Ma

KEY STAGE 3

HIGHER TIERS TEST A

2006

This booklet contains **CONFIDENTIAL** test questions. It **MUST BE KEPT SECURE**. It should not be opened until the mental mathematics test is due to start on Wednesday 3 May 2006. Early opening, up to one hour before the test starts, is permissible only if papers are needed for administrative purposes.

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 audiotape or CD failure or for specific special arrangements outlined in the 2006 *Assessment and reporting arrangements* booklet for key stage 3.

2006

QCA

Notes for use of transcript

Instructions

In the event of an audiotape or 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 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.

Instructions continued on page 5

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	What number is the arrow pointing to on the number line?
2	Divide three hundred by ten.
3	Multiply six by nine.
4	How many millimetres are there in eight centimetres?
5	What number is six less than minus two?
6	Write in figures the number that is one less than one million.
7	Round three point six eight to one decimal place.
8	Look at the expression on your answer sheet. Write it as simply as possible.

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

9	In a quiz, pupils were asked a question. The pictogram shows how many pupils were right and how many were wrong. Eight pupils were right. How many pupils were wrong?
10	The perimeter of a square is twenty centimetres. What is the length of one side of the square?
11	In a class of twenty-eight pupils, thirteen are boys. About what fraction of the class are boys? Put a ring round the fraction that is closest.
12	AB is a straight line. Work out the size of angle w.
13	Look at the expression on your answer sheet. When x is nine, what is the value of the expression?
14	The scale on a map is ten centimetres to two kilometres. On the map the distance between two points is fifteen centimetres. How many kilometres are there between the two points?
15	I have a fair six-sided dice, numbered one to six. I roll the dice. What is the probability that I roll a number greater than two?
16	What is five per cent of three hundred pounds?

'Now turn over your answer sheet.'

Pupil answer sheet

Key stage 3 mathematics 2006

Mental mathematics Test A

First name _____

Last name _____

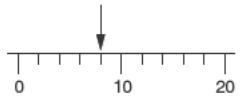
School _____

Total marks

Practice question

		37

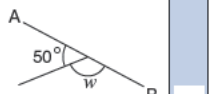
Time: 5 seconds

1		
2		300
3		9
4	mm	
5		−2
6		

Time: 5 seconds continued

7		3.68
8		$10y^2 - 3y^2$

Time: 10 seconds

9	Right Wrong	pupils
10	cm	
11	13 $\frac{1}{8}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{3}{4}$	
12	°	
13		$2x - 8$
14	10cm : 2km 15cm km	
15		
16	£	5% £300

17	Find the volume of a cuboid measuring two centimetres by eight centimetres by four centimetres.
18	Material costs four pounds fifty per metre. How many metres of this material can I buy with twenty-seven pounds?
19	Using three as an approximation for pi, find the circumference of a circle with diameter eight centimetres.
20	Jake and Sarjun share some money in the ratio one to three. Sarjun's share is one hundred and fifty pounds. Altogether, how much money did they share?
21	Look at the expression. When y is six, work out the value of the expression.

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

22	Your answer sheet shows the answer to twenty-seven multiplied by thirty-two. Use this information to help you work out the answer to twenty-seven multiplied by sixteen.
23	In a survey, some people were asked if they use a library. The pie chart shows the results. Twelve people said no. How many people were asked altogether?
24	A machine copies exactly fifty pages a minute. How many pages can it copy in half an hour?
25	The diagram shows an arrow of height three centimetres. I enlarge it by a scale factor of two and a half. What is the height of the enlarged arrow?
26	The table on your answer sheet shows the number of milk bottles ordered for twenty different houses. Altogether, how many milk bottles were ordered?
27	What is the square root of forty thousand?
28	Look at the right-angled triangle. Work out the height of the triangle.
29	Look at the grid. What is the equation of the line marked B?
30	Nine multiplied by nine has the same value as three to the power what?

'Put your pens down. The test is finished.'

Time: 10 seconds continued

17	2cm by 8cm by 4cm	cm^3	17
18	m	£4.50 £27	18
19	cm	8cm	19
20	£	1 : 3 £150	20
21		$y(y-3)$	21

Time: 15 seconds

22	27 × 32 = 864 27 × 16 =		22
23		No / Yes	23
24		50	24
25	cm	3cm	25

Time: 15 seconds continued

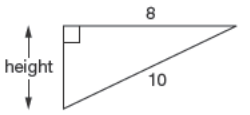
26

Number of milk bottles	Frequency
0	6
1	3
2	8
3	1
4	2

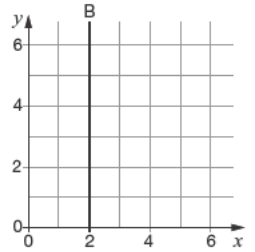
26

27	$\sqrt{40000}$	27

28



29



30		9×9

5. Read out the following script, **using exactly these words:**

Listen carefully to the instructions I am going to give you. When I have finished reading them, I will answer any questions. 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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