Reception, Year 1 and 2

Calculations Workshop

29.01.18

Jan 29-15:42

General Information

C.P.A. Approach - what does this mean?

Maths, No Problem & White Rose

- Singapore maths, bar model etc.

Talk for maths

Jan 29-15:43

Addition: Reception

- Numbers to 10
- Begin to count sets of objects (including counting on / adding one more)
- Combine sets of objects into one group (1:1 correspondence)
- Draw pictures or symbols to begin solving and recording addition problems.
(e.g. if I have five bears and then I get three more, how many bears altogether?)

Taught using practical resources

Additional maths during child initiated learning time (in Reception)

Jan 29-15:43

Number – addition and subtraction

Statutory requirements

Pupils should be taught to:

- read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9.

Jan 29-16:53

Addition: Year 1

- Adding 1-digit and 2-digit numbers to 20
- Use a number line to count on (starting at the biggest number)

- Regrouping to make 10
- Adding three single digit numbers (4 + 7 + 6 = 17)
- Solve one step problems that involve subtraction

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Statutory requirements

Pupils should be taught to:

- solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Jan 29-16:54

Addition: Year 2

- Adding two 2-digit numbers to 100
- Adding three single digit numbers to 100
- Use column addition (without regrouping and with regrouping)

20	20	21	29	29
+10	+ 7	+17	+17	+17
___	___	___	___	___
			___	

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Subtraction: Reception

- Taking away ones (numbers to 10)
- Counting back (starting with the biggest number)
- Draw pictures or symbols and then cross them off
  (e.g. if I have five bears and then I lose two, how many bears will I have left?)
- Begin to represent subtraction using basic number sentences

  5 - 2 = 3

Taught using practical resources

Additional maths during child initiated learning time (in Reception)

Jan 29-15:43

Subtraction: Year 1

- Use number bonds related subtraction facts within 20
- Subtract 1-digit and 2-digit numbers to 20 including 0
- Solve one step problems that involve subtraction
- Find the difference (using numbers to 20)
- Make 10

  14 - 9 = (14 - 4 = 10 - 5 = 5)

14

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Number – addition and subtraction

Statutory requirements

Pupils should be taught to:

- read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9.

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Subtraction: Year 2

- Find the difference (using numbers to 100)
- Column method (without regrouping and with regrouping)

19	20	29	20
- 7	-10	-17	-12
___	___	___	___

Jan 29-15:43

Statutory requirements

Pupils should be taught to:

- solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

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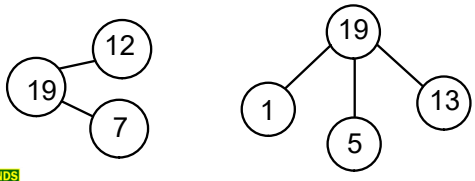
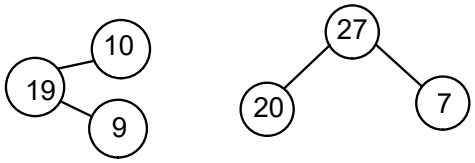
Part-part Whole Model



Jan 29-16:36

Partitioning (tens and ones)



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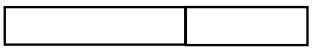
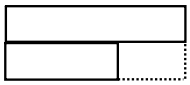
Bar Model: 25 + 12 =



Bar Model: 25 - 12 =



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Division & Multiplication: Reception

- Practical activities involving sharing into equal groups (laying the table, sharing sweets)
- Counting in 2s and 10s (numbers to 20)
- Doubling and halving (within 10)

** This is all linked to topic and taught in a variety of ways (including through stories and songs)

Jan 29-15:43

Statutory requirements

Pupils should be taught to:

- solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Notes and guidance (non-statutory)

Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.

They make connections between arrays, number patterns, and counting in twos, fives and tens.

Jan 29-17:12

Division & Multiplication: Year 1

- Doubling and halving numbers to 20
- Skip counting in 2s, 5s, 10s
- Multiply using repeated addition
- Begin to use arrays to understand multiplication and grouping

Jan 29-15:43

Statutory requirements

Pupils should be taught to:

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Jan 29-17:20

Division & Multiplication: Year 2

- Multiply in 2s, 5s and 10s (begin to count in 3s and 4s)
- Recognise odd and even numbers
- Commutativity and inverse operations
- Use arrays to understand multiplication, grouping and sharing

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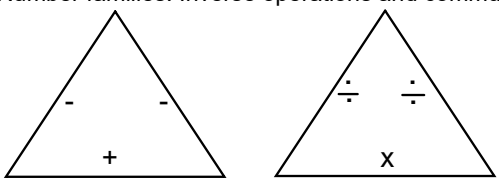
Number families: Inverse operations and commutativity



Jan 29-17:29

Any questions?

Thank you for coming.

Jan 29-17:38