Inspire Maths Impact
How a proven textbook programme from Singapore is transforming maths teaching and learning in England
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1 Executive summary to the case studies and report

Context and aims of this report

England’s 2014 National Curriculum set higher expectations for maths outcomes, focusing on three clear aims:

1. Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

3. Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

These aims reflected a growing focus on the approaches used to teach and learn maths in high-performing jurisdictions (HPJs), championed by policymakers and organisations like the National Centre for Excellence in the Teaching of Mathematics (NCETM). In 2015, Oxford University Press launched its whole-school mastery textbook programme, *Inspire Maths*, adapted from *My Pals are Here!*, the number one primary maths programme used by almost 100% of state primary schools in Singapore. Singapore is a HPJ for maths achievement according to the Programme for International Student Assessment (PISA) surveys (globally ranked second in 2012 and first in 2015).

A team of UK teachers adapted *Inspire Maths* so it could be used to deliver the English National Curriculum at the same time preserving the successful textbook approach, proven progression, and transformative mastery pedagogy of the Singapore original. Initial evidence of the practical success of *Inspire Maths* was shown in a detailed random control study by Oxford University’s Department of Education into the use of *Inspire Maths* in Year 1. This follow-up report shines a spotlight on five schools that have been teaching with *Inspire Maths* for several years, and uses case studies to explore in greater depth each school’s experience of using the programme over a sustained period. It demonstrates – in the schools’ own words – how they have used *Inspire Maths* to transform primary maths learning and outcomes for their children.

We asked schools to tell us:

1. The impact *Inspire Maths* has had on teaching and learning in mathematics.

2. How *Inspire Maths* supports them in fulfilling the requirements of the National Curriculum.

3. How *Inspire Maths* helps teachers to teach for mastery at a suitable pace, with clear progression for children working at all levels.

4. The benefits of using *Inspire Maths*’ high-quality textbooks for consistency of teaching, teacher confidence and workload.

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3. OECD, 2018 ‘PISA 2015 Results in Focus’

Methodology of the case studies

In July 2018, five schools that had adopted *Inspire Maths* soon after its publication were identified. The schools were:

- St Thomas’ C of E Primary School in Blackburn
- Fulwell Infant School Academy in Sunderland
- Barncroft Primary School in Hampshire
- Squirrel Hayes First School in Staffordshire
- Rawmarsh Thorogate School in Rotherham.

Independent researchers created a survey and interview script designed to let the schools provide evidence of how they have delivered the *Inspire Maths* programme, and the impact that they have seen on National Curriculum outcomes. All five schools completed the questionnaire and took part in a detailed telephone interview. Independent researchers then wrote up case study notes and the conclusions contained in this summary report.

The schools

The schools are in a variety of different circumstances. Two out of the five schools interviewed are located in areas of high deprivation, with a much higher percentage (43% and 47.9% respectively) of children attracting pupil premium than the national average (26.6%)\(^5\). One school, at 21.5%, is close to the national average. At one school, 63% of children have English as an additional language (EAL). All five schools had identified a need to raise their standards in maths and were attracted to mastery; which led them to adopt *Inspire Maths*.

The schools have seen their children’s outcomes for maths transformed.

\(^5\)Department for Education, 2013 ‘Illustrative number of pupils eligible for the pupil premium in 2014 –15’

“It is our view of a perfect scheme...they’ve really considered every last detail.”

“There isn’t a child who now feels that they can’t do maths.”

Fulwell Infant School Academy, Sunderland

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At Barncroft Primary School 47.9% of children attract Pupil Premium.
**Improved outcomes in teaching and learning**

All of the schools interviewed reported higher levels of attainment since implementing *Inspire Maths*. Teachers reported an increase of confidence in both staff and children. Staff across the schools interviewed have had the opportunity to completely reassess the way that they teach maths, extend their own understanding of the subject, and improve their teaching skills. All schools praised the professional development provided by OUP, explaining that it gave them the support and skills they needed to implement the programme successfully.

> “It’s revamped maths; like a breath of fresh air... it’s not just the higher end pupils – it’s everyone.”
>
> “The teachers have higher expectations... It’s creating that mindset where everyone can achieve. The programme makes that possible because of how it’s structured and scaffolded.”
>
> St Thomas’ C of E Primary School, Blackburn

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**All five school received SATs scores well above the national average (NA).**

<table>
<thead>
<tr>
<th>School</th>
<th>Year 2</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squirrel Hayes</td>
<td>2016 57%</td>
<td>2017 72%</td>
<td>2018 95% (35% GD)</td>
<td>+20% NA</td>
<td></td>
</tr>
<tr>
<td>Fulwell</td>
<td>2017 89% (34% GD)</td>
<td>2018 86% (34% GD)</td>
<td>+11% NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barncroft</td>
<td>2018 83% (40% GD)</td>
<td>+8% NA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rawmarsh Thorogate</td>
<td>Year 6</td>
<td>2015 53%</td>
<td>2017 83%</td>
<td>+8% NA</td>
<td></td>
</tr>
<tr>
<td>St Thomas’ C of E</td>
<td>Year 6</td>
<td>2017 75% (10% GD)</td>
<td>2018 95% (33% GD)</td>
<td>+20% NA</td>
<td></td>
</tr>
</tbody>
</table>

Based on 2017’s national average, where 75% of children were meeting expectations, and 23% achieving greater depth (Department for Education, 2017 ‘National curriculum assessments at key stage 2 in England, 2017 (revised)’)

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**Sequencing and the National Curriculum**

To preserve the integrity and impact of the programme, *Inspire Maths* retains the original tried-and-tested Singapore progression. Support is provided in the UK programme so it can be used with England’s National Curriculum Programme of Study. While different approaches are evident across the five schools, all use the support in the *Inspire Maths* teachers’ materials, in particular the medium-term plans, to plan the order of topics and concepts. Several teachers describe how useful these were in the first year of implementation, and how with growing confidence both in their own delivery of the programme and the effectiveness of the mastery approach, they feel empowered to make more choices in subsequent years. Teachers felt that each *Inspire Maths* unit offered plenty of opportunity for children to practise and then embed their learning, citing the clear and logical progression within units as extremely important in helping them to decide when to move children on to the next block of work.

> “The scheme is very well planned and ordered.”
>
> Barncroft Primary School, Hampshire
Mastery, progression and depth

All schools commented that prior to implementing *Inspire Maths* they were either not teaching to mastery at all, or had thought they were, then realised they had not been sufficiently challenging their children. The change in teaching methodology also offered more support to struggling learners (utilising *Inspire Maths*’ spiral curriculum) and to encounter the curriculum together with the rest of the class. Where previously teachers may have addressed the needs of high achievers through differentiation by acceleration, the pace of teaching has slowed and differentiation is through depth. For those needing extra consolidation, schools are using same-day interventions. In all the schools, the commitment to whole-class progression is strong. Teachers report increased confidence that all children’s conceptual understanding is secure before they move on.

The benefits of high-quality textbooks

Teachers have gained confidence by following the teaching sequence, and in using the well-constructed questions in the textbooks. The textbooks have proved a revelation to teachers who might previously have had reservations about using them in their classroom. The textbooks have given teachers the confidence to model the concrete–pictorial–abstract (CPA) approach in the classroom, and to ask higher-order questions that deepen children’s understanding. The positive impact on teacher planning has also been marked and given teachers space to be more reflective in their approach to their children’s understanding of maths.

Summary

- The schools’ responses demonstrate that the carefully designed spiral curriculum, combined with the underlying mastery-based pedagogical approach of *Inspire Maths*, creates more time for reinforcement, supporting steady, whole-class progression.
- The textbook programme and the support materials give teachers the information they need to cover topics and concepts with confidence, making sure that their classes successfully deliver the National Curriculum outcomes.
- The much-improved results in statutory assessment for all the schools demonstrate the effectiveness of the programme in improving outcomes and transforming the teaching and learning of mathematics.

“We’ve realised that previously we were unintentionally ‘capping’ children’s learning, whereas now they have the opportunity to go deeper, exploring and challenging their thinking. There are children who’ve developed in a way we wouldn’t have imagined.”
Squirrel Hayes First School, Staffordshire

“There is clear progression through [the textbooks], support for using concrete resources, then showing pictorial representation before moving on to the abstract.”
Barncroft Primary School, Hampshire
2 Report

2.1 Background

The National Curriculum and mastery

“The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.”

Extract from the Mathematics programmes of study: key stages 1 and 2, National Curriculum in England, 2013

Based on research into the factors that made HPJs successful, the revised National Curriculum introduced in 2014 adopted the ideas of mathematical mastery. It placed new emphasis on whole-class progression, and in differentiation through depth rather than through acceleration. Teaching for mastery would benefit all children, helping them develop deep understanding of mathematics and support their future mathematical development.

The case for textbooks

The 2010 review of the National Curriculum, led by Tim Oates, demonstrated the role of high-quality textbooks in supporting successful teaching. Research revealed that schools in HPJs used textbooks to a much greater extent than schools in England: data published in 2011 showed 95% of schools in Finland and 70% of schools in Singapore used textbooks as a basis for instruction compared to just 10% of schools in England. In his subsequent policy paper, Why Textbooks Count, Tim Oates argues that carefully designed textbook programmes were instrumental in raising standards in these jurisdictions, and remain key to maintaining those standards. The paper goes on to report how England has gradually moved away from using textbook programmes, and concludes that a failure to recognise the importance of high-quality textbook programmes which support high-quality pedagogy may impede the improvement of education in England’s school system.

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6 Department for Education, 2013 Mathematics programmes of study: key stages 1 and 2, National Curriculum in England

7 Mullis I., Martin M., Foy P. and Arora A., 2012 ‘TIMSS 2011 International Results in Mathematics’. Boston College and International Association for the Evaluation of Educational Achievement

8 Oates, T., 2014 ‘Why Textbooks Count’, Cambridge Assessment
2.2 About Inspire Maths

The Inspire Maths programme was first published in 2015 and is the UK version of the leading Singapore series My Pals are Here! This Singapore Ministry of Education approved programme has been used in almost 100% of Singapore’s state primary schools for over 17 years. Inspire Maths is a whole-school textbook programme, designed to support teachers in delivering the robust Singaporean mastery approach whilst meeting the expectations of the National Curriculum. It is comprised of printed teacher materials, pupil textbooks, practice books and assessment books, supported by online resources. It emphasises the teaching of mathematics through multiple representations of mathematical concepts, specifically the use of a concrete–pictorial–abstract (CPA) approach. Inspire Maths focuses on developing children’s mastery of fundamental mathematical principles and reasoning skills in order to provide a secure foundation for future learning. This solid grasp of the fundamentals is promoted by the frequent and varied use of manipulatives in lessons, an emphasis on depth over breadth, and teachers’ use of a variety of questioning techniques, including higher-order questions.

At the same time, Inspire Maths is also intended to promote inclusion within classrooms because it emphasises full-class instruction and mixed-ability grouping. Alongside the textbooks, schools are able to access online resources via the Oxford Owl website. Inspire Maths Online supports the textbook components of the programme and offers teaching support, further activities, assessments and guidance to ensure effective implementation of Inspire Maths. Schools are supported through sustained professional development, delivered by experts. This report aims to review the positive impact Inspire Maths has had on five schools over the several years since they implemented the programme, soon after its UK publication. It highlights improvements in attainment, and demonstrates how schools successfully teach with Inspire Maths using the proven Singapore sequencing and progression while addressing the requirements of the National Curriculum Programme of Study.
Previous research

Through the 2015/16 school year, Oxford University’s Department of Education tracked the programme’s use in schools at Year 1. The findings were published as the Evaluation of the Impact and Implementation of Inspire Maths in Year 1 Classrooms in England in October 2016, subsequently independently examined and approved by the University of Southampton. The paper concludes that Inspire Maths positively impacted schools in a number of ways, including: increased confidence of both teachers and children, greater depth and security of understanding, development of mathematical language and reasoning skills, multiple ways of accessing and representing concepts, and the use of meaningful extension tasks.

2.3 About the case studies

Schools

Five schools were interviewed regarding their use of Inspire Maths. All five schools were early adopters, so have multiple years’ experience delivering the programme. Beyond that, the schools cover a range of contexts and challenges.

Process

The schools were sent a short questionnaire, then took part in a detailed telephone interview devised and conducted by independent researchers. The questions covered a number of areas, including:

- the impact Inspire Maths has had on teaching and learning in mathematics
- how Inspire Maths supports them in fulfilling the requirements of the National Curriculum
- how Inspire Maths helps teachers to teach for mastery at a suitable pace, with clear progression for children working at all levels
- the benefits of using high-quality textbooks for consistency of teaching, teacher confidence and workload

2.4 Case study responses

2.4.1 Adopting Inspire Maths

Immediately prior to adopting Inspire Maths, all schools were thinking about the challenges facing them in implementing the new National Curriculum Programme of Study for Mathematics, and had got to various stages either in considering, or actually embarking on, using a mastery approach for teaching and learning maths.

The National Curriculum

All schools told us that they were motivated by the introduction of the 2014 National Curriculum to change the way that they taught maths. The National Curriculum promotes achieving mastery through depth of learning, and the schools recognised the need to adapt the way they taught maths in order

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to achieve this. The focus on reasoning, problem solving and fluency in the National Curriculum Programme of Study were all important considerations, with some schools saying that they were struggling in these areas and were in need of a new approach to help them deal with the issue.

When asked about their maths strategy, all the schools identified similar aims: specifically to improve reasoning, problem solving and fluency; and more generally to increase numeracy, and to help children become confident mathematicians for life. All schools were looking to challenge both staff and children. One school (St Thomas’ C of E Primary School) stated that *Inspire Maths* “addressed these areas perfectly”.

**Mastery**

Before selecting *Inspire Maths*, all the schools had identified the benefits of adopting a mastery approach. Some reported that previous maths teaching had not been particularly deep or meaningful; for example, that they had simply been “ticking off objectives” (St Thomas’ C of E Primary School). Three schools (Fulwell Infant School Academy, Squirrel Hayes First School and St Thomas’ C of E Primary School) said that before adopting *Inspire Maths*, they had already been attempting to adapt their teaching towards mastery. However, they were finding that children were not really achieving mastery. Using the schools’ existing resources and practices, children were not being sufficiently challenged by higher order questions or extension through depth, and whole-class progression was not being achieved; schools often wanted to increase the use of CPA, but found this difficult to embed in lessons.

In short, all the schools interviewed had arrived at a decision that they should adopt a mastery approach, with some already trying but failing to do so. *Inspire Maths* gave each of the schools and its teachers and children the tools, approach, and confidence to embed a mastery approach to maths and make it a success for the teachers and children alike.

“Adults use skilful questioning to check pupils’ understanding and challenge their thinking. Questioning by teachers and teaching assistants is a key strength. They prompt pupils well to develop their reasoning and use their growing vocabulary to explain their thinking. Adults check pupils’ understanding carefully and quickly identify and tackle misconceptions. Adults focus strongly on developing pupils’ language, including technical vocabulary. Increasingly, pupils are learning the correct terminology to express and discuss their mathematical thinking and reasoning. Teachers provide frequent opportunities for pupils to use and apply their mathematics skills in different ways. The most able pupils are often challenged to explain their thinking or show their working in different ways. The improvement for current pupils compared with historical performance data are particularly marked in Key Stage 1 and in mathematics across the school. Current Year 2 pupils have risen well to the higher expectation and challenge of the new national curriculum.”

Extract from Barncroft Primary School Ofsted report July 2016, after using *Inspire Maths* for a year.

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10 Ofsted, 2016 ‘Barncroft Primary School full inspection report’
Deciding on Inspire Maths

The schools’ decision-making processes for choosing to adopt Inspire Maths varied. They identified the expectations of the National Curriculum as very high, and were looking for a programme to support children working to achieve the expected standard.

Schools recognised that Inspire Maths is a well-researched and constructed programme: “When you unpick the questions in Inspire Maths you can see how carefully constructed they are in terms of constantly building on prior knowledge” (Barncroft Primary School).

Most visited another school already using Inspire Maths, and this often confirmed their decision. Others made very detailed comparisons to other mastery and non-mastery programmes.

2.4.2 Inspire Maths, sequencing and the National Curriculum

Most of the schools interviewed recalled initial nervousness about using an alternative curriculum with a different sequence and progression to the National Curriculum Programme of Study. However, these fears were quickly allayed as they saw that by using Inspire Maths they were comfortably able to meet National Curriculum targets, and that the programme provided a wealth of planning information to help them (see 2.4.5 Inspire Maths, planning and teacher workload, below).

“*We follow the structure of Inspire Maths very closely. Using a different curriculum is a valid concern, but the payoff is that there are more children who become better at reasoning questions than ever before, and who work at greater depth.*"

Rawmarsh Thorogate School, Rotherham

The training and detailed support provided in the Inspire Maths teaching materials helped teachers in the case study schools to ensure every cohort or group made good progress. For example, a teacher describes how clear and valuable the Teacher’s Guide was when first teaching the course: “It was very easy to follow and the learning goals were clearly stated. The range of resources are easy to use, and the online resources are fantastic”. The same teacher says: “Now we’re going into our third year of using the programme, I don’t need to follow the guide quite as closely as I’m more confident about what we’re doing. This year we decided to change some of the units around a bit to support what’s right for each cohort or year, without losing the consistency across the school.” (Fulwell Infant School Academy)

“*Moderation went extremely well: they were very happy with Inspire Maths, and satisfied we were meeting or exceeding the National Curriculum expectations.*"

Fulwell Infant School, Sunderland

Teachers are similarly confident using Inspire Maths to deliver the National Curriculum yearly outcomes, with no fears of missing out on
outcomes, nor of overloading the children. Higher aspirations mean children are exceeding expectations. The support materials help the teachers to navigate the National Curriculum pathway: “The Inspire Maths correlation grids map out... the scheme’s coverage of the National Curriculum” (Squirrel Hayes First School). The schools are also confident in the programme’s coverage, the deep learning it facilitates and the time it creates, both in the classroom and in removing planning effort: “We now have the confidence to take the time to explore concepts” (Squirrel Hayes First School).

2.4.3 Progression

Teachers found achieving appropriate pace and progression to be well supported by the programme. Inspire Maths provides the support for teachers to reflect on where the children are at the end of each lesson, and intervene where necessary to ensure all children have a firm understanding of the content. There is clear signposting of when to move on. Achieving understanding for the whole class is managed in a variety of ways, including pre-teaching, in-lesson interventions, and afternoon ‘maths meetings’ (Barncroft Primary School). These amount to same-day interventions, in which the morning’s learning is revisited and consolidated for those who need additional support. Those who have grasped the learning are challenged to deepen their understanding. Barncroft Primary School reported that “we’ve definitely reduced the long tail of underachievers”.

Schools in these studies reported that the pace at which they teach maths has decreased since their introduction of Inspire Maths, surprising some schools who at first expected it would be hard to cover all of the content: “Even if you follow all the units in the programme, you have extra time” (Squirrel Hayes First School). “The textbook is structured to allow time for practising and embedding the learning. If we feel that the children haven’t got something, we’ll simply spend the next lesson going over it again” (Fulwell Infant School Academy).

“The pace is appropriate: we only move on when they’re ready to move on. It’s appropriately challenging.”
Barncroft Primary School, Hampshire

The adaptability of Inspire Maths to individual children’s needs was often highlighted, particularly by the schools in areas of high deprivation. Schools find that the materials support every child in becoming a confident mathematician: “As a school, we specialise in offering a personalised learning programme and yet children have surprised us with what they’re able to achieve through independent learning and exploration. Where we’ve worried about spending time because of the pressure to cover the National Curriculum, we’ve now realised that taking the time allows the learning to develop, and children become empowered” (Squirrel Hayes First School).

“It allows teachers and children to go deeper than just ticking off objectives... The old three-way differentiation doesn’t exist. The whole class progresses together.”
St Thomas’ C of E Primary School, Blackburn
Schools appreciate *Inspire Maths*’ spiral curriculum. This allows all of the children to access the same topics. Teachers reported increased awareness, through continuous professional development (CPD) and ongoing use of the programme, of the support for differentiation through depth that the *Inspire Maths* spiral curriculum supports. They praised the high quality of the material, which means it is very easy to drop back a level and be confident that the children are going to cover the necessary content: “The teachers know that if some children are struggling with a certain area you can go down to the appropriate book, and it’s going to be quality” (St Thomas’ C of E Primary School).

**Depth, not acceleration**

A common theme to emerge from the case studies is that since adopting *Inspire Maths*, the schools no longer feel pressure to “push the children on” (Fulwell Infant School Academy; Rawmarsh Thorogate School) through National Curriculum objectives. Teachers understand that they are not expected to push the children to accelerate through new content, as they may have done previously. They are confident in the curriculum they are delivering through *Inspire Maths*, and they embrace the mastery approach to whole-class progression. Intervention becomes lighter-touch; differentiation by depth means children aren’t falling behind. It is a consistent theme across the schools: at the same time as they talk about higher challenge, the teachers point out that they are slowing the pace in lessons and making more time for reflection and exploration.

> “If anything, *Inspire Maths* has lent us space and time to slow down a little bit, and go deeper, and allow the children to explore. If they don’t understand, we don’t just move on: *Inspire Maths* provides the material so that we can have the intervention straight away so they can move on together.”

**St Thomas’ C of E Primary School, Blackburn**

All the schools noted an important change in teachers’ mindset regarding children’s ability. All were surprised at how learners previously deemed low achievers were often shown to be able to work at greater depth in various lessons. For example, one teacher explained that “it is not always the most numerate who are best at reasoning” (Rawmarsh Thorogate School). It is clear that the *Inspire Maths* programme is transforming teachers’ expectations. For example, another teacher described a similar experience, saying the school now realised that prior to using *Inspire Maths*, they had been “unintentionally capping children’s learning, whereas now they have the opportunity to go deeper to explore and challenge their thinking” (Squirrel Hayes First School).

### 2.4.4 *Inspire Maths* pupil textbooks in the classroom

Most of the schools had had some initial hesitancy about textbook programmes based on past experience and entrenched beliefs about what it meant to use pupil textbooks in the classroom. For example, at Squirrel Hayes First School “we didn’t introduce the textbooks [at first] because we were concerned about using them”. There was initial concern from teachers at Fulwell Infant School
Academy that Inspire Maths was “just another textbook series”. But after their experience teaching with Inspire Maths, the same school reports “if you follow the structure, you can’t teach a bad lesson”. The schools now talk warmly about the children’s relationship with and attachment to the pupil textbooks, and about the fact that the textbooks contain more variety and engagement than they previously imagined when they thought of textbooks.

“At first, we were a little concerned about the textbooks because we felt that our children with behavioural challenges would be distracted. But now the children love maths, and are excited by it, which they weren’t previously.”

Squirrel Hayes First School, Staffordshire

Schools believed the pupil textbooks are a very important part of the scheme. Children enjoyed using the textbooks, with one interviewee explaining that the children “love the books” and take great pride in having their own copy (Rawmarsh Thorogate School). Several schools talked about how good the questions in the books are: teachers “could see the depth of learning that could be accessed through the questions. It can be surprising that a textbook programme is so strongly driven by a CPA approach; it uses concrete materials more than any other textbook scheme.” (Barncroft Primary School). Schools reported that the textbooks underpin reasoning, offer clear progression and are very well structured: “We use the textbook to model effective practice and how to explore a mathematical concept” (Squirrel Hayes First School).

“As a result of adopting the programme, our staff are happier and our children are thriving.”

Fulwell Infant School Academy, Sunderland

2.4.5 Inspire Maths, planning and teacher workload

An important benefit reported by all schools was the reduction in teachers’ planning effort. The materials provided by Inspire Maths let teachers spend less time on detailed lesson plans. This is not to say there is no work required from teachers, but rather that there has been a change in their approach and focus.

“Teachers don’t just follow the teaching guides: they add to and annotate the plans to reflect the needs for their children. It’s definitely reduced the time spent on planning and means there’s greater consistency across the year groups.”

Barncroft Primary School, Hampshire

The schools used the medium-term plans provided by Inspire Maths instead of daily plans: “Now we use the medium-term plans which we annotate with observations or issues for tracking, but we no longer create a daily plan. That frees teachers up to decide which resources to use, and that works well” (Fulwell Infant School Academy). Teachers are using the time and energy they save from stopping daily planning to take a reflective approach to the children’s learning and mastery: “We’ve completely changed our planning.
format to follow the *Inspire Maths* plans, and we’ve changed our approach to assessment. In planning, teachers are more focused on reasoning, variation, and children really showing depth of understanding and secure knowledge, rather than focusing on procedural learning” (Barncroft Primary School).

> “Planning is transformed: now [teachers] reflect on the day’s practice and look at the children who might not have achieved the objective. ... Instead of children being ‘stuck’ in an ability group, differentiation is fluid depending on how the child has done that day. It gives teachers time to reflect, and ensure that all children are moved on, to consolidate and move to greater depth.”
> St Thomas’ C of E Primary School, Blackburn

### 2.4.6 Supporting teachers and CPD

The wealth of teachers’ materials, including the *Getting Started Guide* and *Inspire Maths Online*, give practical support for teachers to help them successfully adopt and deliver the *Inspire Maths* programme.

Another core part of the *Inspire Maths* programme is its CPD offering. All the schools had five days’ initial CPD. The training is intensive, detailed and high quality, and covers the pedagogy and rationale for the programme before introducing the resources. Several schools described how it challenged their understanding of teaching the subject, and deepened their own understanding of underlying mathematical principles. Attending the training gave staff confidence in the effective use of textbooks alongside the concrete materials through the programme’s CPA approach.

> “The training alongside the programme is key. It’s unlocked teachers’ understanding of how maths develops, right from the start of understanding number and having number sense through to the pedagogy of what makes for effective teaching.”
> Squirrel Hayes First School, Staffordshire

One school, Barncroft Primary School, felt that the *Inspire Maths* training surpassed that provided in Initial Teacher Training, thus increasing the knowledge and confidence of their NQTs. An important factor in the success of *Inspire Maths* is that schools often visit user and advocate schools in advance of adoption. These informal networks persist as they continue to offer each other support, meaning that sharing of best practice is ongoing.

> “The NQTs have said that they’ve learned more on the *Inspire Maths* course than in their Initial Teacher Training, while the confident teachers have revisited some of their assumptions about teaching maths and reflected on their practice.”
> Barncroft Primary School, Hampshire
2.4.7 *Inspire Maths* and impact on attainment

Across all the schools there are significant similarities in reported improvements to attainment. Looking at the data available, they have all shown evidence of significant progress in pupils’ results since adoption. All the schools reported a change in attitudes regarding expectations and the realisation that all children can succeed. They told us that using *Inspire Maths* has stopped schools from unintentionally capping their children through inappropriate methods of differentiation. In the past, schools would differentiate by allowing children who seemed to understand a concept to move onto the next, ahead of their peers. Now instead, they work to deepen the understanding of these children, while reinforcing the understanding of children who haven’t yet understood (see 2.4.3 Progression). Because the children progress together, all encounter new concepts at the appropriate time. At Squirrel Hayes First School, many children start school unable to access the National Curriculum expectations for their age. Since implementing *Inspire Maths*, 95% of their children are now working at the expected standard by Year 2. Barncroft’s 2016 Ofsted report, carried out after Barncroft introduced *Inspire Maths* in Key Stage 1 in 2015, noted improvements against historic data: “The gap between disadvantaged pupils and others at the end of Key Stage 1 this year is tiny”\(^\text{11}\). Teachers also feel better equipped to identify those who can work at greater depth, and to support them. Children’s confidence has increased as they realise it is possible for them to succeed. The schools frequently used the word “resilience” to explain that children are now much more willing to explore mathematically: to try to find mathematical explanations or ways of working. Again, the schools in areas of high deprivation find this change particularly significant. The programme helps them to challenge low aspiration. Barncroft Primary School, one of the schools in an area of high deprivation (47.9% attracting pupil premium) now has 82% of children at KS1 working at the expected standard, well ahead of the national average. In 2015, the level of children achieving Level 2 was below the national average.

Evidence provided by Rawmarsh Thorogate School shows a marked improvement from 2015 (before they adopted Inspire Maths) to 2018 in the number of children achieving the expected standard in maths, with an increase from 53% to 83% in Key Stage 2.

An additional benefit reported by all of the schools interviewed was the improvement in children’s language and communication skills. The emphasis placed on reading the questions and discussion of ideas in *Inspire Maths* has helped all children to improve in these areas, but has had particular impact on those children with language delays. Children take these skills into other lessons. In some cases, it has inspired schools to consider teaching other subjects using a mastery approach (Squirrel Hayes First School).

“[The children’s] language and communication skills in maths are much richer, and this has transferred to other areas of the curriculum.”

Rawmarsh Thorogate School, Rotherham

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\(^\text{11}\) Ofsted, 2016 ‘Barncroft Primary School full inspection report’
2.5 Conclusion

Sequencing and the National Curriculum

Teachers use *Inspire Maths*’ planning grids effectively to deliver the *Inspire Maths* programme to meet National Curriculum objectives. As the mastery approach becomes embedded, the teachers gain confidence in the extra time they have to enrich children’s learning, building on secure concepts to make sure objectives are mastered. They embrace and enjoy the mastery approach, and the whole-class progression it enables. Teachers in all the schools considered that the quality of the mathematical conversation with (and among) the children has improved. This gives teachers evidence of children’s understanding of topics, so that they are confident the learning outcomes have been met. The planning materials in *Inspire Maths*, in particular the medium-term plans, clearly direct teachers to achieve the outcomes; and they have the time and resource to make sure any objectives not directly covered within the textbooks are addressed using the National Curriculum activities and assessments provided on *Inspire Maths Online*.

The results in all of these schools in the year groups using *Inspire Maths* demonstrate the success here: all have improved, some very significantly.

Progression and depth

At all of the schools, teachers reported having time to explore mathematical concepts and secure knowledge. Instead of differentiating through acceleration, as they would have done in the past, they focus on improving the depth of children’s understanding within a concept. They talk with confidence about the children in the class progressing together; and they present examples where peer-to-peer teaching is stronger because the children have learnt to use richer language to communicate concepts more effectively.

It is evident from the views expressed in the case studies that the teachers are not racing ahead; rather than pushing children on (as they report was past practice), they encourage them to go deeper into a concept, and they see the benefits of this for children of all abilities. Teachers at several schools comment that this helps children to show particular strengths which the children wouldn’t have had the chance to demonstrate if they had been ‘left behind’. They have confidence in the robust structure of the *Inspire Maths* programme and the careful construction behind its sequencing and content, and feel their practice is strengthened by their ability to use the spiral curriculum to support children who need more help.

While some schools chose the programme because the revised National Curriculum called for a mastery approach, it is *Inspire Maths* itself that they identify as being responsible for their major change in practice. The robustness of the programme (schools frequently talk about teachers’ growing trust in how carefully constructed the textbooks and planning are) and their experience of the evident benefits – not just in attainment, but also in pupil confidence, aspiration and enjoyment of mathematics – increases teachers’ commitment to steady, whole-class progression supported by differentiation through depth.
Positive effect on outcomes

Adopting *Inspire Maths* has not always been an easy decision for these schools: entirely changing the way a subject is taught is a sizeable challenge, even if that challenge is to be expected with any major change. However, initial concerns were overcome, sometimes very early on, sometimes after having used the programme for a few months.

The improvement in levels of attainment seen in the schools demonstrate the positive impact that *Inspire Maths* is having (for example, two schools have transitioned from below average performance to now have 83% and 95% of children achieving the expected standard). *Inspire Maths* has fundamentally changed how the schools approach maths teaching and learning, while allowing them to meet the aims of the National Curriculum. Moreover, the impact of *Inspire Maths* has been felt across all subjects due to its emphasis on reading and writing skills, and its challenging of expectations. Schools report that children are more resilient and feel more able to try new things in the classroom, no matter what subject.

Summary

The five case studies of the implementation of *Inspire Maths* in a range of contexts have demonstrated that the programme drives the transformation of learning and outcomes. The improvement in test scores is enough to demonstrate the latter, but when we unpick the teachers’ enthusiasm in all cases for the greater mathematical engagement – shown by children of all abilities – we find that they are expecting more reflection and investigation from all of their learners. Teachers who would once have differentiated through acceleration are now committed instead to using the carefully constructed content and curriculum of *Inspire Maths* to differentiate through depth, and to make sure that all the children in the class progress together. They see how this benefits all children, including those who may have previously struggled, and are pleased to find that these children can now successfully access the full curriculum with their peers.

These are schools that thought carefully about which resources to invest in at the time of the new National Curriculum. They are confident that their choice of a course with an alternative curriculum has supported them in delivering the National Curriculum objectives, and in successfully preparing their learners for the statutory assessments. This is through the proven effectiveness not only of the structure and high-quality content of *Inspire Maths*, but because of the detailed support in the teachers’ materials, and the effectiveness of the medium-term plans.

Together, the case studies demonstrate that *Inspire Maths* is creating classroom environments where children are increasing in confidence and competence, with deeper understanding and enthusiasm for mathematics, and are achieving the National Curriculum outcomes. The commitment of *Inspire Maths* and the teachers who use it to differentiate through depth means that children are not experiencing undue acceleration, and that the practice in all of these classrooms demonstrates an appropriate pace for whole-class progression.
3 The case studies

3.1 St Thomas’ C of E Primary School, Blackburn

SCHOOL INFORMATION

Head Teacher and Assistant Head Teacher:
Carolyn Morris and Liam Noon
Location: Blackburn
LA: Blackburn with Darwen
Pupils on roll: 477
SEN: 2.7%
EAL: 63.2%
Pupil Premium on roll: 20.5%
Ofsted: Good
Using Inspire Maths since: 2016
Year groups using Inspire Maths: 1–6
Progress in Maths: -0.7 (2017), +2.4 (2018, results yet to be validated)

“The teachers absolutely love it. They now have higher expectations, both for the children, and for themselves as well. It’s creating that mindset where everyone can achieve. The programme makes that possible because of how it’s structured and scaffolded, and the teachers know the journey that they’re taking pupils on. Children also know why they’re doing something, and they know that they will use that learning again, because of the spiral curriculum. It’s changed their mindsets, because they know that everyone can succeed.”

Background information

The school is a medium to large primary school serving a community with high numbers of children with EAL. In the feedback following their most recent Ofsted inspection in April 2018, the Inspector noted that many children start school with delays, particularly in speech and language, and personal development and social skills. The school works hard to foster a love of learning amongst its children, and Ofsted go on to note that “Pupils enjoy coming to school and love learning. Parents commented that ‘from the Nursery class through to Year 6, this school is amazing.’”

Prior to implementing Inspire Maths, St Thomas’ C of E Primary School followed the Lancashire medium-term plans. They began using Inspire Maths in September 2016, and use it across KS1 and KS2. They also introduce elements of Inspire Maths in Reception. They use Progress in Understanding Mathematics Assessment (PUMA) tests for summative assessments and a target tracker to identify National Curriculum coverage.

Improving results

In 2017, 76% of children in Year 2 were meeting expectations, and 25% achieving greater depth, both above the national average in a school where 63.2% of children have EAL.

In Year 6, 75% of children were meeting expectations, and just 10% were achieving greater depth, both well below the national average. By 2018, 95% of children are meeting expectations, and 33% are achieving greater depth, both well ahead of the national average.

The average progress score has gone up from -0.7 in 2017 to +2.4 this year.

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12 Based on 2017’s national average, where 75% of children are meeting expectations, and 23% achieving greater depth (Department for Education, 2017 National curriculum assessments at key stage 2 in England, 2017 revised)

13 Provisional results subject to validation
Adopting Inspire Maths
We were using the medium-term planning grids, and we’d begun to take a more focused CPA approach as a school, and began to make links within what we were teaching, especially via the calculation progressions. However, when the “new” curriculum came in, we felt we needed something different as we didn’t feel we were fulfilling the three main areas of the maths National Curriculum: problem solving, reasoning and fluency. We researched the various Singapore-style programmes out there and went to visit a school that was using Inspire Maths. We felt it was perfect for our school, as it addressed the three areas perfectly. The approach provided depth, a focus on higher-order questioning, and challenge.

Because we had begun the CPA approach, we wanted a scheme that continued that approach. It was also hitting those areas of the National Curriculum. We also wanted to make sure the scheme was challenging, and we felt that Inspire Maths provided more challenge than the other schemes available: it raised the bar. That might turn some people off, but now we’ve got pupils achieving greater depth. The programme had that methodical approach and structure going through. So the challenge grows through the programme, but there’s also the opportunity to supplement with other resources.

We were looking for something that supported the National Curriculum, followed the CPA approach, and challenged the children. We also wanted something that would enthuse our teachers. The way Inspire Maths looks, the supporting rationale, the step-by-step teacher guides; I just felt that teachers would benefit from it, and it would enhance their skills as practitioners. It makes them feel more confident. It allows teachers and children to go deeper than just ticking off objectives.

The teachers absolutely love it. They now have higher expectations, both for the children, and for themselves as well. It’s changing to a mindset where everyone can achieve. The programme makes that possible because of how it’s structured and scaffolded, and the teacher knows the journey that they’re taking pupils on. Children also know why they’re doing something, and they know that they will use that learning again, because of the spiral curriculum. It’s changed their mindsets, because they know that everyone can succeed. The old three-way differentiation doesn’t exist. The whole class progresses together, and the children who understand soonest are now equipped with the language to explain their insights to others.

The impact of Inspire Maths
We weren’t expecting the impact it’s had on the school. It’s revamped maths; like a breath of fresh air. The way the children approach the questions: it’s that resilience and willingness to give it a go because they’ve got a method to apply, and the confidence to tackle it. Before, they didn’t have that confidence, that discussion in the classroom, with children using mathematical language and thinking mathematically. If they have got an answer one way, they will try to get it other ways, to decide which is the best and quickest way of answering it. Inspire Maths has trained our teachers to use different methods, and the pupils follow it. It’s given them the freedom to get something wrong. They’re curious and exploratory in their maths. It’s not just the higher end pupils; it’s everyone.

Using Inspire Maths alongside the National Curriculum
You’re going to get pupils of different abilities anyway. The thing is that the teachers know that if some children are struggling with a certain area you can go down to the appropriate book, and it’s going to be quality. It’s well-structured and scaffolded, with clear objectives. But it also quickly weans the children off the scaffolding so that they become more independent.

There are overview documents of the content of each book and an online index. Everything is there for teachers. They know the children, and have an overview of where, when and why they want to teach topics.

Teachers are far more confident because they know the journey. Within a unit, there’s a logical progression which is clear to teachers,
so they know why things are done in that way. They like the depth; they don’t feel they have to rush things.

**Pace and progression**

Because you have to teach the KS2 curriculum in Year 6, teachers drop back into previous books to teach the skills and concepts that will be tested. They know they’ve got a supportive textbook. They do drop back into Book 5 because a lot of the Year 6 curriculum is covered in that, but in Book 6 they’re looking at pie charts and algebra. They know that what they’re teaching is quality and depth, and the questions in the practice books, teachers books and assessment books are probably more challenging than the questions in the SATS paper, so it stands the children in good stead.

We’re very fluid with how we use the books. If the teacher has to cover an objective that’s not in the book for their year, they’ll drop down to previous books to give them that foundation and move them on.

**Supporting children working below and above expectations**

That depends on the teacher, and the way that they teach, and especially the use of questions to move them on. For those working at greater depth, how are they explaining things to their partner? You need to then reflect on where the children are at the end of the lesson, and whether some need a quick intervention, while others might do some “Put On Your Thinking Caps!” activities. It’s the responsibility of each teacher to make sure that children keep up. They make sure to use resources and manipulatives so children can visualise, then draw, before moving onto the abstract.

If anything, *Inspire Maths* has lent us space and time to slow down a little bit, and go deeper, and allow the children to explore. If they don’t understand, we don’t just move on: *Inspire Maths* provides the material so that we can have the intervention straight away so they can move on together.

**Interventions**

We don’t do “interventions” as such. Our pupils who need a bit more support will receive it in the afternoon of the lesson. What we’ve taken away from *Inspire Maths* is using more concrete resources. Everyone can do the maths if they use concrete resources and explain what they’re doing. We use some of the online support like the illustrations to scaffold children’s talk, but again, not structured “interventions” as such.

**Supporting teachers**

The CPD was very important for us to understand the background to the programme, and how to use the resources, giving us the confidence to use it. The first two days were about the pedagogy and rationale, and then we looked at resources.

Now there are the advocate schools, which are quite inspirational themselves, and it’s nice to see the different ways they’re using *Inspire Maths*. You always have one of the consultants at the end of the phone to support you, and give good advice.

It’s got a good balance between questioning, games, and exploratory activities. Teachers know their children, so they know if they need more time to explore a teaching sequence. They use their professional judgement and the support in the programme to decide on the appropriate pace.

**The school’s maths strategy**

Our vision for maths is for all children to be mathematicians for life, and not depend on some “innate” academic ability. We want them all to succeed, and feel that *Inspire Maths*, with its CPA approach, provides the children with the opportunity to develop at their own level, and move forward at their own pace. Having the concrete resources alongside pictorial representations, then the abstract, supports everyone’s learning. It’s not just about getting the best results possible. When they move on, we want them to build on the skills we’re giving them.

We first looked at a CPA approach within our calculation policy, but we weren’t really embedding it across other areas of the maths curriculum, which we wanted to. With *Inspire Maths*, everything we teach in maths has that
CPA focus. But it’s also going the other way, so you also go abstract, concrete then pictorial: you interweave.

*Inspire Maths* has changed the way we think as teachers. We’ve been able to reflect more on how and why we teach maths, what the end game is, and developing confident and resilient mathematicians. The whole approach of the programme supports that.

**Planning and teaching**

Before adopting *Inspire Maths* we were using the medium-term planning grids, and it was very much ‘same old, same old’. Each term, you’d cover the same objectives again. We felt it was very bitty, and there wasn’t much depth. We were ticking off objectives, rather than teaching in any depth. We weren’t developing children as mathematicians. Teachers were looking for coverage, with no real understanding of why they were teaching those objectives.

*Inspire Maths* has lightened teachers’ workload, because the structure and extra resources allows them not to waste time. Planning is transformed: now they reflect on the day’s practice and look at the children who might not have achieved the objective. Pupils that would have been put in the middle group may now be exceeding. Instead of children being ‘stuck’ in an ability group, differentiation is fluid depending on how the child has done that day. It gives teachers time to reflect, and ensure that all children consolidate learning and move on to greater depth.

Teachers’ own mathematical language has been massively increased. Their subject knowledge has improved. It’s also supported their development as teachers because they see things in different ways: it’s extended their thought processes as mathematicians over what they want to teach. They identify higher order questions, and they expect children to answer them; and if the children get it wrong there’s much more of a focus on why it’s wrong. *Inspire Maths* itself supports teachers in asking the right questions, which helps the children progress.

Part of the improved quality of teacher questions is due to an in-school improvement initiative. Lesson observations now focus on greater depth and higher order skills. The practice books and teacher books provide high-quality questions.

**Supporting a mastery approach**

The mastery approach has driven the higher expectations, but *Inspire Maths* has changed our mindsets. So you can say a mastery approach is more challenging. *Inspire Maths* has done that for us, and staff can see it. It’s hard to say if other programmes lend themselves to the greater depth and higher expectations, but *Inspire Maths* does. The pupils’ mindsets have changed as well, because they can see their mathematical thinking evolve during the lessons. They now have a can-do attitude.

**The importance of the textbooks**

The textbooks are very well structured. There is clear progression throughout, support for using concrete resources, then showing pictorial representation before moving onto the abstract. It’s not just one thing – as well as everything else, you’ve got games, and a variety of activities.

**Advice for other schools implementing *Inspire Maths***

Choose *Inspire Maths* because of the way the programme is structured. It completely changes your approach to maths, and the way that staff and pupils think about maths. We personally wouldn’t introduce it a year group at a time, but we’d advise a whole school adoption. You have to think strategically about what you’re wanting to achieve for your school; you can’t just pick it up and run with it. Plan how you want to implement it. You’ve got to get your senior leadership team and governors on board too: they all need to believe in your vision for maths at the school.
3.2 Fulwell Infant School Academy, Sunderland

SCHOOL INFORMATION

Head Teacher and Maths Co-ordinator: Wendy Angus and Emma Hopkinson
Location: Sunderland
LA: Sunderland
Pupils on roll: 370
SEN: 1.9%
EAL: 3.3%
Pupil Premium on roll: 79%
Ofsted: Outstanding
Using Inspire Maths since: 2016
Year groups using Inspire Maths: 1–2

“There isn’t a child who now feels that they can’t do maths. They can problem solve, they can work on their own. We’ve stopped thinking that some children aren’t capable of working at a certain level because those children might now be top of the class. You can’t put a limit on children’s learning using Inspire Maths.”

Background information

Fulwell Infant School Academy in Sunderland is a three-form entry school and is part of the Jigsaw Learning Trust. One of the school’s stated aims is “to maintain high standards of education, whereby each child is encouraged to achieve their maximum potential”. It is this philosophy which led them to adopt Inspire Maths. Historically, the school has performed better in reading and writing than in maths, and one reason to choose Inspire Maths was its aspirational curriculum, which would stretch and challenge the children. Unlike the infant school, Fulwell Junior School is not part of the Jigsaw Learning Trust. They have adopted Inspire Maths on the recommendation of the Infant School. This means there is continuity from children moving from Year 2 into Year 3.

Prior to implementing Inspire Maths, Fulwell Infant School Academy was following the National Curriculum objectives and interim statements. They followed the Inspire Maths transition programme with Year 1 in 2016 summer term and now use Inspire Maths across Year 1 and Year 2.

Improving results

In 2015, 97% of children in Year 2 achieved Level 2 and above. In 2017, 89% of children the same age were meeting expectations and 34% were achieving greater dept. In 2018, 86% of children were at ARE and 34% at greater depth, both much higher than the national average. We’d started moving to a mastery approach a year before buying the scheme. We were trying to have one learning objective in each lesson for pupils to meet, using the CPA approach. And that was working, and we were enjoying it, but we felt our children could be challenged at a higher level.

Adopting Inspire Maths

Historically, the school has been better at reading and writing. We felt that the children could be stretched further in maths. With the change in the curriculum, schools were encouraged to follow a CPA approach.

Inspire Maths is based on the Singapore way of teaching, modified to support the English curriculum, so we know we’re meeting the expected standards. We really like the idea of all children accessing the same objectives in a lesson and the fact that it supports all learning styles.

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14 Based on 2017’s national average, where 75% of children were meeting expectations, and 23% achieving greater depth [Department for Education, 2017 ‘National curriculum assessments at key stage 2 in England, 2017 (revised)’]
We found out about the programme through word of mouth from a school whose Head had been to Singapore and seen first-hand the transformative effect of teaching for mastery. We visited their school, and seeing Inspire Maths in action immediately made our decision, especially when we saw the improvement in that school's results, and not only in maths: it was also impacting on their reading results. It was a no-brainer for us to decide to use it. It was very attractive because it supported the mastery approach which we were being encouraged to adopt. We looked through the textbooks and journals. Even though it felt like a lot of money, we viewed it as a long-term investment.

**The impact of Inspire Maths**

We love the way Inspire Maths boosts children's reading skills, teamwork and collaboration, enabling them to become more independent. The Inspire Maths curriculum is more challenging, and typically the children are working a year above the National Curriculum expectations. It also frames the questions in a problem-solving context. We felt we needed more focus on reasoning, too, as this is what staff were struggling with, rather than fluency. As teachers, we like the structure. It encourages all aspects of learning theory to be covered in a lesson. It's very visual and child-friendly, so they can see how each lesson builds on the previous one: you see it all come together. We have three-form entry, and we like the idea that each class is accessing the same lesson, and every teacher following the same approach. As a result of adopting the programme, our staff are happier and our children are thriving.

**Using Inspire Maths alongside the National Curriculum**

It's true that in Year 1 children encounter Year 2 curriculum content, but we have extra weeks throughout the programme where we can cover National Curriculum statements that might not otherwise be achieved. In Year 2, we also have the interim statements to cover, so each Friday, one of our maths lessons focuses on the interim statements, and that's worked fantastically for us.

This year we were externally moderated. We had all the evidence for all the statements, as well as a comprehensive Inspire Maths journal to show we've covered it very well across Year 1 and Year 2. The moderator was very happy with all our judgements; the only judgement that was changed was from an expected to a greater depth. Moderation went extremely well: they were very happy with Inspire Maths, and satisfied we were meeting or exceeding the National Curriculum expectations.

We follow the programme very closely. We have every resource and component that comes with the programme, and we bought each child their own textbook and journal. We use the online resources closely, and really try to make sure we get the full experience. Even though it is a structured scheme, you still have the freedom and flexibility as a teacher to put your own spin on things. One of the concerns about adopting a scheme is that you can feel you can't express your individuality as a teacher, but Inspire Maths can be adapted to the needs of every classroom. The online resources are invaluable.

At the beginning, we followed the teaching guide religiously, and it was very easy to follow and the learning goals were clearly stated. The range of resources are easy to use, and the online resources are fantastic. We can put the textbook onto the screen for the children to follow. The less confident teachers are well supported through the teaching books, and the clear structure. In my opinion, if you follow the structure, you can't teach a bad lesson.

Now we're going into our third year of using the programme, we don't need to follow the guide quite as closely as we're more confident about what we're doing. This year we decided to change some of the units around a bit to support what's right for each cohort or year, without losing the consistency across the school.

**Pace and progression**

The textbook is structured to allow time for practising and embedding the learning. If we feel that the children haven't got something, we'll simply spend the next lesson going over it again. The pace has definitely got even better this year, because we're feeling more confident about using it.
Supporting children working below and above expectations

What we’ve tried to do is support the children within class using our teaching assistants. As soon as we see a child is having an issue, we deal with it straight away. The majority of children cope very well with Inspire Maths, and in the 2017/18 year there were only three children (all with education, health and care plans) who couldn’t access it. We do sometimes pre-teach if some haven’t quite grasped a concept. They have the concrete apparatus at each table, so they can have a play to see if they can work it out for themselves. In the two years we’ve been using Inspire Maths, we’ve seen a reduction in the number of children who are lagging behind expectations. Again, it’s amazing what they can achieve if they’re exposed to a high-quality structured scheme with the right resources like Inspire Maths.

In the past, children doing well would have been given more of the same, but perhaps “with a bigger number”. But what you realise with Inspire Maths is that some children who might have a very good abstract understanding might struggle to represent it pictorially or using manipulatives, so that became a challenge for them. The problem-solving in the books definitely challenges the children, and the assessment book provides further challenge, and of course the programme is based around a more challenging curriculum anyway. There’s been no difficulty in challenging these children, without pushing them on.

What I love about the scheme is that although it provides everything, it doesn’t stop you from incorporating other resources. I feel as teacher, we have a lot of freedom to use it the way we want to.

Supporting teachers

Sometimes teachers become used to teaching in a certain way and are wary of textbooks, assuming that it’s “just another textbook series”. Some teachers were perhaps concerned about the level of challenge, but once they got going, they were in awe of what the children could achieve, so any concerns were ironed out early on.

Firstly, all our teachers went on the five days’ training. It’s essential for all staff, and not just the maths lead, to benefit from the training so that they can understand the underlying rationale of the programme and have that clear vision of what they’re hoping to achieve. The Maths Coordinator supports staff and helps to address any concerns or questions. We discuss it at staff meetings, and training from OUP is very helpful.

The training talked about how all children learn differently, but must all be exposed to the same learning objective. It showed us how to teach in a way that supports all children, but also works for our staff. We’re now very confident with it. We’ve compiled our own bank of interactive whiteboard resources to dip into in future years. It’s important that staff feel that they can raise any issues or concerns openly, and they will receive the support they need.

The school’s maths strategy

Our strategy is led by the National Curriculum, which informs what we need to cover. We want each child to succeed and achieve mastery of all statements. We need to support those who struggle to access the statements, and ensure that we challenge the high attainers, which make up a large percentage of our intake. Our aim is to provide a curriculum that individually caters for the needs of each child. We want all staff to share the same level of understanding, and have access to the same high-quality resources, training and tools. Our parents are fully informed, so they can support their child at home, and understand why we’ve taken certain approaches.

Planning and teaching

It’s creating a lot of discussion about maths amongst staff. We’re discussing our teaching much more, and the approaches we take. Our Teaching Assistants are much more involved, and they feel they’ve been upskilled by using Inspire Maths, because generally speaking they don’t get as much formal training as teachers.

We don’t change the teaching sequence within a lesson, as every teacher knows how important that is.
Previously, we would create handwritten plans. Now we use the medium-term plans which we annotate with observations or issues for tracking, but we no longer create a daily plan. That frees teachers up to decide which resources to use, and that works well. Children work in mixed ability pairs on the carpet for “Let’s Learn” and “Put On Your Thinking Caps!” Sometimes children might choose to work with their partner, or go and sit at the literacy table, sometimes they might want to work independently, so we’re quite fluid in the way we allow them to work. That allows better readers to support children who may be fantastic at maths, but struggle to read the questions. That’s then improving their reading skills, which has been really positive.

Without a doubt, *Inspire Maths* has had a positive impact on teacher workload, because they’re no longer spending time on planning, and all the resources are there for you. The school has also bought Dienes maths equipment, so the programme allows staff time to focus on the teaching.

**Supporting a mastery approach**

*Inspire Maths* has provided staff with a clear vision of what they want to achieve with their maths teaching, but the real surprise has been the impact on the children. I can’t believe their enthusiasm, and the independence we’re seeing in the way they work, as a result of using *Inspire Maths*. They have ownership over their journals, they love the way the scheme looks, and they’re so enthusiastic about every lesson. That for me has been the biggest gain: seeing the children’s confidence. There isn’t a child who now feels that they can’t do maths. They can problem solve, they can work on their own. We’ve stopped thinking that some children aren’t capable of working at a certain level because those children might now be top of the class. You can’t put a limit on children’s learning using *Inspire Maths*. Previously the traditional differentiation approach we used almost forced teachers to make assumptions about children’s ability, but with *Inspire Maths*, it allows every child to reach their potential.

**The importance of the textbooks**

Firstly, from a child’s perspective, they are very straightforward, and structured. They start with the basics and build from there. We like the way that it supports the focus on a concrete approach. We’ve got visualisers, so we use these for the concrete step, then pictorial. We then make the connection with the abstract. Concepts are worded in different ways, but it also gives repetition, so it reinforces the learning and supports the fluency that they need to do well in SATs, but also challenges them with problem solving and reasoning, so it’s not just the same boring questions again and again.

**Advice for other schools implementing *Inspire Maths***

If I describe *Inspire Maths*, it is our view of a perfect scheme. It offers online resources, and supports the National Curriculum correlation, so even though it exceeds the standards, we know how our children are doing against the statements. We love the fact that it provides our medium and long-term planning, so that ensures that all staff are on the right track. That then also gives extra time to prepare and plan resources which ensures that the children get the best out of the scheme. It’s very structured and well thought out: they’ve really considered every last detail. We start with posing a problem to the class, then looking at a problem together, allowing the children to discuss it with each other, then use questions to see how well the children have grasped it. They then practise it, and it moves to something more challenging for those who are capable. It brings out so much discussion in the children – it allows them to compare and contrast ideas with each other.

We love the fact that it has all the homework resources. It’s very parent friendly. It comes with a PowerPoint for parents so they’re informed. It comes with tests to check progress which we’re planning to start using from September. We really love the fact that everybody is “on the same page” and is using the same approach, so we can help each other out.
Improving results

In 2015, just 53% of children in Year 6 were achieving the expected level in maths\(^\text{15}\). By 2017, this had risen to 83%, expected to be maintained in 2018.

Adopting Inspire Maths

It was very challenging, which is what we wanted; very structured, very hands on with the practical side, and we felt it was well organised and easy to use.

Consistency across the school was a huge priority. We wanted a clear journey for children as they progressed through school. We wanted a familiar process and a common language for our pupils which would then support their literacy. Tying into the focus on oracy developed through explaining and using full sentences which we’ve applied across the curriculum was also important. Inspire Maths enables children to become better at talking about maths, and the better they can explain, the more they can understand.

We looked at a lot of different schemes, including Maths – No Problem! and another Oxford one. We visited several advocate schools to find a programme that fitted our school’s requirements best. It was a big decision because of the level of investment required. Our governors decided to support it hook, line and

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\(^{15}\) 86% were at or above Level 4, 72% Level 4b and 28% Level 5, all below the national average
sinker: the recommendation is for one textbook between two pupils but we’ve bought one per child. So far, it’s been good and I believe in it. It’s the right decision for the school. Our KS1 maths results have gone up.

We put a lot of time and thought into choosing Inspire Maths. We were looking into a mastery approach; at the time we thought we were doing mastery, but in hindsight our lessons weren’t challenging enough.

**Using Inspire Maths alongside the National Curriculum**

We follow the structure of Inspire Maths very closely. Using a different curriculum is a valid concern, but the payoff is that there are more children who become better at reasoning questions than ever before, and who work at greater depth. Also it’s not always the most numerate who are best at reasoning: we’ve had those who’ve been deemed poor mathematicians see their status in the class go up quite dramatically. In Year 6, we stop working through Inspire Maths in February. We go back and revisit areas that will be assessed in the national tests. In my opinion you’d get that in any scheme, and as you approach the statutory test, you need to prepare the children. Call it a revision period!

**Pace and progression**

Rather than pushing children on, we focus on ensuring we’ve covered the assessment framework statements. Both the children and teachers have engaged with an aspirational curriculum. It’s a challenge the first time round: in the first year, teachers weren’t yet confident, not having gone through the process before. Now we have high expectations of the children, and the belief that children can achieve against the greater challenge.

**Supporting children working below and above expectations**

The programme supports children working below expectations extremely well, although as a school we need to think about how well we use Inspire Maths to challenge the most able. We’ve just done a book survey, and have found that the more difficult, stretching questions haven’t been covered. This isn’t because the children aren’t capable of doing them, it’s because teachers aren’t yet asking them to tackle these questions. This is something we need to work on as a school.

Schools always need to reflect on how the most able are supported, and that often comes down to staff CPD.

**Supporting teachers**

It’s very supportive. We would recommend the training as vital to adopting Inspire Maths, although once you’ve had it, the resources are easy and straightforward to use. It’s much more than just a ‘how to use this scheme’ training programme: it’s about the conversations that underpin the questions. Staff had to realise that it’s not like other schemes, where you start at question 1 and work your way through.

The Year 1 books are a good case in point of how useful the training is: the material is so focused on discussions, and how to ask the questions, that it’s important the teacher is helping the class to access that. The richness comes through the interactions between pupils and the teacher. That needs to be pointed out through the training.

As an advocate school, we get a day’s training each year. We’re also involved with our local maths hub, and even though we use Inspire Maths we continue to engage with other maths groups.

**The school’s maths strategy**

Currently, we do have an issue further up the school where there are gaps between the ability of the lower attainers, and those working at the expected level of the scheme. We sometimes set the children, or put in place intervention support in class, sometimes using peer or teaching assistant support, and we may do pre-teaching or catch-up teaching. On the whole, even the less confident speakers fare well with the programme because they know that they all have to describe what they’re doing.
Planning and teaching

The planning is very well supported through the scheme, although teachers still have to invest time in getting to know it, and plan for their lessons. We sometimes pre-teach concepts and do catch-ups, and teachers have to be creative, particularly in terms of how to approach the reasoning. It has made planning easier, because they’ve got the medium-term plans in the teacher books. We’ve kept our teachers in the same year group, so they’re now much more familiar with the material, and can draw on their previous experience of teaching the content, so they know if they need to do a bit of pre-teaching or approach the unit slightly differently. That said, we do stick to the programme closely. I tell my staff that they can add in, but not take out, material, and that’s about knowing your cohort.

Supporting a mastery approach

As a school, in the past we’ve been guilty of teaching a skill and then practising it twenty times, just changing the numbers. There’s limited benefit to that! In *Inspire Maths*, the questions are not just a list of similar questions: they underpin the reasoning. *Inspire Maths* doesn’t expect children to do a lot of repetition; it’s looking at the depth of the question. There’s far more discussion about maths, both teacher talk, and discussion amongst the children themselves in groups, pairs or whole class. Children are expected to provide coherent explanations in full sentences, and to scrutinise their own ability to explain things clearly. The talking encourages self-reflection, and we hear them saying “now that I’ve had to talk about it, I would do it differently.”

Children are now more confident and creative in their approach to maths, as they realise that there’s more than one way of tackling a problem. They are enjoying maths more, even those who historically weren’t the high fliers. *Their language and communication skills in maths are much richer, and this has transferred to other areas of the curriculum.*

The importance of the textbooks

A lot of the training was around the background and pedagogy. In KS1, the approach is different to that in KS2. Textbooks are new to KS1, and possibly the idea of working through a textbook is not just answering the questions but reframing them in different ways so they learn from a young age that you can talk about representations in different ways.
Improving results

The school has seen a dramatic improvement in KS1 maths results, with the percentage of children achieving the expected standard going up from 57% in 2016, to 72% in 2017, then to 95% in 2018, with 35% of children now working at greater depth.

Adopting Inspire Maths

We have a number of learners with SEN or complex social and emotional challenges, and a high proportion of pupil premium children as we’re in one of the most deprived areas in the country, so a lot of our learners start school significantly behind. That means they’re not able to access the National Curriculum expectations for their age. Because Inspire Maths is based on using manipulatives and follows a mastery approach it has enabled children who previously couldn’t access the age-related curriculum to do so. It’s definitely made a difference there, because we now have more working at age-related expectations. Previously, we were struggling to identify children working at greater depth, and how to challenge them. The whole Singapore approach has enabled us to support these children.

We wanted to improve maths standards across the school and ensure that our learners were being taught through a mastery approach to maths. That’s how to meet the expectations of the National Curriculum, where the emphasis isn’t moving them onto the next years’ objectives, but to take them deeper into their learning. As a school, we wanted to understand the pedagogy underpinning the teaching of...
maths, so that teachers and children have access to the best quality resources.

It was the decision of the Head (also the Maths Lead), along with a teacher who advises on maths. We’d been trying to improve our maths results, and plateaued at a certain level, so we were looking at different maths approaches. The Head had done some research into the Singapore approach, and read the DfE information about Singapore textbook-based schemes.

Before adopting it, we went to see a very high-performing school with 100% achieving the expected standard, to see why they wanted to change to *Inspire Maths* when they already had such fantastic results.

**The impact of *Inspire Maths***

Staff were less concerned about the aspirational aspect of the scheme because we have high expectations, and more about the whole-class approach and use of textbooks because that’s very different from our school ethos. We have a very individual personalised curriculum, and staff were concerned that we were moving away from our view of ‘good practice’.

Now they have seen the impact on the learning, they love it. We’ve recognised that previously we were unintentionally “capping” children’s learning, whereas now they have the opportunity to go deeper, exploring and challenging their thinking. **There are children who’ve developed in a way we wouldn’t have imagined.** At first, we were a little concerned about the textbooks because we felt that our children with behavioural challenges would be distracted. But now, the children love maths, and are excited by it, which they weren’t previously.

The training alongside the programme is key. It’s unlocked teachers’ understanding of how maths develops, right from the start of understanding number and having number sense through to the pedagogy of what makes for effective teaching. It’s not a scheme you can pick up and run with: the training and professional development is essential for developing self-reflection among staff.

**Using *Inspire Maths* alongside the National Curriculum**

If you want a textbook just to pick up and hand out, then *Inspire Maths* isn’t the right scheme. *Inspire Maths* is an approach to teaching maths; it supports you in becoming a better teacher. We didn’t use a scheme before *Inspire Maths*, so we weren’t expecting *Inspire Maths* to do all the work for us. We have an expectation of what we think learners can achieve, but I’ve realised it enables children to explore and reflect on their learning. It encourages them to use a wide range of manipulatives, and you spend a lot of time unpicking a concept before you use it. Previously, we told children how to do a calculation by giving them rules to follow without allowing them to make connections, or have the chance to spot patterns and relationships for themselves.

The *Inspire Maths* correlation grids map out exactly how the programme covers the National Curriculum, and we’ve addressed any gaps through our own teaching. Even if you follow all the units in the programme, you have extra time to supplement it with your own resources. The staff don’t find it a problem. It’s more of a focus for the assessment year groups. The programme has even inspired us to look at how we teach other subjects in terms of a mastery approach, so they can make more purposeful links in children’s learning.

We now have the confidence to take the time to explore concepts, and to supplement the programme with additional resources where we feel it’s necessary to meet the National Curriculum statements.

**Pace and progression**

We’ve had to revisit our tracking and assessment statements, because before we were assessing against coverage, whereas now we track what’s been taught, as well as monitoring their depth of understanding and which stage of learning they’re at: concrete, pictorial or abstract. **Now we’ve got children working at greater depth, rather than moving onto the next year’s objective.**
Supporting children working below and above expectations
We used to use personalised challenges and write the steps for success for the different levels of challenge within our maths progression, and then match them to the children. The approach now is that all children start at the same stage. We start with exploration, then move onto a stage of qualifying their understanding and making links to previous knowledge, and that’s where you identify misconceptions. Then they progress onto consolidation and practice, and finally onto application. Previously we were trying to do that entire sequence within a lesson, and we realise that we were moving children on too quickly, and not giving them time to embed their learning.

Supporting teachers
You do need the high-quality training that underpins it supported by your own CPD: that’s what makes it an effective programme. All our staff have had the initial training, plus additional training and then fortnightly maths meetings to share good practice and allow more experienced teachers to support those who are less confident.

The training from OUP went back to the basics of teaching maths and looked at what effective practice looks like. It’s challenged our understanding of maths and raised our understanding of the underlying principles. After the first two days, I came away with lots of questions, but as you go on to the third and fourth day you start to make sense of it, and by the last day we couldn’t wait to start using it. It’s not really training on how to use the scheme; it’s more about the mathematical approach.

It’s a challenge to adopt a whole new approach, and staff have had to rethink their understanding of how maths is taught. We all found it quite hard to start with, but we persevered and are confident now. My maths buddy and I have attended additional Inspire Maths training, we’ve bought in training for staff, and we run our own in-house training.

The school’s maths strategy
We want to continue to raise standards in maths across the school. We also want our learners to follow a mastery curriculum.

Planning and teaching
We follow the programme very closely. We use the medium-term plans, supplemented with our own planning. The guidance is there to support your progression through the unit. We use all the books with each individual learner apart from the assessment book, which is used to inform assessments and further challenge.

In fact, we use a range of assessments: PUMA maths tests and our own internal tests, alongside the Inspire Maths tests, to triangulate our evidence.

Supporting a mastery approach
Both the children and teachers have engaged with an aspirational curriculum, and they take on so much more. It’s a challenge the first time round: in the first year, teachers worried that they couldn’t follow the programme with certain children. A lot of that was due to teacher confidence, and not having gone through the process before.

Now we have high expectations of the children, and the belief that children can achieve the harder curriculum.

The scheme starts in Year 1, and as part of Inspire Maths training we looked at pre-Year 1 teaching. If you don’t get the foundations in basic number sense right, the problems accelerate and become compounded. Quite quickly, children become rather sophisticated in their language and problem solving. It’s particularly effective for children who aren’t natural mathematicians because they can use the concrete resources. Because it’s a mastery curriculum, you’re constantly revisiting skills. The questions are carefully formulated to encourage children to look for patterns and make connections.
The children are far more confident and see themselves as mathematicians. They look forward to and enjoy maths lessons, and are not afraid to take risks, and challenge themselves. They’re more resilient as learners, because they understand that it’s not about always getting the right answers: it’s about exploring and developing and it’s OK for it not to work out each time. It’s the self-reflection that this prompts that’s important, and for children to reflect on why it didn’t work, and what they would do differently next time. Children love maths, because they feel successful.

A lot of our children start school with very poor SLC (speech, language and communication) skills, and *Inspire Maths* promotes speaking in full sentences and using the correct mathematical terminology to explain their thinking, which has had a knock-on effect in other curriculum areas. As a school, we specialise in offering a personalised learning programme and yet children have surprised us with what they’re able to achieve through independent learning and exploration. Where we’ve worried about spending time because of the pressure to cover the National Curriculum, we’ve now realised that taking the time allows the learning to develop, and children become empowered.

**The importance of the textbooks**

At first we didn’t introduce the textbooks to all year groups because we were concerned about using them, so we took questions and challenges from the book. But as we went through the training we realised that the pupil book was a way of checking that they’d gained the understanding. We use the textbook to model effective practice and how to explore a mathematical concept. But you don’t have to just follow the textbook religiously: you and the children are encouraged to explore, and to approach the questions in different ways.
Improving results

In 2015, 92% of children in Year 2 achieved Level 2 or above, just below the national average. In 2018, 83% of children are meeting expectations, and 40% are achieving greater depth, both well ahead of the national average.¹⁶

Adopting Inspire Maths

Our maths progress and attainment across the school was low. We’d received an Requires Improvement grade from Ofsted, and that was largely down to our teaching and attainment in maths. Maths was a big priority for the

Background information

Barncroft Primary School is a two-form entry school with classes from Reception to Year 6. It is located in an area of high deprivation: the catchment area is one of the most deprived areas of the country, and is one of the ten most deprived areas in Hampshire. In some classes, nearly 70% of the children attract Pupil Premium. The school has high levels of mobility because many families live in social or temporary housing. The school is also close to a children’s home and a women’s refuge, which both bring particular challenges. Historically, the school has obtained very low results in both KS1 and KS2. Very few children have achieved the higher levels and reaching the expected standard has been incredibly difficult.

Prior to implementing Inspire Maths, Barncroft Primary School was following the National Curriculum and using resources from the Nrich Maths Project where appropriate. They were not using any mastery resources. They began using Inspire Maths in 2015, opting to phase it in on a year-by-year basis. KS1 data has improved dramatically, and they confidently expect to see a similar outcome for the KS2 data in the future. Barncroft Primary School use past papers to prepare for national tests. They use assertive mentoring to track progress against the key performance indicators for each year group. Since using Inspire Maths, they have been using the beginning, middle and end of year assessments, as well as the formative assessments in the practice books.

“It’s completely changed the children’s levels of resilience, and they’re far more willing to try things out, and explain their thinking and reasoning. Their enjoyment of maths has improved, and this is partly evident in the reduction in challenging behaviour in maths lessons. Our maths lessons are now the calmest session of the day.”
Inspire Maths report and case studies

Inspire Maths has had an impact on maths results, but also on speaking, listening and language, particularly children’s ability to speak in full sentences, and read and interpret information. The textbooks require them to read and comprehend. They have developed their technical language which they can use in science, along with the ability to make predictions and use their reasoning skills. We can see the impact of Inspire Maths across the curriculum.

Using Inspire Maths alongside the National Curriculum

Before going on the training, there was some concern amongst staff about adopting a textbook approach, but on closer inspection, it was clear that the questions in the books were of a higher quality than those being asked by teachers themselves at the time. Historically teachers had spent their Sunday evenings planning questions to use in their teaching, and the questions lacked the variation, progression and multi-representation of the Inspire Maths books. When you unpick the questions in Inspire Maths you can see how carefully constructed they are in terms of constantly building on prior knowledge and gently moving the children forward. Once the teachers saw that, they were more confident. After the training, they were bowled over by the programme, because they realised that the books are just one component of a much wider approach: changing the way that maths is taught, from planning, to the focus on problem solving and reasoning, and the requirement for children to answer in full sentences. They could see the depth of learning that could be accessed through the questions.

It can be surprising that a textbook programme is so strongly driven by a CPA approach; it uses concrete materials more than any other textbook scheme.

Pace and progression

We’ve definitely reduced the long tail of underachievers, so they are moving forward at the same pace. Those using books from a lower level will have significant learning delays or SEND (special educational needs and disability). For them, we link the units following a “spiral” curriculum, so they still have the same topic, but access it at a lower level. Because the

school, and within maths, problem-solving and reasoning were our main concerns. Children were working at a procedural level but didn’t have depth of understanding to apply that through variation and reasoning.

We’d heard about a pilot of Inspire Maths at our local teaching alliance, and because we were looking for something to improve the quality of our maths teaching, we went along to the initial training session. We were impressed because it wasn’t just another scheme: it was a high-quality teaching programme. After the pilot, our outcomes had improved so dramatically that we decided to invest in it.

We were looking for a commercial scheme, but something that was based on research on how children learn. We wanted it to follow the CPA approach, and include lots of reasoning and variation. We were looking for high-quality teaching sequences, which taught concepts to sufficient depth. We wanted it to support the improvement of teaching through high-quality professional development. We wanted to empower our teachers, so it was important it wasn’t a “scheme” which teachers just followed and delivered.

The deputy head and Year 1 teacher attended the training, and having made the decision to adopt it, we sent all teachers on the training.

When the school was making the decision to adopt Inspire Maths, staff were concerned about the depth of learning required by the programme (and a mastery approach). However, when we looked at the Year 2 National Curriculum, we realised the concerns were around reasoning, problem-solving and depth of learning, which were requirements of the newer and higher expectations of the National Curriculum, which they were conflating with concerns over Inspire Maths. Once they realised that, they could see that Inspire Maths would help them to meet the new higher expectations of the National Curriculum.

The impact of Inspire Maths

Inspire Maths has had an impact on maths results, but also on speaking, listening and
expectations are so much higher than those for the National Curriculum, we will pause if we feel children need a bit longer to grasp a new concept or skill, knowing we’re still meeting the National Curriculum expectations.

The pace is appropriate: we only move on when they’re ready to move on. It’s appropriately challenging.

**Supporting children working below and above expectations**

*Inspire Maths* has supported children working below and above age-related expectations very well. Greater depth and fewer topics mean children can achieve better understanding. That means later on they’re not trying to remember something they’ve not really understood. Instead, they have lots of opportunities to apply their learning which ultimately raises attainment.

*Inspire Maths* has helped those with delays in SLC skills because it follows a CPA approach, so talk is scaffolded through the manipulatives and pictorial representations. From that, they move to the abstract, whereas before they were going straight to the abstract.

Children who need to catch up are given one-to-one support using the *Inspire Maths* resources because these are the best quality resources available, and to maintain consistency.

**Interventions**

The language fluency is driven by the need to be able to explain their reasoning: if they can’t talk about why they’ve done something, it’s hard for us to see their strengths and gaps, so we can assess them and address misconceptions or gaps.

The school has introduced an afternoon “maths meeting” and this is used to reinforce the content of the morning’s lesson for those who haven’t quite got it, and to stretch those who need the greater challenge. The higher attainers use the assessment books, and the maths journals to allow working at greater depth.

Because the *Inspire Maths* lessons enable teachers to get the same quality learning in forty minutes as they used to get in an hour, this time is allocated to the afternoon session. Overall, there hasn’t been an increase in the timetabled allowance for maths, but it’s just structured differently.

**Supporting teachers**

Because the quality of the professional development is so good, all the teachers who’ve attended it have moved on in their practice. The NQTs have said that they’ve learned more on the *Inspire Maths* course than in their ITT (initial teaching training), while the confident teachers have revisited some of their assumptions about teaching maths and reflected on their practice. Staff’s technical vocabulary and understanding of maths language has come on significantly.

The training was fundamentally important because it’s the quality of the CPD that’s underpinned the success and effectiveness of the programme. Without it, our teaching and results wouldn’t have been transformed. OUP were very supportive. The CPD is over five days, spread out over the first year so that you can interweave the training with starting to use the programme, which means that you’re supported in the first year of using it.

Anytime we get in touch they’re quick to respond. We aren’t a typical school, and OUP have come up with advice which is specific to our needs.

**The school’s maths strategy**

Our strategy is for all children to attain their potential in maths, to be confident and capable so that they can progress to the next stage in their education, and for all to receive high-quality teaching in maths for the duration of their time at the school.

**Planning and teaching**

We’ve completely changed our planning format to follow the *Inspire Maths* plans, and we’ve changed our approach to assessment. In planning, adopting *Inspire Maths* had meant teachers are more focused on reasoning, variation and children really showing depth of understanding and secure knowledge.
rather than focusing on procedural learning which was driven by curriculum coverage. That meant that children could get away with surface learning without being able to use and apply their learning.

Teachers don’t just follow the teaching guides: they add to and annotate the plans to reflect the needs of their children. It’s definitely reduced the time spent on planning and means there’s greater consistency across the year groups.

We follow the sequence as closely as we can, to ensure we benefit from the consistency. The scheme is very well planned and ordered.

It’s been very straightforward to use the resources; the training was very useful in this. We believe the programme has reduced teachers’ workload.

The curriculum doesn’t give an exact year-to-year match, but offers a progression through the books. So although we’re very clear that book 1 doesn’t mean Year 1, the expectations are so much higher it’s better to follow the structure of the programme because you know that children are exceeding the expectations of the National Curriculum. For example, some of the Year 3 children are using the Year 2 books, but we know that they’re still meeting the National Curriculum expectations.

Initially we looked at changing the order in Year 2 to prepare for SATs, but because the expectations are so much higher, we know that by May in Year 2, children are already achieving the National Curriculum expectations.

Supporting a mastery approach

It’s completely changed children’s levels of resilience, and they’re far more willing to try things out, and explain their thinking and reasoning. Their enjoyment of maths has improved, and this is partly evident in the reduction in challenging behaviour in maths lessons. Our maths lessons are now the calmest session of the day.

We like that Inspire Maths focuses on the pedagogy and is based on research on how children learn, particularly with regards to educational theory underpinning the CPA approach.

Ultimately, I don’t see Inspire Maths as a scheme, I see it as a high-quality teaching programme. It fills the gap left by ITT which puts less and less focus on how children learn and understanding their needs.

For less – and more – confident teachers it shows them how to deliver a spiral curriculum, teaching the right things at the right time.

The importance of the textbooks

The textbooks are important and we are increasing our use of these, and of course extending the programme up into Year 6. We’re expecting that once we have our first set of results with Inspire Maths we’ll see the same improvements as those we’ve already seen at KS1.
4 Acknowledgements

Our thanks to all the schools and teachers who contributed to these case studies, for their enthusiastic adoption of the resources, and for their willingness to share their experiences here.

5 References


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