Primary
National Strategy
Primary Framework
Session 2 Maths

Update on the renewed framework
What have we done to date?

- Introduction to Head Teachers, Deputy Head Teachers, Literacy and Numeracy Coordinators

- Following the introductory session schools:
  - Should have identified key priorities from their data
  - May have shared the introductory power point presentation with all staff
Primary
National Strategy

Significant changes: Maths
Knowing & using number facts

- Foundation Stage children start process of observing and finding facts.

- Identified progression from Year 6 into Year 7 where there is consolidation and application of facts.

- Increased expectation in most year groups – specifics may include:
  - Year 1 pupils recalling doubles of all numbers to at least 10 (previously a Year 2 objective).
  - Year 2 deriving and recalling facts for 2 and 5 times tables and related division facts (previously part of Year 2 and Year 3 objectives).
  - Year 4 children derive and recall facts up to 10 x 10 and related division facts (previously Year 5 objective).

- Increased emphasis on multiplication and division in all year groups.
Calculating strand

- **Calculating** strand

  - *In the Foundation Stage children begin to use the vocabulary of calculation and learn the processes that support early calculation*

  - *Emphasis on mental calculation throughout the years with the Progression from Year 6 to Year 7 retaining an emphasis on mental methods and taking the written methods into level 5*

  - *Increased emphasis on multiplication and division in all year groups with some changes in expectation. For example: Children in reception year will learn to share objects into equal groups and in Year 1 children solve practical problems that involve the combining of groups of 2, 5 or 10 objects, and sharing objects into equal groups*
Calculating strand (ii)

- Progression in developing and refining written methods starting from Year 3
- Earlier introduction of use of calculators for carrying out calculations and greater clarity of purposes supported by Guidance document
- Progression in developing and refining written methods starting from Year 3
Welcome to the Electronic Framework

The National Literacy Strategy’s Framework for teaching and the National Numeracy Strategy’s Framework for teaching mathematics were introduced into primary schools in 1998 and 1999 respectively. Over the last seven years, the context within which schools and settings have worked has changed. There have been significant successes; schools and settings have improved the quality of education for our children.

We need to build on this success and, in reviewing them, ensure that the frameworks meet the challenges we now face and continue to work at, ensuring that all children really have the opportunity to achieve their potential. This requires effective personalisation of learning, providing the right support and opportunities tailored to the individual needs of every child. This challenge raises the bar in terms of aspirations.
Core position papers and guidance;
Interactive access to learning objectives;
Structured support for planning;
Support for assessment.

Library of all documents;
Supporting resources.

Key principles underpinning the Early Years Foundation Stage;
Access to progression in learning through the Foundation Stage;
Early Reading support;
Links with EYFS;
Example planning support.

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Papers

There are three Guidance Papers available on this page. There are intended to offer further support on planning and teaching and might be used to inform and guide policy and practice in the school.

- **Using and applying mathematics.** This paper identifies the importance of children being taught how they can use and apply their mathematical knowledge, skills and understanding and being given regular and frequent opportunity to do so. The paper sets out the themes within the using and applying mathematics strand and the progression embedded within each theme.

- **Calculation.** This paper emphasises the importance of children acquiring secure mental methods of calculation and an efficient written method of calculation for each of the four operations. It outlines progression in each of the four operations and draws on the material that was previously set out in the Supplement of Examples in the 1999 Framework for teaching mathematics.

- **Calculators.** This paper addresses the role of the calculator as a tool in the teaching and learning of mathematics. It distinguishes between the calculator as a useful resource to help develop children’s understanding of numbers and the use when calculating. The paper offers guidance on the children need and the calculating skills they should
The Primary Framework core position papers

- **Core documents underpinning the principles in the Primary Framework for Literacy & Mathematics**
- **Guidance on Using and Applying**
- **Guidance on calculation**
- **Guidance on the use of calculators in the teaching & learning of mathematics**
This position paper:

Emphasises the importance of children acquiring secure mental methods of calculation and an efficient written method of calculation for each of the four operations.

Outlines progression in each of the four operations and draws on material that was previously set out in the Supplement of Examples in the 1999 Framework for teaching Mathematics.
When approaching the core position paper on calculation teachers need to be aware:

- *This is one pathway for the teaching of written calculation. However, there is no suggestion that this pathway should be adopted by schools. It should be the basis for whole school discussion.*

- *Research suggests that the use of number lines within division have been particularly successful in helping children gain an understanding of the process*
Questions to be addressed

- How do we currently teach calculation skills?
- How effective are we at teaching these skills and how do we know this?
- What will need to change?
- How will we set about reviewing our policy on calculations and what will be the expected impact on pupils?
- How will we know that the changes we make are having the desired impact on learning and teaching and on children’s attainment?
This position paper:

- addresses the role of the calculator as a tool in the teaching and learning of mathematics. Key skills that need to be taught in preparation for using a calculator as a calculating tool.

- Distinguishes between the calculator as a useful resource to help develop the children’s understanding of number and a tool to use when calculating.

- Offers guidance on the technical skills children need and the calculating skills they should learn from Year 4.
Core position paper: Using & Applying

This position paper:

- Identifies the importance of children being taught how they can use and apply their mathematical knowledge, skills and understanding and being given regular and frequent opportunity to do so.

- Sets out the themes within using and applying mathematics strand and the progression embedded within each theme.
Select year group for planning

Planning

The planning structure for each year is organised into five blocks. The structure is the same for each year group. A block is designed to cover the equivalent of 6 weeks or 9 weeks of teaching. Each block has incorporated into it objectives from the Use and apply mathematics strand and from two or three of the other core strands. The blocks are:

- Block A: Counting, partitioning and calculating
- Block B: Securing number facts, understanding shape
- Block C: Handling data and measures
- Block D: Calculating, measuring and understanding shape
- Block E: Calculating number facts, calculating, identifying relationships

Each block is made up of three units. A unit represents 2 or 3 weeks of teaching. For each of the 15 units that cover the teaching year there are overviews of children's learning, assessment questions and suggested resources. These are intended to provide you with support when planning the children's learning and reviewing their progress. The units are designed to be used independently when planning a period of 2 or 3 weeks' work. However, when mapping out the blocks and units over the term or year the inter-relatedness of the content and pitch of the units needs to be taken into account. There are various ways that the units can be placed together to provide children with a coherent learning experience and the
Year 3

- Add or subtract mentally combinations of one-digit and two-digit numbers

- Develop and use written methods to record, support or explain addition and subtraction of two-digit and three-digit numbers

- Multiply one-digit and two-digit numbers by 10 or 100, and describe the effect

- Use practical and informal written methods to multiply and divide two-digit numbers (e.g., 12 \times 3, 50 \div 4); round remainders up or down, depending on the context

- Understand that division is the inverse of multiplication and vice versa, use this to derive and record related multiplication and division number sentences

- Find unit fractions of numbers and quantities (e.g., \( \frac{1}{4}, \frac{1}{6}, \frac{1}{8} \) and \( \frac{1}{12} \) of 12 litres)
Planning a teaching sequence
Planning elements

• Review of prior learning
• Identification of where children’s learning will be by the end of the unit
• Map of Unit to identify possible pathways from prior learning to expected outcomes
• Identification of a variety of teaching strategies to address outcomes and cater for the learning needs
• Relevant vocabulary, appropriate resources
Supporting teachers to develop a sequence of lessons

- **Develop AfL** including use of review, discussion and enquiry activities to assess learning and inform planning
- **Develop teachers’ subject knowledge** to support analysis of children’s learning and the setting of high expectations
- **Promote the use of different teaching strategies** to match learning outcomes and meet needs of the learners over the sequence of lessons
Counting, partitioning and calculation

### Objectives

End-of-year expectations (key objectives) are highlighted

- Present solutions to puzzles and problems in an organised way; explain decisions, methods and results in pictorial, spoken or written form, using mathematical language and number sentences

- Read and write two-digit and three-digit numbers in figures and words; describe and add number sequences and recognise odd and even numbers

- Count up to 100 objects by grouping them and counting in tens, fives or twos; explain what each digit in a two-digit number represents, including numbers where 0 is a place holder; partition two-digit numbers in different ways, including into multiples of 10 and 1

- Order two-digit numbers and position them on a number line; use the greater than > and less than < signs

### Units

| Units |
|-------|---|---|
|       | 1 | 2 | 3 |
| Present solutions | ✔ | ✔ | ✔ |
| Read and write numbers | ✔ | ✔ | ✔ |
| Count objects | ✔ | ✔ | ✔ |
| Order two-digit numbers | ✔ | ✔ | |
Prior learning

Check that children can already:

- talk about how they solve problems, using the vocabulary of addition and subtraction and number sentences to describe and record their work
- count reliably at least 20 objects, estimate a number of objects that can be checked by counting
- read and write numerals from 0 to 20, and order these numbers on a number line
- say the number that is 1 more or less than any given number, and 10 more or less than a multiple of 10
- understand that addition can be done in any order and relate addition to counting
- understand subtraction as ‘take away’ and counting back, and find a difference by counting up
- recognise the value of coins
Planning for the teaching sequence

Share the three forms of planning between you as a table. After 2 minutes we will ask you to swap planning to look at a different example. After you have seen all the three examples we would like you to discuss the following questions:

• Where can you see the teaching sequence for maths

• Where can you see aspects of AfL e.g. use of review and building on prior learning
Questions for coordinators:

What are the benefits and disadvantages of each type of planning for the teacher or those monitoring the planning?

What changes might you suggest to colleagues within school based on implementing the teaching sequence for maths?