



South Marston CofE Primary School

Mathematics Approach

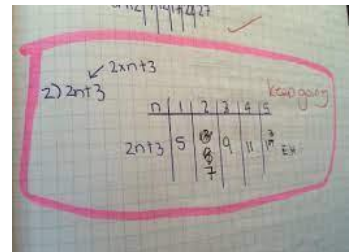
Presentation of work:

- The short maths date should be written on each piece of work (In EYFS and KS1, staff may use labels).
- Each piece of work should have a learning objective / title.
- All titles, LOs, dates and lines should be drawn with a ruler.
- All maths work should be completed in pencil.
- Any worksheets/photos should be trimmed and neatly stuck in.
- Children should be taught to write 1 digit per square.
- Staff should insist on an age-appropriate, good quality presentation of work.



Assessment and marking:

- In the EYFS, teachers and TAs will carry out observations and collect maths evidence for the children's learning journey folder.
- From Year 1 upwards, teachers should track children's progress and attainment through marking, observations and discussions with the child, end of unit/term assessments (including the NFER tests and past SATS papers), and completion of weekly Assessment for Learning (AfL) grids. This supports teacher assessment judgement when inputting children's data.
- When marking, teachers should ensure they have indicated whether the child has used any scaffolding/support materials. For example - 'worked in a group practically', 'TA supported', 'used the numicon'.
- Teachers should use a blue pen when marking. A tick indicates a correct response and a dot represents an incorrect response.
- Where appropriate and necessary, teachers are to leave an additional 'response and feedback' question to clarify, check children's understanding and challenge.



EYFS:

In Pre-School and Reception, mathematics should have a daily place within the class timetable. It is expected that the teacher/TAs plan for a provide mathematical activities during continuous provision, and should also lead a short maths-based lesson. Maths equipment and resources should be made readily accessible to children in the learning environment both in the inside and outside areas. As children develop and increase in their knowledge, teachers/TAs should provide more challenging mathematical experiences and opportunities. Where appropriate, some children may have written evidence of a maths activity (e.g - cut and stick the numbers 0-10 in order on the numberline). The majority of EYFS maths activities will be evidenced through photographs and observations.



Early Years staff take objectives set out in the EYFS framework and plan activities based around these.

Year 1 & 2:

In Years 1 and 2, the focus of Maths is to ensure the children develop confidence and mental fluency with whole numbers, counting and place value. This often involves working with numerals, words and the four operations (+ - x ÷). The children should be precise in using and understanding place value and know number bonds to 20.

The children also develop their ability to recognise, describe, draw, compare and sort different shapes. The children will use a range of measures to describe and compare different quantities (such as length, mass, capacity/volume, time and money).

In Year 1 & 2, children will take part in a daily maths lesson and work will be evidenced in children's exercise books. Furthermore, additional maths based continuous provision style activities and challenges will be available to the children throughout the week. Evidence for this will be stored in children's Learning Journals.

Year 3 & 4:

In Years 3 and 4, the focus is to ensure the children become increasingly fluent with whole numbers and the four operations (including number facts and place value). Pupils begin to develop efficient written and mental calculations with increasingly large whole numbers. They begin to develop their ability to solve a range of problems, including simple fractions and decimal place value. The children develop mathematical reasoning to help them analyse shapes and their properties and confidently describe their relationships.

By the end of Year 4, children should have memorised their multiplication tables up to and including the 12 times table and be able to show precision and fluency in their work.

In Year 3 & 4, children will take part in a daily maths lesson and work will be evidenced in children's exercise books.

Year 5 & 6:

In Years 5 and 6, the focus of Maths is to ensure that children extend their understanding of the number system and place value to include larger integers. Pupils should be able to make connections between multiplication and division with fractions, decimals, percentages and ratio. Children should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems that demand the use of efficient written and mental methods of calculation.

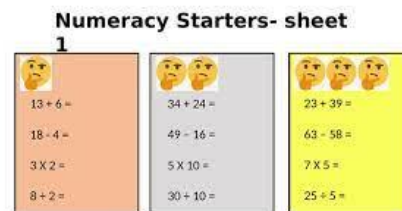
Children are introduced to algebra as a means for solving a variety of problems. The children's understanding and knowledge in geometry and measures consolidates and extends the knowledge they have developed in number; children should be able to classify shapes with increasingly complex geometric properties, using the vocabulary they need to describe them with accuracy and confidence.

In Year 5 & 6, children will take part in a daily maths lesson and work will be evidenced in children's exercise books.

Lesson Starters:

Maths lesson starters should be used as a way to engage the whole class' attention on mathematics. At South Marston, Maths lessons begin with: addressing misconceptions from previous lessons and arithmetic and mental maths (e.g - counting stick, singing a times table song, quiz and Big Maths Beat That timed calculation challenges, loop cards, spot the mistake etc). This 'warms up' children's brains, supports with revision, consolidation and revision of skills/concepts.

Lesson starters are usually verbal (paired/whole class discussion) / work completed on mini whiteboards. Lesson starters should last around 10 minutes.



Maths Approach:

At South Marston, we follow the 'White Rose' approach as a guide and basis to our teaching. Staff will also use materials and activities from this scheme. However, teachers use their professional judgement, knowledge of their class/needs and objectives set out in the National Curriculum to plan a series of sequential lessons, which develop over the course of a unit of work. We believe by not purely relying on one set scheme, this supports a spiral curriculum approach, develops teachers and children's mathematical awareness and knowledge, and allows teachers to scaffold, adapt and challenge lessons as necessary.



Times Tables:

At South Marston, we believe that through a variety of interactive, visual and engaging techniques, all children can achieve the full multiplication tables knowledge by the time they leave primary school.

The National Curriculum states that by the end of year 4, pupils should be able to recall multiplication and division facts for multiplication tables up to 12×12 . Children in Year 4 are also required to take a multiplication tables check in the Summer Term. The purpose of the check is to determine whether pupils can fluently recall their times tables up to 12, which is essential for future success in mathematics. This means it is important for the children to learn their multiplication tables facts and to be able to recall them quickly and accurately.

We teach times tables using the following progression:

Year 1 - Be able to count in multiples of 2s, 5s and 10s

Year 2 - Be able to recall 2, 5 and 10 multiplication and division facts

Year 3 - Be able to recall 3, 4 and 8 multiplication and division facts

Year 4 - Be able to recall 6, 7 and 9 multiplication and division facts

Year 5/6 - application of multiplication and division facts to problem solving



To support children's learning of multiplication tables, we have a Multiplication Table Challenge and children have access to Times Tables Rockstars. This is an online resource that is used to aid the teaching and fluency of multiplication and division facts. All children from Year 2 have individual login

and access to this learning platform. Children will also have regular opportunities in class to access this website, amongst other educational maths related learning platforms and apps.

Furthermore, by the end of Key Stage 1, children should have a good understanding of number facts (addition and subtraction) to 10 and 20.

Maths in the Environment:

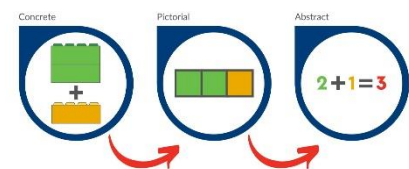
Each classroom should have a maths working wall / maths area. Children should be taught that this working wall / area can be used as a scaffold for them and is a place where maths resources and equipment (e.g - numicon and place value cards), examples of questions completed together as a class/models and key vocabulary related to the unit can be located.



In the EYFS and KS1, maths resources and materials should be easily accessible and readily available. Furthermore, outside areas should promote and develop children's maths skills (e.g - giant dominos, use of water and sand tray to practise measure, giant snakes and ladders etc).

Maths Teaching:

While using 'White Rose' as a guide, teachers will ensure throughout each unit of work, children will be exposed to and have opportunities to develop their fluency, reasoning and problem-solving skills. With this in mind, children will be familiar with the concrete, pictorial, abstract approach,



which is a system of learning that uses physical and visual aids to build a child's understanding of abstract topics. Pupils are introduced to a new mathematical concept through the use of concrete/manipulative resources such as: money, counters, dice, numicon, cubes, weighing scales and counting beads. As children become more familiar and confident with new concepts and units, the use of manipulatives is reduced, while children rely more on pictorial and abstract methods.

When introducing a new unit of work to a class, teachers will make this as engaging and practical as possible, making links to real life experiences. For example, when introducing 3D shapes, children will go on a shape hunt around the school site, and when learning about money, children will investigate the different types of coins and notes while sorting them into groups. The first few lessons will usually focus on fluency. Fluency is about developing children's confidence, basic understanding and answering straightforward questions - focussing on the fundamentals.

Once fluency has been established, children will move onto more reasoning and problem-solving based activities. Reasoning in maths is the process of applying logical thinking to a situation to derive the correct problem-solving strategy for a given question, and using this method to develop and describe a solution. Problem solving is usually a task that is more open ended, can have multiple different answers and requires children to use a wider range of maths skills in order to support them to answer the question.

Although reasoning and problem solving may not be relevant in children's books each lesson, it will have an important part of each maths lesson. This could be a challenge question posed to the children during the lesson, while a member of staff is working with a maths group and during a lesson plenary. Staff will develop and deepen children's mathematical skills and knowledge through questioning. As the unit progresses, more reasoning and problem-solving activities will be seen in children's books.

- Can you tell a friend?
Can you tell me what you remember about...?
- Can you ask a question?
Can you show a friend?
- Can you show me another way?
Can you prove it?
- Can you spot the mistake?
Can you see a pattern?
- What do you think will happen?
Do you agree? Why not/Why?
- Are there any other ways?
Can you show me using...?

Teachers are to regularly plan arithmetic and mental maths activities. This include: during lesson starters and plenaries, standalone arithmetic lessons, use of practice and past assessment booklets where the teacher then goes through each question with the class. Arithmetic activities should focus on the 4 operations: addition, subtraction, multiplication and division.

For those children who require additional support in Maths, teachers will use quality-first teaching approaches to support and scaffold children's learning. This may include: boosters and interventions with a Teaching Assistant, use of additional practical resources, adapted maths activities, pre-teaching and guided group work with a teacher during the lesson.

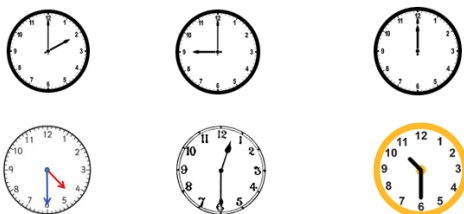
As the unit progresses, children will be using a range of maths skills and will be learning how to answer a range of fluency, reasoning and problem-solving activities. See example below:

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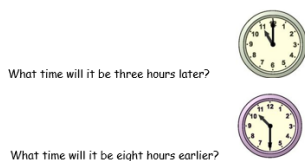
Learning Objective: I can solve problems involving time (o'clock and half past).

Practise It!

What do these times show?



Twist It!



What time will it be three hours later?

What time will it be eight hours earlier?

Solve It!

Mr Conlan says "I went to the park at 3:00. I was there for 4 hours. I left the park at 7:30".

Is Mr Conlan right or wrong? Prove it!



27/06/22

Learning Objective: To count, read, write and represent numbers to 100.

Practise It!

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Using a colouring pencil, find the following numbers on the hundreds square:

44, 68, 10, 39, 74, 51, 100, 7, 23, 66, 61, 85.

Twist It!

Using partitioning (tens and ones), represent the following

82 56 23 34 61 75

Solve It!

Correctly convert these numbers to either numerals or words.

Ten _____ Four _____ Twenty _____
 62 _____ 9 _____
 Eleven _____ Fifty _____ Two _____
 37 _____ 5 _____

With the Practise It! Twist It! Solve It! questions, teachers are to decide whether they feel it more appropriate to shrink down the questions for children to stick into their book, then write the answers straight into their books, next to the question.

Due to maths covering a wide range of units and topics. Teachers will use their professional judgement to determine whether a lesson requires a worksheet. Some units such as shape and time require more images and pictorial representations, therefore more worksheets and sticking in of pictures may be required. However, units such as addition and subtraction should have limited use of worksheets.