

Maths Makes Sense

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3

National Curriculum Levels

OXFORD

Introduction

***Maths Makes Sense* and National Curriculum Levels**

This booklet provides information on how *Maths Makes Sense* 3 Progress Books correlate with National Curriculum levels. The Maths Makes Sense Manager can use this information to support the accurate tracking of children's progress in mathematics.

In order to create this booklet, several workshops were carried out with established *Maths Makes Sense* schools. During these workshops, teachers shared experience and examples of children's work were collated. This information was used to help make accurate assessments of National Curriculum levels. The resulting booklets list the 'I Can!' statements from the back of the *Maths Makes Sense* Progress Books and assign a 'best fit' National Curriculum level to each statement. The 'I Can!' statements are derived from the end-of-block objectives and so accurately reflect the work children complete throughout the year.

Examples of children's work have also been assigned where appropriate to exemplify the National Curriculum levels. In those cases where work has not been included, the 'I Can!' statement may be better assessed through observations and assessments on oral or practical work. Alternatively, this may be due to the fact that examples of children's work are still being submitted for *Maths Makes Sense* 3.

***Maths Makes Sense* and National Curriculum Sub-levels**

Maths Makes Sense recommends teachers support children's progress by offering **differentiated levels of assistance**, through adult or peer support and through the use of concrete apparatus. The level of assistance teachers give to pupils as they complete their work is categorised in three main ways: **High**, **Moderate** or **Independent**. Teachers closely monitor children against the end-of-block objectives detailed in the Teacher's Guides and where appropriate, annotate pupils' work for the amount of assistance required in Partner Teaching, Individual Assessment and in Progress Books.

The three levels of assistance can guide the National Curriculum sub-levels assigned to individual pupil attainment against each 'I can!' statement. As a basic guide, a child who needs a **High** level of assistance may be sub-level C, a **Moderate** level of assistance, sub-level B and a child working **Independently**, sub-level A. However, teacher judgement of individual children and their progress is an important part of the assignment of sub-levels and the above information should be used as a guide only. This is similar to the familiar approach used to determine sub-levels with *Assessing Pupil Progress* (The National Strategies, 2010) by considering whether the pupil's attainment at a given level is low, secure or high.

Further guidance on assessment is detailed in each *Maths Makes Sense* Teacher's Guide and the Co-ordinator's Handbooks.

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Complete add and take away Maths Stories with 1-digit numbers, $\frac{1}{2}$ and $\frac{1}{4}$.

NC Level 3

Q1: Can I add and subtract fractions, also vertical add and subtract?

1 $3 - 0 + \frac{1}{2} + \frac{1}{2} - 2 + \frac{1}{4} = 2\frac{1}{4} \checkmark$

2 $2\frac{1}{4} + 1\frac{1}{2} - \frac{1}{2} + 1\frac{1}{4} - 0 + \frac{1}{4} = 4\frac{3}{4} \checkmark$

3 $3 + \frac{1}{2} - 1\frac{1}{4} = 2\frac{1}{4} \checkmark$

4 $1\frac{3}{4} - 1\frac{1}{4} = \frac{1}{2} \checkmark$

Write and calculate a vertical add or take away.

NC Level 4

1) $\begin{array}{r} 25 \\ - 17 \\ \hline 08 \end{array} \checkmark$

2) $\begin{array}{r} 31 \\ - 15 \\ \hline 16 \end{array} \checkmark$

3) $\begin{array}{r} 44 \\ - 28 \\ \hline 16 \end{array} \checkmark$

4) $\begin{array}{r} 46 \\ - 39 \\ \hline 07 \end{array} \checkmark$

5) $\begin{array}{r} 51 \\ - 37 \\ \hline 14 \end{array} \checkmark$

6) $\begin{array}{r} 56 \\ - 38 \\ \hline 18 \end{array} \checkmark$

Brilliant!

Great Job.

1. $\begin{array}{r} 3447 \\ + 2115 \\ \hline 5562 \end{array} \checkmark$

2. $\begin{array}{r} 5814 \\ - 1216 \\ \hline 4628 \end{array} \checkmark$

3. $\begin{array}{r} 2516 \\ + 3176 \\ \hline 5692 \end{array} \checkmark$

4. $\begin{array}{r} 3513 \\ - 1454 \\ \hline 2059 \end{array} \checkmark$

5. $\begin{array}{r} 1534 \\ + 8227 \\ \hline 9761 \end{array} \checkmark$

Draw and measure line segments and the diagonal of a polygon.

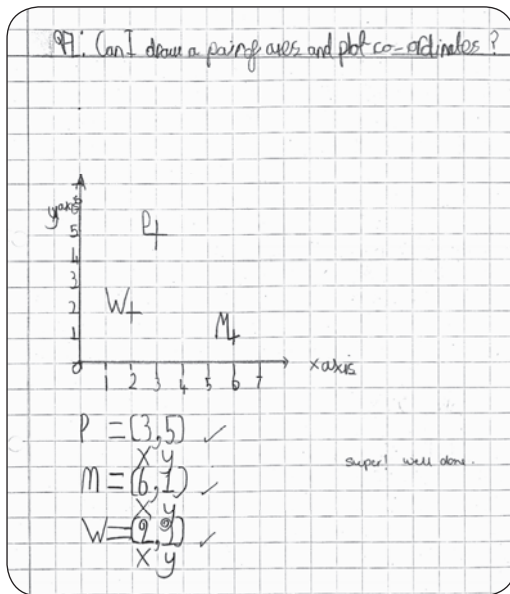
NC Level 3

Draw arcs to show turns and measure sides of a polygon using cm.

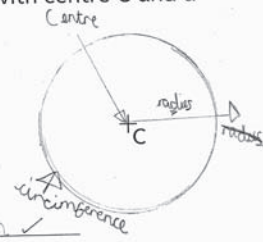
NC Level 2

Copy a grid and draw axes, plot points, draw line segments and draw polygons and circles.

NC Level 4

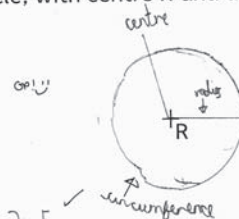


- Use line segment AB and your compasses to draw a circle, with centre C and a radius AB.



Length of AB 3cm

- Use line segment PQ and your compasses to draw a circle, with centre R and a radius PQ.



Length of PQ 2.5cm

Recognise place value.

NC Level 3

Draw cups to show bigger, smaller or the same and draw $\frac{1}{5}$ cards to show a fraction.

NC Level 3

Order and round numbers to the nearest 10, 100.

NC Level 2

Solve word problems using all four operations.

NC Level 4

1. $5 \times 7 = 35$

2.

Joshua's 7 friend each gave him £5. How much did he get altogether?
pounds $5 \times 7 = 35$
He got ~~£~~ 35 altogether.

3. Niki has 7 tins with 5 cakes in each tin. How many cakes has she got?
Cakes $7 \times 5 = 35$
She has 35 cakes.

4. There are 4 boxes. Each box holds 10 pencils. How many pencils are there altogether?
pencils $4 \times 10 = 40$
There are 40 pencils altogether.

5. There are 9 bags. There are 2 apples in each bag. Find the total number of apples.
apples $9 \times 2 = 18$
There are 18 apples altogether

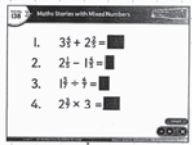


Calculate a Maths Story for all four operations with mixed numbers and negative numbers.

NC Level 4

Q: Can I use the four math operations to work out negative numbers and mixed number math stories?

- $-2 + 2 = 0$ ✓
- $-3 - 2 = -1$ ✓
- $-2 \times 3 = -6$ ✓
- $-4 \div -2 = 2$ ✓
- $-8 - 2 = -10$
- $-3 + 3 = 0$ ✓ Great by: create at Q5 again.
- $-8 \div -3 = 2$ ✓ get work out at 2.
- $-1 \times 2 = -2$ ✓



1. $3 \frac{1}{2} + 2 \frac{1}{2} = 6$ ✓

Calculate division Maths Stories without remainders and then with remainders as a mixed number.

NC Level 3

Q: Can I write the division math story and write the answer using a remainder?

1. Don had 7 chairs.
He put them in piles of 2 chairs.
How many piles did he make?

$7 \div 2 = 3 \text{ R } 1$ ✓

$7 \div 2 = 3 \frac{1}{2}$

Turn through $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{3}{4}$ of a full turn and describe the turn in degrees.

NC Level 4



Draw angles of 10° , 20° and 30° and mark them with arcs.



NC Level 4


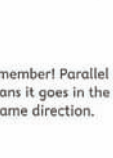
Show pairs of parallel lines. Draw and label a pair of axes. Plot points and draw line segments.

NC Level 4


1. Draw arrows to show parallel lines.

a  b 

c  d 

e  f 

Remember! Parallel means it goes in the same direction.



Maths Makes Sense 3 - Block 4 - Lesson 3 - Geometry
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Identify shapes as 1D, 2D or 3D and use the correct hand actions.

NC Level 3

Use a grid and partitioning to multiply and find the sum of two products.

NC Level 3

Walt: I can use grid multiplication

1. $32 \times 5 = 160$

30	150
2	10
160 ✓	

9. $75 \times 4 = 300$

70	280
5	20
300 ✓	

2. $32 \times 7 = 224$

30	210
2	14
224 ✓	

5. $77 \times 5 = 385$

70	350
7	35
385 ✓	

3. $57 \times 4 = 228$

50	200
7	28
228 ✓	

Well done Cans!

6. $55 \times 7 = 385$

50	350
5	35
385 ✓	

① $55 \times 2 = 110$

50	100
5	10
110 ✓	

② $35 \times 9 = 315$

30	270
5	45
315 ✓	

③ $55 \times 3 = 165$

50	150
5	15
165 ✓	

④ $20 \times 4 = 80$

20	80
80 ✓	

⑤ $60 \times 2 = 120$

60	120
120 ✓	

⑥ $50 \times 9 = 450$

50	450
450 ✓	

⑦ $70 \times 3 = 210$

70	210
210 ✓	

Independent Work

Answer questions about a bar chart.

NC Level 3

Activity 99 Grids, Bar Charts and Pie Charts

B This bar chart shows what the children in Class 3 had for lunch.

Lunch Item	Number of Children
chicken salad	8
hot dog	4
lasagne	12

4 Bar chart B

1 It is talking about lunch. ✓

5 $12 + 4 = 16$ ✓
16 children have hot dogs and lasagne.

5 $12 - 8 = 4$ ✓
4 children had lasagne than chicken salad.

Copy a 2-digit by 1-digit multiplication Maths Story into a grid to answer a word problem.

NC Level 3

Progress Book 3C

Use all operations with negative numbers.

NC Level 5

Calculate vertical adds and take aways with 4-digit numbers.

NC Level 4

The image shows six handwritten vertical arithmetic problems on lined paper, arranged in two columns and three rows. Each problem is numbered and includes a circled 'I'.

1.
$$\begin{array}{r} 3432 \\ + 1811 \\ \hline 5243 \end{array}$$

2.
$$\begin{array}{r} 3432 \\ - 1811 \\ \hline 1621 \end{array}$$

3.
$$\begin{array}{r} 5613 \\ + 1811 \\ \hline 7424 \end{array}$$

4.
$$\begin{array}{r} 4513 \\ - 1811 \\ \hline 3502 \end{array}$$

5.
$$\begin{array}{r} 3532 \\ + 1911 \\ \hline 5423 \end{array}$$

6.
$$\begin{array}{r} 4611 \\ - 1711 \\ \hline 3900 \end{array}$$

Draw a triangle using compasses or by plotting points.

NC Level 6

Measure the sides of a triangle and say its special name.

NC Level 3

Complete a tally chart and use the data to answer a question.

NC Level 3

Write money in symbols and calculate the total prices of shopping items.

NC Level 3

Solve word problems using all four operations, including calculating the area of a shape.

NC Level 4

Calculate the fraction of the shape that is shaded/not shaded by counting and making a comparison.

NC Level 4

Complete sequences and work out the sums and products of odd and even numbers.

NC Level 3