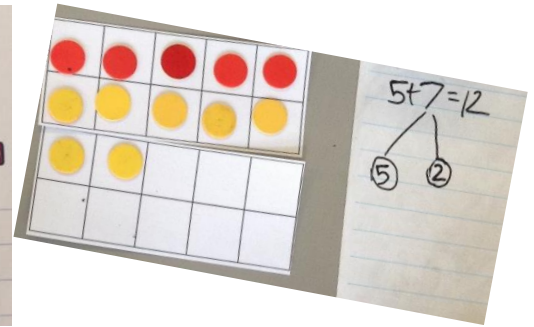
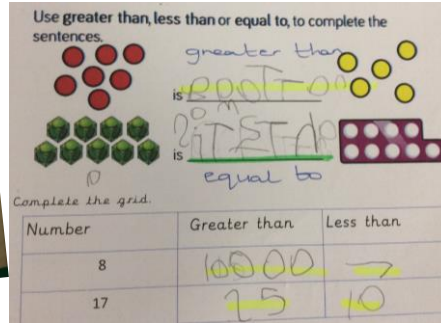
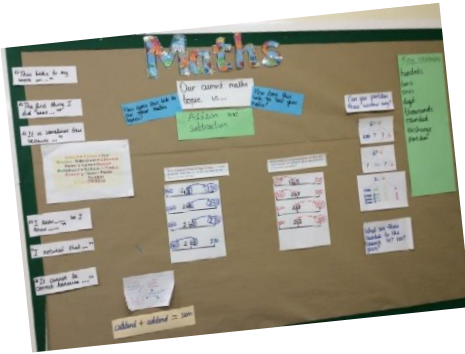




Intent

Here at St Edmund's we have a passion for high quality teaching and learning of mathematics. We believe that every child can succeed in maths and we aim to instil this belief in the children themselves. We teach a coherently planned and sequenced programme based on the National Curriculum and the Early Years Foundation Stage through the use of the Mastery approach.

Through our mathematics curriculum we aspire that all learners:

- become fluent in the fundamentals of mathematics
- develop a deep conceptual understanding, and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by conjecturing relationships and generalisations, and proving their understanding using mathematical language and representations
- have the opportunity to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication
- are guided to break down problems into a series of simpler steps and persevere in seeking solutions.

Our aims for mathematics builds on our whole school vision for pupils to be effective communicators both in written and verbal responses, active contributors within class and representing the school within the community, aspirational independent learners who show the necessarily skills such as resilience and problems solving to achieve their goals, and to be healthy in mind and body through reflection.

Implementation

The principles of Teaching for Mastery, a product of extensive research into the highly successful teaching practice in Singapore and Shanghai, are used throughout the school. A whole class teaching approach is adopted, keeping the class working together, with no acceleration to new content. This is to avoid superficial, surface learning and foster a deep, secure understanding of all the concepts taught. The learning needs of every child are addressed through skilful questioning and appropriate, immediate intervention – this provides the necessary scaffolding or challenge for all.

In our reception class, children work towards the Early Learning Goals for Number and Shape, Space and Measure. Teaching adopts the Teaching for Mastery principles where appropriate and builds this into the unique pedagogy for the EYFS.

The Key Stage One and Key Stage Two curriculum focuses on four areas: number, measurement, geometry and statistics across the year. Within these areas, concepts are taught slowly and at great depth to ensure the learning is secure and sustainable. Topics are taught in a structured order to ensure learning is built on prior learning and to ensure connections are created between the topics. Included in every lesson are fluency, reasoning and problem-solving tasks, giving the children the opportunity to explore the concept being taught extensively before moving on to the next. Questions are designed carefully by the teachers to provide intelligent practice, developing and embedding conceptual fluency. We believe in exposing the children to multiple representations of a concept, using concrete, pictorial and abstract examples simultaneously to support the children's understanding and meet the cultural capital needs of differing cohorts. Pupils who need additional support may also receive a structured intervention overseen by the Inclusion Lead.

At St Edmund's, we place high importance on mathematical talk. As a result, lessons include regular opportunities for the children to discuss their understanding and explain their thinking, both with the adults and their peers. Accurate use of vocabulary and terminology features prominently in our lessons, with teachers both modelling and expecting it from the children. We believe this will support our children when faced with a range of mathematical problems.

Impact

EYFS

EYFS	2017	2018	2019	2020
Good level of development	76% (National Average 71%)	82% (National Average 72%)	78% (National Average 72%)	N/A N/A

KS1

KS1	2017	2018	2019	2020
Expected level	78% (National Average 75%)	77% (National Average 76%)	76% (National Average 76%)	N/A N/A
Greater depth standard	18% (National Average 21%)	23% (National Average 22%)	16% (National Average 22%)	N/A N/A

KS2

KS2	2017	2018	2019	2020
Expected level	88% (National Average 75%)	92% (National Average 76%)	92% (National Average 79%)	N/A N/A
Greater depth standard	37% (National Average 23%)	37% (National Average 23%)	38% (National Average 27%)	N/A N/A

- ✓ Our maths attainment scores for achieving the expected level are consistently above the national average and significantly above the national average by the end of KS2. Children achieving greater depth standard at the end of KS2 is consistently significantly above the national average.
- ✓ Monitoring of staff lesson design shows strong evidence of staff subject knowledge and understanding of the mathematical concepts being taught. Staff are developing their inclusion of microscopic progression between tasks, allow children to make connections in their learning.
- ✓ All learning is matched appropriately to the age group being taught.
- ✓ Our pupils' work in books consistently shows evidence of opportunities for fluency, reasoning and problem solving.

If you were to walk into mathematics lessons at St Edmund's, you will see these approaches:

- Concrete, pictorial and abstract (CPA) representations are used fluidly to allow deep, sustainable learning for all.
- Recapping of previous learning to help children retain and build on prior knowledge and skills.
- Questions are carefully planned and used throughout the lesson to target children's fluency and reasoning skills.
- Children are given opportunities to share and critique answers or strategies.
- Children are given opportunities in a lesson and encouraged to identify and recognise patterns and rules, rather than just shown how to find the answer.
- Children will be given opportunities to practise and use their number skills, and apply them in different contexts.
- Children are expected to understand and use the correct, precise mathematical vocabulary when explaining their maths. Mathematical vocabulary is given high importance.
- Adults in lessons will quickly identify children who are struggling within the lesson. Adults will move between tables to support and question children to deepen their understanding.

An example of skill progression within our mathematics curriculum:

Mathematical area of learning: Addition and Subtraction						
Reception:	Year 1:	Year 2:	Year 3:	Year 4:	Year 5:	Year 6:
Composition of numbers to 10 . Subsidising numbers to 5 and knowing number bonds to 5 .	Represent and use number bonds and related subtraction facts within 20 . Add and subtract one-digit and two-digit numbers to 20 , including zero.	Derive and use related facts up to 100 . Add and subtract numbers using concrete objects, pictorial representations, and mentally including; a two-digit number and ones; a two-digit number and tens; two two-digit numbers and adding three one-digit numbers.	Add and subtract numbers with up to three digits , using formal written methods of columnar addition and subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	Add and subtract whole numbers with more than 4 digits , including using formal written methods (columnar addition and subtraction). Add and subtract numbers mentally with increasingly large numbers	Perform mental calculations, including with mixed operations and large numbers. Use their knowledge of the order of the operations to carry out calculations involving the four operations. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Please see our curriculum maps for full progression.

Pupil Voice

Can you tell me what you have enjoyed about your maths lessons and what you have achieved?

Year 6 – I've enjoyed multiplying fractions by whole numbers as I wasn't able to do this last year.

Year 5 - I feel more confident with written methods. We used to do the longer ones and now we do the shorter written methods and I feel more confidence with them.

Year 4 - I enjoy the year 4 written methods better than the year 3 written methods because it makes more sense and they're quicker.

Year 3 – I have enjoyed rainbow maths (mental maths multiplications and division) and I have got better at division.

What do you think has helped you to learn in maths this year?

Year 6 – When we have tests, when we go through it to see where you've made a mistake and see what the mistake is that you've made.

Year 5 – It helps me when we go through our answers and mark our own work.

Year 4 – Learning the written methods especially for exchanging.

Year 3 - My mum helps me. She prints me out sheets to practice at home and then in maths I got a lot of them correct.

How do you think you have been challenged in your maths this year?

Year 6 – We're given morning tasks. They help to challenge you by time and to see if you remember it from the day before.

Year 5 – In maths we have Task 1, 2, 3 which get harder. We are asked to apply our knowledge to another question.

Year 4 — I found it challenging during lockdown because our computer kept on glitching.

Year 3 - When we started year 3, I didn't know any division so I still find it a bit hard.

Outstanding examples of learning outcomes and mathematics at St Edmund's

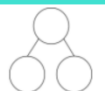
Examples of children using varied representations to access and rehearse core facts and methods of learning.

Task 2

Roman numerals	numeral	words
VII	7	Seven
XVII	17	seventeen
XXVII	27	twenty-seven
XXIX	29	twenty-nine
XLIX	49	forty-nine
LXVII	67	sixty-seven
XCIII	93	ninety-three

200 + 600 = make it with the blocks

Draw it



Write it

_____ hundreds and _____ hundreds is equal to _____ hundreds.

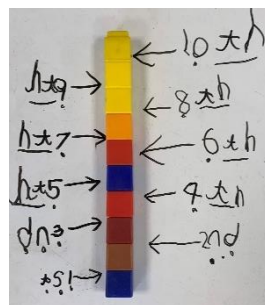
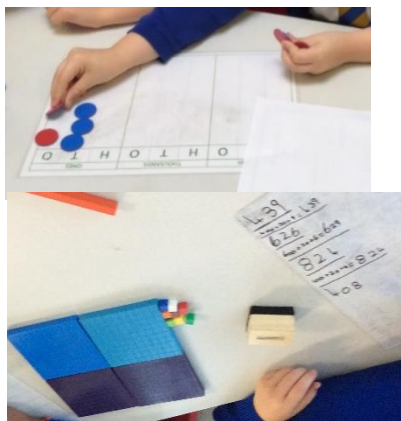
Part-Whole

Number Sentence

_____ + _____ = _____

The children are encouraged to answer in full sentences, both in their verbal and written answers, using appropriate mathematical vocabulary.

Jack because Jack has partshind the ten into ones but still has the 5. so he can do 15 - 8



No because he put the hundreds in the thousands column tens in the tens in the hundreds column and the ones in the tens column. Instead he needs to put them in the eight column like this:

$$\begin{array}{r} \text{Th} \text{ H} \text{ T} \text{ O} \\ 5 \ 7 \ 0 \ 2 \\ + 0 \ 1 \ 2 \ 5 \\ \hline 5 \ 8 \ 2 \ 7 \end{array}$$

Task 2

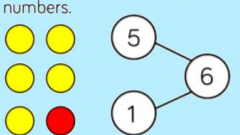
Ron's answer: 11,191

Hermione's answer: 11,211

$$\begin{array}{r} 13,785 \\ - 2,574 \\ \hline 11,211 \end{array}$$

Ron is correct. Hermione's mistake was that she forgot to exchange.

Use the counters and the part-whole model to fill in the missing numbers.



Which number represents the whole?

Which numbers represent parts?

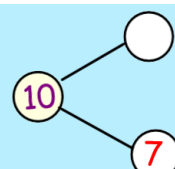
Is the equals sign (=) always at the end of a number sentence?

1 + _____ = 6

_____ + 1 = 6

The whole is _____

One part is _____



Successes in 2020-21

- ☺ Joining of one of the London Maths Hubs in 2019. Year 1 and 3 teachers have applied learning of small step teaching to daily practice. In 2020-21, these teachers supported Year 1, 3 and 4 colleagues in the application of small step teaching to daily practice.
- ☺ Teaching consistency using CPA approach across the whole school.
- ☺ All children were set and accessing age appropriate maths daily during all 3 lockdowns through White Rose videos.

Priorities for 2021 - 22

- 🎯 The introduction to all staffing of small step progression within and between lessons, to allow for purposeful and structured progression.
- 🎯 Use of STEM sentences to encourage and embed use of key terminology.
- 🎯 Reviewing the mathematics curriculum for EYFS due to the changes in the Statutory Framework 2021.

Please see subject action plan for more detail.