

Maths information evening to parents

Tuesday 11th July, 2017

Our roles in the school –

Past two years –

New ‘mastery’ curriculum – China –
courses and Mangotsfield school.

Making maths more interactive -
creating hands-on learners.

Assessment leader. SDP

Why we are holding this evening and our aims.

- **To show you how we teach maths and the strategies we use for calculations.**
- **Show you the resources we use and invite you to 'have a go' at maths!**
- **To explain what maths looks like for your child/children in the class.**
- **To give you a better insight into the maths curriculum and expectations in Years 1 and 2.**
- **To give you ideas for maths at home and provide you with some useful websites.**

How we teach maths

- Change from learning things by rote and 'I do, you do' – procedural learners.
- We believe children should investigate and explore the maths for themselves – conceptual learners. Make links and can apply what is learnt to many situations and scenarios (example – count in tens – sort a large set of resources into tens for counting)
- We believe it's not about the answers but the thinking process. Encourage children to talk about the maths – what have they found out.
- Exception - 'Mathematical fluency' – learn facts by heart to speed up calculations and apply e.g doubles and near doubles. Will talk about our mental 'Monkey Maths' lessons later.

Exploring the maths for yourselves!

- WALT and explain partner work (mixed ability pairs)
- Introduce Numicon shapes – children know the numbers.
- -Show sheets and read words (Numicon shapes)
- Odd and evens learning – put a 1 where it says ‘odd’
- What do you notice about the shapes?
- Write the numbers in each box e.g 1,3,5/ 2,4,6
- Put marbles in odd numbers – share with a friend.
- Put marbles in even numbers – share with a friend.
- What do you notice?

(Children doing the maths using resources, finding out for themselves, talking like mathematicians, more likely to ‘stick’ – not just us telling them which numbers are odd and even)

- As a class we make a ‘sentence stem’ or a rhyme / ditty about the learning e.g Odd numbers are 1,3,5,7,9 - you can’t share those! Even numbers are 2,4 ,6 8, 10 – you can share those again and again.

What maths looks like in the class

- Change from set ability groups – groups are fluid and we respond to the children's needs and immediate next steps. Work is marked on the same day and this informs us what the children need to learn the next day (re-teach; recap in a different, 'varied' way; move on to a challenge)
- Planning is done in 'steps' rather than days – changes.
- Mixed ability pairing – often or in challenge groups.
- Plenary – involves lots of talk about the learning.

Mastery / Greater depth

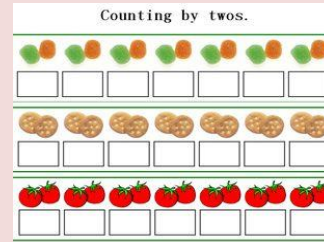
1. Teach knowledge and skills.
2. Children 'have a go'
3. Apply – use in other situations and problem-solve ('master' the learning)
4. Independently explore the maths learning – open-ended questions / think for themselves / justify / explain and describe the learning.

Steps for learning - Bronze, Silver, Gold, Platinum

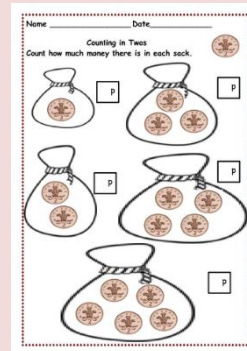
Differentiation in a lesson is shown by the depth of learning of a concept.

E.g - Counting in 2s

- Bronze - Learning the concept



- Silver - Applying the concept (Mastery – ‘Varied and practised’)



- Gold - Reasoning deeply about the concept (Greater depth) “If I count forward in twos, will I say the number 43?” Explain your answer. Problem solving (link to multiplication) – “The welly bench can hold 30 wellies. There are 12 pairs. Will they all fit on?” Record / justify your answer.

CPA approach for calculations – concrete, pictorial, abstract.

- Concrete – children see the maths happening and they manipulate the resources
- Pictorial – helps them to see the maths and shows them how they can record.
- Abstract – number sentences.

The curriculum and the strategies we teach.

Foundation Stage (Reception Year) - ELG

- Counts to 20 and beyond – saying numbers in order and counting resources – anything is countable! Counting objects 1:1 is key!!!

Also use Numicon and tens frames (place objects inside – marbles, pom poms)

- Recognises numerals to 20 and beyond – number-line.
- Can count forwards and backwards from different numbers – really important for adding and subtracting – number-line – what number comes next when counting (one more / one less – two more / two less)
- Can add and subtract numerals to 20 –

Adding - counting all, then counting on – objects, real-life problems e.g sandpit, Numicon, tens frames.

Subtract – take items away – cover with a Numicon shape.

If there are gaps – the Year One teachers will have this information and children will continue to work towards the ELG.

Year 1 objectives and strategies

- Add and subtract numbers to 20 (and beyond) – **Numicon, tens frames, numberlines, bar model, part-part-whole**, 100 squares. Writing the equations. Drawing to represent Number problems – crossing out for subtract.
- Number bonds to 20 – Numicon.
- I can solve number problems, missing numbers – Numicon, bar model, tens frames part-part-whole.
- Counts in 2, 5 and 10s. Numicon / dienes / money.
- Multiplication and division – Numicon, raisins in hoops, peg boards, arrays, tens frames.
- Doubles and halving – Numicon & marbles, tens frames.

Numicon for adding and subtracting.



$$5 + 5$$



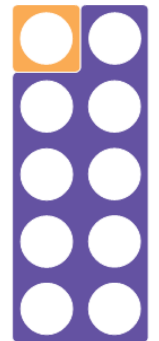
$$6 + 4$$



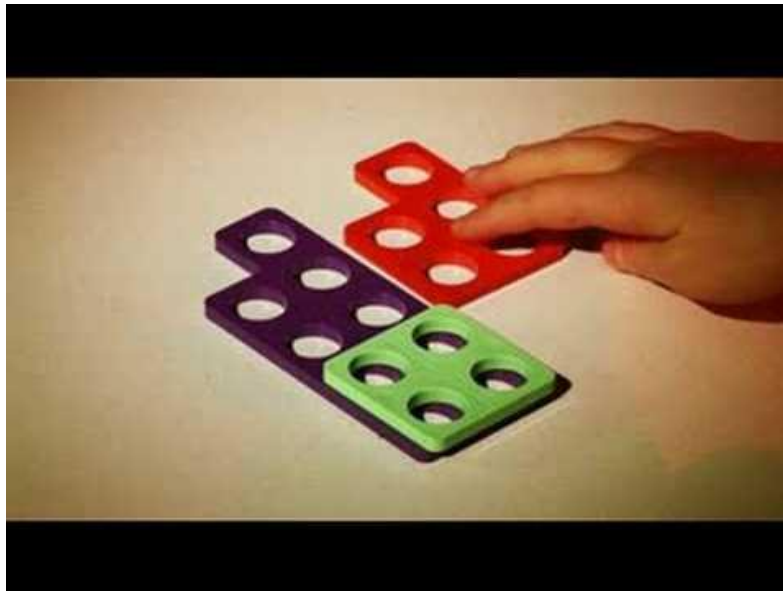
$$7 + 3$$



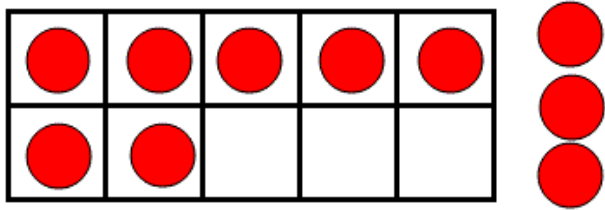
$$8 + 2$$



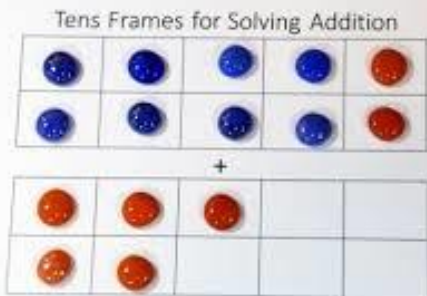
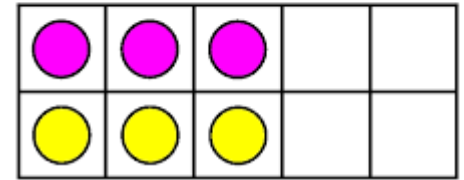
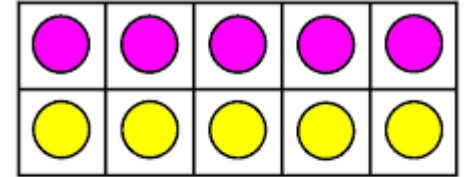
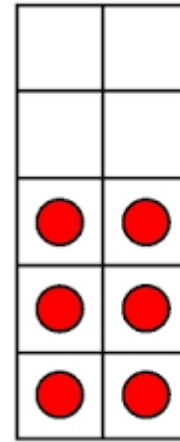
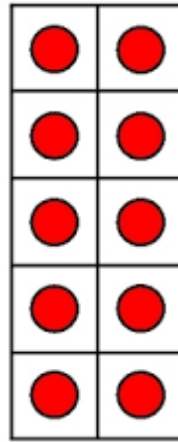
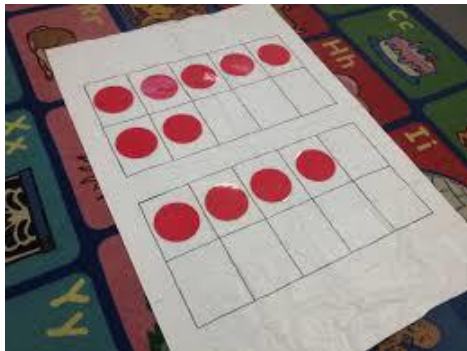
$$9 + 1$$



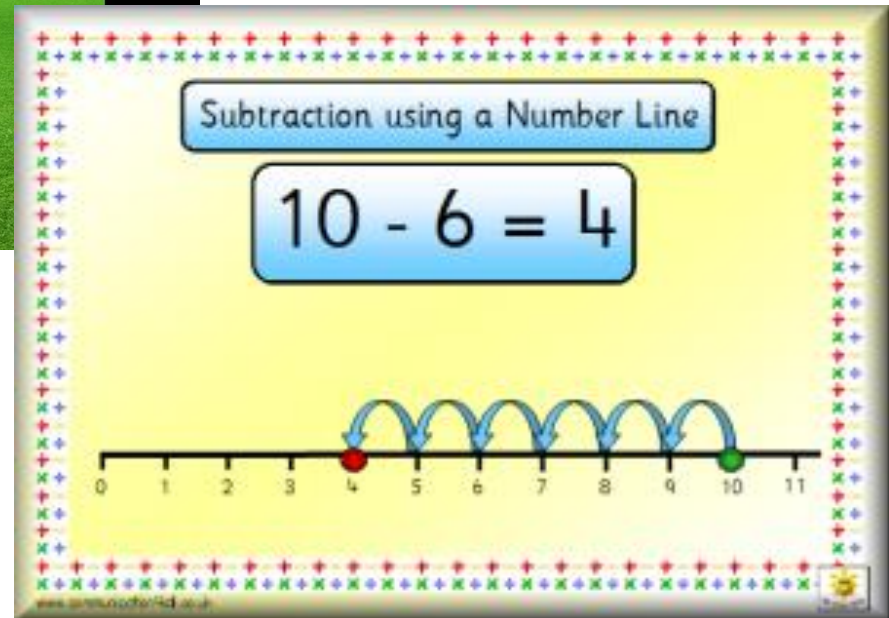
Tens frames for addition, difference, number bonds and doubles.



Tens Frame



Number line for adding and subtracting



Bar model – so children can ‘see’ the problem.

Date: _____

BASE CAMP

L To use a bar model to solve missing number calculations.

A

$$7 + \underline{\quad} = 11$$

11	
7	

B

$$\underline{\quad} + 5 = 9$$

9	
	5

C

$$12 - \underline{\quad} = 6$$

12	
	6

D

$$8 - \underline{\quad} = 1$$

8	
	1

Date: _____

HILL CLIMBER

L To solve missing number problems.

A

$$45 - \underline{\quad} = 30$$

45	
30	

B

$$22 - \underline{\quad} = 4$$

22	
	4

C

$$40 + \underline{\quad} = 62$$

62	
40	

D

$$39 - \underline{\quad} = 31$$

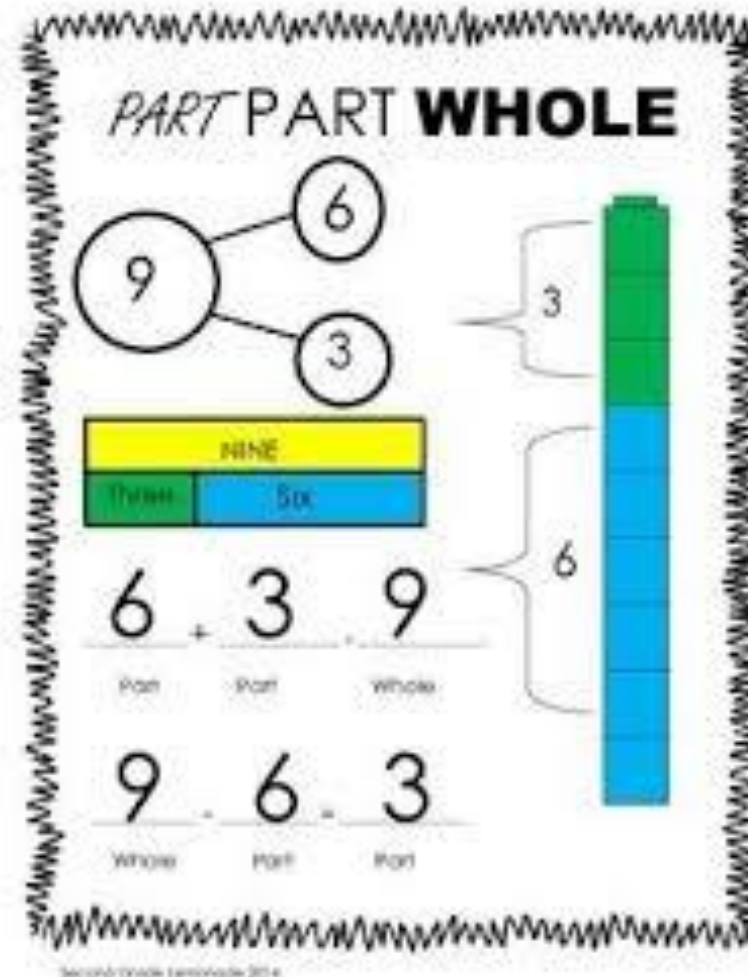
39	
	31

E

$$60 - \underline{\quad} = 10$$

60	
	10

Part-part whole – alongside other resources.



Year 2 objectives and strategies

- Adding and subtracting 3 numbers – Numicon and dienes.
- Adding 2 two-digit numbers – crossing the tens – dienes.
- Missing number problems, using inverse to check – bar model, dienes.
- Multiplication and division – repeated and subtraction, arrays, Numicon, bar models, dienes.

Fluency –Mental ‘Monkey maths’ and homework

- Maths is everywhere – encourage your child to talk like a mathematician.
- Fluency – learn facts e.g doubles (near doubles), number bonds, adding 1 and 2, adding 10s, crossing then tens.
- Monkey Maths – homework – Year 1 / Year 2.

Adding 1 and 2

Bonds to 10

Adding 10

Bridging/
compensating

Doubles

Adding 0

Near doubles

Y1 facts

Y2
facts



+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10
5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10
6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10
7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10
8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10
9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10
10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10

Useful websites.

<https://nrich.maths.org/8937> - Addition and subtraction – Year One.

<https://nrich.maths.org/8940> - Year One and Two – place value

<https://nrich.maths.org/8938> - Multiplication and division – Years One and Two.

<https://nrich.maths.org/8934> - Counting and ordering – Years One and Two.

<http://www.ictgames.com/doubles.htm> - Doubles game

<http://www.ictgames.com/oddEven.htm> - Odd and Even numbers

<http://www.ictgames.com/placeValue.htm> - Place value

<http://www.ictgames.com/bridgingThro.htm> Bridging through ten - Year Two



HOORAY!

