

MATHEMATICS

Expectations in the new National Curriculum Tests

Maths

- *At the moment we are being told that, during the KS2 Maths assessments, pupils will be tested on a range of core skills, including:*

2016 KS2 mathematics exemplification

Interim teacher assessment framework at the end of key stage 2: mathematics

Working at the expected standard

- The pupil can demonstrate an understanding of place value, including large numbers and decimals (e.g. what is the value of the '7' in 276,541?; find the difference between the largest and smallest whole numbers that can be made from using three digits; $8.09 = 8 + 9/?$; $28.13 = 28 + ? + 0.03$).
- The pupil can calculate mentally, using efficient strategies such as manipulating expressions using commutative and distributive properties to simplify the calculation (e.g. $53 - 82 + 47 = 53 + 47 - 82 = 100 - 82 = 18$; $20 \times 7 \times 5 = 20 \times 5 \times 7 = 100 \times 7 = 700$; $53 \div 7 + 3 \div 7 = (53 + 3) \div 7 = 56 \div 7 = 8$).
- The pupil can use formal methods to solve multi-step problems (e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55; a roll of material is 6m long; how much is left when 5 pieces of 1.15m are cut from the roll?; a bottle of drink is 1.5 litres, how many cups of 175ml can be filled from the bottle, and how much drink is left?).
- The pupil can recognise the relationship between fractions, decimals and percentages and can express them as equivalent quantities (e.g. one piece of cake that has been cut into 5 equal slices can be expressed as $1/5$ or 0.2 or 20% of the whole cake).
- The pupil can calculate using fractions, decimals or percentages (e.g. knowing that 7 divided by 21 is the same as $7/21$ and that this is equal to $1/3$; 15% of 60; $1 \frac{1}{2} + 3/4$; $7/9$ of 108; 0.8×70).
- The pupil can substitute values into a simple formula to solve problems (e.g. perimeter of a rectangle or area of a triangle).
- The pupil can calculate with measures (e.g. calculate length of a bus journey given start and end times; convert 0.05km into m and then into cm).
- The pupil can use mathematical reasoning to find missing angles (e.g. the missing angle in an isosceles triangle when one of the angles is given; the missing angle in a more complex diagram using knowledge about angles at a point and vertically opposite angles).

Maths

- Children will sit three papers in Maths:
- Paper 1: arithmetic, 30 minutes
- Papers 2 and 3: Mathematical fluency, solving problems and reasoning, 40 minutes per paper
- The old timed mental Maths test has gone, however the speed and accuracy of calculation is still crucial to attain marks in the 3 Maths papers.
- Paper 1 will consist of fixed response questions, where children have to give the correct answer to calculations, including using formal written methods.

Maths

- There is an increased importance of the children using the correct method when solving calculations.
- They will need similar equipment to before including a pencil, eraser, rulers (cm & mm), protractor and mirror.
- Formulae needed will be provided e.g. area and volume, but the children will be expected to know how to use it.
- No calculators will be allowed in any of the papers.

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- The format of the tests will look like this

6. Test specification

This section provides details of each test component and paper.

6.1 Summary of test

The test will comprise two components, which will be presented to children as three separate papers.

Table 9: Format of the test

Component	Description	Number of papers	Number of marks	Timing of component
Paper 1	Arithmetic	1	30	30 minutes
Paper 2 and Paper 3	Mathematical fluency, solving problems and reasoning	2	80 overall 40 per paper	80 minutes 40 minutes per paper
	Total	3	110	110 minutes

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- And the marks will be awarded as follows.

Table 10: Profile of content domain

Content area Strand	Number of marks	Percentage of marks
Number, ratio and proportion, and algebra Number, place value, approximation and estimation (N) Addition, subtraction, multiplication, division, calculations (C) Fractions, decimals and percentages (F) Ratio and proportion (R) Algebra (A)	72–83	65–75%
Measurement, geometry and statistics Measurement (M) Geometry - properties of shapes (G) Geometry -position and direction (P) Statistics (S)	28–39	25–35%

Table 11: Profile of marks by paper and national curriculum element

Paper	Number	Measurement, geometry and statistics	Total marks
Paper 1 (Arithmetic)	30	0	30
Papers 2 and 3 (Fluency, problem solving and reasoning)	20–30	10–20	80 (40 each)

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- Papers 2 and 3 will involve a number of question types, which may include:
 - Multiple choice
 - True or false
 - Fixed answer questions, e.g. giving the answer to a calculation, drawing a shape or completing a table or chart.
 - Multiple answer questions, where children will have to explain their approach for solving a problem.

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- Here is an example question

8

Maria bakes cakes and sells them in bags.



She uses this formula to work out how much to charge for one bag of cakes.

$$\text{Cost} = \text{number of cakes} \times 20\text{p} + 15\text{p for the bag}$$

How much will a bag of 12 cakes cost?

£

1 mark

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- Children will also receive a teacher assessment based on observations, evidence in books and interim judgements.

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What can you do to help?

- Quick mental facts- doubling and halving, adjusting for mental addition and subtraction. Learn all the time tables up to 12×12
- Learn all the division facts up to 12×12
- Practise formal methods of addition, subtraction, multiplication and division
- Answer questions in their SATS practice books - these are similar to the reasoning paper.