

# Supporting your child's maths fluency at home

Thursday 15<sup>th</sup> September 2016

“The only way to learn maths is to  
do maths”

What maths have you already done today?



- **National Curriculum**

- •the curriculum is presented on a year-on-year basis
- •content has generally become more challenging
- •Fewer things but in more depth

# curriculum 2014 - mathematics

- The national curriculum for mathematics aims to ensure that all pupils:
  - become fluent in the fundamentals of mathematics – mental and written
  - reason mathematically
  - can solve problems by applying their mathematics

# What is fluency?

- Not only about number
- Not about practice, practice, practice of formal algorithms
- The government wishes to continue to emphasise fluency, but this should not be understood to mean “rote learning without understanding”.....conceptual understanding is clearly important and ..any emphasis on practice needs to be a part of achieving that understanding.

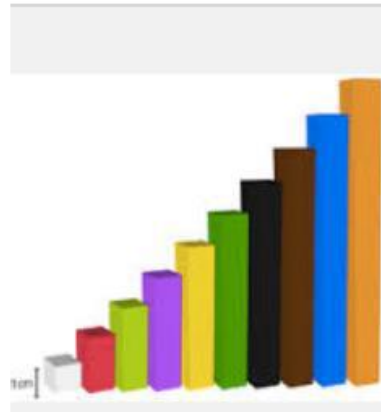
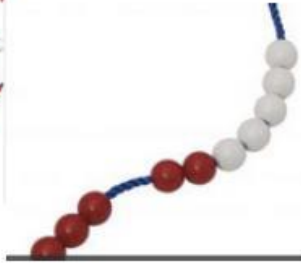
# What is fluency in Mathematics?

- Fluency means that children can:
- Be Efficient
- Choose the most efficient strategy rather than getting bogged down with too many steps.
- Be Accurate
- That they know some things about number facts such as: two numbers that make 5; two numbers that make 8; two numbers that make 10.
- Be Flexible
- They know how to solve a problem and gradually realise that there are lots of ways to solve the same problem.
- So fluency in mathematics demands more of pupils than memorising a single procedure – they need to understand why they are doing what they are doing and know when it is appropriate to use different methods.  
(Russell 2000)

# Times tables

- Sally knows her facts up to  $12 \times 12$
- When asked what is  $12 \times 13$  she looks blank.
- Discuss:
- Does she have fluency and understanding?
- What can we do to help her?

# Resources used to underpin conceptual understanding



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	47	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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What can you do at home?

# In the kitchen

- Involve your child when measuring and weighing
- Become familiar with the weight of things
- 1oz – 28g (Bag of Crisps)
- 1kg (Bag of Sugar)
- Become familiar with the volume / capacity of containers
- Mug of tea
- Can of drink
- Identify the heaviest / lightest objects
- Order objects

# In the bath

- Experiment with the sizes of containers by encouraging them to pour from one to another e.g. a small one to a large one or a large one to a small one.



# Walking to school

- look at the environment around you and spot shapes e.g. windows, pavements. See how many squares, rectangles, round shapes and cylinders you can spot. Which did you see the most of? Choose a shape for the week e.g. a square. How many of these can your child spot on the way to school or setting? (You could include in the home as well).
- Count the leaves, cracks in the pavements; Look at door numbers of your friends, relatives and where you live – what does it say? Can they spot their favourite number or their age number?

# What's the time?

- Younger children
- Talk about the passing of time – seasons, months of the year, days of the week as well as recurring significant events and celebrations within their lives. Look at the clock – analogue and make a point of showing them o'clock and significant times of the day e.g. 'We are going to school at half past eight and this is what half past eight looks like'.

# Going Shopping – Younger Children

- Buying one thing, e.g. 18p get your child to tell you how much change you will get from 20p.
- Ask him/her how many tens and how many ones 18p is made up from.
- After you have been shopping, choose different items costing less than £1. Make price labels for each one e.g: 48p, 79p. Then ask your child to do one or more of the following these:
  - Choose two items and find the total
  - Work out the change from £1
  - Add 9p to each price in their head
  - Say which price is an odd number and which is an even number
  - Place the labels in order, starting with the lowest
  - Identify the coins that they have to use to pay for each item (fewest)

# Going Shopping – Older Children

- '2 for £2.30'
- Buy one get one free
- Three for two
- Sale - work out what some items would cost with: 50% off; 25% off; 10% off or 5% off
- Ask your child to explain how she worked it out.

# Other money activities

- How much? Tip out the small change from a purse. Count it up with your child.
- William has £1 he spends 40p. How much change does he receive? Link it to number bonds to 100. Spent 40p, 60p change.



# Fractions

- Real life – Sharing
- Know what the whole is
- Find  $\frac{1}{2}$  of things
- Find fraction of a quantity

# Other ways

- •Emphasise numbers in real life e.g. telephone numbers, lottery numbers, bus...
- •Talk about maths in sport e.g. how many points do you need to go top?
- •Challenge with mental maths and tables
- •Look at number puzzles in magazines, TV
- •Encourage concentration on a problem, perseverance – especially when the first attempt is wrong