

# Sequence of lessons for KS1 and KS2 (for each mathematics topic)

Cover sheet with key knowledge for new topic.  
Pupils complete a circle map to identify and discuss key vocabulary linked to the topic (verbal for Y1 in Autumn term).

Developing fluency, reasoning and problem solving for each small step in learning.

• Arithmetic test every 2 weeks.  
• **Non-routine problem-solving every week.**

End of topic assessment. Children self-assess their own understanding of the topic.

## Place Value

**Square Numbers**

4		$2^2$ or $2 \times 2 = 4$
9		$3^2$ or $3 \times 3 = 9$
16		$4^2$ or $4 \times 4 = 16$
25		$5^2$ or $5 \times 5 = 25$

**Triangular Numbers**

1		1
3		3
6		6
10		10

Rule:  $n^2 - n + 1$

Place Value

Is it prime or composite?

<b>Prime</b> have only 2 factors (1 and itself) 2, 3, 5, 7, 11	<b>Composite</b> have more than 2 factors 4, 6, 8, 9, 12, 14
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0 and 1 are neither

<b>B Brackets</b>	$10 \times (4 + 2) = 10 \times 6 = 60$
<b>O Order</b>	$5 \times 2^3 = 5 \times 4 = 9$
<b>D Division</b>	$10 \div 6 \div 2 = 10 \div 3 = 13$
<b>M Multiplication</b>	$10 \div 4 \div 2 = 10 \div 8 = 2$
<b>A Addition</b>	$10 \div 4 \div 7 = 40 \div 7 = 47$
<b>S Subtraction</b>	$10 \div 2 \div 3 = 5 \div 3 = 2$

- Step 1 Roman numerals to 1,000
- Step 2 Numbers to 10,000
- Step 3 Numbers to 100,000
- Step 4 Numbers to 1,000,000
- Step 5 Read and write numbers to 1,000,000
- Step 6 Powers of 10
- Step 7 10/100/1,000/10,000/100,000 more or less
- Step 8 Partition numbers to 1,000,000
- Step 9 Number line to 1,000,000
- Step 10 Compare and order numbers to 100,000
- Step 11 Compare and order numbers to 1,000,000
- Step 12 Round to the nearest 10, 100 or 1,000
- Step 13 Round within 100,000
- Step 14 Round within 1,000,000

### Shape puzzle

Each shape stands for a number.  
The numbers shown are the totals of the line of three numbers in the row or column.  
Find out which number each symbol represents and find the other totals.

			12
			14
			□

□ = 20    □ = 6    □ =

=  
 =  
 =

### The Pet Shop Puzzle

A pet shop has 7 pets for you to choose from. You can buy 3 pets on each visit e.g. cat, dog, mouse. You cannot buy 2 of the same pet in any one visit e.g. cat, cat, dog. Work out the different ways you can buy 3 pets.

Cat

Horse

Mouse

Snake

Rabbit

Pig

Dog

### Place value

Name \_\_\_\_\_

1 What number is represented below?

Th	Th	H	T	U

Teddy says that the number is multiple of 5. Is Teddy correct? Explain your answer.

2 Complete the missing numbers.

$92,046 = 90,000 + \square + 40 + 6$

$\square = 40,000 + 3,000 + 10 + 9$

$50,000 + 1,000 + \square = 52,080$

3 In a game, people have some play money to buy houses. Each person starts with the following play money.


How much money does each person start with? £ \_\_\_\_\_

4 Circle all the numbers that round to 8,500 to the nearest 100.

8,458   548   8,548   8,488   8,558

5 Complete the bar model.

603,090	90
600,000	□

6 Tick the greater number. Explain your choice.

CXXIX     CXX

Round your number to the nearest 1,000 \_\_\_\_\_

Round your number to the nearest 10,000 \_\_\_\_\_

Big Maths tests completed 3 times per week

# What does maths look like in Nursery?

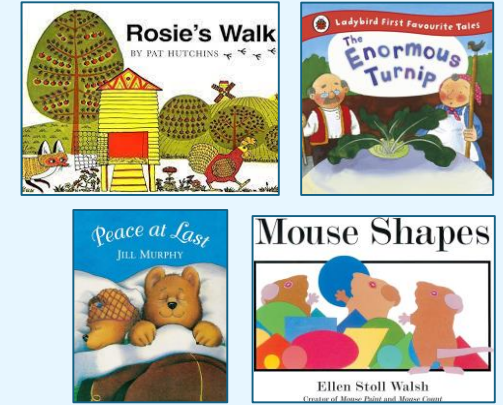
- Strong focus on number.
- Daily practice of counting skills and reciting numbers up to and beyond 5.
- Regular practice with one-to-one correspondence - matching each object to a number, counting each object once, and only once.
- Regular practice with subitising – developing children’s ability to look at a small set of objects and instantly know how many there are without counting them.
- Developing children’s ability to use mathematical and positional language.

## Daily maths meet

Daily rehearsal of vocabulary and number skills linked to:

- Days of the week.
- Months of the year.
- Creating a tally linked to the register.

# What does a maths lesson look like in Reception?



\*During each maths topic, children's books are used to help pupils relate mathematics to their own lives and support them in visualising abstract maths ideas.

Teacher shares the learning objective with children.\*

Whole class teaching and teacher modelling

Whole class teaching and teacher modelling.

Children are encouraged to access the continuous provision linked to maths learning objective.

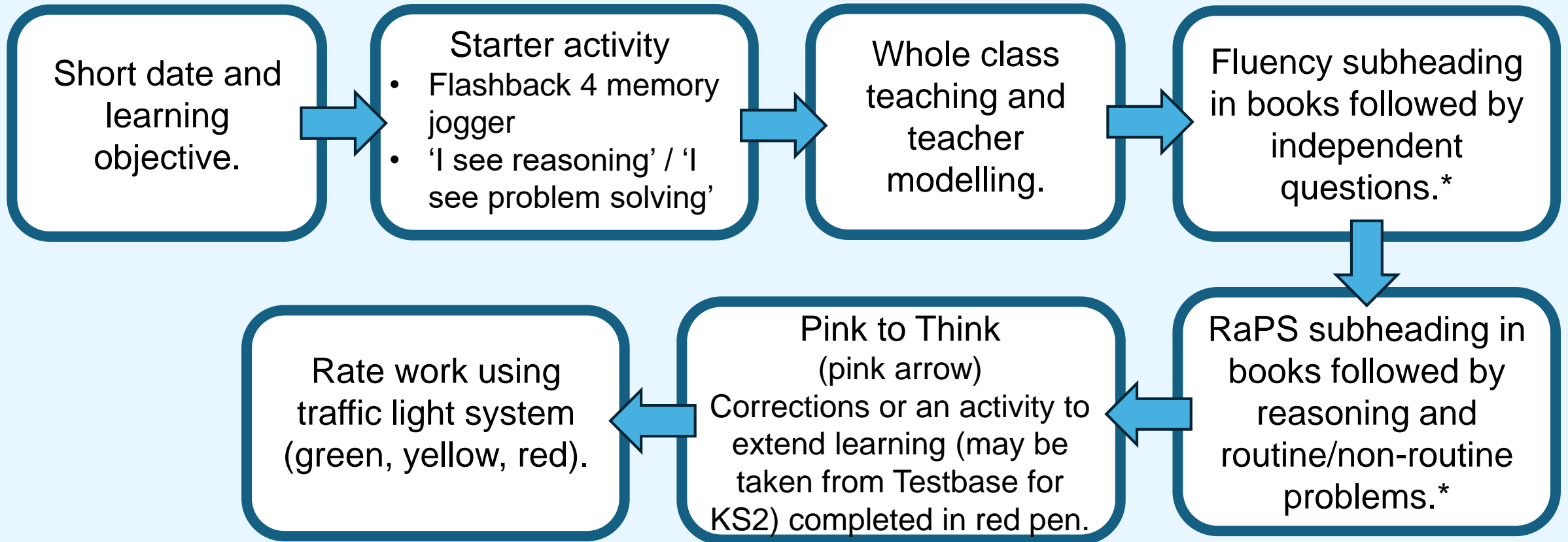
Children complete the task in their books.\*\*

Whole class / group practical activity  
Class split into 5 groups: 3 independent; 2 teacher/TA led.

Big Maths 3x per week

\*\*Teacher uses pink highlighter to prompt a child to correct their work or to provide a challenge question to take the child's learning deeper.

# What does a maths lesson look like in KS1/KS2?



\*Mini-plenaries are used at key points during the lesson to identify children who are struggling. These children will receive additional support in an intervention group.

\*Children who grasp a concept quickly will be further stretched through challenge questions and activities to take their learning deeper.

# Starter activities for KS1 and KS2



## Monday, Wednesday and Friday

- Flashback 4 memory jogger:
  - 1 question from last lesson
  - 1 question from last week
  - 1 question from 2/3 weeks ago
  - 1 question from last term/last year

**Flashback 4** Year 1 | Week 4 | Day 1

1) Order the numbers from smallest to greatest.

12   19   2  

2)

3) What number is shown?

4) How many bees are there?

**Flashback 4** Year 6 | Week 3 | Day 1

1) What is the difference between 11 and -9? CCXVII

2) What is the area of shape A and B?

3) Write an addition to check the answer to  $8,842 - 4,290 = 4,552$

4) Find the difference between 482 and 1,889

5)  $4,756 = 3,000 + \square + 50 + 6$

**Flashback 4** Year 4 | Week 9 | Day 1

1) Which shape has the smaller area?

2) Write an addition to check the answer to  $8,842 - 4,290 = 4,552$

3) Find the difference between 482 and 1,889

4)  $4,756 = 3,000 + \square + 50 + 6$

## Tuesday and Thursday

- 'I see reasoning' / 'I see problem solving' starter activity

**TASK**

I think of **3 numbers**.  
 They are all **different**.  
 They **add** to make **10**.

+ = 4

+ + = 4

=

=

**What fraction of the square is blue?**  
*The red spot is in the middle of the square.*

**TASK**

Position the digits 3, 4 and 5 to make the product as large as possible.

×  =

3    4    5

# What does non-routine problem-solving look like at St Josephs?



- 'I see problem-solving' activities used twice per week as starter activities in KS1/KS2.
- Routine and/or non-routine problems are used in the 'RaPS' part of each maths lesson in KS1/KS2.
- One lesson per week dedicated to solving a non-routine problem.
- Children use concrete/pictorial resources to support them during problem-solving.
- Children are encouraged to monitor their thinking and the effectiveness of their strategies.
- Non-routine problems sourced from NRICH, National Strategies resources, Classroom Secrets (discussion problems) and Third Space Learning resources.

