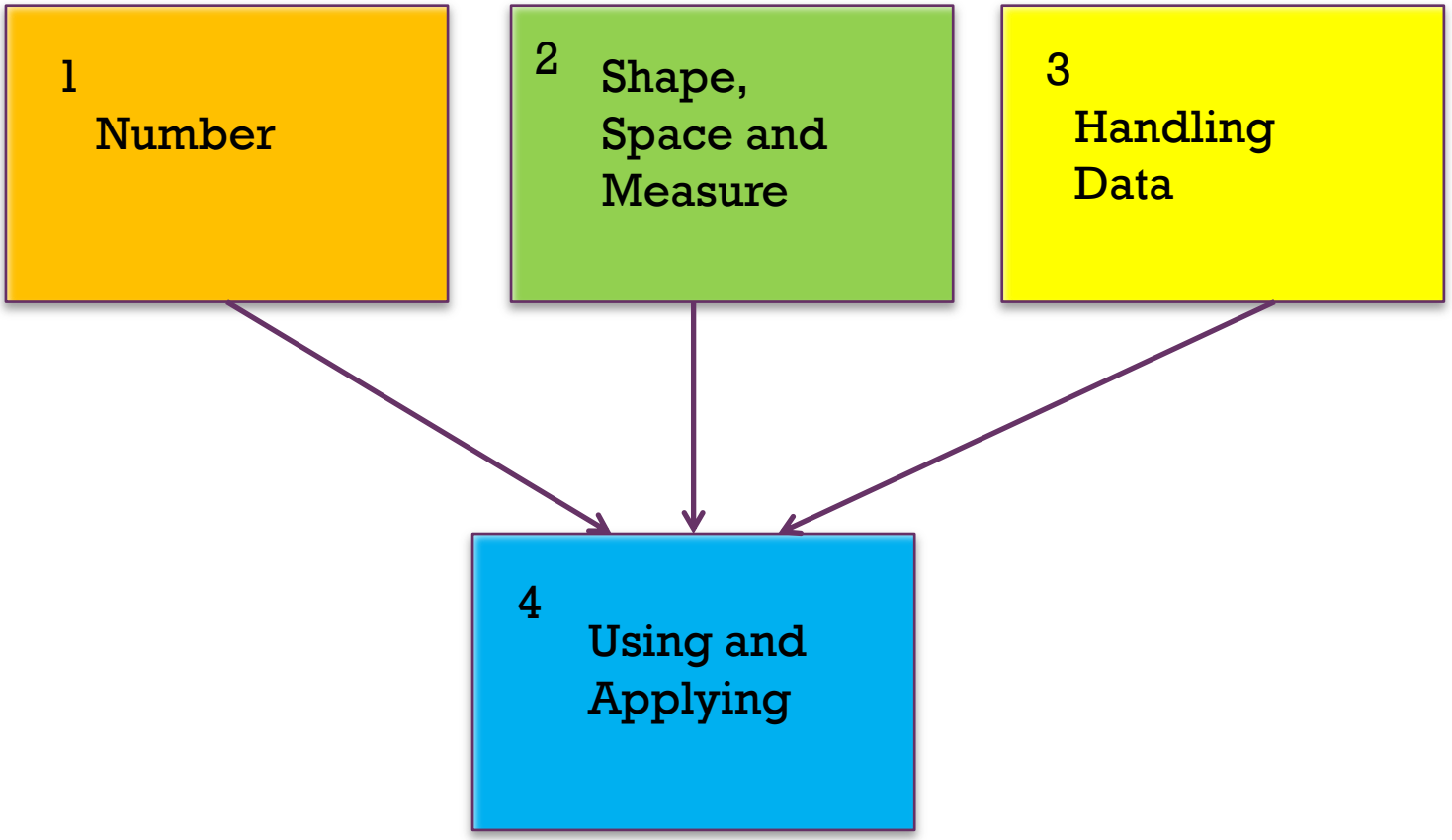
KS1 Maths Workshop

19 January 2017

THE BRITISH SCHOOL OF BEIJING, SANLITUN

A NORD ANGLIA EDUCATION SCHOOL

There are 4 areas in the Maths curriculum



Number

- 4 operations
- Doubles and halves
- Number bonds
- Number sequencing
- Tens and ones
- Partitioning

Shape, Space and Measure

- Names of common 2 D and 3D shapes
- Properties of these shapes (curved and flat faces)
- Position, direction and movement
- Units of time (seconds, minutes, hours, days)
- Length, Mass and Volume (cm, m, ml, km, l, g, kg)

Statistics

- Collect and record data
- Tables, pictograms and block graphs
- Discuss results using mathematical language

Year 1 Mathematics Yearly Overview

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number and Place value	Sequencing and Sorting	Number and Place value	Length and Mass/weight	Number and Place value	Time
Number and Place value	Fractions	Mass/weight	Addition and Subtraction	Addition and Subtraction	Multiplication and Division
Length and Mass/weight	Fractions Capacity and Volume	2-D and 3-D Shape	Fractions	Capacity and Volume	Subtraction - difference
Addition and Subtraction	Money	Counting and Money	Position and Direction	Fractions	Measurement
Addition and Subtraction	Time	Multiplication	Time	Position and Direction Time	Sorting
2-D and 3-D shape	Assess and review week	Division	Assess and review week	2-D and 3-D shape	Assess and review week

Year 2 Mathematics Yearly Overview

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number and Place value	Counting, multiplication and sorting	Number and Place value	Length and Mass/weight	Number and Place value and statistics	Time
Number and Place value	Statistics	Mass/weight	Addition and subtraction	Addition and subtraction	Multiplication and division
Length and Mass/weight	Fractions Capacity and volume	2-D and 3-D Shape	Fractions	Capacity and volume and temperature	Statistics including finding the difference
Addition and subtraction	Money	Counting and money	Position and direction	Fractions	Measurement
Addition and subtraction	Time	Multiplication	Time	Position and direction Time	Sorting
2-D and 3-D shape	Assess and review week	Division	Assess and review week	2-D and 3-D shape	Assess and review week

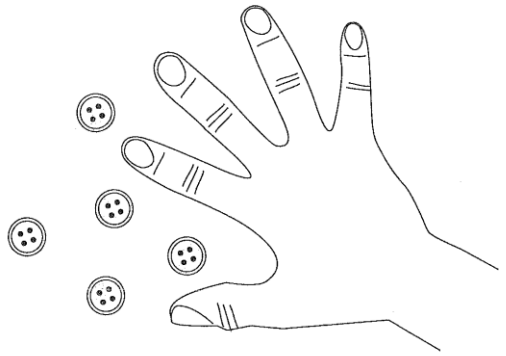
Using and Applying - operations

Knowledge

15 - ? = 5
15 – 5 = ?

Apply

Ben puts 15 buttons on the table. He hides some of them under his hand. How many is Ben hiding?



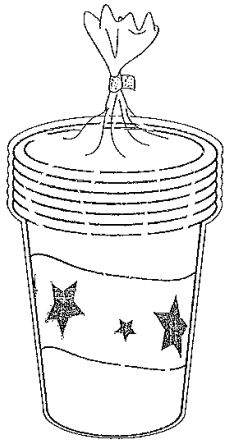
Using and Applying – Multiplication and division

Knowledge

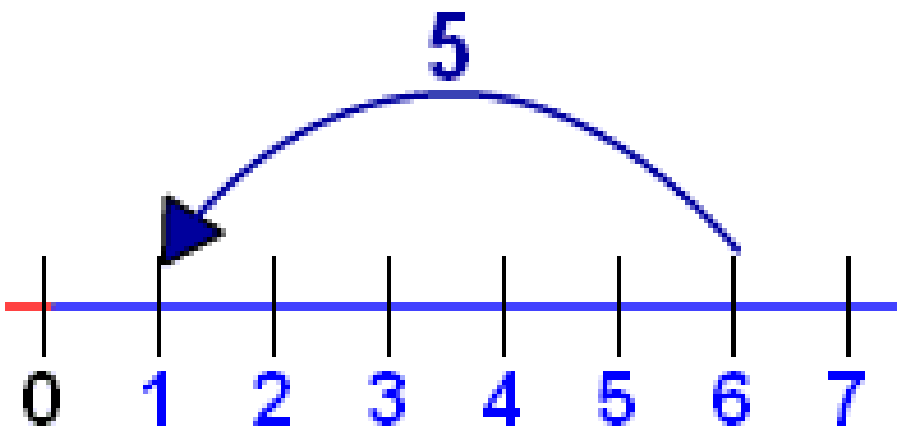
6 x 5 = 30

Apply

Miss West needs 30 paper cups. She has to buy them in packs of 6. How many packs does she have to buy?



NUMBER



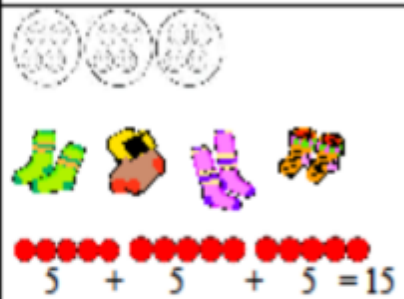
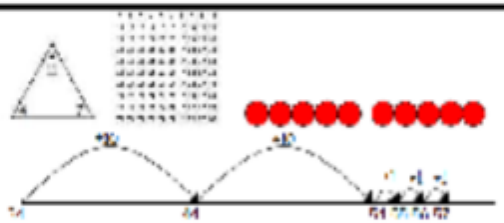
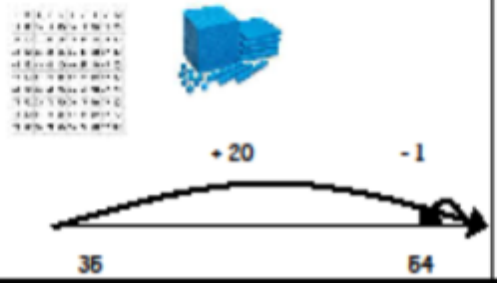
How we teach calculations in Key Stage 1

3 strands:

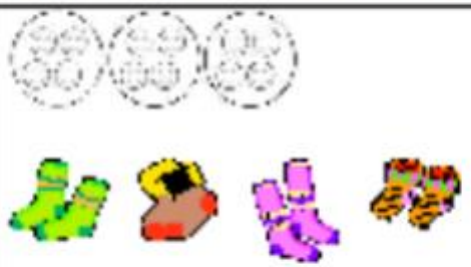
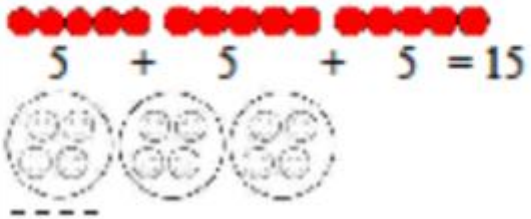
- Knowledge and understanding
- Mental strategies
- Informal written methods

A simple overview of the development of calculations through KS1

Addition Calculations

	Knowledge & Understanding	Mental Strategies	Informal Methods	Formal Methods
Y1		Counting skills Number bonds to 10 secure Number bonds to 20 recall		
Y2		Counting skills Number bonds to 20 secure	**Partitioning** 23 + 34 20 + 30 + 3 +4 = 57 23 + 30 + 4 = 57	
Y 3		TU+TU **Recall quickly all addition facts for 100**	**Partitioning**	374 + 248 12 (4 + 8) 110 (70 + 40) 500 (300 + 200) 622 335 + 258 593

Multiplication Calculations

	Knowledge & Understanding	Mental Strategies	Informal Methods
Y1		Counting skills, multiples	
Y2		Counting skills, multiples X2, x5, x10	
Y 3		Counting skills, multiples x2, x5, x10, x3, x4, x8	Partitioning 23 x 4 = (20 x 4) + (3 x 4) = 80 + 12 = 102

How do we teach mental strategies?

Addition

Knowledge and understanding: practical resources

A lot of counting opportunities

Counting on and back

Doubles

Doubles add 1, 2

Adding 10

Adding 9 using 10

Number bonds up to and for 10 (Y1) 10, 20 and 100 (Y2)

Relate addition to subtraction

number families

missing number problems

Leads to:
adding two-digit numbers
TO +TO

Partitioning

36 + 23 =

30 + 20 = 50

6 + 3 = 9

50 +9 = 59

Multiplication

Knowledge and understanding: practical resources

A lot of counting opportunities

Count in steps of 2, 5, 10 (Y1) 2, 3, 5 and 10 (Y2)
Introduced as repeated addition

Relate to division
Missing number calculations

Relate to real world situations:

problem solving
word problems
investigations

How to help your child at home – counting

- Practice chanting the number names. Encourage your child to join in with you. When they are confident, try starting from different numbers - 4, 5, 6 . . .
- Sing number rhymes together - there are lots of commercial tapes and CD's available.
- Give your child the opportunity to count a range of interesting objects (coins, pasta shapes, buttons etc.). Encourage them to touch and move each object as they count.
- Count things you cannot touch or see (more difficult!!). Try lights on the ceiling, window panes, jumps, claps or oranges in a bag.

How to help your child at home – counting continued…

- Play games that involve counting (e.g. snakes and ladders, dice games, games that involve collecting objects).
- Look for numerals in the environment. You can spot numerals at home, in the street or when out shopping.
- Cut out numerals from newspapers, magazines or birthday cards. Then help your child to put the numbers in orders.
- Make mistakes when chanting, counting or ordering numbers. Can your child spot what you have done wrong?

How to help your child at home

– practicing number facts

- Throw 2 dice. Ask your child to find the total of the numbers (+), the difference between them (-) or the product (x). Can they do this without counting?
- Use a set of playing cards (no pictures). Turn over two cards and ask your child to add or multiply the numbers. If they answer correctly, they keep the cards. How many cards can they collect in 2 minutes?
- Give your child an answer. Ask them to write as many addition sentences as they can with this answer (e.g. 10 = +). Try with multiplication or subtraction.
- Place playing cards face down (using cards 1 – 9, Ace being1). Turn over two cards. If they equal 10, they keep the cards. If not, they try to remember where it is for later.

How to help your child at home – shape and measure

- Play ‘guess my shape’. You think of a shape. Your child asks questions to try to identify it but you can only answer ‘yes’ or ‘no’ (e.g. Does it have more than 4 corners? Does it have any curved sides?)
- Make a model using boxes/containers of different shapes and sizes. Ask your child to describe their model.
- Practise measuring the lengths or heights of objects (in metres or cm). Help your child to use different rulers and tape measures correctly. Encourage them to estimate before measuring.
- Let your child help with cooking at home. Help them to measure ingredients accurately using weighing scales or measuring jugs. Talk about what each division on the scale stands for.

How to help your child at home

– shape and measure continued…

- Choose some food items out of the cupboard. Try to put the objects in order of weight, by feel alone. Check by looking at the amounts on the packets.
- Practise telling the time with your child. Use both digital and analogue clocks. Ask your child to be a 'timekeeper' (e.g. tell me when it is half past four because then we are going swimming).
- Use a stop clock to time how long it takes to do everyday tasks (e.g. how long does it take to get dressed?). Encourage your child to estimate first.

How to help your child at home

– real life problems

- Go shopping with your child to buy two or three items. Ask them to work out the total amount spent and how much change you will get.

- Plan an outing during the holidays. Ask your child to think about what time you will need to set off and how much money you will need to take.

- Use a bus or train timetable. Ask your child to work out how long a journey between two places should take? Go on the journey. Do you arrive earlier or later than expected? How much earlier/later?

Useful websites

- www.oxfordowl.co.uk - activities, info for parents
- http://www.nnparenttoolkit.org.uk - lots of tips and advice for parents
- www.topmarks.co.uk – activities for children
- www.bbc.co.uk/bitesize/**ks1/maths/** – activities for children
- http://www.crickweb.co.uk/ks1numeracy.html – activities for children
- http://www.ictgames.com/resources.html – activities for children

Maths Vocabulary Year 1

General	Measure	Time	Geometry	Fractions	Position and Direction	Addition and Subtraction	Multiplication and Division
Count **count on** **count back** **equipment** **hundred square** **number line** **digits** **numbers** **number bonds** **inverse** **pattern** **How many are there?**	Length, width, non-standard, standard, cm, m, longer, longest, shortest, shorter, ruler, tape measure. Weight, heavy, light, heavier, lighter, heaviest, and lightest, g, kg, scales. Capacity, full, half full, nearly full, almost full, empty, almost empty, nearly empty, container, liquid, holds an amount.' Denominations of different coins and notes	before after next yesterday today tomorrow morning afternoon evening quicker slower earlier later days of the week months of the year dates including ordinal numbers (e.g. 1st, 2nd, 3rd and 4th) o'clock half past.	2D and 3D regular side corner vertices edges faces flat curved circle, square, rectangle, pentagon, hexagon, octagon sphere, cylinder, cube, cuboid, square based pyramid, cone	half quarter whole equal	behind in front beside next to between under below over on in inside forwards backwards left right clockwise anticlockwise half turn quarter turn	add plus altogether total take away subtract minus	multiple times groups of grouping share divide

Maths Vocabulary Year 2

Number and place value	Measure and Time	Geometry (position and direction)	Geometry (properties of shape)	Fractions	Data/statistics	General/problem solving	Multiplication and Division
multiples **more, Less** **place value, digits, hundreds, tens and ones** **compare, order identify, represent, estimate** **numerals** **number problems** **practical problems** **numbers to one hundred Hundreds** **partition, recombine Hundred more/less**	mass, length, weight, height, width ruler, scales, meter ruler scale cm, m, km m/km, g/kg, ml/l temperature (degrees) clock, analogue, digital o'clock, half past, quarter past/to 5 minutes intervals	rotation Clockwise, anticlockwise straight line Ninety degree turn, right angle	2D shapes, sides, corners, curved, straight 3D shapes, edges, faces, vertices, flat, curved describe angles, right angles, degrees ½ turn, ¾ turn, complete turn greater than, Less than horizontal lines, vertical lines, perpendicular lines, parallel lines size bigger, larger, smaller symmetrical, line of symmetry Fold Match Mirror line, reflection Pattern, repeating pattern	recognise, find numerator denominator half quarter three quarters, one third, a third equivalence, equivalent	interpret data, present data read data bar Charts Pictograms Tables axis, Scale count, tally, sort bar chart, block graph, pictogram, tables, tally chart set, list, table label, title most popular, most common, least popular, least common	add, total, make, plus, sum, more, altogether difference, subtract, difference between, less, minus, take away, more than mentally, Orally Estimate inverse operation solve problems number facts place Value complex predict describe the pattern, describe the rule Find, find all, find different investigate	multiply, times, groups of, multiple of, multiplied by, lots of, repeated Addition divided by, divide, share, divided into, share equally, equal groups of estimate, approximate inverse operation Calculate statements multiplication tables solve problems