

Inspire Maths and the Singapore approach to learning and teaching mathematics

- **What is Singapore Maths?**

There is no such thing as Singapore Maths in Singapore. What has come to be known as Singapore Maths is the Singapore approach to teaching and learning maths which is recognised globally as one of the most impactful ways to teach and learn maths. Singapore's students have consistently been top performers in international assessments, such as Trends in International Mathematics and Science Studies (TIMSS) and OECD Performance for International Student Assessment (PISA). This approach is integral to *Inspire Maths*, a whole-school primary maths programme based on the series *My Pals are Here!*, which is used by 100% of Singapore's state primary schools.

- **What is it that Singapore does so well?**

Singapore's high performance internationally is attributed to numerous factors including high quality textbooks combined with high quality, sustained teacher professional development. The Ministry of Education in Singapore introduced textbooks to primary schools in 1985 and these have been rigorously developed over decades of research. The Singapore approach to teaching maths is based on the learning theories of Bruner, Dienes and Skemp. The pupil textbooks, for example, draw on Bruner's Concrete-Pictorial-Abstract approach to develop secure foundations that lead to a deep understanding of mathematical concepts.

- **How does the Singapore approach work in the classroom?**

Lessons in Singapore involve teaching the whole class together. Teachers introduce a new concept or skill in the first part of the lesson; this involves lots of mathematical discussion supported by concrete and visual representations on the whiteboard. This is followed by guided practice where pupils work collaboratively to solve problems. Pupils are encouraged to use concrete apparatus and share ideas as they work in groups. This is followed by individual practice to develop fluency and build confidence.

- **Is Inspire Maths from Singapore?**

Inspire Maths is the only series in the UK based on the leading Singapore Maths series *My Pals are Here!* which has almost 30 years of efficacy in Singapore primary schools. As it is a proven high quality textbook programme which is attributed to student achievement, this was the most appropriate series to adapt for the UK. The UK edition of *My Pals are Here!*, *Inspire Maths* has been developed with leading educational experts in the UK and supported by face-to-face professional development. It has been selected by the Department for Education and NCETM for the [national textbook research project](#).

- **How does this UK edition differ from My Pals are Here!?**

Inspire Maths follows the same progression and structure as the original series *My Pals are Here!* We have made changes to the contexts and names so they are familiar to UK children and changed the currency. To support teachers using the published resources, we have also provided wraparound resources online on *Inspire Maths Online*. This collection will continue to grow as we work alongside schools using *Inspire Maths*.

- **How will the Singapore approach transfer to the UK?**

The textbook series was written to support non-specialist maths teachers to deliver it; the pupil textbooks and practice books are highly structured with explicit visual representations and precise mathematical language that will support pupils to become confident mathematicians. UK teachers are already familiar with the CPA approach, which underpins *Inspire Maths* – for example there are 10,000 schools using *Numicon* successfully to support and deepen children's mathematical understanding. The *Inspire Maths* programme offers professional development to develop teachers' mathematical subject knowledge, develop pedagogical understanding of the approach so the textbooks can be used effectively and support schools leaders and teachers in planning for effective implementation and delivery.

To find out more about how schools have been successfully using *Inspire Maths* in the UK, [view case studies and videos](#).

- **There are so many cultural and institutional differences between Singapore and the UK. How will Singapore methods work here?**

The cultural and institutional differences with Singapore do not mean that children in the UK cannot do as well. The Singapore Maths approach is not beyond any teacher. The approach has a theoretical foundation in learning, such as concrete-pictorial-abstract that can work successfully in any country. *My Pals are Here!*, the series on which *Inspire Maths* is built, has been successfully adapted for use in the USA, South Africa, The United Arab Emirates, the Netherlands, Australia, Hong Kong, India, Japan, Pakistan and Chile, to name but a few.

Inspire Maths and the 2014 National Curriculum

- **The level of work in Inspire Maths appears to be pitched too high. Why is this?**

Inspire Maths follows the mathematical progression of the Singapore curriculum which is not the National Curriculum for England. It is an aspirational curriculum with higher expectations than the National Curriculum, but it is highly structured and supported by comprehensive teacher's guides written for non-specialist maths teachers.

- **How does Inspire Maths fit with the new National Curriculum?**

Sometimes topics are introduced earlier in *Inspire Maths* than in the National Curriculum. The order of topics in *Inspire Maths* are exactly the same as *My Pals are Here*: the Singapore curriculum has been used in Singapore schools for 15 years and has proven impact based on evidence from international comparison tables. Where there are gaps between the 2014 curriculum and the original Singapore programme, additional activities are provided digitally on *Inspire Maths Online*.

Curriculum matching charts are also available on *Inspire Maths Online*, with suggestions for additional activities to ensure complete coverage of the National Curriculum. To view the charts, register at www.oxfordowl.co.uk

- **What additional topics are included in Inspire Maths that exceed the National Curriculum?**

The correlation charts indicate additional objectives that are not in the National Curriculum, but are essential to the Singapore curriculum. Most of these can be found in *Inspire Maths* 5 and 6 and include topics such as speed, and finding the circumference and area of a circle.

Implementing Inspire Maths

- **How do I get started using Inspire Maths?**

The best starting place is to download [Essential Reading for Inspire Maths](#). This provides a pathway to support teachers after purchasing Inspire Maths resources and includes considerations such as planning professional development, accessing *Inspire Maths Online*, making an implementation plan and transitioning children into the programme.

- **What is the Inspire Maths Online subscription?**

This is an annual subscription accessed from www.oxfordowl.co.uk. *Inspire Maths Online* provides support to implement *Inspire Maths* in school. This includes editable planning documents, curriculum correlation charts, transition guides, and additional activities to provide complete National Curriculum coverage and video support. To activate your subscription, refer to the [School Leader Set up Guide](#) and [Classroom Teacher Set up Guide](#).

- **How do Junior Schools implement Inspire Maths?**

We recommend that Junior Schools follow our transition guides and refer to the curriculum correlation charts on *Inspire Maths Online*. Each transition guide outlines a 7-week block of teaching covering the key mathematical concepts to prepare pupils for Inspire Maths 3 Pupil Textbooks. This is recommended to prevent gaps in knowledge. If there is a partner Infant School, it is ideal that the children begin *Inspire Maths* in Year 1. For further guidance, please contact your [local educational consultant](#) to receive a copy of a Junior School version of Essential Reading for *Inspire Maths*.

- **Are children grouped by ability?**

In a mastery classroom there is an expectation that the class is taught together, with no preconceived ideas about ability before pupils are taught a new concept and skill. When schools are differentiating, they are setting predetermined ability groups or activities before the lesson. In a mastery classroom, all pupils are working on the same concept and they are given intervention support as and when required. Children are taught together and the rapid graspers are given tasks or questions to go deeper, rather than accelerating some pupils into new content.

Teachers using *Inspire Maths* tell us that mixed ability groupings encourage mathematical discussion, improve children's confidence using mathematical vocabulary and children's verbal reasoning.

- **How do I manage children of different ability levels in a class?**

As *Inspire Maths* is a programme that promotes teaching to mastery, the whole class are kept together. However, the 'quick graspers' are given opportunities to deepen their understanding through the higher-order questioning that the teacher would use to go deeper, and challenge further, giving opportunities for enriched and robust mathematical conversation. *Inspire Maths* is a programme which builds deep mathematical understanding through whole-class teaching and learning, as well as the collaborative group/partner work, rather than moving children quickly through new topics. The challenging practice and problem solving tasks in the Practice Books provide ideal material for this.

- **How do I manage different year groups in one class?**

Children need to develop the firm foundations at each level before moving on. Topics are built on at a higher level as children move through the programme from *Inspire Maths 1* to *Inspire Maths 2* and so on; the Year 1 children would need to follow the *Inspire Maths 1* programme and the Year 2 children would need to follow the *Inspire Maths 2* programme to prevent gaps developing. If a TA is available, we would recommend splitting the class and running two mini lessons tailored to each year group with the TA overseeing independent practice. If the teacher does not have a TA, we would still recommend keeping the class together for direct instruction on, for example, addition and rotating the Year groups so Year 1 children go back to their tables for guided practice while Year 2 children stay on the carpet for more direct instruction. The teacher may like to focus on the same topic for all children, for example selecting addition, so that some whole-class starter exercises or conversation could take place.

- **Can I change the order of what I am teaching to make it easier to teach mixed year groups?**

The spiral progression of the Singapore curriculum relies on building mathematical understanding year by year, so by moving content around between year groups and to some extent within a year group could affect the impact of the programme. We would only recommend doing this in consultation with a professional development consultant after *Inspire Maths* professional development. For mixed year classes such as Y1 and 2, Y3 and 4 - it may only be practical to split the lesson and teach the year groups separately, following the order in the Pupil Textbooks, rather than finding common topics in the Pupil Textbooks.