

SNAP ON 2 MATHS (Updated 2009)

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SNAP ON 2 MATHS is an Intervention Programme designed to be used with children in Key Stage 1 and 2 who are working significantly below age related expectations. It has been based on the success of the SNIP and SNAP Programmes already being used with children in some Surrey schools. Schools using these programmes have said that children's self esteem has been boosted and that they contribute with greater confidence in whole class sessions.

Which children is SNAP ON 2 MATHS designed for?

Year	P5	P6	P7	P8	1c	1b	1a	2c	2b	2a	3c	3b	3a	4c	4b	4a	5c	
1	Children with only 3 or 4 EYFSP points																	
2	x	x	x	x	x													
3	x	x	x	x	x	x	x											
4	x	x	x	x	x	x	x	x	x									
5	x	x	x	x	x	x	x	x	x	x								
6	x	x	x	x	x	x	x	x	x	x	x							

X = the SNAP ON 2 MATHS children



Expected level at the end of summer term in order to achieve Level 2c/2b/2a at the end of KS1 and Level 4c/4b/4a at the end of KS2

What does the programme include?

- A diagnostic assessment tool to enable teachers to accurately assess the level that a child is working at in order to place them at the correct entry stage of the programme. This can be used as an ongoing record of achievement and to inform planning for the next steps.
- Advice for schools on how to implement the programme effectively (ie: suggestions on how to run the programme in the classroom).
- A detailed programme of intervention arranged into units which include regular assess and review opportunities in order to ensure that the child makes progress through the sub-levels at an appropriate pace.
- A bank of activities which the children can work on during the main part of the lesson to consolidate understanding and practise skills in a range of contexts. These may need to be adapted to be age appropriate eg. Exchange teddies for football stickers.
- Prompts to support children's learning which can be displayed in the area that the child is working in or used as table top resources to support independent work.
- A suggested list of resources that will be needed to deliver the intervention programme (these could form the basis of an individual maths tool kit for the child).

Effective implementation of the programme

This has been achieved effectively in many schools by using the mental and oral starter for a short, focused input with a small group of children followed by opportunities to work on appropriate activities to consolidate understanding.

The key features of successful programmes include:

- Short, regular small group sessions
- High adult and child expectations
- Activities which are enjoyable and motivating
- Effective and appropriate use of resources
- Next steps based on ongoing assessment

Children working at P5 start the programme at ...

Unit 1

Learning objective: Respond to and join in with familiar number rhymes

Unit 2

Learning objective: Indicate one or two

Unit 3

Learning objective: Demonstrate awareness of contrasting quantities by making groups of objects with help.

Children working at P6 start the programme at ...

Unit 4

Learning objective: Number recognition to 5

Unit 5

Learning objective: Match 1-1

Unit 6

Learning objective: Count out 3 objects from a set

Unit 7

Learning objective: Indicate the group which has more

Unit 8

Learning objective: Join in with counting 1-5

Children working at P7 start the programme at ...

Unit 9

Learning objective: Count out 5 objects from a set

Unit 10

Learning objective: Indicate which is the smallest amount

Unit 11

Learning objective: Recognise numerals 1-5

Unit 12

Learning objective: Know that the last number in the count tells us "How many?"

Unit 13

Learning objective: Be able to add 1 more to a set

Assessment Use the diagnostic assessment to review progress

Children working at P8 start the programme at ...

Unit 14

Learning objective: Join in with counting 1-10

Unit 15

Learning objective: Number recognition 0 to 10 and relate them to sets of objects

Unit 16

Learning objective: Say and use the number names in order in familiar contexts

Unit 17

Learning objective: Continue the rote count onwards from a given small number

Unit 18

Learning objective: Compare two given numbers of objects and say which is more or less/fewer

Unit 19

Learning objective: Estimate a small number and check by counting

Unit 20

Learning objective: Use ordinal numbers when describing the position of objects

Unit 21

Learning objective: In practical situations respond to add one or take away one from a set of objects.

Unit 22

Learning objective: Demonstrate an understanding of addition as the combining of two or more groups.

Assessment - Use the diagnostic assessment to review progress

Children working at 1c start the programme at ...

Unit 23

Learning objective: Reads most numbers up to 10 in familiar contexts

Unit 24

Learning objective: To be able to count on and back in ones

Unit 25

Learning objective: Use the vocabulary of adding in practical activities

Unit 26

Learning objective: Count at least 10 objects with some consistency

Unit 27

Learning objective: Use vocabulary of more than

Unit 29

Learning objective: To use a number line to add

Unit 30

Learning objective: Begin to relate subtraction to take away

Unit 31

Learning objective: Begin to recognise coins up to 10p

Assessment - Use the diagnostic assessment to review progress

Additional Resources - Wave 3 material

Year group/booklet	Misconception
Year R addition/subtraction Mauve booklet 1	Can only begin counting at one; inaccurately counts objects when rearranged; has no consistent recognition of small numbers of objects; lacks systematic approaches (unit 26)
Year R addition/subtraction Mauve booklet 4	Is not confident about when to stop counting when taking away (subtracting) in answer to the question 'How many are left?' (unit 29)

Children working at 1b start the programme at ...

Unit 31

Learning objective: Count reliably at least 10 objects

Unit 32

Learning objective: Read and order numbers to 10 in a range of settings

Unit 33

Learning objective: Say what number comes next, is one more than

Unit 34

Learning objective: Count back in 1s to zero

Unit 35

Learning objective: Understand addition as the total of 2 or more sets of objects

Unit 36

Learning objective: Say what number comes before, is one less than

Unit 37

Learning objective: Understand subtraction as taking away objects from a set and finding how many are left

Unit 38

Learning objective: Begin to add by putting the bigger number in your head

Unit 39

Learning objective: Solve problems involving 1p and £1

Unit 40

Learning objective: Use ordinal numbers

Assessment - Use the diagnostic assessment to review progress

Children working at 1a start the programme at ...

Unit 41

Learning objective: Count, read and order numbers from zero to 20

Unit 42

Learning objective: Recognise 0 as none or zero

Unit 43

Learning objective: Compare two sets to find a numerical difference

Unit 44

Learning objective: To be able to count forwards and backwards in 10s to and from zero

Unit 45

Learning objective: To use and understand the vocabulary of fewer

Unit 46

Learning objective: To use and understand the vocabulary of difference

Unit 47

Learning objective: Understand that addition can be done in any order.

Unit 48

Learning objective: Jump in 1s on a numbered number line to help to solve problems

Unit 49

Learning objective: To be able to count forwards and backwards in 2s from zero

Unit 50

Learning objective: Find coins to total up to 10p

Assessment - Use the diagnostic assessment to review progress

Additional Resources - Overcoming Barriers Materials Level 1 - 2	
Strand	Overcoming barriers sequences
Knowing and Using Number Facts	<ul style="list-style-type: none"> Can I recall all addition and subtraction facts for each number to 10?
Calculating	<ul style="list-style-type: none"> Can I find the difference between a pair of numbers?

Additional Resources - Wave 3 material	
Year group/booklet	Misconception
Year R addition/subtraction Maive booklet 3	Does not relate the combining of groups of objects to addition and/or does not interpret the counting of all of the objects as an answer to the 'How many are there altogether?' (unit 47)
Year R multiplication/division Blue booklet 1	Confuses numbers when counting in twos; has difficulty understanding a pair consists of two objects (unit 49)

Children working at 2c start the programme at ...

Unit 51

Learning objective: Begin to understand teens numbers

Unit 52

Learning objective: To be able to use money to 20p

Unit 53

Learning objective: Count, read and order numbers to 30

Unit 54

Learning objective: Start to recognise odd and even numbers to 20

Unit 55

Learning objective: Say what number comes next (1 more) or before (1 less) with numbers up to 30

Unit 56

Learning objective: Say the number that is 10 more or less than a given number up to 30

Unit 57

Learning objective: Begin counting in 5s starting from zero

Unit 58

Learning objective: Begin to know by heart pairs to 10

Unit 59

Learning objective: Know by heart addition doubles of all numbers to 5

Unit 60

Learning objective: To find the difference between 2 small numbers

Unit 61

Learning objective: To be able to solve "empty box" type questions

Unit 62

Learning objective: Combining counting in 10s and 1s

Unit 63

Learning objective: Counting on in 10s from single and 2-digit numbers

Unit 64

Learning objective: Recognise simple number sequences eg counting on and back in 2s

Assessment - Use the diagnostic assessment to review progress

Additional Resources - Overcoming Barriers Materials Level 1 - 2

Strand	Overcoming barriers sequences
Counting and Understanding Number	<ul style="list-style-type: none"> • Can I partition a two-digit number into tens and ones (units) and use this to create related addition number sentences? • Can I count on and back in equal steps and explain the patterns?
Knowing and Using Number Facts	<ul style="list-style-type: none"> • Can I recall all addition and subtraction facts for each number to 10? • Can I recall all pairs of numbers that total 20? • Can I count on in 2s, 5s and 10s and use this to begin to say multiplication facts?
Calculating	<ul style="list-style-type: none"> • Can I find the difference between a pair of numbers? • Can I add and subtract a multiple of 10? • Can I say what needs to be added to a two-digit number to make the next multiple of 10? • Can I add and subtract to or from a two-digit number (bridging through a multiple of 10)?

Additional Resources - Wave 3 material

Year group/booklet	Misconception
Year R addition/subtraction Mauve booklet 2	Misunderstand meaning of 'one more' and 'one less'; does not consistently identify the number before or after a given number (unit 55)
Year 2 addition/subtraction Purple Booklet 4	Does not relate finding a difference and complementary addition to the operation of subtraction (unit 60)
Year R multiplication/division Blue booklet 5	Has difficulty with counting reliably in tens from a multiple of ten (unit 62)

Children working at 2b start the programme at ...

Unit 65

Learning objective: Begin to understand the place value of each digit.

Unit 66

Learning objective: Order numbers to at least 50

Unit 67

Learning objective: Count on and back in 1s from a 2-digit number

Unit 68

Learning objective: Recognise odd/even numbers up to 50

Unit 69

Learning objective: Count sets of objects reliably including grouping objects in 10s, 5s, 2s

Unit 70

Learning objective: Recognise that subtraction is the inverse of addition

Unit 71

Learning objective: Identify doubles and halves up to 20

Unit 72

Learning objective: Know by heart all addition and subtraction facts for each number to at least 10

Unit 73

Learning objective: Begin to understand subtraction as "difference"

Unit 74

Learning objective: Recognise coins up to 50p

Assessment - Use the diagnostic assessment to review progress

Additional Resources - Overcoming Barriers Materials Level 1 - 2	
Strand	Overcoming barriers sequences
Calculating	<ul style="list-style-type: none"> • Can I record number sentences and explain what the signs and numbers mean? • Can I write addition and subtraction number sentences that use the same three numbers and explain why they are linked?

Additional Resources - Wave 3 material	
Year group/booklet	Misconception
Year 2 addition/subtraction Purple booklet 3	Counts up unreliably; still counting the smaller number to get one too many in the answer (unit 66 & unit 67)
Year R addition/subtraction Mauve booklet 4	Is not confident about when to stop counting when taking away (subtracting) in answer to the question 'How many left?' (unit 70)
Year 2 addition/subtraction Purple booklet 5	Is insecure in making links between addition and subtraction and/or recognising inverses (unit 70)
Year R multiplication/division Blue booklet 2	Has difficulty with identifying doubles and adding a small number to itself, for example $2 + 2$, to make twice as many (unit 71)
Year 2 multiplication/division Pink booklet 4a	Has difficulty relating multiplying by 2 to known facts about doubles; records double 4 as $4 + 4$ (unit 71)

Children working at 2a start the programme at ...

Unit 75

Learning objective: Count, read, write and order accurately to at least 100

Unit 76

Learning objective: Know what each digit represents in any two-digit number

Unit 77

**Learning objective: Describe and extend simple number sequences
(including odd and even numbers)**

Unit 78

Learning objective: Understand the operation of \times as repeated addition

Unit 79

Learning objective: Begin to see multiplication as an array

Unit 80

Learning objective: Begin to represent multiplication on a number line

Unit 81

Learning objective: Understand \div as repeated subtraction

Unit 82

Learning objective: Know by heart facts for the 2 and 10 times tables

Unit 83

Learning objective: Know and use halving as a way of "undoing" doubling

Unit 84

Learning objective: Add or subtract mentally a multiple of 10 to/from a two-digit number

Unit 85

Learning objective: Use the £ sign and money to £1

Assessment - Use the diagnostic assessment to review progress

Additional Resources - Overcoming Barriers Materials Level 1 - 2

Strand	Overcoming barriers sequences
Counting and Understanding Number	<ul style="list-style-type: none"> • Can I show where a whole number is on a 0 - 100 number line? • Can I tell someone how to order two-digit numbers? • Can I partition a 2-digit number into tens and units & use this to create related addition & subtraction sentences? • Can I partition 1-and 2-digit numbers in different ways?
Calculating	<ul style="list-style-type: none"> • Can I describe an array and write number sentences about it? • Can I solve problems that involve multiplication as repeated addition? • Can I use grouping to solve division problems?

Additional Resources - Overcoming Barriers Materials Level 2 - 3

Strand	Overcoming barriers sequences
Counting and Understanding Number Facts	<ul style="list-style-type: none"> • Can I order 1-digit (& 3-digit numbers) & position them on a number line?

Additional Resources - Wave 3 material

Year group/booklet	Misconception
Year 2 addition/subtraction Purple booklet 1	Makes mistakes when counting up to 100 using teens numbers and/or crossing boundaries (unit 75)
Year 2 multiplication/division Pink booklet 1	Still counts in ones to find how many there are in a collection of equal groups; does not understand vocabulary associated with multiplication (unit 78)
Year 2 multiplication/division Pink booklet 3	Does not focus on 'rows of' and 'columns of' but only sees arrays as a collection of ones (unit 79)
Year R multiplication/division Blue booklet 3	Makes unequal groups and is unable to compare the groups (unit 81)
Year 2 multiplication/division Pink booklet 2	Does not link counting in equal steps to the operation of multiplication; does not use the vocabulary associated with multiplication (unit 81)
Year 2 multiplication/division Pink booklet 6	Is not systematic when sharing in two equal groups using a 'one for you' approach; does not use the language of division to describe the process (unit 81)
Year R multiplication/division Blue booklet 6	When halving, makes two unequal groups or splits a single object unequally (unit 83)
Year 2 multiplication/division Pink booklet 5	Does not use knowledge of doubles to find half of a number for example, continues to find half by sharing using a 'one for you' approach and cannot apply knowledge of doubles (unit 83)

Children working at 3c start the programme at ...

Unit 86

Learning objective: Read write and order numbers to 1000

Unit 87

Learning objective: Counting on/back in tens or hundreds from any two or three-digit number

Unit 88

Learning objective: Know what each digit represents in any 3 digit number

Unit 89

Learning objective: Begin to know by heart all pairs of numbers with totals up to 20

Unit 90

Learning objective: Add or subtract mentally near multiples of 10 to and from a 2 digit number

Unit 91

Learning objective: Use addition to solve simple problems

Unit 92

Learning objective: Use subtraction to solve simple problems

Unit 93

Learning objective: Know by heart facts for the 2, 5 and 10x tables

Unit 94

Learning objective: Multiply integers by 10

Unit 95

Learning objective: Recognise that division is the inverse of multiplication

Unit 96

Learning objective: Division as repeated subtraction/grouping or sharing

Unit 97

Learning objective: Begin to find remainders after division

Unit 98

Learning objective: Use a number line to record division including remainders

Unit 99

Learning objective: Use known facts and place value to carry out mentally simple \times and \div

Unit 100

Learning objective: Understand and use $\pounds.p$ notation

Assessment - Use the diagnostic assessment to review progress

Additional Resources - Overcoming Barriers Materials Level 1 - 2	
Strand	Overcoming barriers sequences
Knowing and Using Number Facts	<ul style="list-style-type: none"> • Can I count on in twos, fives and tens and begin to use this to begin to say multiplication facts?

Additional Resources - Overcoming Barriers Materials Level 2 - 3	
Strand	Overcoming barriers sequences
Counting and Understanding Number Facts	<ul style="list-style-type: none"> • Can I read, write and partition whole numbers to 1000? • Can I order 2-digit and 3-digit numbers and position them on a number line? • Can I recall and use addition and subtraction facts to 20? • Can I find pairs of numbers that total 100? • Can I recall multiplication & division facts of 2,3,4,5 & 10 x tables?
Knowing and Using Number Facts	<ul style="list-style-type: none"> • Can I use understanding of multiplication and division to solve problems? • Can I subtract mentally combinations of 1-digit and 2-digit numbers? • Can I say a subtraction fact that is the inverse of an addition fact, and vice versa? • Can I multiply 1-digit and 2-digit numbers by 10 and 100?

Additional Resources - Wave 3 material	
Year group/booklet	Misconception
Year 4 addition/subtraction Green booklet 2	Has difficulty in partitioning for example, 208 into 190 and 18 and 31 into 20 and 11 (unit 88)
Year 2 addition/subtraction Purple booklet 2	Has difficulty remembering number pairs between ten and twenty, resulting in calculating errors (unit 89)
Year 2 addition/subtraction Purple booklet 6	Does not readily use number patterns to support calculation, eg $46 - 5 = 41$ so $46 - 15 = 31$, $46 - 25 = 21$ etc. (unit 90)
Year 4 addition/subtraction Green booklet 1	Has insecure understanding of the structure of the number system, resulting in addition and subtraction errors and difficulty with estimating (unit 90)
Year 4 multiplication/division Aqua booklet 1	Is not confident in recalling multiplication facts (unit 93)
Year 4 multiplication/division Aqua booklet 3	Describes the operation of multiplication by ten as 'adding a nought' (unit 94)
Year 4 multiplication/division Aqua booklet 2	Is muddled about the correspondence between multiplication and division facts, recording, for example $3 \times 5 = 15$ so $5 \div 15 = 3$ (unit 95)
Year 2 multiplication/division Pink booklet 7	Does not understand that 'sets of' or 'groups of' needs to be subtracted to solve the problem (unit 96)
Year 4 multiplication/division Aqua booklet 7	Does not use chunking (unit 96)
Year R multiplication/division Blue booklet 4	When sharing, can sometimes make equal groups but has no strategies to deal with any left over (unit 97)
Year 4 multiplication/division Aqua booklet 6a & 6b	Writes a remainder that is larger than divisor. Discards the remainder; does not understand the significance (unit 98)
Year 4 multiplication/division Aqua booklet 4	Does not apply partitioning and recombining when multiplying (unit 99)

