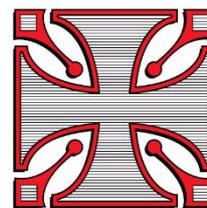


Maths at St. Bert's



Intent

It is the aim of the school that all children should be confidently numerate and that their mathematical skills be developed to the fullest in a supportive atmosphere.

Mathematics can be used in many different circumstances as a precise and unambiguous means of representing ideas, of predicting outcomes, or explaining results. Mathematics also provides children with a way of testing their hypotheses by classifying, ordering, counting, measuring.....and then generalising about what they have discovered.

Through the use of mathematics to solve problems in school, children become more aware of the need for mathematical understanding and skills necessary in future life and to appreciate the role of mathematics in science and technology.

Mathematics is not only included in the school curriculum because it is a useful subject, people around the world have always used geometric patterns and structures for decoration and enjoyment and the pleasure derived from playing strategic games or deciphering puzzles continues into adulthood and can be enjoyed either on ones own or together with others.

At St. Bertelines School we feel that mathematics contributes to a child's personal, social, and intellectual development as it plays an important role in everyday life.

We believe that children learn best when they are motivated, so we endeavour to make maths pleasurable by:

- providing a wide variety of apparatus and equipment that will help children makes sense of what they are doing.
- emphasising practical work - common vision across both stages.

- creating classroom surroundings that aim to be stimulating and supportive.
- sharing lesson objectives with the children.
- ensuring mathematical reasoning is an integral part of daily lessons.
- planning activities that are challenging and in which each child can experience success.
- valuing each child's achievement.

Implementation

We help children learn mathematics by:

- recognising each child's mathematical ability, strengths as well as weaknesses (refer to the Support Plan).
- appreciating that all children are different, and vary in the rates and ways of learning.
- arranging experiences that match a child's stage of development.
- building on knowledge and skills gained both inside and outside school.
- having regular assessment opportunities built into planning.

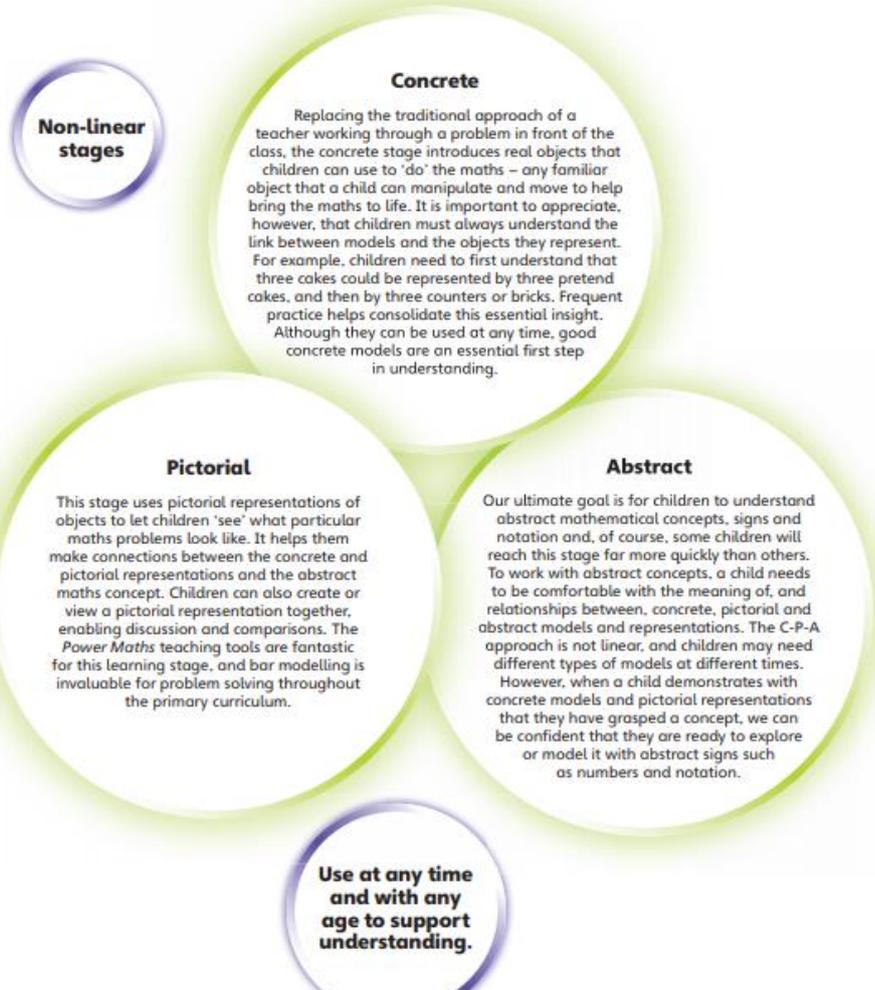
At St. Bert's, the staff are committed to:

- ◆ Delivering daily mathematics lessons.
- ◆ Adopting whole class interactive teaching methods.
- ◆ Using effective questioning techniques.
- ◆ Introducing mathematical terminology in a systematic way.
- ◆ Engaging in high quality training.
- ◆ Involving parents in their children's mathematical education.

We use 'Power Maths' as our whole school Maths scheme providing an engaging and challenging Maths curriculum from EYFS to Year 6.

Structures and Representations

By taking a Concrete-Pictorial-Abstract (C-P-A) approach, Power Maths allows children to tackle concepts in a tangible and more comfortable way.



Created especially for UK primary schools, and aligned with the National Curriculum, *Power Maths* is a whole-class, textbook-based mastery resource that empowers every child to understand and succeed. *Power Maths* rejects the notion that some people simply 'can't' do maths. Instead, it develops a growth mind set and encourages hard work, practice and a willingness to see mistakes as learning tools.

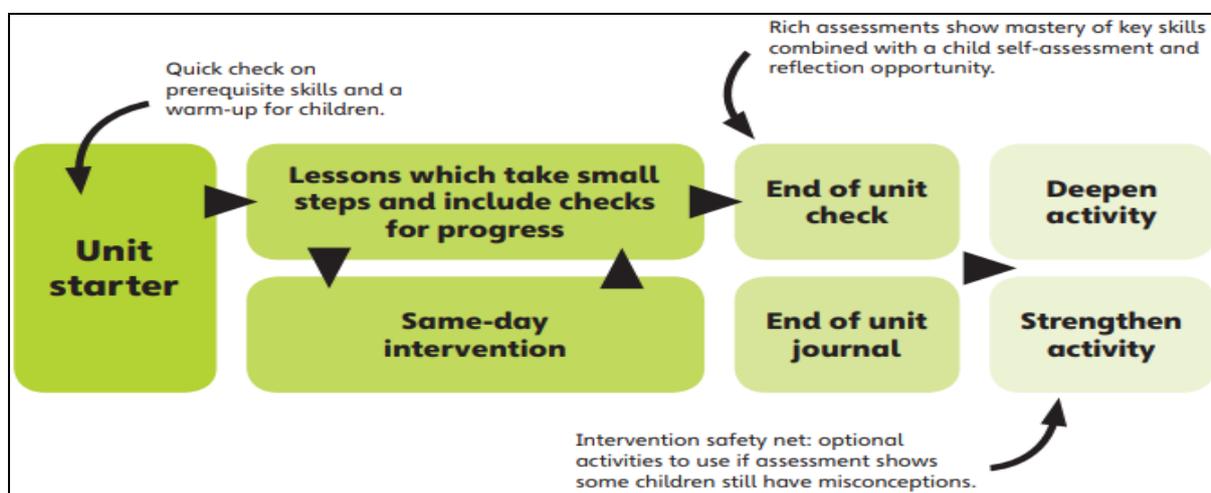
Power Maths combines interactive teaching tools, high-quality textbooks and continuing professional development (CPD) to help you equip children with a deep and long lasting understanding. Based on extensive evidence, and developed in partnership with practising teachers, *Power Maths* ensures that it meets the needs of children in the UK.

To develop mastery in maths children need to be enabled to acquire a deep understanding of maths concepts, structures and procedures, step by step.

Complex mathematical concepts are built on simpler conceptual components and when children understand every step in the learning sequence, maths becomes transparent and makes logical sense. Interactive lessons establish deep understanding in small steps, as well as effortless fluency in key facts such as tables and number bonds. The whole class works on the same content and no child is left behind. Power Maths Builds every concept in small, progressive steps. It is built with interactive, whole-class teaching in mind. It provides the tools you need to develop a growth mind set. Helps you check understanding and ensure that every child is keeping up. Establishes core elements such as intelligent practice and reflection.

At the heart of Power Maths is a clearly structured teaching and learning process that helps you make certain that every child masters each maths concept securely and deeply. For each year group, the curriculum is broken down into core concepts, taught in units. A unit divides into smaller learning steps - lessons. Step by step, strong foundations of cumulative knowledge and understanding are built.

Teaching Model



Unit starter:

Each unit begins with a unit starter, which introduces the learning context along with key mathematical vocabulary, structures and representations.

The textbooks include a check on readiness and a warm-up task for children to complete.

Lessons:

There is the option of a 'Power Up' activity prior to starting the main lesson, this is sometimes used to as a mental warm up. Alternatively, the teacher may use an alternative mental warm up activity.

The textbook then introduces the main concept of the lesson and the children work through this concept with the class teacher.

There are also individual practice books that offer children the opportunity to consolidate their learning.

Power Up activity (Same Day Intervention)

Intervention is focused on keeping up now, not catching up later, so interventions should happen as soon as they are needed.

End of unit check and journal:

An end of unit check in the **Pupil Textbook** lets you see which children have mastered the key concepts, which children have not and where their misconceptions lie.

The **Practice Book** includes an End of unit journal in which children can reflect on what they have learned. Each unit also offers Strengthen and Deepen activities.

At St. Bert's we recognise the importance of teaching the child, not just delivering the scheme. This means that class teachers recognise and adapt lessons when necessary. Sometimes this involves adding in extra lessons and/or not teaching every single lesson in the practice books.

Mathematical Language

Everyone in the classroom should use the correct mathematical terms in full, every time. For example, refer to 'equal parts', not 'parts'. Used consistently, precise maths language will be a familiar and non-threatening part of children's everyday experience. Teachers and children alike need to use full sentences to explain or respond. When children use complete sentences, it both reveals their understanding and embeds their knowledge. In Power Maths, the unit starters

highlight essential vocabulary for every lesson. In the Pupil Textbooks, characters flag new terminology and the Teacher Guide lists important mathematical language for every unit and lesson. New terms are never introduced without a clear explanation. Mathematical language in school is consistent and progressive.

Resources

Practical resources make maths real and relevant to children, no matter their age. Manipulatives are essential resources for both key stages and Power Maths encourages teachers to use these at every opportunity, and to continue the Concrete-Pictorial-Abstract approach right through to Year 6.

The concrete stage of learning introduces real objects that children can use to 'do' the maths – any familiar object that a child can manipulate and move to help bring the maths to life. It is important to appreciate, however, that children must always understand the link between models and the objects they represent. For example, children need to first understand that three cakes could be represented by three pretend cakes, and then by three counters or bricks. Frequent practice helps consolidate this essential insight. Although they can be used at any time, good concrete models are an essential first step in understanding. Each class has practical Maths boxes containing appropriate concrete objects that can be used in daily maths lessons. There is also a central resources area in school where classes can access a whole range of practical resources linked to a range of Maths topics.

Cross-curricula Maths

The ability to be able to use 'Mathematics in Context' is an important aspect of being 'numerate'. On a daily basis, pupils should be provided with problems to solve which involve money and measures and real life situations. The application of mathematics in cross-curricular teaching should also be encouraged, eg Statistics in Science, History or Geography or using measures in Design Technology. Computing is also an area of the curriculum in which Maths can be used in context. The school computers and iPads allow opportunity for the children to collect, display and analyses data as well as providing the opportunity to introduce children to coding and programming. Teachers are also able to access and use various interactive Maths programmes on their classroom computer system. Each child (from Y2 onwards) has access to 'Timestables Rockstars'. This is a fun online programme that can be accessed both at school and at home to support children developing their quick recall and times tables fluency.

See separate Power Maths calculation policy (EYFS, KS1, Lower KS2 and Upper KS2)

Impact

- Children are happy learners who talk enthusiastically about maths and can articulate their learning using age appropriate mathematical language.
- Children who can make links with other subjects and with the wider world.
- Children who can tackle mathematical challenges with resilience, confidently using concrete resources and visual representations.
- Children adopting a 'growth mindset' is actively nurtured and developed. It is okay to get it wrong. Mistakes are valuable opportunities to re-think and understand more deeply.
- Praise hard work. Praise is a great motivator, and by focusing on praising effort and learning rather than success, children will be more willing to try harder, take risks and persist for longer.
- The impact of 'mastery' and the emphasis on accurate use of mathematical language is evident during class/pupil discussions
- Children's fluency in number is evident across the school, with an important emphasis on regular arithmetic work.
- More consistent teaching practices across the school using common mathematical language and teaching strategies.
- Cross-school moderation highlights the high level of challenge for all ability groups, evident throughout topics through reasoning and problem solving activities
- These factors ensure that we are able to achieve high standards, with achievement at the end of KS2 above that of the national average, as well as an increasing proportion of children demonstrating greater depth, at the end of each phase.