

# Renewing the Frameworks

**Primary and Secondary National Strategies**

**Session 1**

**Driving Improvement**



# Welcome to Day 3 – Division

## Session 1

- **Driving Improvement - Issues for Our School (Division Focus)**

**COFFEE**

## Session 2

- **Assessment for Learning**
- **Oral & Mental Work / Speaking & Listening**

**LUNCH**

## Session 3

- **Tools to Support the Bilingual Learner**
- **Developing Planning**

**COFFEE**

## Session 4

- **Reflection**
- **Planning for School Focus and Next Steps**

# Welcome to Day 3 – Division

Aspects	Day 1	Day 3	Day 5
Improvement and change	Introduction: key themes and revisions	Supporting under performing groups	Planning and sustaining change
Framework structure and content	Calculation	Using and applying mathematics	<b>Assessment for learning</b>
Teaching and learning mathematics	Teaching sequences and strategies	Enriching and enhancing teaching and learning	<b>Oral and mental work – speaking and listening</b>
Subject leadership role and expectations	<b>Leading improvement: supporting colleagues</b>	<b>Driving improvement: improving pedagogy</b>	Reviewing impact and progress: making a difference

# 5 Key themes

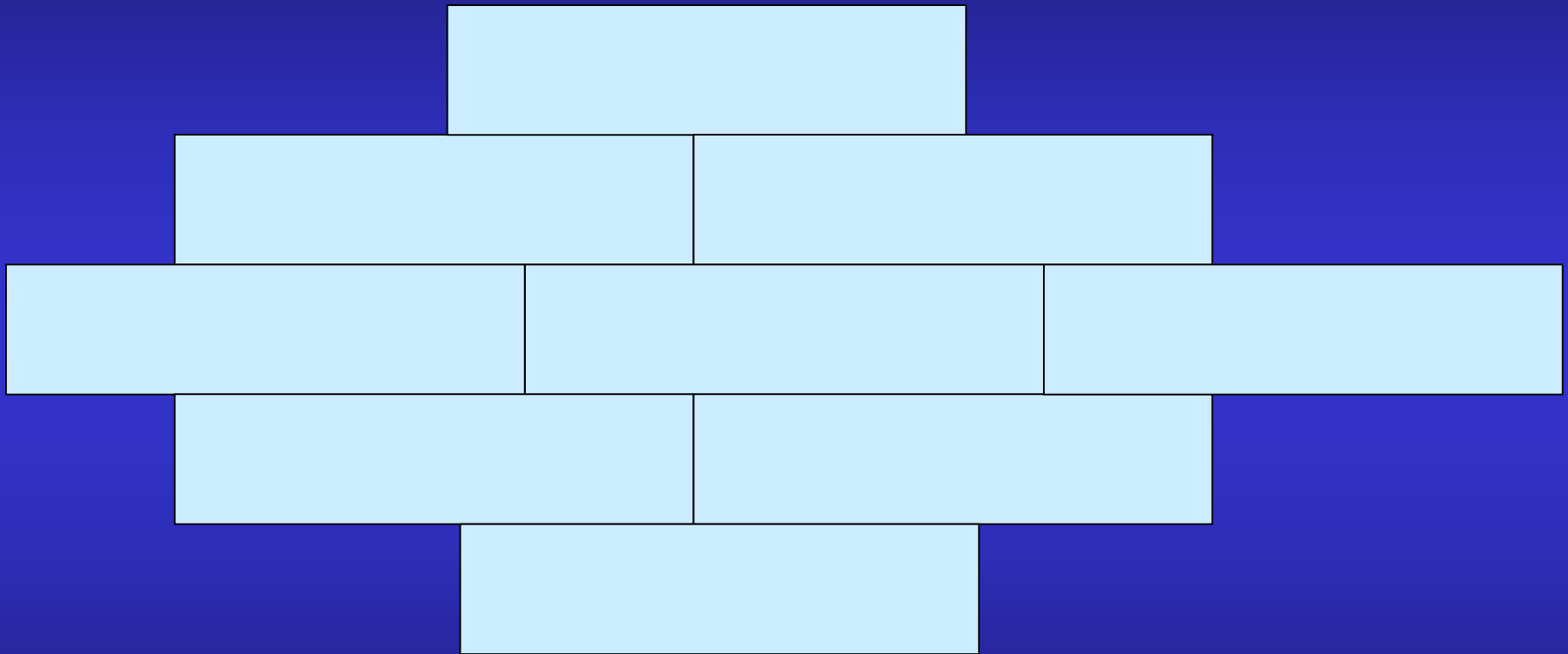
- Encourage flexibility
- Structure teaching and learning
- Raise expectations
- Make more effective use of assessment
- Broaden and strengthen pedagogy

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*Where are we now?*



# Impact on children's learning



# Aspects of planning and teaching

- Identify and set learning expectations for all children
- Use and structure dialogue in the mathematics classroom
- Promote and use interactions with and between children
- Structure mathematics lessons
- Plan the teaching sequence
- Use resources including ICT to support learning

# Aspects of planning and teaching

- Decide on the most important issues that you need to address to support and enhance children's learning in mathematics.
- Think about how you might share these with colleagues and where there is already good practice in place in your school

# Primary and Secondary National Strategies

## Division



# Reflecting on action research

- How did you engage all staff in your school's continued professional development in mathematics and the action research?
- How did you retain an overview of the progress being made and the implications for your school on the teaching and learning of division?
- In talking to colleagues and the targeted children, what did you learn that will help you to lead in developing and supporting the school learning community?
- What agreed actions arose from the PDMs – are there any joint actions agreed with the literacy subject leader?

# GAP Task - Division

Extend your own leadership in school in terms of mentoring and coaching

- Identify a colleague who would engage in and benefit from joint work
- Identify 1 aspect from 8.1 'Aspects of Planning and Teaching' that would benefit from further attention
- You and a colleague together plan and prepare 2 lessons that address the same aspect and are linked to objectives from same strand
- 1 lesson is to be pitched at the children in your colleagues class and 1 lesson to be pitched at yours
- The 2 lessons are to be co-taught and observed
- Be prepared to discuss these lessons at the next training session and draw from it issues that relate to mentoring and coaching of colleagues

# PDM 3

- What are the key messages you want to share with colleagues when planning and running PDM 3?
- How do PDM2 and PDM3 link? What would you need to do to follow up PDM2 to make these links?
- How will you ensure staff are clear about and committed to the actions they take after the meetings?

# Making a Written Calculation Policy Work 1

- All staff who teach or support children with calculation need to be involved in the formation of a policy which sets out the schools progression.
- Real discussion / argument is required to ensure commitment and consistency.
- Staff should be involved in the formation of the policy and not simply the reviewing of a presented policy
- The formulated policy should be referenced to the Core Position paper and other policies.

# Developing an Understanding of Progression in Division

- The Renewed framework suggests a much earlier building of the foundations of division.
- Within Key Stage 1 children should have an understanding of both “Sharing” and “Grouping” and the movement from one to the other.
- Children should be introduced to a range of models through which to approach division.
- Children should have had the opportunity to practice division in real life contexts.
- Children should have been introduced to the idea of a remainder and its effect in problem solving situations.

# Developing an Understanding of Progression in Division Continued

- Children need to be introduced to horizontal chunking along a numberline as it allows children to calculate division calculations free from subtraction.
- Children need to be continually aware of the relationship between division and multiplication and use this relationship to aid their checking.
- The Renewed Framework focuses on children using their known facts to “Trap” numbers in order to estimate an appropriate answer.
- Children should have had experience of converting a remainder to a fraction or a decimal.

# Progression in Written Calculation Methods for Division

- Which methods for the recording of division calculations best support the progression within it?

## Task

- Place the written calculations methods within the envelopes into a progression eliminating any which you believe do not support it.

# Making a Written Calculation Policy Work 2

- The policy needs to be approved by all the staff
- The policy needs to be shared with the learning community
- The policy needs to be shared with new staff
- The policy needs to be sold. Best sold by children.
- The policy needs to have a “best before date” and a timetable for review

# Impact on Learning- Is it working?

- Written calculation methods should be the focus of book trawls over a two year period following publication.
- The teaching of written calculation should be focus of monitoring following publication.
- Deviation from the policy needs to be addressed.
- Blind teaching of written calculation methods without regard for mental methods or alternatives needs addressing. “ Try these 8 calculations, 2 of them don't fit this method, can you find them?”

# Dodgy Division

- Analysis of children's written calculations is necessary to determine their understanding and application of division

## Task

Look at the 3 examples of children's work.

- What do the methods show us about their understanding of division? Discuss.
- What should be the next steps for these children?

# Renewing the Frameworks

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**Session 2**

**Assessment for Learning**



# Excellence and Enjoyment

- Questioning
- Observing
- Discussing
- Analysing
- Reviewing

# Guidance Paper

- Assessment for learning is part of the planning process
- Assessment for learning is informed by learning objectives
- Assessment for learning engages children in the assessment process
- Assessment for learning recognises the achievements of all children
- Assessment for learning takes account of how children learn
- Assessment for learning motivates learners

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**Oral and mental work – speaking and listening**



# Oral / mental starters - The history so far.....

- In 1999 teachers were enthused by the oral / mental starters.
- In 1999 teachers and children were using a range of practical teaching resources during the oral / mental starters
- In 1999 teachers had access to training on oral / mental starters

# Oral / mental starters – Recent research suggests that.....

- In 2006 oral / mental starters were observed that were less well resourced
- In 2006 oral / mental starters showed an over reliance on individual wipe boards
- In 2006 oral / mental starters showed an increase in the use of IWB's and prominence of the visual image
- In 2006 oral / mental starters were often inappropriate in duration

# Oral / mental starters in our schools.....

- Do we need to reenergize the teaching of the mental / oral starter? How have our staff changed since 1999?
- Do we have mental / oral starters that focus on visual learners predominantly?
- Are we well enough resourced to encourage variety?
- Do our teachers link to many oral / mental starters to the main activity?
- Are we increasing the number of mental / oral starters in our school's mathematical development areas ?

# Oral work

Discuss:

- How often activities of this sort are used in your classroom, in their school
- How the activities can be adapted to develop children's speaking and listening skills
- How you might use the activity with colleagues to promote oral and mental work and speaking and listening in mathematics

# Balance of oral mental work

- Using and applying mathematics
- Counting and understanding number
- Knowing and using number facts
- Calculating
- Understanding shape
- Measuring
- Handling data

# 6 Rs

- Rehearse
- Recall
- Revisit
- Refine
- Read
- Reason

# 6 Rs – Variety and balance!

- Within each strand, particularly those strands not headed 'Number', what opportunities are there for children to REHEARSE and what do they rehearse?
- Are there key facts, other than number facts that children should RECALL quickly and accurately?
- How does oral and mental work provide children with the opportunity to REFRESH and consolidate previous learning?
- How does the oral and mental work help the children to REFINE, reinforce and use, with increasing precision, key aspects of mathematics across all strands?
- What mathematics do children READ? Is reading mathematics a feature of each strand and what role does oral and mental work play?
- How is children's ability to REASON develop by oral and mental work? How is this work organised and planned across all strands?

# Renewing the Frameworks

## Primary and Secondary National Strategies

### Session 3

## Learning & Teaching for bilingual children in the Primary Years



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**Developing Planning**



# Supporting Colleagues With Planning

Staff should have ...

- Time to familiarise themselves with teaching sequence for Maths
- Access to sample weekly planning and had opportunity to discuss
- Reviewed their planning in light of teaching sequence
- Had the opportunity to look at on-line framework
- Focused on assessment opportunities in detail particularly checking on prior learning

# Block A Planning

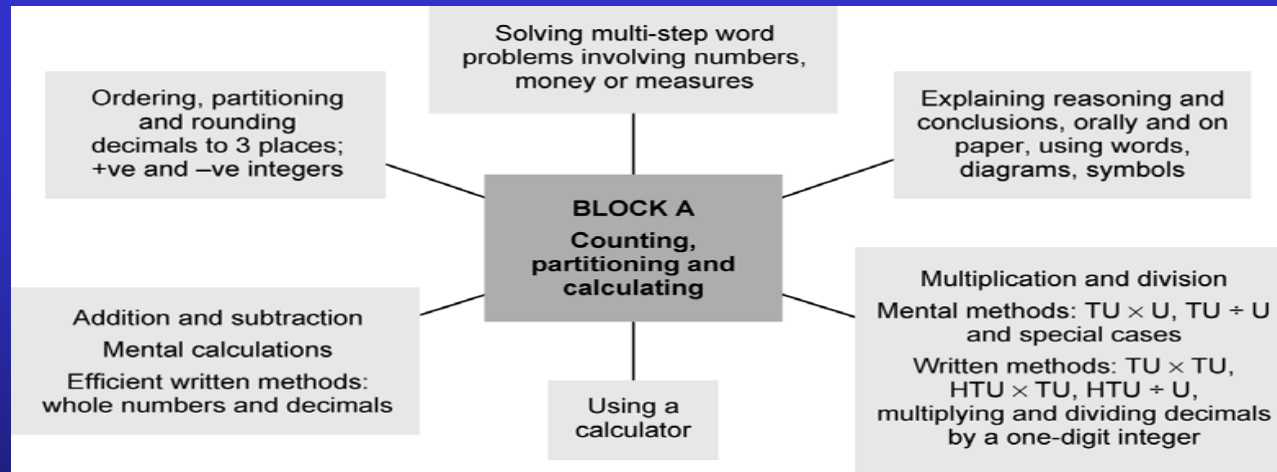
Block A provides...

- A good starting point for teachers to discuss planning
- Suggested starters/ MTA
- Assessment for learning opportunities
- Incorporates ICT
- Model and Images
- Resources

# Planning – Where to start?

When planning a unit of work practitioners may want to consider the following:

- What are the big ideas of the block? How does the block diagram help? Is there an overarching theme?



# Planning – Where next?

When planning a unit of work practitioners may want to consider the following:

- What does the learning in the unit look like? How does the learning overview help? What are the 2/3 big ideas in 2/3 week unit?

- **Learning overview**

- Children **count** in whole-number, fraction and decimal steps. They count forwards in jumps of 19 from 7 and backwards in 7s starting at 19 and continuing below zero. They count in thirds from 0 using mixed numbers and in steps of 0.3 from 0.....

# Planning – Where next?

## Where else does this learning take place?

### Year One – Block A

The objectives for the block are listed in the table – the right hand column indicates how the objectives might be addressed in the units

Objectives End-of-year expectations (key objectives) are highlighted	Units			Also in	
	1	2	3	D	E
<ul style="list-style-type: none"> <li>Solve problems involving counting, adding, subtracting, doubling or halving in the context of numbers, measures or money, for example to 'pay' and 'give change'</li> </ul>		✓	✓	✓	✓
<ul style="list-style-type: none"> <li>Describe ways of solving puzzles and problems, explaining choices and decisions orally or using pictures</li> </ul>	✓	✓	✓		
<ul style="list-style-type: none"> <li>Count reliably at least 20 objects, recognising that when rearranged the number of objects stays the same; estimate a number of objects that can be checked by counting</li> </ul>	✓	✓		✓	

# Planning – Where to start?

What can the children already do? How do the “building on prior learning” prompts help?

## **Building on previous learning**

Check that children can already:

- explain reasoning using text, diagrams and symbols
- solve one- and two-step problems involving whole numbers and decimals and all four operations, choosing and using appropriate calculation strategies
- order positive and negative numbers in context

# Developing The Review Lesson

- Does the school community have a collective understanding of what a good review lesson looks like?
- Have the teachers had the opportunity to teach a review lesson and evaluate its impact?
- Has the school community had the opportunity to share examples of review lessons?
- Are teachers aware that review lessons are best when approached kinaesthetically and practically as opposed to a response to questions and problem solving?
- Has your school identified staff who need support in planning and teaching the review lesson?

# Effective review should allow you to.....

- Prioritise the objectives within the unit
- Decide which objectives that you will keep “on the boil” within mental/oral starters
- Differentiate the learning outcomes for the unit for the children?
- Plan a balanced unit of work matched to the children’s needs

# Questions to consider while planning.....

What are the key images and models to support this learning?

How can I make links between the different objectives in this unit?

How will I teach the aspects of using and applying mathematics within this unit?

How can I assess children's understanding before and through the unit and adapt my planning based on the information?

How will I ensure an appropriate balance between, review, new learning, practise application and evaluation?

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**Session 4**

**Reflection/Next Steps**



# Reflection /Next Steps

- What was successful and why?
- The next steps in your school
- Planning for your school focus