

The Devonshire Hill Nursery and Primary School  
Mathematics Teaching and Learning  
Upper Key Stage 2



In UKS2 Children move on from dealing mainly with whole numbers to performing arithmetic operations with both decimals and fractions. They will consolidate their use of written procedures in adding and subtracting whole numbers with up to 6 digits and also decimal numbers with up to two decimal places. Mental strategies for adding and subtracting increasingly large numbers will also be taught. These will draw upon children's robust understanding of place value and knowledge of number facts.

Efficient and flexible strategies for mental multiplication and division are taught and practised, so that children can perform appropriate calculations even when the numbers are large, such as  $40,000 \times 6$  or  $40,000 \div 8$ .

In addition, Y5 and Y6 children will extend their knowledge and confidence in using written algorithms for multiplication and division. Fractions and decimals are also added, subtracted, divided and multiplied, within the bounds of children's understanding of these more complicated numbers. The children will calculate simple percentages and ratios. They will become familiar with prime, square and cube numbers and Roman Numerals to at least 1000. Negative numbers will be added and subtracted.

Where needed and when introducing new concepts children will have access to a wide range of practical resources such as Numicon, number squares and vertical horizontal number lines to help them work out calculations and word problems independently.

### **In Year 5**

#### **Daily Mathematics Lesson**

- Mental Arithmetic (20 minutes) where strategies are taught to ensure that children are secure in number facts

Main Teaching (1 hour)

- **Present a question/word problem**

- *Ask the class what information they would need to answer the question. Class will work in small groups to try to solve the problem. Groups to report back. Results are compared to see if their outcomes are similar. (5 min)*
- The teacher introduces Learning Objective, Success Criteria and Vocabulary
- The progress line is displayed and discussed
- Teacher demonstrate/model the strategy
- Check understanding of strategy by white board example (individual or paired work) (10 min)

#### Group/Independent Tasks

- Display independent tasks (3 levels of challenge 'chili challenge' – children will decide what level of challenge they want to do) - (10 min)
- Conduct mini-plenary & Assess using Progress Line – (5 min)
- Continue independent tasks (7 min)
- Mini-plenary – address misconceptions and celebrate success. (5 min)
- The progress line can be updated throughout.
- Continuing independent tasks - If children complete 'Chili 3' they can attempt the 'Hot 'n' Spicy' extension task. This may involve applying their understanding in a different context or question type, completing word problems, creating their own questions, or solving exam style (Test Base) questions (8 min)

#### Plenary (10 min)

- Sharing success
- Discuss key learning points/ draw together what has been learned – find out from the children what they think they've learned, what they found easy/difficult and what they need to try and remember
- Completing Self/peer Assessment

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## **In Year 6**

### **Daily Mathematics Lesson**

- Mental Arithmetic(20 minutes) where strategies are taught to ensure that children are secure in number facts

#### **Main Lesson**

- **Present a question/word problem**
- *Ask the class what information they would need to answer the question. Class will work in small groups to solve the problem. Groups to report back. Results are compared to see if their outcomes are similar.*
- Teacher introduces Learning Objective, Success Criteria and Vocabulary
- Use progress line to assess baseline
- Teacher demonstrate/model the strategy
- Assess children's understanding by applying strategy to a similar question(s) using their mini-whiteboards

#### **Independent Activities**

- Display independent tasks (e.g. 3 levels of challenge 'chili challenge – children to choose their preferred level of challenge')
- Conduct **mini-plenary** (teacher-led/child-led) to address misconceptions and celebrate success
- Assess using progress line
- Continuing independent tasks. Once completed, children will undertake extension task. This may involve applying their understanding in a different context or question type, completing word problems, creating their own questions, solving exam style (Test Base)

#### **Plenary**

- **Sharing/demonstrating success**
- Discuss key learning points/ draw together what has been learned – find out from the children what they think they've learned, what they found easy/difficult and what they need to try and remember
- Completing self/peer assessment