Maths Curriculum Rationale

At Springvale Primary School, we value Mathematics.

We are all MATHEMATICIANS! (#Everyone Can)

We want our children to understand that Maths is essential to everyday life: critical to science, technology and engineering, and a necessary life skill. We want our children to grow up with a deep understanding of mathematics, applying it to their chosen career paths as accountants, air craft engineers, teachers, gaming directors and more! We value our vision: **Play together, learn together, achieve together -** using this to guide and influence our learning. We want our children to leave Springvale feeling not only confident but with memories of Maths that spark joy and encourage a life-long positive relationship with the subject.

Maths leaders at Springvale are: Mrs N Evans (FS1-Y2) and Mrs R Mayston (Y3-Y6)

Maths Governor: Mr W Chadburn

Intent:

Maths at Springvale follows the NCETM Guidance, which is aligned to the National Curriculum. We intend to teach a progressive curriculum, which builds upon children's previous understanding, that enables children to become natural problem solvers. They will think like mathematicians and use correct mathematical language when explaining their understanding.

Maths Talk:

ADDEND + ADDEND = SUM
MINUEND – SUBTRAHEND = DIFFERENCE
FACTOR X FACTOR = PRODUCT MULTIPLICAND X MULTIPLIER = PRODUCT
DIVIDEND ÷ DIVISOR = QUOTIENT

Using correct terminology will help children explain, reason, predict and spot patterns.

Our curriculum is carefully sequenced and cumulative. This gives the pupils opportunity to "master maths" by using their previous learning, enabling them to develop mathematical fluency and conceptual understanding. We have high expectations of all children and scaffold as needed to enable success. In addition, interventions are used to close gaps.

At Springvale the three aims of the Primary Maths Curriculum are at the heart of everything we do, these are:

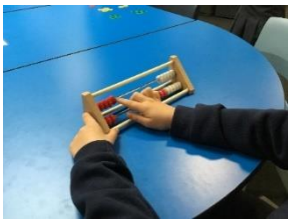
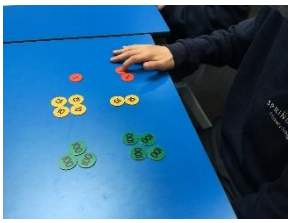
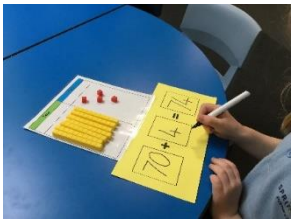
- **Fluency** in the fundamentals of mathematics so that pupils develop conceptual understanding, and the ability to recall and apply knowledge rapidly and accurately.
- **Reasoning** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- **Problem Solving** 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.

Implementation:

Children from Reception to Year 6 follow the NCETM: a programme to meet the criteria for high-quality teaching of mastery in England.

Through careful and planned use of concrete, pictorial and abstract approaches learners tackle the same concepts at the same time and progress together as a whole class. The 'small step approach' allows children to *keep up* not *catch up.*

Each class uses manipulatives to start their focus unit. The use of manipulatives allows children to have a tangible link to their learning.

The use of pictorial representations enables children to understand how the focus maths skills can be represented in a number of different ways - mastering the small steps to learning and ensuring the learning is not just 'discrete'.

From this process, children are then able to approach the maths in a more abstract problem but, by using their previous knowledge and skills, can apply the small steps to understanding and solving the problem.

What does Maths look like at Springvale?

Click the links to see how knowledge and skills build from year to year across the 10 strands of Maths:

1-progression-map-place-value

2-progression-map-addition-and-subtraction

3-progression-map-multiplication-and-division

4-progression-map-fractions

5-progression-map-ratio-and-proportion

6-progression-map-algebra

7-progression-map-measurement

8-progression-map-geometry-properties-of-shapes

10-progression-map-statistics

See when knowledge and skills are taught across year groups by clicking the links below:

curriculum-map-year-1

curriculum-map-year-2

curriculum-map-year-3

curriculum-map-year-4

curriculum-map-year-5

curriculum-map-year-6

Opportunities for daily practise of core skills
In order for children to know more and remember more, core skills are practised through the NCETM Mastering Number Programme from FS2 to Y2, and Early Bird questions in Key Stage 2.

Click the links to see the progression of core skills in the Mastering Number Programme:

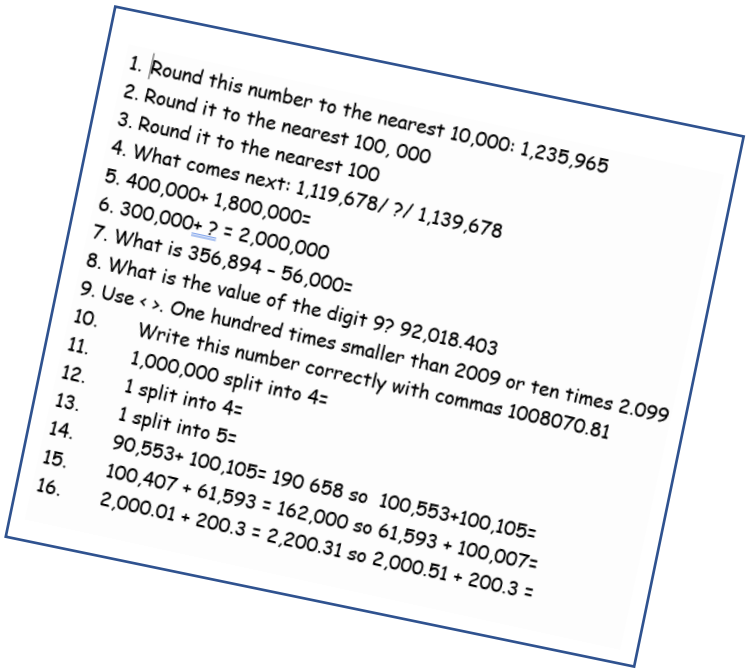
mastering-number-overview-reception

mastering-number-overview-year-1

mastering-number-overview-year-2

Example of Year 6

Early Bird:



X tables At Springvale

We have a whole school systematic approach to teaching times tables (outlined below). This incorporates the use of concrete, pictorial and abstract approaches making conceptual links to the real world.

We introduce a new times table by building it around facts already known. Then we deepen learning and make links through exploring patterns, reasoning and investigation.

Year group	What should be taught?
Reception	•Introduce concept of X1 (one group of 5 etc) •Solve problems with doubling and halving
Year 1	•Counting in multiples of **2, 5 and 10** •**X1 table (one group of…) X0 table**
Year 2	•Count in steps of **2,3 and 5** from 0 and in **10s** from any number forwards or backwards. •**Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables**, including recognising odd and even numbers. •**Begin to introduce concept of square numbers through arrays** •**Revise X1 table X0 table**
Year 3	•Count from 0 in multiples of **4, 8, 50 and 100** •Recall and use multiplication and division facts for the **3, 4 and 8** multiplication tables •Revise **X2, X5, X10** multiplication tables •**X1 and X0 tables** •**Square number times tables**

Year 4	•Count in multiples of **6, 7, 9, 25 and 100** •Recall multiplication and division facts for multiplication tables up to **12 x 12** (**x6, x7, x9, x11 and x12** are new tables for this year group) •Revise **X0, X 1, X 2, X 3, X4, X 5, X 8, X10** •**Continue with square number times tables**
Year 5	•Revise **all times tables (including x0 and x1) to 12x12** •Revise **square number times tables** •Establish whether a number to 100 is prime. **Recall prime numbers to 19**
Year 6	•Revise **all times tables (including x0 and x1) to 12 x12** •Revise **square numbers times table** •Revise **prime numbers**

Multiplication Tables Check (MTC)

'The Multiplication Tables Check (MTC) is a key stage 2 assessment to be taken by pupils at the end of year 4 (in June). The purpose of the MTC is to make sure the times tables knowledge is at the expected level. The MTC is an online test were the pupils are asked 25 questions on times tables 2 to 12. For every question you have 6 seconds to answer and in between the questions there is a 3 second rest. Questions about the 6, 7, 8, 9, and 12 times table come up more often. The questions are generated randomly based on the rules of the MTC.' (Timestables.co.uk)

A good way to prepare is start early and build a daily routine practising the times tables. With regular practise you will learn all the questions and gain confidence. We suggest practising 10 to 15 minutes a day for optimal results.

Here are some links that you can follow to help support learning at home:

- https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check
- https://www.timestables.co.uk/multiplication-tables-check/
- https://www.topmarks.co.uk/maths-games/hit-the-button
- https://ttrockstars.com/
- https://urbrainy.com/mtc
- https://collins.co.uk/pages/primary-mathematics-times-tables-test-simulator
- Twinkl - times table games

For more information about the check, what it all means for your child and ways to support them please follow the link.
https://matr.org/blog/times-tables-test-parents-guide/

Maths in the Early Years at Springvale

Mathematics is one of the specific areas in the EYFS. We instil mathematical concepts not only in our direct teaching and opportunities in child initiated play but

we also thread mathematics through our daily classroom routines. We want our children to not only develop a love of maths but also have the opportunity to learn practical skills through real life application.

For example, each day we count at every possible opportunity. We count how many children are present, when lining up, counting out milk and fruit, and counting out the story votes. We look at concepts of sharing, more/ less, size and measurement at every available opportunity and carefully promote that all adults reinforce and strengthen children's knowledge and mathematical vocabulary.

Following the units set out by The NCETM Mastering Number Programme, children are given the opportunity to work in small steps, building upon their prior knowledge and creating a concrete understanding of the learning taking place.

Click link to see our Maths progression in the EYFS:

Impact:

Evidence in knowledge: Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times table.
Evidence in skills: Pupils use acquired vocabulary in maths lessons, seeing a progression of this throughout the school. They have the skills to use methods independently and show resilience when tackling problems.

Outcomes: At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Children who have gaps in their knowledge receive appropriate support and intervention. Same Day Interventions are used in class to ensure that there is no delay in moving the learning forward for **all** learners.

Assessment: We use excel software to keep track of children's progress against the standards. Questioning and discussion are tools used within lessons so that teachers are clear about pupil's knowledge, understanding and progress towards the standards.

Senior leaders regularly monitor standards and identify key improvement actions as a result.

Maths Homework

Every child in school has a personal log in for Numbots (FS2 to Year 2) and TT Rockstars (Y2 to Y6).

Please contact Maths leaders if you have any queries or concerns:
r.mayston@springvaleprimary.org
n.evans@springvaleprimary.org

TT Rockstars Reward Assembly-April 2023

Children were rewarded with certificates and we “rocked!”. Younger learners got Numbots effort rewards!

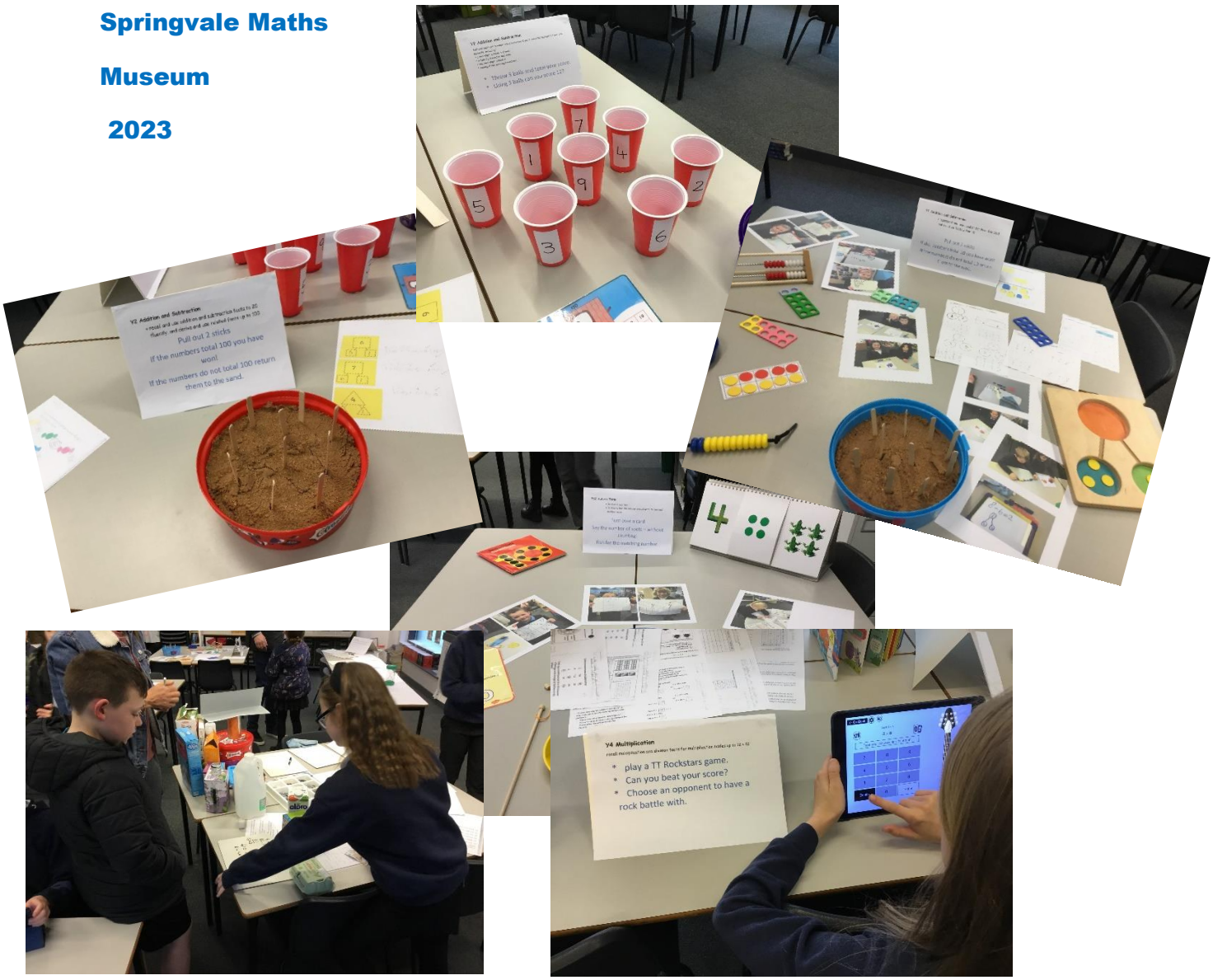




Springvale Maths

Museum

2023



Helpful Websites:

FS2

www.ictgames.com

www.crickweb.co.uk

www.topmarks.co.uk/maths-games

www.familylearning.org.uk

KS1

www.ictgames.com

www.crickweb.co.uk

www.topmarks.co.uk/maths-games

www.familylearning.org.uk

www.bbc.co.uk/bitesize/subjects

www.primarygamesarena.com/Years/Key-Stage-1

KS2

www.crickweb.co.uk

www.topmarks.co.uk/maths-games

www.bbc.co.uk/bitesize/subjects

www.mathsframe.co.uk

www.nrich.maths.org