HOW WE TEACH MATHS AND WHAT CAN YOU DO TO HELP AT HOME?

DECEMBER 2018

AIMS

- For you to have a greater understanding about how we teach maths at school;
- Become aware of some age related calculation strategies;
- Take away some ideas on how to help at home, using real life situations to apply maths skills/knowledge;
- Squeeze a 7 year maths calculation curriculum into 30ish minutes;

THE CURRICULUM

Year 1- Number

Statutory requirements

Pupils should be taught to:

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- read and write numbers from 1 to 20 in numerals and words.

Year 6

Pupils should be taught to:

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above.

HOW DO WE GET FROM…

$$\begin{array}{r} 154 \\ \times\ 51 \\ \hline 154 \\ 7700 \\ \hline 7854 \end{array}$$

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…TO THIS.

ESSENTIAL KNOWLEDGE

- Numbers and counting objects (not just recall)
- Place value
- Times tables
- Basic number facts
- Number bonds
- Number pairs
- Near doubles
- Mathematical vocabulary

What ways to we teach these areas of maths?

BASIC NUMBER FACTS

Number bonds to 10.

7 + 3 = 10

5 + 5 = 10

Near bonds

7 + 4 = 11

5 + 6 = 11

Doubles

Double 3 = 6

Near Doubles

3 + 4 = 7 3+3+1

Place Value

5497=

5000 400 90 7

AGE RELATED STRATEGIES

What are the different age related steps and strategies in order to add and subtract effectively and efficiently?

ADDITION

How would you work this out?

89 + 9 3 =

ADDITION

- Using vocabulary more and less.
- Number songs
- Practical ways using lots of equipment
- Number lines
- Simple number sentences
- Landmark number line
- Empty number line
- Partitioning
- Vertical column with carrying below the line
- Vertical column addition with carrying below the line

SUBTRACTION

How would you work this out?

101 – 95?

143 - 48 =

SUBTRACTION

- Using vocabulary more and less.
- Number songs
- Practical ways using lots of equipment
- Number lines- jumping back, counting up
- Simple number sentences
- Finding the difference
- Landmark number line
- Empty number line
- Partitioning
- Vertical column without exchanging
- Vertical column subtraction with exchanging

MULTIPLICATION

Making “lots of” practically

Repeated addition

Doubling Arrays

Repeated addition on a number line

Arrays in a grid

Partitioning

Repeated grouped addition on a blank number line

Grid method

Vertical addition

DIVISION

Sharing practically

Repeated subtraction practically and mentally

Halving practically, mentally and then with partitioning

Arrays

Fractions practically

Fractions on paper

Repeated grouped subtraction on a blank number line- chunking

Long multiplication without and then with remainders with chunking

With decimals

Short multiplication

HOW DO WE GET THE CHILDREN TO CHECK ANSWERS

- Inverse operations
- Even + Even= Even Odd + Odd = Even Odd + Even= Odd
- Estimating and rounding
- Does it just look right?

WHAT CAN I DO TO HELP AT HOME?

Some things, the children just need to learn and repeat, repeat, repeat until it 'goes in':

- Number bonds, place value , times tables etc

- Times tables
  - Posters in their bedroom
  - CDs of times tables on car journeys
  - Real life situations- 5 x 4=
    - How many wheels are on those cars?
    - How many fingers do 3 people have?
- Number bonds-
  - Using money/coins to work out number bonds-
    - If a _____ costs 33p and you have £1, how much change will you get (counting on)

WHAT CAN I DO TO HELP AT HOME?

Shapes

- Identify shapes in the real world

Fractions

- Pizzas, cake, cooking,

Map skills will help with directions, coordinates, compass rose

Telling the time and time intervals

- Watching TV, length of journeys, parks (making obstacles courses, how many times can you go down the slider in one minute) playing outside (you need to be in by this times, races, dates

WHAT CAN I DO TO HELP AT HOME?

Measurements

- Measure heights, length of hair, feet size, garden size, perimeter of the garden to fix a fence, height of animals

Numbers

- Spot numbers in the real world

WHAT CAN I DO TO HELP AT HOME?

Or, what maths can you squeeze in to everyday situations?

- Car journeys
- Cooking/baking
- Watching TV
- Shopping
- Board games
- Playing cards
- Gardening
- Calendars
- Days out
- On the farm
- Watching a football match
- Toys

WEBSITES TO HELP

Children to use:

http://themathworksheetsite.com/

Websites for parents

http://www.oxfordowl.co.uk/home/maths-owl/maths

http://school.familyeducation.com/math/parenting/38812.html

http://www.sparkyteaching.com/resources/thinkingskills/reallifemaths.php

FINALLY (FOR MATHS)

Some maths skills need to just be learnt.

'Doing maths' can be 'hidden' or practised in everyday situations.