



TUNBURY PRIMARY SCHOOL

Teaching of Calculations in Mathematics

Rationale:

Children need to understand what they do and what they record in mathematics. They should never record in a way that does not mirror their understanding.

When faced with a problem or calculation, we want children to say to themselves, "Can I do this in my head?" Mental calculation needs to be a first resort, although some more complex calculations will require a pencil and paper method. When working mentally, children should be taught to make informal jottings to help them remember the method they are using.

Our Aims

- ◆ To equip children with the confidence and understanding to use a variety of mental and written strategies when solving mathematical problems.
- ◆ To use their knowledge and apply it to different situations across the curriculum.

NB: It is very important that children are not taught formal written methods too early, before mental methods are fully understood.

Reception – The Early Years Foundation Stage

Mathematics learning in the reception classes involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces and measures. At Tunbury Primary school there is an expectation that the National Curriculum first published in 2014 is followed.

Mathematics is one of the four specific areas through which the three prime areas of communication and language; physical development; and personal, social and emotional development; are strengthened and applied.

Children are given the opportunity to develop their understanding through games, rhymes, songs, stories, construction, imaginative play, outdoor play, cooking, shopping, music, art, exploring patterns and number in the environment and daily routines.

Recording calculation in the early years

Mark making is the first important stage of recorded calculation. Children will use their own graphics to represent numbers and calculations.

Once children understand the quantifiable nature of numbers, they will be taught the digits that can be written to represent numbers. The children will be taught the correct formation of numerals and will use these to record findings and to label.

Children will be taught to use informal jottings and drawings to support number work and will be able to use these written methods to explain their thinking.

Once confident counting and using numbers to quantify amounts, the children will be taught the skills of mental addition and subtraction and once confident will begin to record simple addition and subtraction calculations in a formal number sentence for example $6+4 = 10$. Children will be taught to understand each symbol within the number sentence.

Key Stages 1& 2

General guidance on the teaching for calculation can be found in the New National Curriculum.

Children at all stages should be encouraged to make jottings to support their thinking. Adults **must** model the different strategies, jottings and presentation expected (e.g. margins, one number in one square).

Monitoring progress in calculations

Although there are 7 stages, the boundaries between them are not fixed. The progression is incremental so that successful prior learning of these methods determines the children's pace of progress. Teachers use their professional judgment to decide when children are ready to move onto the next stage. Children will only move onto the next stage once their learning is secure in the previous stage.

The expectation is that the majority of pupils will move through the stages at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

The majority of the children at Tunbury Primary School will be taught the following stages for the four rules at each stage of their learning.

Year Group	Stage
Reception	Early Stage
1	1
2	2
3	3
4	4
5	5
6	6

Details of each stage of the calculation policy can be found in Appendix A

Senior Leaders and the Mathematics Subject Leaders monitor the progress of all pupils. Any variations in attainment are identified and relevant interventions put into place. The progress of vulnerable groups is also tracked and evaluated to ensure equality of access and opportunity within this area of mathematics.

This policy will be reviewed regularly and updates given to Governors, in line with any new information and guidance that becomes available.

Reviewed by: A. Carpenter and Emma Smith – October 2017