National curriculum tests

Key stage 2

Mathematics

Paper 3: reasoning

First name
Middle name
Last name
Date of birth Day Month Year
School name

SAMPLE BOOKLET

Published July 2015

This sample test indicates how the national curriculum will be assessed from 2016. Further information is available on GOV.UK at www.gov.uk/sta.
Instructions

You may not use a calculator to answer any questions in this test.

Questions and answers
You have 40 minutes to complete this test.
Follow the instructions for each question.
Work as quickly and as carefully as you can.
If you need to do working out, you can use the space around the question.
Do not write over any barcodes.

Some questions have a method box like this:

For these questions you may get a mark for showing your method.
If you cannot do one of the questions, go on to the next one.
You can come back to it later, if you have time.
If you finish before the end, go back and check your work.

Marks
The number under each line at the side of the page tells you the maximum number of marks for each question.
Here is a diagram for sorting numbers.

Write **one number** in each box.

One is done for you.

<table>
<thead>
<tr>
<th>multiple of 5</th>
<th>not a multiple of 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>multiple of 3</td>
<td>30</td>
</tr>
<tr>
<td>not a multiple of 3</td>
<td></td>
</tr>
</tbody>
</table>

2 marks

---

Here is part of a number line.

Write the missing numbers in the boxes.

-5

2 marks
Look at this number.

23,451.96

Write the digit that is in the hundreds place.

Write the digit that is in the hundredths place.
A school plans to collect £200 between January and May.

This chart shows how much they collected by the end of April.

Write the name of each month where they collected more than £50

How much money did they collect in February and March altogether?
Chen pours 165 millilitres of milk into a measuring jug.

Draw an arrow on the jug to show the level of the milk.
Here are six cards.

\[
\begin{align*}
\times 10 & \quad \times 100 & \quad \times 1000 \\
\div 10 & \quad \div 100 & \quad \div 1000
\end{align*}
\]

Use a card to complete each calculation.

\[
\begin{align*}
5.3 \boxed{} &= 0.53 \\
5.3 \boxed{} &= 5300 \\
5.3 \boxed{} &= 0.053
\end{align*}
\]

2 marks
Write the number 53,148 in **words**.
Here is a shaded shape on a grid.

The shape is translated so that point A moves to point B.

Draw the shape in its new position.

Use a ruler.
The mass of a 10p coin is 6.5g.
The mass of a 5p coin is half the mass of a 10p coin.

What is the mass of these six coins altogether?

Show your method
A bag of 5 lemons costs £1

A bag of 4 oranges costs £1.80

How much more does one orange cost than one lemon?

Show your method
Write the four missing digits to make this **addition** correct.

\[
\begin{array}{c}
\phantom{1} \phantom{1} \phantom{1} \\
6 \phantom{1} 8 \\
+ \phantom{1} \phantom{1} \phantom{1} \\
3 \phantom{1} 9 \phantom{1} \\
\hline \\
9 \phantom{1} 0 \phantom{1} 1 \phantom{1} 9 \\
\end{array}
\]
12 Two decimal numbers add together to equal 1
One of the numbers is 0.007
What is the other number?

13 Here are four fraction cards.

\[
\frac{3}{4} \quad \frac{5}{8} \quad \frac{6}{12} \quad \frac{7}{16}
\]

Use any three of the cards to make this correct.

\[
\text{___} < \text{___} < \text{___}
\]
Here is a number pyramid.
The number in a box is the **product** of the two numbers below it.

Write the missing numbers.
Join dots on the grid to make a quadrilateral that has 3 acute angles.

Lara chooses a number less than 100
She divides it by 3 and then subtracts 11
She then divides this result by 2
Her answer is 10.5

What was the number she started with?
This model is made with 20 cubes.

What **percentage** of the cubes in the model is black?
Here are the ingredients for chocolate ice cream.

- cream 400 ml
- milk 500 ml
- egg yolks 4
- chocolate 120 g
- sugar 100 g

Stefan has only 300 ml of cream to make chocolate ice cream.

How much chocolate should he use?

Show your method.

Answer: 87 g
The area of a rugby pitch is 6,108 square metres.

A football pitch measures 112 metres long and 82 metres wide.

How much larger is the area of the football pitch than the area of the rugby pitch?

Show your method

square metres

3 marks
Here are two identical shaded triangles on coordinate axes.

Write the coordinates of points A and B.

A = ( , )
B = ( , )
[END OF TEST]

Please do not write on this page.