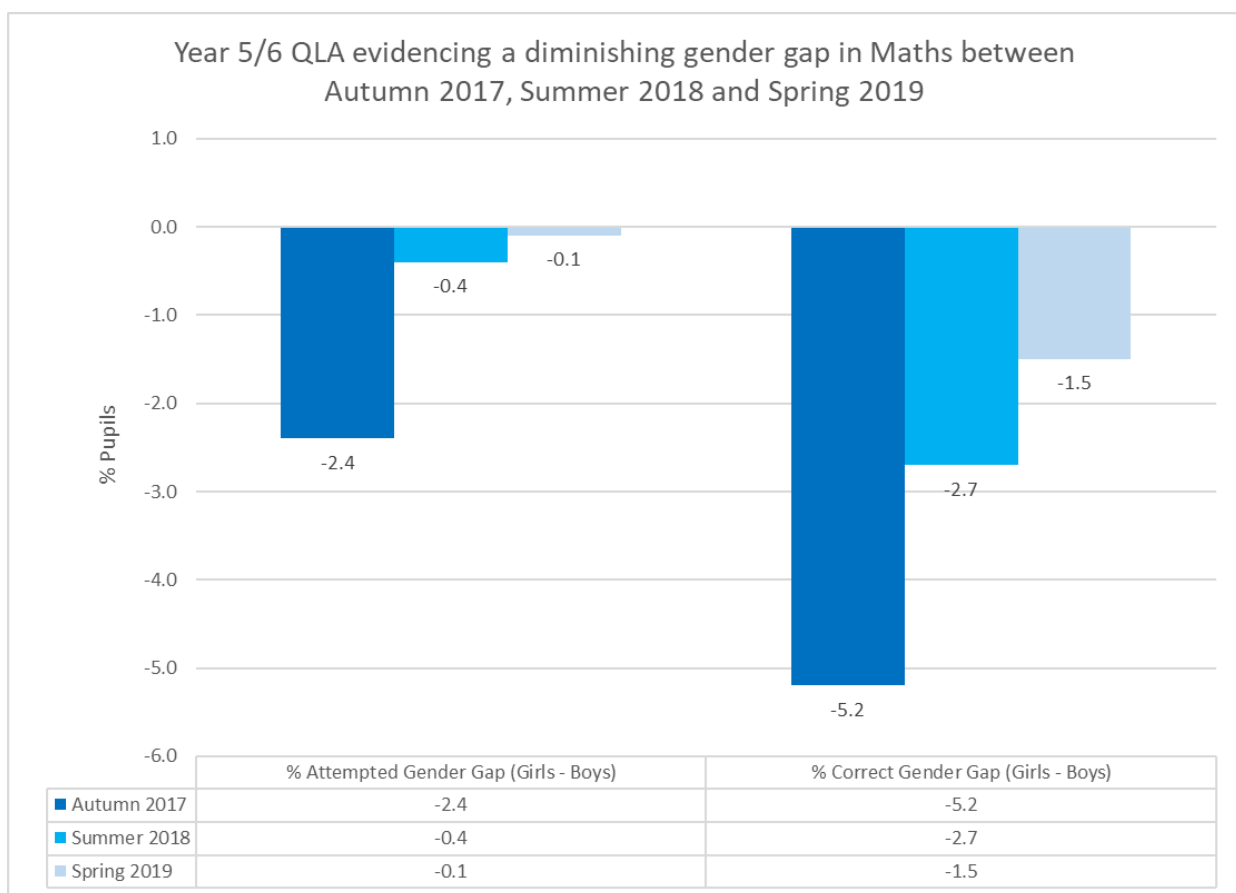
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Analysis of improvements in Year 5/6:

- During the course of the project, the proportion of girls attempting questions improved slightly more than that of boys overall due to stronger improvements for girls between Autumn 2017 and Summer 2018. Between Summer 2018 and Spring 2019 both boys and girls made similar improvements in the proportions of pupils attempting questions.
- The proportion of girls achieving correct responses improved more than that of boys between Autumn 2017 and Summer 2018 and to a slightly lesser degree between Summer 2018 and Spring 2019, this time period being shorter.
- Girls improvement in correct responses was stronger than boys over both periods overall for all questions, Year 3 questions, Year 4 questions and Year 5 questions.
- These stronger improvements for girls providing evidence of the success of the project in closing the gender gap between boys and girls in mathematics.



Analysis of the gender gap in mathematics for Year 5/6:

- At the start of the project there was a 2.4% gender gap in favour of boys in terms of the proportions of pupils attempting questions. This gap closed incrementally during the course of the project to -0.1% in favour of boys, evidencing a stronger improvement for girls in terms of attempting questions. .
- Autumn 2017 initial assessments indicated that the proportion of boys achieving correct responses was 5.2% higher than that of girls. This gap also diminished incrementally during the course of the project to 1.5%, girls improving 3.7% more than boys.

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Appendix A: QLA capturing the proportions of correct responses by question compared to the national average for the question where the gap is 10% or lower and ordered with the largest gap first.

Year 3 Boys:

Question Number	Year Group	Mark value	PoS Objective	Content Strand	Project Difference to National
24	4	1	Multiply or divide whole numbers and decimals by 10, 100, 1000	N & NS	-62%
22	3	1	Write and calculate multiplication and division statements for two digits by one digit	N & NS	-56%
28	3	1	Calculate mathematical statements for multiplication using multiplication tables that they know, including two digit numbers times one digit numbers	N & NS	-55%
25	3	1	Solve problems including missing number problems, multiplication and division	N & NS	-54%
19	3	1	Divide two digit by a one digit number	N & NS	-50%
23	4	1	Multiply numbers mentally drawing upon known facts	N & NS	-48%
20	3 3	2	Add and subtract numbers mentally with up to three digits Solve problems including missing number problems	N & NS	-46%
27	3	2	Show using diagrams equivalent fractions with small denominators	G	-42%
17	3	1	Add numbers with up to three digits	N & NS	-39%
13	3	1	Write and calculate multiplication and division statements for two digits by one digit	N & NS	-38%
14	3	1	Add or subtract mentally with 3 digit numbers, ones, tens, hundreds	N & NS	-36%
21	3	1	Find 10, 100 1,000 more or less than a given number	N & NS	-26%
15	3	1	Add or subtract mentally with 3 digit numbers, ones, tens, hundreds	N & NS	-23%
10	3	1	Subtract numbers mentally including a three digit number and ones	N & NS	-23%
11	3	2	Round any numbers to the nearest 10, 100 or 1000. Compare and order numbers up to 1000	N & NS	-23%
16	3	1	Identify horizontal, vertical, pairs of perpendicular and parallel lines	G	-20%
9	3	1	Add numbers with up to three digits	N & NS	-19%
12	3	1	Find 10 or 100 more or less than a given number Add numbers mentally including a three digit number and hundreds	N & NS	-18%
26	3	1	Solve problems including missing number problems, using number facts, place value and more complex addition and subtraction	NS	-16%
18	3	1	Subtract numbers mentally including a three digit number and tens	N & NS	-15%



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Year 3 Girls:

Question Number	Year Group	Mark value	PoS Objective	Content Strand	Project Difference to National
24	4	1	Multiply or divide whole numbers and decimals by 10, 100, 1000	N & NS	-63%
22	3	1	Write and calculate multiplication and division statements for two digits by one digit	N & NS	-59%
28	3	1	Calculate mathematical statements for multiplication using multiplication tables that they know, including two digit numbers times one digit numbers	N & NS	-56%
23	4	1	Multiply numbers mentally drawing upon known facts	N & NS	-55%
25	3	1	Solve problems including missing number problems, multiplication and division	N & NS	-52%
19	3	1	Divide two digit by a one digit number	N & NS	-47%
20	3 3	2	Add and subtract numbers mentally with up to three digits Solve problems including missing number problems	N & NS	-46%
27	3	2	Show using diagrams equivalent fractions with small denominators	G	-44%
14	3	1	Add or subtract mentally with 3 digit numbers, ones, tens, hundreds	N & NS	-41%
13	3	1	Write and calculate multiplication and division statements for two digits by one digit	N & NS	-36%
17	3	1	Add numbers with up to three digits	N & NS	-34%
15	3	1	Add or subtract mentally with 3 digit numbers, ones, tens, hundreds	N & NS	-34%
11	3	2	Round any numbers to the nearest 10, 100 or 1000. Compare and order numbers up to 1000	N & NS	-32%
10	3	1	Subtract numbers mentally including a three digit number and ones	N & NS	-32%
21	3	1	Find 10, 100 1,000 more or less than a given number	N & NS	-27%
12	3	1	Find 10 or 100 more or less than a given number Add numbers mentally including a three digit number and hundreds	N & NS	-25%
18	3	1	Subtract numbers mentally including a three digit number and tens	N & NS	-21%
9	3	1	Add numbers with up to three digits	N & NS	-20%
16	3	1	Identify horizontal, vertical, pairs of perpendicular and parallel lines	G	-19%
26	3	1	Solve problems including missing number problems, using number facts, place value and more complex addition and subtraction	NS	-18%

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Year 5 Boys:

Question Number	Year Group	Mark value	PoS Objective	Content Strand	Project Difference to National
28	6	1	Multiply multiple digit numbers up to 4 digits by 2 digits	N & NS	-30%
30	4	1	Add or Subtract fractions with the same denominator	N & NS	-24%
27	5	1	Divide numbers up to four digits by one digit	N & NS	-21%
26	4	2	Solve comparison, sum, difference problems using bar charts, tables, line graphs.	N & NS	-18%
29	4	1	Add or Subtract fractions with the same denominator	N & NS	-18%
17	5	2	Use all four operations to solve problems involving money and decimal notation	N & NS	-16%
18	4	1	Solve money problems involving two decimal places	N & NS	-15%
19	5	2	Solve add or subtract multi step problems in contexts deciding which operation and method	N & NS	-15%
22	5	1	Recognise and use square and prime numbers	N & NS	-14%
8	4	1	Solve problems involving multiply or divide using distributive law	NS	-14%
25	4	1	Multiply three digit numbers by one digit numbers	N & NS	-14%
13	3	1	Solve problems including missing number problems, multiplication and division	N & NS	-13%
12	5	1	Read and interpret information in tables and timetables	M&M	-11%

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Year 5 Girls Spring 2019

Question Number	Year Group	Mark value	PoS Objective	Content Strand	Project Difference to National
28	6	1	Multiply multiple digit numbers up to 4 digits by 2 digits	N & NS	-30%
30	4	1	Add or Subtract fractions with the same denominator	N & NS	-26%
26	4	2	Solve comparison, sum, difference problems using bar charts, tables, line graphs.	N & NS	-20%
27	5	1	Divide numbers up to four digits by one digit	N & NS	-19%
22	5	1	Recognise and use square and prime numbers	N & NS	-18%
23	4	2	Solve problems with increasingly large positive numbers	N & NS	-18%
18	4	1	Solve money problems involving two decimal places	N & NS	-18%
17	5	2	Use all four operations to solve problems involving money and decimal notation	N & NS	-18%
13	3	1	Solve problems including missing number problems, multiplication and division	N & NS	-16%
2	5	1	Read, write, order and compare numbers as fractions	N & NS	-15%
25	4	1	Multiply three digit numbers by one digit numbers	N & NS	-14%
21	4	2	Solve problems involving converting units of time	N & M & M	-14%
11	4	2	Find 10, 100 1,000 more or less than a given number	N & NS	-13%
29	4	1	Add or Subtract fractions with the same denominator	N & NS	-13%
12	5	1	Read and interpret information in tables and timetables	M&M	-12%
8	4	1	Solve problems involving multiply or divide using distributive law	NS	-12%
5	5	2	Rounding any number to 1,000,000	N & NS	-12%
16	6	1	Identify the value of each digit to 3 decimal places and multiply or divide by 10, 100, 1000	N & NS	-10%
9	5	1	Multiply or divide mentally drawing up known facts	N & NS	-10%