Sixty-Second Survey: KS3 Mathematics

Introduction and Respondents

For this survey, we felt that the time was right to focus again on Key Stage 3 and to ask mathematics teachers some questions about this age group.

Our Sixty-Second Survey was answered by just over 300 respondents. About one quarter of these are heads of department, with another quarter holding a different leadership position in their mathematics department. The majority (61%) of respondents teach in Academies, with a further 24% in Local-Authority maintained schools and 14% in the independent sector.

We are very grateful to all those who gave their time to respond to the survey. The comments made were hugely informative and we hope that we have represented them accurately below. As ever, the sixty-second surveys only give us a brief snapshot of views: we do not expect them to be representative of the experiences of all teachers and we cannot draw any firm conclusions. However, we hope that the results might lead to further discussion and investigation.

Summary of Results

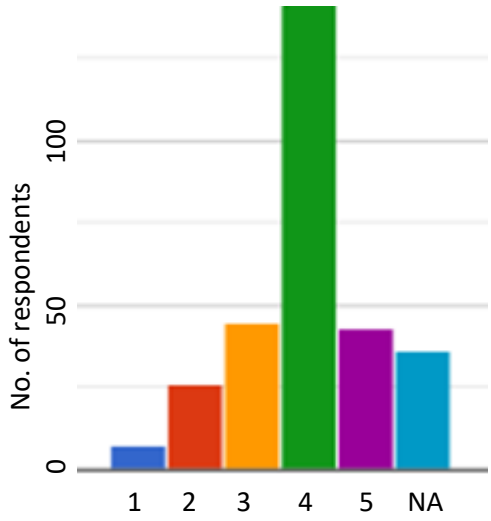
We asked about the impact that various factors have had on the teaching and learning of KS3 mathematics in the context of the respondent.

- **Changes to programmes of study in KS2 and KS4**. There is evidence that the teaching of mathematics in KS3 has been impacted by changes to the key stages both above and below. The impacts are complex, but 62% of respondents thought the new KS2 programme of study has had a positive effect overall on KS3, while opinion is more divided on the effects of changes to GCSEs on KS3 mathematics (34% saw a negative impact, while 48% saw a positive impact).
- **Mastery approaches to teaching and new resources or schemes of work.** A small majority of respondents overall indicated that there have been positive impacts in both of these (possibly related) areas. However, some of the comments about "Mastery" were mixed, and several people commented that finding high quality resources is a challenge.
- **Assessment without National Curriculum levels ("life after levels").** This area saw the strongest overall negative impact, with 48% of respondents reporting a negative impact from the changes and only 19% seeing a positive impact.
- **The number of maths specialists teaching in KS3.** Several strong comments were received about the lack of specialist teachers, so it is clearly an issue in some schools. However, it was a minority (34% of respondents) who said that this factor has had a negative impact, so perhaps it is not a major factor in the majority of schools.

Results in Detail

In the charts below, the responses were as follows: 1 = Strongly negative impact; 2 = Somewhat negative impact; 3 = Zero impact; 4 = Somewhat positive impact; 5 = Strongly positive impact; NA = Don't know / does not apply to me

The new KS2 Programme of Study and its impact on incoming Year 7 pupils

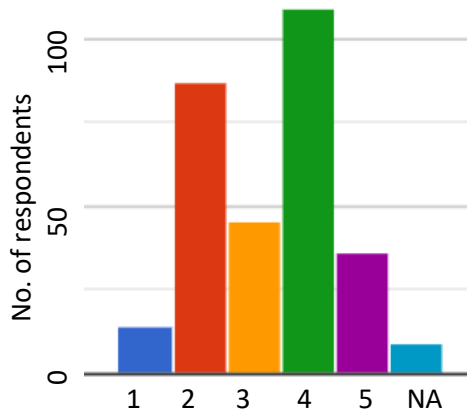


62% of respondents replied that there had been a somewhat positive or strongly positive impact of the new KS2 Programme of Study and its impact on incoming Year 7 pupils. The largest single response (48%) indicated a somewhat positive impact, perhaps implying there are positives and negatives.

This was expanded on by some of the comments. Some indicated that incoming Year 7 students are stronger in some topics. However, several people commented that this is not universally true, suggesting that lower achieving students may not be stronger than previously, and might even be more disillusioned with maths:

- *Students are more likely to know times tables and have more fractions skills than before.*
- *The most able students have increased knowledge, but the weaker students are exactly where they were before. Possibly even worse, as they have been pushed too far, too quickly at KS2. The spread has got wider.*
- *Bigger gaps between high prior attainers and those that didn't meet the expected KS2 standard.*
- *The biggest impact or, perhaps, barrier at KS3 is the primary schools training for a SATs test and then doing no maths from June. The natural gap created, especially at lower levels, is widening.*
- *Growing number of learners disengaged with maths by time reach KS3, possibly as a result of more demanding KS2 curriculum.*
- *There seems to be evidence that primary schools are focussing more on teaching rote arithmetic skills at the expense of understanding.*
- *There are problems with non-specialists at primary teaching more complicated topics 'to the test' meaning more misconceptions in year 7s for secondary teachers to combat.*

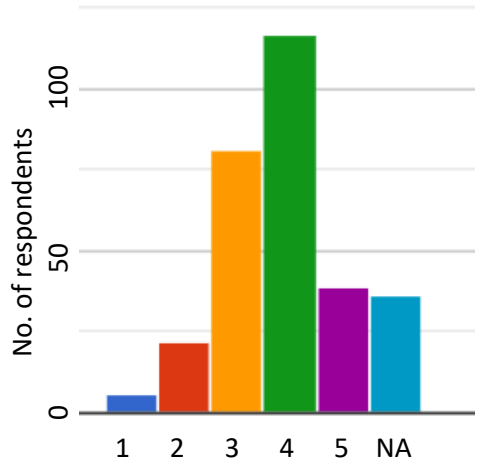
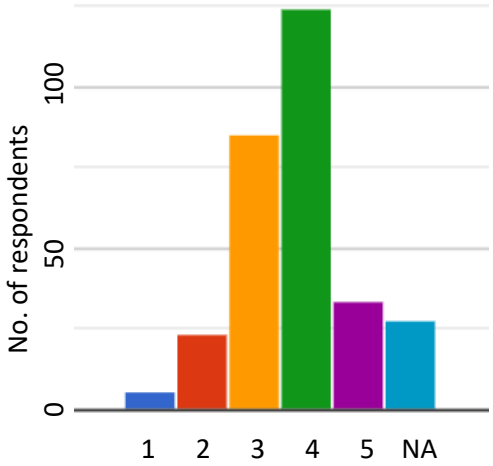
Changes to GCSE Maths impacting on KS3



Opinion was divided on this issue: a large majority (82% of respondents) have seen an impact on KS3 mathematics, but of these, 34% saw a negative impact, while 48% saw a positive impact.

Interestingly, there were fewer written comments from respondents on this topic, so it is difficult to draw any conclusions. However, some of the comments received are below:

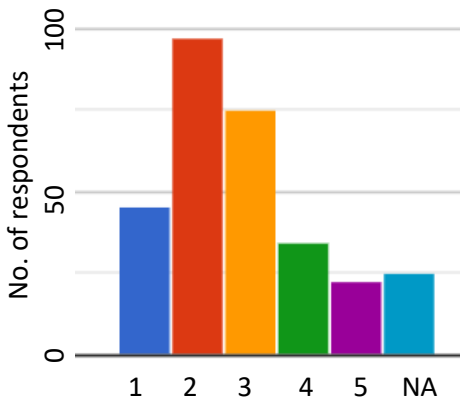
- *The GCSE has 'squeezed' KS3. We have 'fought back' and next year begin teaching from the GCSE SOW from year 7 onward.*
- *Due to the new content at KS4 , KS3 is overlooked sometimes and seems too be rushed.*
- *The only priority in my academy are GCSE results and will 'Do Whatever It Takes (DWIT)' to manipulate methods to get these results.*
- *…all the time energy and effort being diverted to High stakes results of KS4.*
- *All the new curriculum changes from KS1 to KS5 have made maths so hard for so many pupils and we have had to take on the responsibility of motivating the 50% who just want to give up.*

The implementation of mastery approaches to teaching in KS3	New resources and schemes of work/learning
	

Both of these areas had a slight overall majority indicating a positive impact. However, the two largest responses were “Somewhat positive impact” (around 40%) and “Zero impact” (around 27%), with only around 10% finding a strongly positive impact. Some of the comments include:

- *Changing to a mastery approach and teaching for understanding has had a huge positive impact. Looking at variance and fluency has meant students learn concepts as well as procedures.*
- *We are having to rethink the KS3 Schemes of Work in Maths to better equip students to tackle the mathematical elements in other subjects. Initial KS3 Mastery schemes seemed incompatible with achieving this aim.*
- *Mastery has not impacted as we feel we were already teaching for depth and were effectively teaching mastery.*
- *My department leadership appear to be ignoring changes to KS2 and leaving our KS3 scheme of work unaltered.*
- *There are no resources and assessments to teach the new key stage 3 curriculum post the KS3 SATs. I would like to use mastery resources to build on their knowledge from year 6 but there is nothing for key stage 3!*
- *Mastery has some good elements and some poor ones. The assessments I've had to administer to my classes are appalling. ‘Mastery’ has become the new meaningless buzzword.*

Assessment without National Curriculum levels ("life after levels")



48% of respondents reported a negative impact and only 19% a positive impact in this area.

Some of the comments included:

- *If assessment without levels is intended to prevent too much focus on targets then there is little evidence it has had an effect. The only difference is that the tracking schools are continuing to do is now more difficult as the levels are not standardised.*
- *The assessments reported to parents are bland and unhelpful requiring parents to interpret mastery thresholds and vocabulary.*
- *Life after levels is problematic as we are still required to issue them in school and without any criteria, this feels arbitrary at times.*
- *Life post levels is one big mess with lots of different schools dealing with it differently- incomprehensible to parents especially when changing schools.*
- *Having no tracking guidance puts pressure on heads of department as SLT want reliable tracking and predictions from year 7 and even as a very competent mathematician and experienced head of maths I don't feel confident with this.*
- *Losing national levels/ SATs scores seems pointless. Now a child comes as an '89' previously level 4? No more useful data than before except we knew what level 4 kids looked like.*
- *Short term impact of life without levels is negative but in time should improve teaching and assessment in maths.*

Other Factors

We asked about other possible factors: any changes to the number of hours of teaching, data collection practices, and the number of maths specialists teaching in KS3. None of these questions gave a strong overall result, with "Zero impact" being the most popular response in each case.

Several strong comments were received about the lack of specialist mathematics teachers at KS3, so it is clearly an issue in some schools. However, it was a minority (34% of respondents) who said that this factor has had a negative impact, so perhaps it is not a major factor in the majority of schools. Some of the comments are below:

- *Due to recruitment issues we have three non specialists teaching KS3 maths which is causing many problems.*
- *It is extremely difficult to recruit specialists, especially as priority is always given to year 11.*
- *Sad you do not consider the increasing numbers of cover teachers, including schools settling for daily cover, and not able to control the consistency of teaching for that cover. This impact might overweight the impact of the new curriculum.*
- *Lack of maths specialists, no good quality textbooks- all worksheets based.*
- *Number of non specialists teaching and turn over of staff very negative impact.*
- *Experienced staff teaching KS4/5. Trainee teachers mainly taking KS3 classes.*
- *When we don't have maths specialists teaching at KS3, then it's so hard to rectify the damage done in time for GCSE. They aren't able to teach 'mastery' as they haven't mastered the subject themselves.*
- *What is hindering progress is lack of mathematicians to deliver lessons and too high teaching timetables meaning not enough time to train people.*
- *Having several non specialists we see a huge difference in the ability to teach for understanding.*

Information about Respondents