

2017 national curriculum tests

# Key stage 1

## Mathematics

Administering the mathematics test

Paper 2: reasoning

# CONFIDENTIAL

This pack must be kept secure and unopened until **Tuesday 2 May 2017**. The pack must not be opened until the pupils are in the test room ready to complete the first administration of the test.

The photocopiable pupil transcript for the aural questions is contained within this pack; if you need to use this with any of your pupils, you can open this pack up to one hour early on the day of the administration to photocopy the transcript.

Please ensure you have read and understood the 2017 test administration guidance before opening this pack.

### Pack contents:

- An overview of the key stage 1 mathematics: Paper 2: reasoning (overleaf)
- 10 copies of Paper 2: reasoning

**For test administration**

## 2017 Key stage 1 mathematics test Paper 2: reasoning

The key stage 1 mathematics test consists of 2 papers. The papers must be administered in order. Pupils do not have to sit both papers on the same day. If both papers are administered on the same day, pupils may benefit from a break between papers. Both papers can be administered to the whole class, smaller groups of pupils or on an individual basis. However, test packs must not be opened until the pupils are in the test room ready to complete the first administration of the test.

### Paper 2: reasoning

The following information explains how to administer mathematics Paper 2: reasoning. If you have any questions, you should check with your headteacher or key stage 1 test co-ordinator before you administer the test.

Administrators can stop an individual pupil at any stage of the test if they feel it is appropriate for that particular pupil.

Please make sure you follow these instructions correctly in order to ensure that the test is properly administered. Failure to administer the test correctly could result in a maladministration investigation at the school.

<b>Format</b>	<ul style="list-style-type: none"> <li>• This component of the test consists of a single test paper.</li> <li>• It is expected that the reasoning paper will take approximately 35 minutes to complete (not strictly timed).</li> <li>• It is at your discretion to choose when or if pupil(s) require a break during the test or whether, if appropriate, to stop the test early.</li> <li>• This paper has two sections: an aural section and a written section. The first section starts with a practice aural question followed by 5 aural questions.</li> <li>• After the aural questions, the pupils are presented with written questions. The time for the written questions should be approximately 30 minutes.</li> </ul>
<b>Equipment</b>	<p>Each pupil will need the equipment specified below:</p> <ul style="list-style-type: none"> <li>• a pencil or blue / black pen</li> <li>• a sharp, dark pencil for mathematical drawing</li> <li>• a ruler (showing centimetres and millimetres)</li> <li>• a mirror</li> <li>• a rubber (optional). If rubbers are not provided tell pupils that they should cross out any answers they wish to change.</li> </ul> <p>Pupils may use the following equipment, if this is normal classroom practice, provided they only give word-for-word translations:</p> <ul style="list-style-type: none"> <li>• bilingual dictionaries or electronic translators</li> <li>• bilingual word lists</li> <li>• monolingual English electronic spell checkers.</li> </ul> <p>Pupils are <b>not</b> allowed:</p> <ul style="list-style-type: none"> <li>• calculators</li> <li>• tracing paper</li> <li>• number apparatus e.g. base ten materials, number squares, etc.</li> </ul>
<b>Assistance</b>	<ul style="list-style-type: none"> <li>• You must ensure that nothing you say or do during the test could be interpreted as giving pupils an advantage, e.g. indicating that an answer is correct or incorrect, or suggesting the pupil looks at an answer again.</li> <li>• If a pupil requests it, a question may be read to the pupil on a one-to-one basis. You can also read questions 6 to 31 if a pupil has difficulty in reading the questions for themselves.</li> <li>• If reading to a pupil, you can read words and numbers but not mathematical symbols. This is to ensure that pupils are not given an unfair advantage by having the function inadvertently explained by reading its name.</li> </ul>

<p><b>Assistance</b> (continued)</p>	<ul style="list-style-type: none"> <li>• For pupils with hearing impairments, be careful when signing numbers and mathematical signs. In particular, please be careful when signing the following: <ul style="list-style-type: none"> <li><b>Q5:</b> <i>forward</i> and <i>quarter of a turn clockwise</i></li> <li><b>Q9:</b> <i>even</i></li> <li><b>Q13:</b> you may point to the sign <math>&gt;</math>, but do not explain it as <i>greater than</i></li> <li><b>Q22:</b> <i>pentagon</i></li> <li><b>Q24:</b> <math>\frac{1}{3}</math></li> <li><b>Q26:</b> <i>quarters</i></li> <li><b>Q28:</b> <i>left</i> may be signed or explained as <i>not taken</i></li> <li><b>Q29:</b> <i>edges</i>.</li> </ul> </li> <li>• Guidance for administering the test to pupils with a visual impairment is contained in the modified test packs.</li> <li>• If reading questions to a pupil, you may point to parts of the test paper such as charts, diagrams, statements and equations, but you must not explain the information or help the pupil by interpreting it.</li> <li>• For this paper there is an optional pupil aural script that you can choose to provide to pupils to access this part of the test. Please refer to page 8 of this document for further guidance.</li> <li>• If any everyday context or words related to a question are unfamiliar to a pupil, you may show them related objects or pictures, or describe the related context.</li> </ul> <p>The examples below illustrate how to deal with some common queries.</p> <p><b>Q.</b> What does 'fraction' mean?  <b>A.</b> I can't tell you, but think hard and try to remember. We can talk about it after the test.</p> <p><b>Q.</b> What does '&gt;' or '&lt;' mean?  <b>A.</b> I can't tell you, but think hard and try to remember. We can talk about it after the test.</p>
<p><b>Before the test begins</b></p>	<ul style="list-style-type: none"> <li>• Review the list of pupils with any particular individual needs, e.g. pupils who may need to use the optional pupil script for the aural questions, or who may need a scribe or a transcript made at the end of the test.</li> <li>• Ensure that you know how to administer any access arrangements correctly. Please refer to the 2017 key stage 1 access arrangements guidance.</li> <li>• The optional pupil script for the aural questions can be found at the back of this document. Please photocopy it for the pupils who need it.</li> <li>• Check that there are enough administrators to maintain supervision and support for the test. You should consider the possibility of at least one test administrator needing to leave the room with a pupil.</li> <li>• Ensure that you understand how to deal with issues during the tests.</li> </ul>
<p><b>How to deal with issues during the test</b></p>	<p>It is impossible to plan for every scenario. Whatever action you take, pupil safety must always be your first consideration.</p> <p>In the following circumstances, you will need to stop the test either for an individual pupil or for the whole cohort:</p> <ul style="list-style-type: none"> <li>• test papers are incorrectly collated or the print is illegible</li> <li>• a fire alarm goes off</li> <li>• a pupil is unwell</li> <li>• a pupil needs to leave the test room during the test</li> <li>• a pupil is caught cheating.</li> </ul>

**This section continues on the next page.**

<p><b>How to deal with issues during the test</b> (continued)</p>	<p>If you need to stop the test:</p> <ul style="list-style-type: none"> <li>• make a note of the time</li> <li>• make sure pupils are kept under test conditions and that they are supervised</li> <li>• if they have to leave the room, ensure they don't talk about the test</li> <li>• speak to your test co-ordinator or a senior member of staff for advice on what to do next</li> <li>• consider contacting the national curriculum assessments helpline on 0300 303 3013 for further advice.</li> </ul> <p>You should brief your headteacher on how the incident was dealt with, once the test is over.</p>
<p><b>What to do at the start of the test</b></p>	<ul style="list-style-type: none"> <li>• Check that seating is appropriately spaced and that no pupil can see another pupil's test paper.</li> <li>• Check that pupils don't have any materials or equipment that may give them extra help.</li> <li>• Check that pupils don't have mobile phones or other disruptive items.</li> <li>• Ensure that each pupil has a copy of mathematics Paper 2: reasoning.</li> </ul>
<p><b>What to say at the start of the test</b></p>	<ul style="list-style-type: none"> <li>• It is important to brief pupils fully at the start of each test. You should use these instructions to introduce mathematics Paper 2: reasoning. The text that you need to read to the pupils is in the large font.</li> <li>• <b>The wording of these instructions can be adapted, provided the meaning is retained.</b> <p>This is the key stage 1 mathematics Paper 2: reasoning. You should have a test booklet in front of you.</p> <p>Write your name on the front of your test booklet.</p> <p>I'm going to explain to you how to write down your answers to the questions. You'll have plenty of time to work out the answers.</p> <p>You need to work on your own. You need to think of your own answers and you mustn't talk about them with anyone else.</p> <p>If you want to change an answer, you should put a line through the answer that you don't want to be marked.</p> <p>If you need to change a diagram or graph, make sure that you completely rub out or cross out your answer before writing your new answer.</p> <p>Some questions have boxes for you to write your answers in. You can do any working out in the white space around the boxes if you need to.</p> </li> <li>• Where necessary, you can show the pupils how to draw a tick, circle or cross to indicate the answer. <p>Open your test booklet at page 2. Amy and Ajay are children who are in some of the questions. There are different children mentioned in other questions as well. Their names are Sam, Ben, Sita and Kemi.</p> </li> </ul>

## Introducing the aural questions

### What to say at the start of the aural questions

Now I'm going to read aloud some questions for you to answer. I'm going to read each question twice, with a short gap in between. You need to listen very carefully when I read the questions to you.

You must work on your own and you must not call out the answers.

- If any pupils are using the optional pupil script to support their access to these questions, you should follow the guidance at the back of this document.

Look at the practice question on page 3. This is a practice question for us to do together.

- When reading the question to the pupils, remember to repeat the bold text only.
- You may help pupils locate the question where necessary.

**Ajay has two footballs.**

**Amy has three footballs.**

**How many footballs do they have altogether?**

Write your answer in the box.

- Before proceeding, ensure that the pupils know where they should have written their answer and the number they should have written. Discuss methods the pupils used to work out their answer. Allow the pupils to change their answer to the correct one by crossing out or rubbing out, to make sure they know how to correct errors.

Now I'm going to read out questions 1 to 5.

You should try to answer all of the questions. You should write your answers in the correct place for each question.

- If any pupils are using the optional pupil script, remind them to write their answers in the test booklet and not on the script.

Remember, I can't help you with these next questions. You should try to work them out on your own. If you can't answer a question move onto the next one.

Do you have any questions that you want to ask before we start?

Turn to page 4 of the booklet.

- Read questions 1 to 5, allowing sufficient time for pupils to write their answers before you move on to the next question. When reading the question to the pupils, remember to repeat the bold text only. Words that are underlined should be emphasised.

**This section continues on the next page.**

<b>Question 1</b>	<p><b>Ajay has <u>four</u> friends: Ben, Kemi, Sam and Sita.</b></p> <p><b>He gives <u>ten</u> pence to each friend.</b></p> <p><b>How much money does he give altogether?</b></p> <p>Write your answer in the box.</p>
<b>Question 2</b>	<p><b>I am counting forwards.</b></p> <p><b>When I stop counting, tick the next number I should say:</b></p> <p><b>ninety-seven, ninety-eight, ninety-nine, one hundred ...</b></p>
<b>Question 3</b>	<p><b>There are <u>sixty-three</u> bean bags in a sack.</b></p> <p><b>Amy takes <u>ten</u> bean bags away.</b></p> <p><b>How many bean bags are left in the sack?</b></p> <p>Write your answer in the box.</p>
<b>Question 4</b>	<p>Turn to the next page.</p> <p><b>Look at the array of circles.</b></p> <p><b>Now look at the four calculations. [Pause]</b></p> <p><b>Tick the calculation that describes the array. [Pause]</b></p>
<b>Question 5</b>	<p><b>Look at the mouse.</b></p> <p><b>Ajay moves the mouse to a piece of cheese.</b></p> <p><b>He moves the mouse <u>two</u> squares forward. [Pause]</b></p> <p><b>He then turns the mouse a <u>quarter of a turn clockwise</u> and moves it forward <u>three</u> squares. [Pause]</b></p> <p><b>Circle the piece of cheese the mouse lands on.</b></p>

## Introducing the written questions

<p><b>What to say at the start of the written questions</b></p>	<p>For the rest of the test you will need to read the questions in the booklet yourself.</p> <ul style="list-style-type: none"> <li>Please note you may need to change the instruction above if you are supporting some pupils with reading.</li> </ul> <p>Remember, if you want to change an answer you should put a line through the answer that you don't want to be marked.</p> <ul style="list-style-type: none"> <li>Where necessary, you can show the pupils how to change their answers if they think they have made a mistake.</li> </ul> <p>In some places there will be an answer box. In other places you may need to write your answer on a diagram or graph.</p> <p>If you need to change a diagram or graph make sure that you completely rub out or cross out your answer before writing your new answer.</p> <ul style="list-style-type: none"> <li>Where necessary, you can show the pupils how to draw a tick, circle or cross to indicate the answer.</li> </ul> <p>You can use the white space on the page to do any working out if you need to.</p> <p>You need to work on your own. You need to think of your own answers and you mustn't discuss them with anyone else.</p> <p>You have approximately 30 minutes to complete the rest of the paper now.</p> <p>Turn to page 8 and start working.</p>
<p><b>What to do at the end of the test</b></p>	<ul style="list-style-type: none"> <li>Follow your school's procedure for collecting and storing the pupils' test scripts.</li> <li>If any pupil needs a transcript, complete it with the pupil at the end of the test, under test conditions. Particular care should be taken to ensure accurate transcriptions are made and pupils' answers are not corrected or amended.</li> </ul>
<p><b>Marking the tests</b></p>	<ul style="list-style-type: none"> <li>Use the key stage 1 test mark schemes to mark the test, following both the general guidance and any specific guidance for each question.</li> </ul>

## Optional pupil script for the aural questions

### 2017 key stage 1 mathematics test Paper 2: reasoning

This is an optional script.

Some pupils may need extra visual support to access the first 5 aural questions of the key stage 1 mathematics reasoning test. The class teacher can provide this optional script to the pupil(s) in addition to their test booklet, if they consider it necessary.

Pupils should use the script alongside their test booklet when listening to the aural questions read by the teacher.

<b>Who is the script for?</b>	<p>The optional pupil script may be used with any pupil who would find it difficult to access and respond to the aural questions and the visual prompts in the test booklet.</p> <p>Before administering the test with the optional pupil script, you should consider:</p> <ul style="list-style-type: none"> <li>• Does the pupil have any needs where providing the optional pupil script alongside the test would improve their access to the aural questions?</li> <li>• You should only use this script with pupils where you are confident that the use of the additional script will not confuse the pupils.</li> </ul>
<b>Assistance</b>	<ul style="list-style-type: none"> <li>• You must adhere to the administration guidelines in the test administration booklet when administering the test.</li> <li>• Pupils using the optional pupil script will need support so that they can manage the script, the test booklet and listen to the teacher appropriately.</li> </ul>
<b>Before the test begins</b>	<ul style="list-style-type: none"> <li>• Make a note of pupils who will have access to the optional pupil script for aural questions.</li> <li>• Make copies of the optional pupil script on the next page, as required.</li> <li>• Provide a copy of the test booklet and the additional optional pupil script to the designated pupils.</li> <li>• Tell the pupils that they should use the script to help them follow the questions as you read them.</li> <li>• Refer to the teacher aural script to administer the aural section of the test.</li> </ul>
<b>What to say at the start of the aural questions</b>	<ul style="list-style-type: none"> <li>• Follow the administration guidance provided in this document.</li> <li>• Tell the pupils to write their name on their optional script as well as their test booklet.</li> <li>• Remind pupils who have the optional script that they should follow each question as you read it aloud.</li> <li>• Explain to pupils that they should record their answers in their test booklet and not on the optional script.</li> </ul>
<b>After the aural questions have been administered</b>	<ul style="list-style-type: none"> <li>• After the last aural question has been read aloud, collect the optional pupil scripts.</li> </ul>
<b>Marking the aural questions</b>	<p>Use the key stage 1 test mark schemes to mark the tests, following both the general guidance and any specific guidance for each question. Answers given in the test booklet should take precedence. However if a pupil has written their answer on the optional script and not in the test booklet, teachers should mark accordingly as long as the pupil's answer is not contradicted elsewhere.</p>



**2017 key stage 1 mathematics test Paper 2: reasoning**  
**Optional pupil script for the aural questions**

You may photocopy the optional pupil script for each pupil who is using it during the administration of the aural questions (1 to 5) of Paper 2. Please refer to the guidance on page 8 before using it.

First name	
Middle name	
Last name	

<b>Practice question</b>	<p>Ajay has <b>2</b> footballs.  Amy has <b>3</b> footballs.  How many footballs do they have altogether?</p>
<b>Question 1</b>	<p>Ajay has <b>4</b> friends: Ben, Kemi, Sam and Sita.  He gives <b>10p</b> to each friend.  How much money does he give altogether?</p>
<b>Question 2</b>	<p>I am counting forwards.  When I stop counting, tick the next number I should say:  97 98 99 100...</p>
<b>Question 3</b>	<p>There are <b>63</b> bean bags in a sack.  Amy takes <b>10</b> bean bags away.  How many bean bags are left in the sack?</p>
<b>Question 4</b>	<p>Look at the array of circles.  Now look at the four calculations.  Tick the calculation that describes the array.</p>
<b>Question 5</b>	<p>Look at the mouse.  Ajay moves the mouse to a piece of cheese.  He moves the mouse <b>2</b> squares forward.  He then turns the mouse a <b>quarter of a turn clockwise</b>  and moves it forward <b>3</b> squares.  Circle the piece of cheese the mouse lands on.</p>

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