Cheadle Hulme School

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Juniors and Infants Calculation Policy

INTRODUCTION

The aim of this guide is to give parents an overview of how the 4 different operations (addition, subtraction, multiplication and division) are taught in the Junior School. For more detail about the methods which are taught, please refer to the Junior School Calculation Policy. As you will see a wide range of different methods are taught at various stages. Children are encouraged to try all these different strategies and be able to use a range of methods to solve problems both mentally and using the more formal written methods. In this guide you will also find suggestions how to help your child with Maths at home and in real-life situations.

The Maths work your child is doing at school may look different to the kind of 'Maths' you remember. This is because children are encouraged to work mentally, where possible, using personal jottings to help support their thinking. When children are taught more formal written methods, (from year 3 / 4 onwards) they are encouraged to use these methods for calculations they cannot solve mentally or with jottings.

When faced with a calculation problem, encourage your child to ask…

- Can I do this in my head?
- Could I do this in my head using drawings or jottings to help me?
- Do I need to use a written method?
- Ask your child to explain their thinking.

Also help your child to estimate and then check the answer. Encourage them to ask: Is the answer sensible?

Overview of Mental and Written Strategies

Year Group	Mental Strategies	Written Methods
Reception	• Counting up to ten and beyond • Counting aloud in ones, twos, fives, tens • Positioning (first, second, third, etc.) • Estimating a number of objects	• Forming numbers 1 – 10 correctly • Writing simple number sentences
Year 1	• Number bonds ('story' of 5, 6, 7, 8, 9 and 10) • Count on and back in 1s from a given 2-digit number • Count on and back in 10s from any given 2-digit number • Count in 2s, 5s, 10s • Halve numbers up to 12 • Add or subtract 10 to any given 2-digit number • Add by putting the larger number first	• Add or subtract two 1-digit numbers (using number line or number square) • Add three 1-digit numbers, spotting doubles or pairs to 10 • Begin to use visual and concrete arrays or 'sets of' to find how many sets of a small number make a larger number
Year 2	• Number bonds – know all the pairs of numbers which make all the numbers to 12, and pairs with a total of 20 • Count on in 1s and 10s from any given 2-digit number • Begin to learn the ×2, ×3, ×5 and ×10 tables, seeing these as 'lots of' e.g. *5 lots of 2, 6 lots of 2* • Double and halve numbers to 20 • Relate division to grouping	• Add and subtract any pair of 2-digit numbers • Add and subtract 10 and small multiples of 10 to any given 2-digit number (use number lines, 100 square, place value, partitioning)
Year 3	• Know by heart all Times Tables and division facts derived from the ×2, ×3, ×4, ×5, ×8 and ×10 tables • Know pairs with each total to 20 e.g. *2 + 6 = 8, 12 + 6 = 18, 7 + 8 = 15* (and use for subtraction 8 – 6 = 2)	• Expanded 3-digit column addition and subtraction • Multiply 2 digit by 1 digit number using Grid Method • Divide using grouping/number facts

Year 4	• Know by heart/quickly derive number bonds to 100 and to £1 • Add to the next 100, £1 and whole number e.g. *234 + 66 = 300* e.g. *3·4 + 0·6 = 4* • Perform place-value additions and subtractions without a struggle e.g. *300 + 8 + 50 + 4000 = 4358* e.*g. 4352 – 302 = 4050* • Count on or back from any 2 or 3-digit number in 10s, or 100s e.g. 34, 44, 54, 64… e.g. 876, 776, 676… • Divide whole numbers by 10, 100 to give whole number answers or answers with 1 or 2 decimal places	• Column addition and subtraction of 3 and 4-digit numbers • Ladder multiplication of 3-digit by 1 digit numbers • Grid multiplication of 3-digit by 2-digit numbers • Short division of 3-digit by 1 digit numbers (Bus Stop)
Year 5	• Know by heart all the multiplication and division facts up to 12 × 12 and 144 ÷ 12 • Use knowledge of factors and multiples in multiplication e.g. *43 × 6 is double 43 × 3* e.g. *28 × 50 is $^1/_2$ of 28 × 100 = 1400* • Use knowledge of place value and rounding in mental multiplication e.g. *67 × 199 as 67 × 200 – 67* • Use doubling and halving as a strategy in mental multiplication e.g. *58 × 5 is half of 58 × 10* e.g. *34 × 4 is 34 doubled twice* • Divide whole numbers by 10, 100, 1000, 10 000 to give whole number answers or answers with 1, 2 or 3 decimal places	• Column addition and subtraction of 5-digit numbers • Short multiplication of 3- and 4-digit by 1 digit numbers • Long multiplication of 2-, 3- and 4-digit numbers by teen numbers • Grid multiplication of numbers with up to 2 decimal places by 1-digit numbers e.g. 1.34 x 6 • Short division of 3-digit by 1 digit numbers (Bus Stop)
Year 6	• Know by heart all the multiplication and division facts up to 12 × 12 and 144 ÷ 12 • Know by heart number bonds and use these to derive related facts e.g. *3·46 + 0·54* • Derive, quickly and without difficulty, number bonds to 1000 • Use number bonds to 100 to perform mental subtraction of any pair of integers by complementary	• Use column addition to add numbers with up to 6 digits • Use column addition to add decimal numbers with up to 3 decimal places • Use column subtraction to subtract numbers with up to 6 digits • Use short multiplication to multiply a 1-digit number by a number with up to 4 digits • Use long multiplication to multiply a 2-digit number by a number with up to 4 digits

	addition e.g. *1000 – 654 as 46 + 300 mentally* • Add small and large whole numbers where the use of place value or number facts makes the calculation do-able mentally e.g. *34 000 + 8000* • Add negative numbers in a context such as temperature where the numbers make sense • Add two 1-place or 2-place decimal numbers e.g. *4·5 + 6·3* e.g. *0·74 + 0·33* • Add positive numbers to negative numbers e.g. *Calculate a rise in temperature or continue a sequence beginning with a negative number* • Subtract negative numbers in a context such as temperature • Subtract mentally simple fractions with common denominators	• Use short multiplication to multiply a 1-digit number by a number with 1 or 2 decimal places, including amounts of money • Multiply fractions and mixed numbers by whole numbers • Multiply fractions by proper fractions • Use percentages for comparison and calculate simple percentages • Use short division to divide a number with up to 4 digits by a 1-digit or a 2-digit number • Use long division to divide 3-digit and 4-digit numbers by 2-digit numbers

USEFUL WEBSITES

There are lots of good Maths website available on the internet. Here are a few good ones to get you started:

https://www.nationalnumeracy.org.uk/your-childs-maths

https://www.oxfordowl.co.uk/welcome-back/for-home/reading-owl/owl-home

Abacus Active Learn Primary

Every child in Years 1 - 6 has their own log in and password. Once logged in click on 'My Stuff' to get started.
https://www.activelearnprimary.co.uk/login
username: first 4 letters of first name, followed by first 4 letters of surname (with no spacing) e.g. John Smith = johnsmit
password: changeme
school code: chhu

Times Tables Practice

- **iPad Apps**

There is a wide range of free iPad apps available to help learn and practice times tables.

- **CGP Times Tables**

https://www.cgpbooks.co.uk/assets/tests-and-games/timestables/index.html#/ (Google CGP Times Tables online)

- **Times Tables Rockstars**

https://ttrockstars.com/login

Other Useful Websites

http://nrich.maths.org/frontpage - Problem Solving: KS1 (Infants) and KS2 (Juniors)
http://uk.ixl.com/math/ - Lots of activities for children of all ages – KS1 & 2
http://www.bbc.co.uk/bitesize/ks2/maths/ - KS2 activities
http://www.crickweb.co.uk/ks2numeracy.html - KS2 activities
http://www.mad4maths.com/ - KS2 activities
http://www.bbc.co.uk/bitesize/ks1/maths/ - KS1 activities (Infants)
http://www.crickweb.co.uk/ks1numeracy.html - KS1 activities
http://www.ictgames.com/resources.html -KS1 activities

Maths Books

If you want to purchase some Maths books to practise at home, anything age appropriate from the following suppliers would be beneficial:
http://www.schofieldandsims.co.uk/
https://www.cgpbooks.co.uk/Parent/books
http://www.bond11plus.co.uk/shop/category/22-maths