

## Easington C of E Primary School Maths Implementation

### What does Maths look like at Easington C of E Primary School?

#### What is 'Mastery'?

The term 'mastery' refers to the ability of the children simply to have understood a mathematical idea or concept and in practical terms, have the ability to apply mathematical knowledge in different ways (fluency, problem solving and reasoning).

#### Mathematics at Easington C of E

From September 2018, for 'single year' year groups, the WRH materials should still be used in order to meet the needs of the National Curriculum (see example below).

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Four Operations					Number: Fractions				
Spring	Number: Decimals and Percentages			Y5: Number: Decimals Y6: Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Y5: Consolidation Y6: Number: Ratio		Statistics	
Summer	Geometry: Properties of Shape		Geometry: Position and Direction	Y6: SATS		Investigations and Consolidation						

However, there is flexibility concerning the length of the blocks-these can be made longer or shorter depending on AFL and Teacher Assessment. Teachers need to use their professional judgement to judge what is most beneficial for their own class.

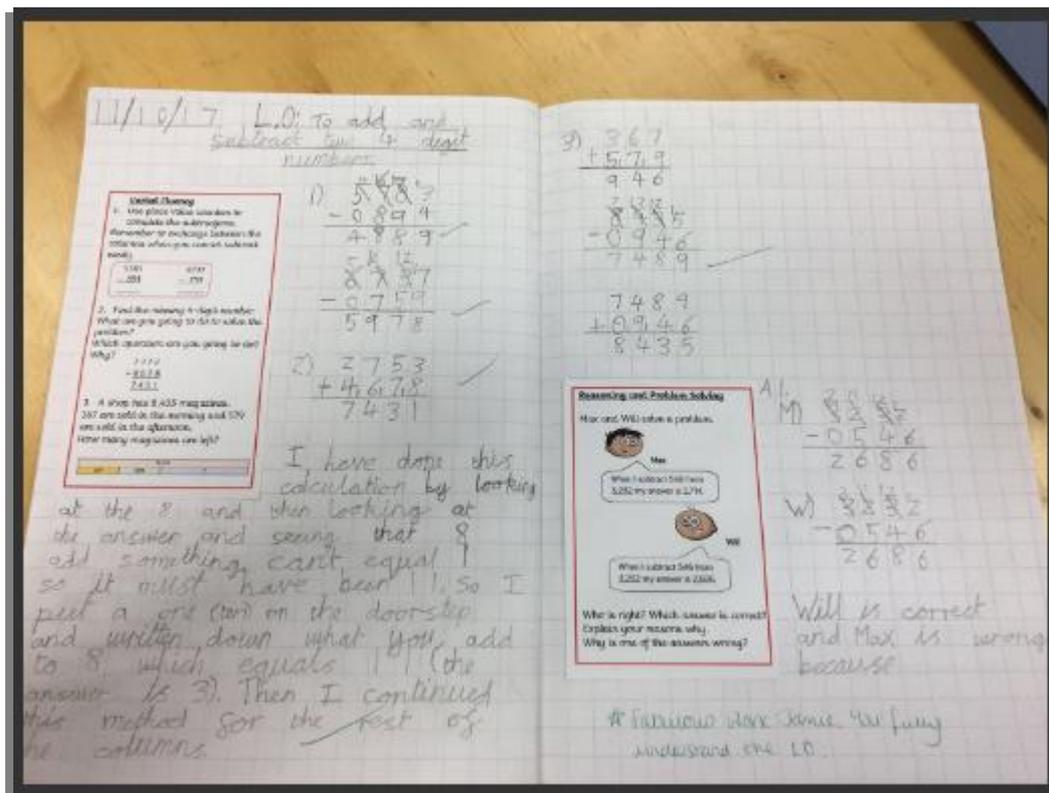
For 'mixed year' year groups, the input and modelling for each lesson should address the higher-level concept (the higher year group). The task should then be differentiated so that it meets the requirement of each year group (e.g. Place value in Y6 is to ten million whereas in Year 5 it is to one million).

Teachers should design lessons with an emphasis on the representation of content (Concrete Pictorial Abstract-CPA-approach) and work designed to meet the needs of the objective (objective first, not task). A wide range of resources should be used in order to create specific tasks-teachers should 'dip in' to WRH, Maths No Problem (electronic version), Kenny's Pouch etc to create tailor-made worksheets for their cohorts. All worksheets need to contain Fluency, Problem Solving and Reasoning

tasks **EVERY DAY** from Monday-Thursday. Every Friday all children should complete real-life problems, investigations, puzzles etc.

Worksheets should be created using the template provided (examples given)-this would provide consistency of expectation across school and present a uniformed approach to presentation of content and appearance for moderation purposes. Children should record in squared books **not** on the sheet, unless it is a diagram/number-line etc to complete.

Example provided below.



SC labels will be used as an indicator of the progress that has occurred throughout the course of the lesson. **The labels need to be specific to the year group objective and the Success Criteria specific to each year group.** The success criteria SHOULD NOT be generic but SHOULD BE differentiated and matched to the children's ability.

The modelling resources used by teachers to facilitate learning should indicate progress clearly and use models and images vital to the children achieving mastery (by the end of the academic year). Marking and assessment within lessons (Verbal Feedback), at the point of learning, should be an integral part of practice. Please use the 'Next Steps' to further challenge the Greater Depth children or to consolidate learning. **It is an expectation that when the children's work merits the 'next step' that it is given.**

### Example of aligning curriculum content:

#### Year 2/3 example:

##### **Y2 Place value – Comparing and Ordering Numbers:**

- Place Value: Objective 2 - Can recognise the place value of each digit in a two-digit number (tens, ones).

##### **Year 3 Place value – Comparing, ordering and rounding numbers:**

- Place Value: Objective 2 - Can recognise the place value of each digit in a three-digit number (hundreds, tens, ones).

#### Year 3/4 example:

##### **Year 3 Place value – Comparing, ordering and rounding numbers:**

- Place Value: Objective 3 - Can compare and order numbers up to 1000.

##### **Year 4 Place value – Comparing, ordering and rounding numbers:**

- Place Value: Objective 5 - Can order and compare numbers beyond 1000.

#### Year 5/6 example:

##### **Year 5 Fractions, decimals and percentages:**

- Fractions: Objective 22 - Can compare and order fractions whose denominators are all multiples of the same number.

##### **Year 6 Fractions, decimals and percentages:**

- Fractions: Objective 15 - Can compare and order fractions, including fractions less than 1.

Once the objectives have been carefully selected from the MTP/WRH32, teachers can deliver the content. In the Year 2/3 example, all children would receive the main input to meet the Y3 objective (pre-signalling content for Y2). The Y3 children could then be sent off to begin their task whilst the Y2 children remain with the teacher for the extended input to deliver the Y2 objective (this 'extended' time may only be 5 or 6 minutes depending on the objective/how well the objectives have been aligned). Once the Y2 input has been completed, the teacher would be able to send these children off to begin their task whilst checking the Y3 children and providing appropriate feedback. The teacher must then ensure that ALL children receive appropriate feedback throughout the course of the lesson.

Please note that not every objective on the MTP may not require a whole lesson e.g. Year 1 Place Value – Rote counts from 0 – 30 or beyond and back from any given number up to 30. This objective may be addressed in a mental and oral, starter, DMM etc.

In autumn term, place value and number should be taught first as this content underpins other areas in mathematics. Also, cross curricular links should be made to alleviate some of the time pressures for delivering mathematics e.g. the 'statistics' requirement of the mathematics NC could be taught exclusively in science but the teacher would need to ensure that the maths being delivered (through science) is age appropriate and will be used to satisfy the expectations for the maths curriculum.

In all year groups, teachers need to use their **professional judgment** to deliver the mathematics curriculum for the maximum benefit for all children within their cohort. In a mixed age class, the children from each year group should have evidence of learning from their own year group rather than it being the same e.g. in Y3/4 – the Y3 children should have evidence of Y3 work whereas the Y4 children should have evidence of Y4 work.

There will be **NO** requirement for teachers to produce short term planning, unless they choose to. For moderation purposes, the children's books and teacher's lesson preparation materials (activeinspire files, powerpoints, notebook files etc) will be collected and analysed.

There would be freedom within teaching to have specific problem solving and specific reasoning lessons where the children are taught the discrete skills necessary to solve problems and reason within areas of mathematics. Teachers should endeavour to make maths fun and use a range of experiences and practical maths activities to engage the children.

The order of the teaching process should be:

Fluency (learning the skills), Problem Solving (applying the learnt skill in different contexts) and then Reasoning (thinking more widely about the skill and in different ways).

Children should have access to fluency, problem solving and reasoning **EVERY DAY**-the children may not always address all three elements but the children need to have access to all three to cater for their needs. GD children should also have access to more complicated/sophisticated questions (NCETM Mastery booklets are a great starting point - 'Mastery with Greater Depth' questions) when **teachers feel it is appropriate to challenge** and using **professional judgement** (development point from F. McKellar – Feb 2018).

The Daily Maths Meeting (DMM) should focus on recapping and consolidating key basic skills (times tables and procedural elements) and concepts, as well as basics such as counting etc. This will take place **EVERY DAY FROM 9.10-9.30**-this should be evident in classes on Learning Walks etc. The mathematics lesson will then take place from 9.35-10.35. This will be monitored closely by SLT. The content for this should come from AfL from lessons as well as the achievement of the children. Please use individual whiteboards for this work-no formal marking required. Format and examples provided.

### In summary

In Key Stage 2, the input for the lesson will be designed to meet the higher objective. The SC label and task will then be differentiated to meet the needs of each year group ensuring full curriculum coverage.

In Key Stage 1, the maths curriculum will be delivered using WRH but there is flexibility with the timings of the blocks-teachers use professional judgement to deliver mathematics for the maximum benefit of the children.

Worksheet will be designed and made by teachers using a wide range of resources and **MUST CONTAIN** fluency, problem solving and reasoning activities-see the example.

-In every year group, the worksheet should be trimmed into each different element (F, PS, R) and be glued into books. The children should glue their work in neatly and complete all working out alongside-NOT on the sheet.

Once a week, there will be a real-life problem solving/investigation/puzzle day where ALL children are taught specific problem solving skills and have access to problem solving activity. There needs to be some form of evidence for this in books.

Every day for 20-30 minutes, a Daily Maths Meeting takes place where basic skills, times tables and procedures are revisited and revised. Please see the example provided but the content for DMM needs to come from your AFL. **Pupil feedback to marking could also take place within the DMM.**