Ma

KEY STAGE
3

HIGHER TIERS
TEST A

2009

Mathematics tests

Mental mathematics

Test A transcript

This booklet contains a transcript of the key stage 3 mental mathematics test A. It should be used **ONLY** in cases of CD failure or for specific special arrangements outlined in the 2009 *Key stage 3 test administrators' guide.*

Notes for use of transcript

Instructions

In the event of CD failure, the test administrator should follow the instructions on pages 2 and 5.

1. Pupils should have only pens or pencils. They should not have rubbers, rulers, calculators or any other mathematical equipment. Access to paper for working out answers is **not allowed**.

2. Ensure that each pupil has an answer sheet. Tell the pupils to write their name and school in the box at the top of the answer sheet.

3. Ensure the pupils understand that:

   ■ they must complete the test on their own without copying or discussing questions with other pupils

   ■ they will be told how long they have to answer each question and that the time given will increase from 5, to 10, to 15 seconds as the test progresses through the three sections

   ■ for some of the questions, the information they will need is included in or beside the answer box on the pupil answer sheet

   ■ they are not allowed to use a calculator or any other mathematical equipment

   ■ if they want to change their answer, they should put a cross through their first answer. They are not allowed to rub out any answers

   ■ they should answer as many questions as they can. If they find a question too difficult, they should put a cross in the answer box and wait for the next question

   ■ they should not write in the white boxes in the blue margins

   ■ they will not be allowed to ask any questions once the test has started.

4. The test administrator must have access to a clock or watch that measures accurately in seconds.

Higher tiers test A questions

'Now we are ready to start the test.'

For the first group of questions you will have 5 seconds to work out each answer and write it down.'

1   How many metres are six hundred centimetres?

2   Subtract thirty-six from two hundred.

3   Write in figures the number ten thousand and ten.

4   Look at the numbers on your answer sheet. Add them.

5   Look at the number on your answer sheet.
    Round it to two decimal places.

6   Look at the expression. Write it as simply as possible.

7   To the nearest centimetre the length of a shelf is fifty-eight centimetres.
    What is the smallest value the length of the shelf could be?

'For the next group of questions you will have 10 seconds to work out each answer and write it down.'

8   Look at the equation. What is the value of x?

9   I started a train journey at three twenty pm.
    The journey lasted for forty-five minutes.
    At what time did I arrive?

10 Some pupils were asked how they had travelled to school that day.
    The pie chart shows the results. Which form of transport is the mode?

11 What is fifty per cent of one hundred and ten pounds?

12 Write down a multiple of four that is greater than one thousand.

13 Draw an arrow on the scale to show two point two kilograms.

14 A football team won fifty-five per cent of their games and lost thirty per cent.
    The rest ended in a draw.
    What percentage of their games ended in a draw?

'Now turn over your answer sheet.'

15 On my desk I have three blue pens, one red pen and four black pens.
    I am going to pick up one of the pens at random.
    What is the probability that I will pick up a black pen?

Pupil answer sheet

Key stage 3 mathematics 2009

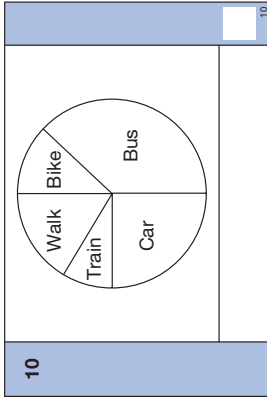Mental mathematics   Test A

First name

Last name

School

Total marks

Practice question

	39

Time: 5 seconds

1	m	600cm

| 2 | 36 | |

| 3 | | |

| 4 | –9 | 5 |

| 5 | 0.576 | |

Time: 5 seconds continued

| 6 | $8p^2 - p^2$ | |

| 7 | cm | 58cm |

Time: 10 seconds

| 8 | $x + 7 = 22$ | |

| 9 | pm | 45 minutes |

| 10 | | |

| 11 | £ | 50% |

| 12 | | |

| 13 | 2kg | 3kg |

| 14 | % | won 55% |
| | | lost 30% |

15 | 3 blue, 1 red, 4 black |

16 | 65m [100m rectangle] |

17 | 10   20 |

18 | $4(m-3)$ |

19 | 90   12 |

20 | [cylinder] |

21 | people   12   20% |

22 | 36km per hour | ___ km |

23 | $y = 4x^2$ |

24 | $\sqrt{\dfrac{1}{9}}$ |

25 | $\dfrac{1}{2}$ $\dfrac{1}{3}$ |

26 | ___ °   [decagon with angle a] |

27 | [1] [2] [3] |

28 | Mean = 10 |

29 | [diagram: angles $k°$, $4k°$, $7k°$ at a point] |

30 | ___ , ___ , ___   45 |

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16 A rectangular football pitch is sixty-five metres by one hundred metres.
A footballer runs once around the perimeter of the pitch. How far does he run?

17 Write down a prime number between ten and twenty.

18 Look at the expression.
When *m* is eight, what is the value of the expression?

19 There are ninety seats in a train carriage.
How many seats are there in twelve of these carriages?

20 Your answer sheet shows a diagram of a 3-D shape.
What is the mathematical name of this shape?

21 Twelve people in a group are left-handed.
Twenty per cent of the group are left-handed.
How many people are in the group?

22 A bird flies at an average speed of thirty-six kilometres per hour.
At this speed, how far would it fly in ten minutes?

23 Look at the equation.
What is the value of *y* when *x* equals three?
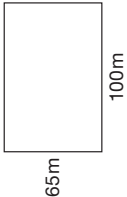
24 What is the square root of one ninth?

'For the next group of questions you will have 15 seconds to work out each answer and write it down.'

25 I eat one half of a pizza.
My friend eats one third of the pizza. What fraction of the pizza is left?

26 Look at the regular decagon. The exterior angle marked *a* is thirty-six degrees.
What is the size of an interior angle?

27 I can make a three-digit number using the digits one, two and three in
six different ways. How many of these three-digit numbers are even?

28 The mean of three numbers is ten. Two of the numbers are eight.
What is the third number?

29 The diagram shows three lines meeting at a point.
Work out the value of *k*.

30 Write down the three consecutive whole numbers that add up to forty-five.

'Put your pens down. The test is finished.'
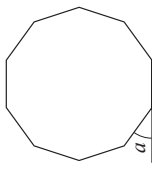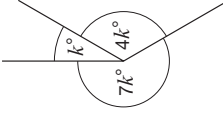
5. Read out the following script, **using exactly these words**:

Listen carefully to the instructions I am going to give you. After I have finished reading them, there will be time for you to ask any questions you might have. However, you will not be able to ask any questions once the test has begun.

I will start by reading a practice question. Then I am going to ask you 30 questions for the test. On your sheet there is an answer box for each question, where you should write the answer to the question and nothing else. You should work out the answer to each question in your head, but you may jot things down outside the answer box if this helps you. Do not try to write down your calculations because this will waste time and you may miss the next question. For some of the questions, important information is already written down for you on the sheet.

I will read out each question twice. Listen carefully both times. You will then have time to work out your answer. If you cannot work out an answer, put a cross in the answer box. If you make a mistake, cross out the wrong answer and write the correct answer next to it. There are some easy and some harder questions so don't be put off if you cannot answer a question.

6. Stop and answer any questions that the pupils may have.

7. Read out the following:

Here is the practice question to show you what to do.

I will read the question twice, and you will have 5 seconds to work out the answer and write it in the answer box.

Double the number on your answer sheet.

Repeat the question.

Double the number on your answer sheet.

Wait 5 seconds (measured accurately using a clock or watch), then read out the following:

Now put down your pen or pencil.

8. Ensure that the pupils have correctly placed their answers to the practice question on their answer sheets. Remind the pupils that, for some questions, information is provided in or beside the answer box. When they are ready to begin the test, tell the pupils that you will not be able to answer any further questions, or interrupt the test, once you have started reading the questions.

9. The questions are given on pages 3–4 of this booklet. The questions must be read out exactly as written. Start by stating the question number, then read each question twice before leaving the 5, 10 or 15 second response time. **These timings must be strictly adhered to**.

10. At the end of the test, tell the pupils to put down their pens or pencils, then collect their answer sheets.

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