

Ma

KEY STAGE

1

LEVELS

2-3

2002

Mathematics test

# Teacher's guide

Key stage I

2002

## Mathematics booklet

Name

Score

Level and grade

10

8

4

0

First published in 2002

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**Teacher's guidance on assistance for the written questions**

This guidance is provided in the central pull-out section in this booklet.

# Background information

## Children to be tested

This test should be used with all children judged by the teacher to have attained level 2 or above in mathematics overall.

In addition, you may wish to administer the test to those children who achieved very highly on all parts of the level 1 task.

## Structure of the test

The materials include:

- a test booklet for each child;
- administration and marking instructions contained in this *Teacher's guide*;
- a grid providing programme of study references for optional use.

The test includes material drawn from the key stage 1 programme of study both for *Number* and for *Shape, Space and Measures* in the 2000 national curriculum order. There are two parts to the test. The first part comprises five questions (and one practice question) which are to be read aloud to the children by the teacher and have been devised to be accessible to the majority of children entered for the test. The second part comprises 29 written questions (and one practice question). The test, therefore, has 34 questions in all, but may be divided into sections and spread over two sessions if appropriate.

The questions have been ordered approximately by their degree of difficulty, as informed by the outcomes of the trials of the test. This test was developed in consultation with a group of year 2 classroom teachers, and was subjected to three types of trial with a nationally representative sample of approximately 3,000 children. Children in one particular class or school may find it easier or harder than this sample.

It is important that all children are given an opportunity to attempt as many questions as they can in the written test. An evaluation study of the performance of a group of children who just attained level 2 in an earlier test showed that each of the more difficult questions, towards the end of the test, was answered correctly by at least one child in this group. If a child is unable to cope with one written question, he or she should be encouraged to move on to the next question.

## Timing

The test should be carried out and completed during the month of May 2002. It should not be necessary for the test to be taken in more than two sessions.

Children may benefit from a break after about 30 minutes. These sessions should normally take place on the same day or on consecutive days.

There is no time limit for either part of this test. In previous tests comprising 30 written questions, trialling showed that most children demonstrated what they could do in about 45 minutes, after a short introduction. You should use your discretion to give the children enough time to finish all the oral and written questions they can do.

## **Grouping children for the test**

Both the oral and written parts of the test can be administered to all the children at the appropriate levels together, in small groups or individually. For the written part of the test, you may give help with reading (see the central pull-out section *Teacher's guidance on assistance for the written questions*). Your decision about grouping, therefore, should reflect the needs of the children in your class and their ability to work independently. Further guidance on grouping and reading the test is included on page 5.

## **Assistance**

This test does not require the use of staff beyond those normally available in the classroom. However, it may be administered, under the direction of the teacher, by any competent and informed person such as a language support teacher, teaching assistant or special educational needs support staff. These staff should have a copy of the pull-out section mentioned above. The teacher, however, remains responsible for the assessments. Parents of children in the class should not administer the test.

Detailed guidance on supporting children during the test is provided on pages 10–12 for the oral questions and on pages 13–14 and also in the central pull-out section for the written questions. **Any person** administering the test should be familiar with this guidance and have it to hand during any administration of the test.

## **Age standardised scores**

This year, the table of age standardised scores for the test is contained within this *Teacher's guide* and not in a separate booklet. The use of this table remains optional.

## **Optional grid for test analysis**

For the first time, QCA has produced this year a grid giving programme of study references for each question, which will allow teachers, if they wish, to analyse the performance of the children in their class. QCA would welcome feedback on whether this grid is useful or not.

# Specific guidance: English as an additional language and special educational needs

You can be flexible in your arrangements for the test as **long as any adaptations do not invalidate the assessments**. The range of children's needs is such that it is neither sensible nor possible to provide detailed advice to cover every individual circumstance. You should use your professional judgement and your knowledge of individual children to decide how best to make the test accessible to all children while maintaining the rigour of the assessment.

Examples of permissible adaptations include:

- using tactile shapes and number cards;
- photocopying on to coloured paper;
- enhancing shading and/or emboldening lines on diagrams, charts and graphs;
- cutting out, enlarging, embossing or mounting diagrams;
- using adhesive to attach materials to a table;
- using mechanical and technological aids, including computers but not calculators;
- rephrasing parts of the written questions as indicated in the central pull-out section of this booklet.

There may be some children who have difficulty with the test layout and procedures. These children may be willing to ask for help, and you will be able to ensure they receive the support they need. However, other children may be reluctant to ask. As well as offering reassurance to the whole group, you may need to be active in watching for children who are having problems with reading or with writing responses.

## ***Children's responses***

Children may convey what they know or understand by any means appropriate to them: talk, sign, writing, gesture, pictures, models, mime or any combination of these. A wide variety of forms of communication is acceptable.

## **Children learning English as an additional language**

Children who are learning English as an additional language may be given access to the test in any way that is usual for them. If language support is available, the questions may be translated and children may respond in a language other than English. It is not intended that children are provided with a comprehensive written translation of the paper. As with all children, you may read the questions aloud in English. You may also give a fuller explanation of the context of the questions, **but it is important to ensure that you do not give any additional interpretation of the mathematics or mathematical vocabulary in doing this.**

It is particularly important when assessing children for whom English is an additional language that sufficient time is given for the children to show their best attainment without pressure.

### **Special educational needs**

This test is designed to be used with all children at the appropriate level, but additional consideration should be given to children with special educational needs. **Usually, the most appropriate conditions for testing will be those in which the children normally work well.**

If you judge it appropriate, you may go through the whole test, reading out each question to a group and waiting for the children to write their answers before continuing (the ‘look and listen’ method). This is a legitimate way to administer the test to children who would otherwise have difficulties in accessing the test. **It is, however, unlikely to be the best method for whole class administration, as the test would then need to be read out to suit the pace of the slowest child.** This would mean that children who wanted to work more quickly could become bored with waiting and possibly not demonstrate their best attainment. Some research that QCA has carried out has shown that fluent readers can sometimes perform better if helped by the ‘look and listen’ technique, as they can otherwise skim read questions and misread what needs to be done. However, QCA feels that, in general, children who read fluently can best be helped by the teacher stressing the importance of reading the questions carefully, asking for help with reading unfamiliar text and checking what they have read and how they have responded. Nevertheless, QCA recognises that teachers are in the best position to judge whether fluent readers would benefit or not from ‘look and listen’.

- You can administer the test to smaller groups of children or on an individual basis and adopt any strategies suggested in this guide.
- You may describe the pictures to the children or provide them with any objects that convey to them what is in the pictures.
- You may use overhead projector transparencies of any parts of the test paper to direct children’s attention to what they have to do.

### ***Children with hearing impairments***

Children who have hearing impairments may need particular help with reading. The questions may be presented to the child in sign. A variety of forms of communication can be used for presentation and response, including British Sign Language (BSL), sign supported English (SSE) and Makaton vocabulary. For children who sign, use should be made of a skilled adult signer who is familiar to the child. Since this person may not be the teacher, there is a need for the teacher and the signer to be clear about how the test will be presented.

The nature of BSL may demand that some questions are restructured. In restructuring, take care that the signs used neither give clues to the answer or the mathematics to be used nor cause confusion, and that the questions are restructured only where the sign language itself necessitates it. You may also give

a fuller explanation of the context of the questions, but it is important to ensure that you do not give any additional interpretation of the mathematics and mathematical vocabulary in doing this. If the child responds orally, the person administering the test will need to be familiar with the hearing impaired child's voice to ensure responses are understood accurately. You should ensure that children with hearing impairments understand the contributions made and questions raised by other children prior to the start of the test.

***The oral questions – additional guidance for teachers of children with hearing impairments***

There are five questions (and one practice question) which are to be read aloud to the children by the teacher. These questions come at the beginning of the test, but they may be administered to children with hearing impairments during a separate session or at the end of the test. The oral questions should be administered by a familiar adult whom the child is used to lip-reading; this could be the child's special support assistant.

Children with hearing impairments should be given enough time to lip-read the question, process the information and find the appropriate part of the answer sheet to write the answer. Each question may be written out as a flash card or projected as an overhead projector transparency if this will make it more accessible for these children. Teachers of hearing impaired children may reword questions using more familiar syntax if necessary. However, considerable care should be taken in order to avoid altering the nature of the assessment within any question. For example:

**question 2:** Use *a girl* instead of *Hannah*.

**question 3:** Find box *d*.

*Work out the sum of 13 and 7.*

If the child cannot lip-read, use flash cards with 13 and 7 on them.

*Write your answer in box d.*

***Children with visual impairments***

Children with visual impairments may have the test presented to them, and make their responses, in any way that is usual for them, but care should be taken to avoid altering the nature of the questions. All usual low vision aids should be used, and real objects may be used where appropriate. Materials may be enlarged, reduced, cut up, brailled, etc, to increase accessibility for individual children, and children may hand write their answers, use computer facilities, braille or dictate answers to an adult scribe. Help may be given to interpret pictures and diagrams, as long as this does not invalidate the assessment being made.



Minor changes have been made to the text in the braille version. A print version of the modified text for braille is included with the braille materials.

Additional teacher's notes for the braille test will also be included with the materials.

You should have ordered these test materials by photocopying the order form on page 41 of the 2002 *Assessment and reporting arrangements* booklet for key stage 1.

Additional teacher's notes will be included with the modified large print materials.

### ***Braille***

The test is available in grade 2 braille, free of charge, from:

Pia  
Victoria Street  
Cwmbrân  
NP44 3YT

Tel: 0870 321 6727

Fax: 0870 321 6429

### ***Modified large print***

Teachers of children with special educational needs should be aware of a modified large print version of the test. Although designed for children with visual impairments, this modified large print paper may be used by other children who have special educational needs. For example, some children with particular physical difficulties may find it more accessible than the unmodified paper. The modified large print paper is produced on A4 size paper using bold print, simplified diagrams and illustrations with all extraneous information removed. Copies of the modified large print test are available free of charge. Examples can be seen on the QCA website at [www.qca.org.uk/ca/tests/modified\\_tests](http://www.qca.org.uk/ca/tests/modified_tests)

### ***Time for the modified tests***

Children using braille or modified large print tests are likely to need more time to complete the tests than fully sighted children to take account of their slower reading speeds. You will wish to make this clear to the children and to organise the classroom as appropriate. You may find it helpful to administer the tests in more than one part.

Additional teacher notes have been produced to accompany modified large print and braille versions of the tests. You should refer to these notes **before** administering and marking the tests.

### ***Children with physical disabilities***

Children with physical disabilities may have the test presented to them, and make their responses, in any way that is usual for them, for example the teacher scribing dictated answers, the use of enlarged form or the use of a computer.

### ***Children with emotional and behavioural difficulties***

Children with emotional and behavioural difficulties may have problems maintaining their attention for extended periods of time. For this reason, the test could be administered to this group of children in smaller parts, over a number of sessions, rather than at two sittings.

# Administering the test

## Resources

For both the oral and written questions, each child will need:

- a copy of the test booklet;
- a pen or pencil;
- a centimetre ruler with which they are familiar;
- a rubber (optional). You may obtain more useful diagnostic information if you encourage your children to leave their working out on the page and to cross out their mistakes rather than rub them out. If rubbers are not provided:
  - you should tell the children that they may cross out any answers they wish to change;
  - you should keep a rubber in readiness for children who wish to change answers they have drawn (such as lines or shapes) where changes may be clearer by rubbing out rather than by crossing out.

You should also provide:

- structured apparatus consisting of tens and units for each group working at the same table. This must be available in sufficient quantity to allow children to select as much or as little as they wish.

### *Please note:*

No other support materials should be given to the children, for example clocks or clock faces, number lines or squares, addition squares, multiplication squares, calculators or any representation of money (toy or real).

Wall displays such as tables charts, number lines or number squares should be covered or removed. Wall clocks do not need to be removed.

Number apparatus must be structured into tens and units (Unifix cubes in sticks of tens and ones, Dienes tens and ones, etc) to discourage unhelpful counting in ones rather than the use of tens where appropriate. If interlocking cubes are used, each rod of ten cubes should be made up of one colour only. At least two different colours of rods should be provided. In this way, children can identify a group of ten easily as they calculate. However, you should not intervene if a child dismantles the structured tens when working.

## Administering the test fairly

In order to ensure that the test is administered fairly in different classrooms, it is important that all teachers behave in a similar way while the test is in progress.

### THEREFORE YOU MUST:

- ensure that children can work undisturbed, individually and without access to materials that could give them an unfair advantage. Changes to the usual classroom layout may be necessary. It is important that you decide on seating arrangements before the start of the test, in order to avoid any unnecessary confusion;
- ensure that the children work on their own and that they do not discuss questions or copy answers. Some teachers have found one or more of the following strategies helpful to ensure that children cannot see each other's work: seating children at the ends of tables; seating children individually in a larger space; providing a blank sheet of paper to cover completed work on the open page; using large picture books, etc, to create table screening between children;
- observe the children throughout the test to ensure that they do not copy or distract each other;
- ensure that wall displays, etc, in the classroom do not give the children an unfair advantage, for example tables charts or number squares or number lines should be covered or removed. However, it is not necessary to remove wall clocks;
- encourage the children to stay on task and to work at an appropriate pace, moving on to the next question promptly when it is clear that they cannot spend any more time productively on the question they are working on;
- encourage the children to check all their work carefully when they have finished.

### DO NOT:

- give help with the mathematics, as this will invalidate the assessment;
- re-present questions on addition or subtraction vertically when they are presented horizontally in the test booklet;
- suggest to the children the mathematical operation to use;
- give clues which help the children to interpret what any question requires them to do;
- rephrase or rewrite, except where indicated in the guidance in the central pull-out section of this booklet;
- prompt the children to confirm or change answers by pointing, frowning, smiling, head shaking or nodding, offering rubbers or asking leading questions.

Teachers of children with special educational needs should refer to the further guidance on pages 5–7 of this guide.

## Starting the test

When you have seated the children, give each child a test booklet and make sure they have the resources they need. Ask the children to write their name in the space provided on the front of the booklet and introduce the test in your own words, making sure you cover the points outlined in ‘Introducing the oral questions’ (below) then in ‘Introducing the written questions’ (page 13) at the appropriate times. To ensure that the testing is carried out in a standard way in all schools, it is important that your introduction does not exceed this information.

## Introducing the oral questions

- These questions will be read aloud by you.
- The first question is a practice question. It is not part of the assessment, so you can spend as much time as you wish helping the children to understand the format, what they should do and where they should write their answer.
- Children are allowed to use space on the test paper for working out their answers if necessary.
- There is no time limit on each question, so the length of time taken will depend on the speed of the children. Proceed from one question to the next when you feel that all the children have had ample opportunity to find the answer.
- The text to be read aloud is shown in italics in the next section, ‘Working through the oral questions’. The language highlighted in bold text is part of the assessment, and **you should not rephrase it or give explanations of terms used.**

### Tell the children:

- *I will read aloud some questions for you to answer.*
- *The first question is a practice question which we will all do together.*
- *I will read each question twice, leaving a short gap in between.*
- *If you want to hear the question a third time, put up your hand.*
- *I will explain how to write answers to each question.*
- *You must listen very carefully to what I am saying.*
- *You will have plenty of time to work out the answers.*
- *You must work on your own and you must not call out the answers.*
- *If you make a mistake, you should cross it out / rub it out neatly\* and write the answer clearly [\*as appropriate].*
- *When you have finished answering a question, look up so that I know you have finished.*

## Working through the oral questions

Ask the children to turn to page 3 of their booklet.

Explain:

- *the boxes are for you to write your answers in;*
- *the letters below each box show you which box to use for each question;*
- *you can do any working out in the white spaces around the boxes, if you need to.*

Where necessary, you can show the children how to draw a tick, cross, etc.

Remember to repeat each question.  
Repeat the **bold text** only.

### **Practice question**

Teacher:

*This is a practice question for us to do together.*

*Find box a. [Help with locating the box where necessary.]*

*Write the number which comes between 13 and 15.*

*Write your answer in box a.*

Afterwards, ensure that the children know the number they should have written, and discuss methods the children used to work out the answer. Allow any children to change their answer to the correct one by crossing out or rubbing out, to make sure they know the way to correct errors.

### **Question 1**

Teacher:

*Look at the number grid with b written below it.*

*Write the number 24 in the correct place on the grid.*

### **Question 2**

Teacher:

*Turn over the page.*

*Find box c.*

*At the shop, all packets of crisps cost the same.*

*Hannah buys 2 packets.*

*She pays 40 pence.*

*How much does one packet cost?*

*Write your answer in box c.*

### **Question 3**

Teacher:

*Find box d.*

*Work out the sum of 13 and 7.*

[Stress the 'teen' in 13 to avoid confusion with 30.]

*Write your answer in box d.*

### **Question 4**

Teacher:

*Look at the shapes in box e on the next page.*

*One of these shapes has one right angle and three straight sides.*

*Tick this shape.*

### **Question 5**

Teacher:

*Find box f.*

*Imagine a number line.*

*What number is halfway between 11 and 19?*

[Stress the 'teen' in 19 to avoid confusion with 90.]

*Write your answer in box f.*

# Ma

KEY STAGE

# 1

LEVELS

# 2–3

# 2002

## Mathematics test

# Teacher's guidance on assistance for the written questions

- These centre pages may be pulled out for manageable reference during the test.
- Any person administering the test should have a copy of these pages available for reference during the test.
- You **must not** read numerals, symbols or abbreviations (eg '5 + 10 =' or '10p') unless otherwise stated.

Key stage 1  
2002

**Mathematics booklet**

Name

Score  Level and grade

10 8 4 0

**Practice question**

Only **one** of these is correct.

Draw a tick (✓) on it.

$$8 - 5 = 7$$

$$9 - 9 = 0$$

$$9 + 2 = 12$$

Only **one** of these is correct.

6 Draw a tick (✓) on it.

$$5 + 7 = 10$$

$$8 + 5 = 18$$

$$10 + 10 = 19$$

$$9 + 6 = 15$$

$$12 + 4 = 14$$

6

You may read and rephrase any of the words.

You may read and rephrase any of the words except 'square'.

You may also read 'B5' and 'D2' but do not explain how these relate to the grid.

You may read letters 'A' to 'E' on the grid.

Do not read the numerals '1' to '5'.

The tick (✓) is in square **B5**


7 Draw a cross (x) in square **D2**

5		✓			
4					
3					
2					
1					
	A	B	C	D	E

7



Amy has these coins in her purse.



Amy

8 How much is in Amy's purse?  p

Amy spends **10p**

9 How much does she have left?  p

8

You may read and rephrase any of the words except 'coins' which may be read **but not** rephrased.


You may read and rephrase any of the words except 'How much' which may be read **but not** rephrased.

You may read but **only** rephrase 'Amy'.  
Read '10p' as 'this amount of money'.

Make sure that children attempt question 9. This question was missed by some children in the trials.

You may read and rephrase any of the words in this question.  
Read '12' as 'this number of'.

Here is a set of **12** pencils.

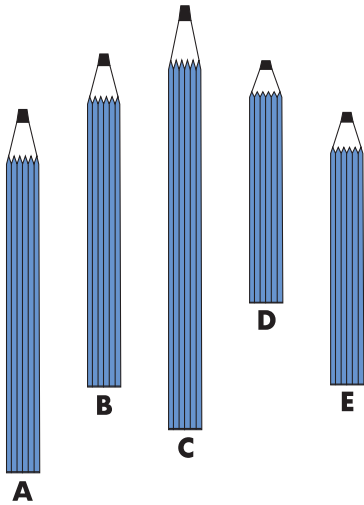


10 How many is half the set?  pencils

9

You may read but **only** rephrase 'set'.

You may read any of the words or letters on this page but **do not** rephrase.



Pencil **C** is the longest pencil.

II Order the rest of the pencils.

You may use a ruler.

longest											shortest
<b>C</b>											<b>D</b>

10

You may read and rephrase any of the words except '*sign(s)*' which may be read but **not** rephrased.

If you are uncertain whether a child has written 'x' or '+' in an answer box, you may ask the child to make clear which one they have chosen.

Look at these signs.



12 Write the missing sign in each box.

$$25 \quad \square \quad 18 = 7$$

$$10 \quad \square \quad 2 = 20$$

$$8 \quad \square \quad 4 = 2$$

11

13 Draw a ring around the **two** letters which are made with **straight lines only**.

E P A C S

14 Draw a ring around each **even** number.

35 28 29

11 16

12

You may read, but **only** rephrase 'Draw a ring around'.

You may read and rephrase any of the words except 'even number' which can be read but **not** rephrased.

You may read but **do not** rephrase any of the words on this page.

You may explain 'arrows' by indicating the one for Tom.  
**Do not** help with the interpretation of the table.

Class 2 counted the letters in their names.  
 They sorted some of them.





3 letters	4 letters	5 letters	6 letters
Sue	Lucy	Rajiv	Nicole
Bob	Paul	Peter	
Max	Lana		

Sean Bethan Tom Lauren

15 Draw arrows to show where these other names belong.  
**Tom** is done for you.

13

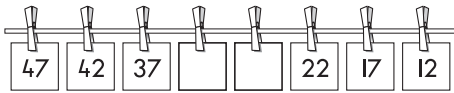
Gemma asked children which fruit they like best.

The fruit we like best	
fruit	number of children
 apples	7
 grapes	4
 bananas	6
 pears	3

16 How many children did Gemma ask altogether?

children

17 Write the missing numbers in this sequence.



You may read any of the words in this question but **only** rephrase 'Gemma'.

For '7', '4', '6' and '3', say 'this number'.

You may read but **do not** rephrase.

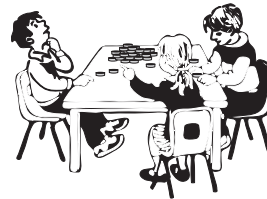
You may indicate the two empty boxes but **do not** help with the interpretation of the sequence.

14

You may read the numbers '3' and '6'.

You may read any of the words in this question but **only** rephrase 'counters'.

3 children need 6 counters each.



18 How many do they need altogether?

counters

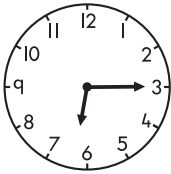
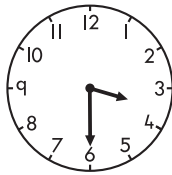
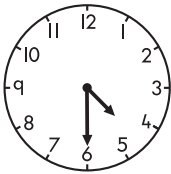
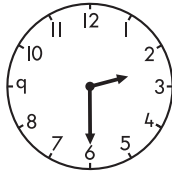
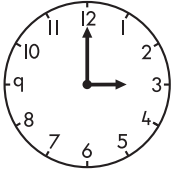
You may read but **do not** rephrase.

19 Write the total.

$$36 + 29 = \square$$

15

20 Draw a tick (✓) on the clock which shows **half past three**.

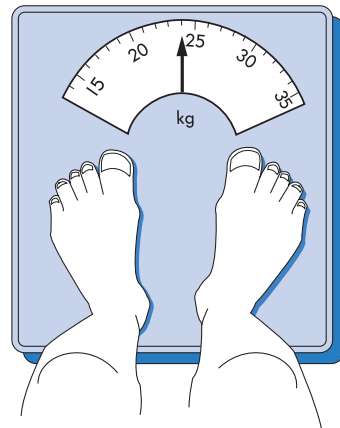


16

You may read any of the words on this page, but **do not** rephrase.

You may read but **only** rephrase 'Peter'.

21 How heavy is Peter?





Peter is  kg



17

Look at this pictogram.

**Number of children in Class 5**

girls	
boys	

<b>Key</b>	
	2 children
	1 child

22 How many **girls** are there in the class?

There are **12** boys in Class 5.

23 Show this on the pictogram.

18

You may read but **do not** rephrase any of the words on this page except 'Key' which may be explained as '*what each of these symbols means*'.

**Do not** help with the interpretation of the key or the pictogram.

For '12', say '*this number of*'.

Make sure that the children attempt question 23. This question was missed by some children in the trials.

You may read any of the words in this question but **do not** rephrase.

You may remind children to use only these numbers.

For '600', say '*this number*'.

You may read but **do not** rephrase any of the words.  
For '50' say '*this number*'.

Look at these digits.

8
---

3
---

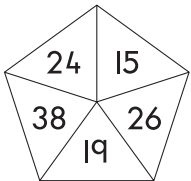
5
---

24 Use all the digits to make the number nearest to **600**

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---

25 Tick (✓) the two numbers which total **50**



19

26 Write the missing number in each box.

19  $\xrightarrow{\text{is 1 less than}}$

19  $\xrightarrow{\text{is 10 less than}}$

---

27 Write the missing number in the box.

+ 57 = 100

20

You may read but **only** rephrase 'box'.

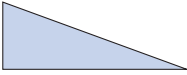
You may read but **do not** rephrase the text on the arrows.  
For '1' and '10', say 'this number'.

You may read but **only** rephrase 'box'.

**Do not** help with the interpretation of the equation.

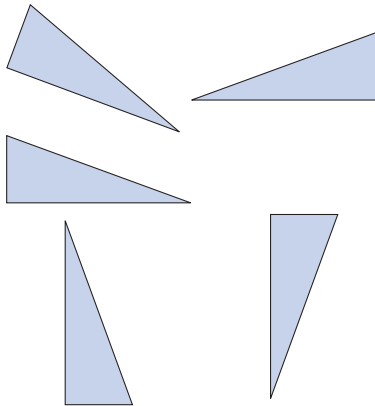
You may read but **do not** rephrase any of the words on this page except 'Tom' which may be rephrased.

Here is a triangle.



Tom turns it **one quarter turn clockwise**.

28 Tick (✓) the triangle which shows how it looks **after** the turn.



21

29 Write the answer.

$$45 \div 5 = \square$$


---

30 Write the missing number in the box.

$$5 \times 4 = 10 \times \square$$

22

You may read but **do not** rephrase.

You may read but **only** rephrase 'box'.

You may read any of the words on this page but **only** rephrase 'Anya' and 'drinks'.

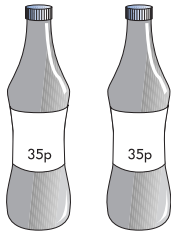
For '£2' and '35p', say 'this amount'.  
You may read the '2' in '2 drinks'.

You may indicate the box.

Remind the children to show their method. They may gain one mark even if their answer is wrong.

Anya has **£2**

She buys **2** drinks costing **35p each**.



31 How much money does she have left?  
Show how you work it out in the box.

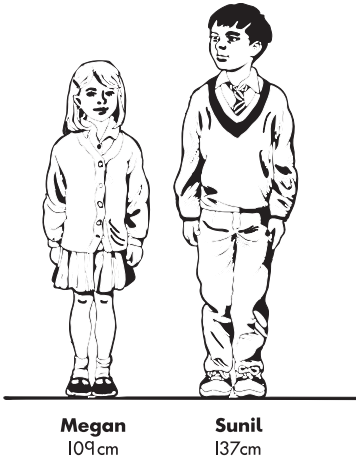
£

23



Megan is **109cm** tall.  
Sunil is **137cm** tall.

32 How much taller is Sunil than Megan?



cm

24

You may read but **do not** rephrase any of the words on this page except 'Megan' and 'Sunil'.

For '109cm' and '137cm', say 'this much'.

You may read but **do not** rephrase.

You may read but **do not** rephrase any of the words in this question except 'drinking straws' and 'box' which may be rephrased.

For '440', say 'this number of'.

You may read the '4' in '4 colours'.

33 Write the answer.

$$63 - 37 = \square$$

There are **440** drinking straws in a box.

There are **4** colours of straws.

There is the same number of each colour.



34 How many of **each** colour are in a box?

straws

25



## Introducing the written questions

Ask the children to close their booklet and to listen carefully while you introduce the written questions.

### Tell the children:

- *I will do one practice question with all of you, and then you will go on by yourselves.*
- *There are many different sorts of question in the test and none will be exactly like the practice question.*
- *Read each question, work out the answer and then write it in the space provided in the booklet.*
- *There is plenty of space in the booklet, which you can use for working out, writing or drawing your answers.*
- *If you are asked to show how you work something out, write or draw how you got your answer since you can get a mark for showing your working.*
- *Always read what you are asked to do. Don't guess.*
- *You can have as much help as you need with reading words in the questions, but no help with reading numbers or working out answers. [You may like to explain that this is because this special booklet will help you to find out how many questions they can do by themselves.] If you need help with reading, put up your hand but don't call out.*
- *You may use only the apparatus that I have provided (see page 8). [If rods of ten interlocking cubes are provided, you may remind children that they are rods of ten.]*
- *If you make a mistake, you should change your answer by crossing or rubbing it out.*
- *Some of the questions are harder than others; if you cannot do one question, go on to the next one which might be easier. Go back to the difficult ones later if you wish. You may not be able to complete all the questions, but you should do as many as you can.*
- *Some of the questions have pictures which may help you to work out the answers.*
- *You can take as long as you need to finish all the questions you can do.*
- *When you have done all you can, check your answers.*
- *Don't discuss the questions with anyone or copy answers.*

## Working through the written questions

- Ask the children to turn to page 6 of their booklet and find the practice question.
- Help the children to work through the practice question. Allow them to try to answer the question before you discuss it.
- The practice question is not part of the test, and you can spend as much time as you like helping the children to understand the format, what they should do and where they should write their answers.
- Ask the children to start working on their own from question 6.
- You can stop the testing whenever you judge it necessary, for example if you feel a child is becoming too unsettled or has done as much as possible.

## Assisting children with the written questions

### *Reading the written questions*

You should give help with reading words as necessary **but not with reading numerals or symbols** in the test booklet. You may need to be aware of more fluent readers who do not ask for the help they need to read unfamiliar words. You may wish to write the following words up on the board, and read them through with the whole group before the written part of the test begins: *signs, straight, altogether, sequence, pictogram, digits, clockwise*. You may also wish to write up any unfamiliar names of children used in the test booklet. You may read them again for any child as necessary during the test. **You should not explain these words in any way except where indicated under *rephrasing in the Teacher's guidance on assistance for the written questions*.**

### *Rephrasing the written questions*

There should be no written adaptations of the text. However, some instruction words in the test may be rephrased or explained if these are not familiar to the children, since these are generally not mathematical terms and therefore not part of what is being tested. The annotated pages in the *Teacher's guidance on assistance for the written questions* set out exactly which words in each question may be rephrased and give further guidance for supporting children where necessary. **It is very important not to exceed the permissible support indicated.**

### *Other assistance*

Apart from the guidance given above and in the *Teacher's guidance on assistance for the written questions*, for reading and rephrasing the test, no other assistance is allowed.

# Marking the test

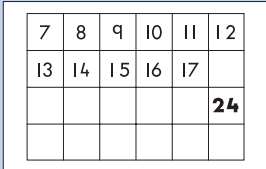
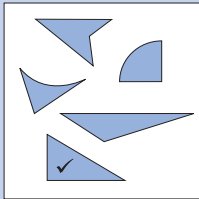
When the children have completed the test, mark each answer right or wrong. The mark scheme helps you to identify appropriate answers and tells you how many marks to allocate to each answer. Mark boxes have been provided in the margin of the test booklet, beside each item. For consistency, it is recommended that you enter 1 (mark awarded) or 0 (mark not awarded) in each mark box. In addition, a box has been provided at the far right-hand side of each double page spread to enter total marks that children obtain for the set of questions that appear on the two pages.

If a child has altered an answer or the answer is not clear, try to establish his or her final intention. You may occasionally need to talk with children individually to check this. Be sure to use open questions that do not suggest the required answer.

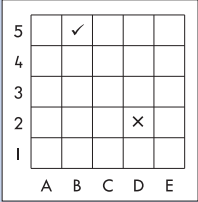
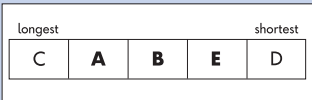
Any numeric answer is acceptable in word or number form unless otherwise stated.

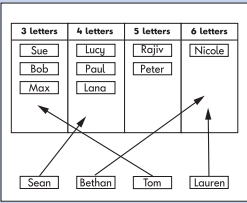
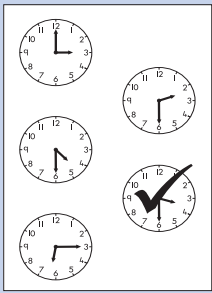
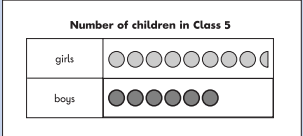
## Mark scheme

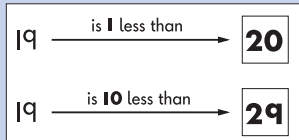
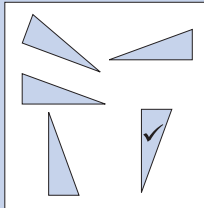
### Oral

Question	Answer	Mark	Additional guidance
Practice	14	None	
1	24 written as shown 	1	
2	20(p)	1	
3	20	1	
4	Bottom triangle ticked as shown: 	1	Accept any other clear way of indicating the correct shape.  Do not award the mark if more than one shape is indicated unless it is clear that the correct one is the child's final choice.
5	15	1	

**Written**

Question	Answer	Mark	Additional guidance
Practice	Tick by $9 - 9 = 0$	None	
6	Tick by $9 + 6 = 15$	1	Accept any other clear way of indicating the correct equation.  Do not award the mark if more than one equation is indicated unless it is clear that the correct one is the child's final choice.
7	Cross drawn in D2 as shown: 	1	Accept any other clear way of indicating the correct square.  Do not award the mark if more than one square is indicated unless it is clear that the correct one is the child's final choice.
8	41 (p)	1	
9	31 (p)  <b>OR</b>  10p less than the amount given for Q8 even if Q8 was not correctly answered.	1	
10	6 (pencils)	1	Accept any other clear way of indicating the correct answer, eg six pencils ringed or a line drawn between the pencils separating them into two sets of six.
11	Writes A, B and E as shown: 	1	Accept also the lengths written in this order instead of the letters: 12cm, 11cm, 9cm or any other clear way of indicating the order.
12	Writes the correct operation signs in all three boxes:  $25 - 18 = 7$ $10 \times 2 = 20$ $8 \div 4 = 2$  <b>OR</b>  Writes the correct operation signs in two boxes.	2  <b>OR</b>  1	Write 1 and 1 in the mark boxes.          Write 0 then 1 in the mark boxes.

Question	Answer	Mark	Additional guidance
13	Rings around E and A.	1	Accept any other clear way of indicating the correct letters.  Do not award the mark if extra letters are ringed unless it is clear that the correct two are the child's final choice.
14	Rings around 28 and 16.	1	Accept any other clear way of indicating the correct numbers.  If extra numbers are ringed, do not award the mark unless it is clear that the correct two are the child's final choice.
15	Matches Sean, Bethan and Lauren as shown:  	1	The arrowheads do not need to be drawn.  If extra lines are drawn, do not award the mark unless it is clear that the correct three lines are the child's final choice.  Accept any other clear way of indicating the correct set for each name, eg writing the name in each set.
16	20 (children)	1	
17	Write 32 and 27 in this order in the boxes.	1	
18	18 (counters)	1	
19	65	1	
20	Bottom right clock ticked as shown:  	1	Accept any other clear way of indicating the correct clock.  Do not award the mark if extra clocks are ticked unless the child indicates the correct one as his/her final choice.
21	24 (kg)	1	
22	17 (girls)	1	
23	Draws 6 full circles as shown:  	1	Accept the correct answer drawn under Q23 or elsewhere.  Do not accept combinations of whole and half circles.
24	583	1	Accept also 500, 80 and 3 written in the digit boxes.

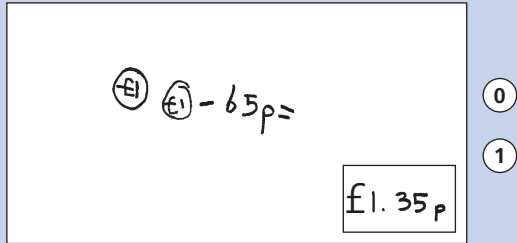
Question	Answer	Mark	Additional guidance
25	Ticks drawn on 24 and 26	1	Accept any other clear way of indicating the correct numbers.  Do not award the mark if extra numbers are ticked unless it is clear that the correct two are the child's final choice.
26	Writes 20 and 29 as shown: 	1	
27	43	1	
28	Bottom right triangle ticked as shown: 	1	Accept any other clear way of indicating the correct triangle.  Do not award the mark if extra triangles are ticked unless it is clear that the correct one is the child's final choice.
29	9	1	
30	2	1	
31	£1.30  <b>OR</b> This mark may be awarded for children who: a) have the <b>wrong answer</b> but a <b>correct method</b> that is communicated clearly:  <b>or</b> b) have written 130 in the answer box as evidence of appropriate working.	2  <b>OR</b> 1	Award both marks for the correct answer (even if working is unclear or not shown). Write 1 and 1 in the mark boxes.  Accept also £1-30 or £1.30p or £1:30 or £1 30 (with a clear space between the 1 and 3) or any of these in words.  If mark awarded, enter 0 then 1 in the mark boxes. This mark should not be awarded to children who have an incorrect answer unless the method they communicate is acceptable. (This might be using numerals, signs, words or diagrams, or any mixture of these.)  Accept £1.3, £13 or £130 or £130p for 1 mark but not 2 marks.  Examples of some acceptable and unacceptable responses are shown on pages 19 and 20.
32	28 (cm)	1	
33	26	1	
34	110 (straws)	1	



## Examples of responses from question 31

### Examples of acceptable methods (1 mark may be awarded)

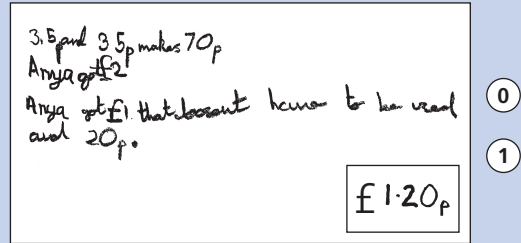
Although he had added mentally two lots of 35p incorrectly, Davindar has shown that he knows he needs to subtract this amount from £2. He has used a **correct and appropriate method**.



Handwritten work by Davindar:  $£1 - 65p =$  (circled £1) (circled £1)  $- 65p =$ . The answer box contains  $£1.35p$ .

Davindar

Georgia's **method is clear and appropriate** because her working shows evidence of calculating the cost of the two bottles of cola and explaining what money will be left after the purchase even though she has mentally calculated the difference between 70p and £1 as 20p.



Handwritten work by Georgia: 3.5p and 3.5p makes 70p, Anya got £2, Anya got £1 that doesn't have to be used and 20p. The answer box contains  $£1.20p$ .

Georgia

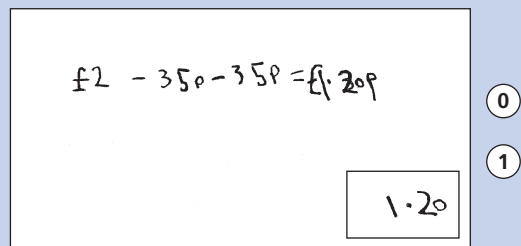
Although Janine has not shown her working out, it is reasonable to assume that she calculated mentally the difference between £2 as 200p minus 70p giving an answer of 130p. She has failed to convert this correctly to £1.30 but still gets one mark for writing 130 in the answer box since it is assumed that her **method of calculation was appropriate**.



Handwritten work by Janine: The answer box contains  $£130$ .

Janine

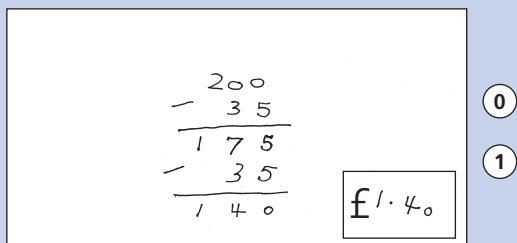
Alexander's working clearly shows that he knew to subtract two lots of 35p from £2 even though his answer is 10p less than it should be. However, his method is **clearly correct and appropriate**.



Handwritten work by Alexander:  $£2 - 35p - 35p = £1.20p$ . The answer box contains  $1.20$ .

Alexander

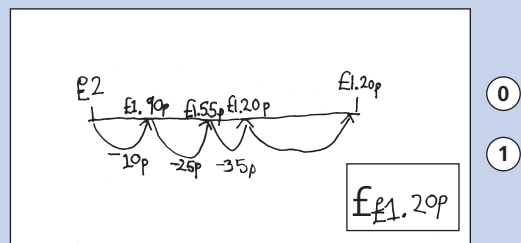
Michael has **clearly identified an appropriate sequence of operations** which could lead to the correct answer. He has made an error in the first calculation, leading to his answer being 10p more than it should be. Nevertheless, he has **communicated clearly** that he knows to subtract two lots of 35p from £2.



Handwritten work by Michael: 
$$\begin{array}{r} 200 \\ - 35 \\ \hline 175 \\ - 35 \\ \hline 140 \end{array}$$
 The answer box contains  $£1.40$ .

Michael

Ishmael has created a number line which clearly shows the stages he went through to find his answer. He got an incorrect total of £1.20 when he subtracted 25p from £1.90 to give an answer of £1.55. However, he has communicated a **reliable, correct method**.



Ishmael

**Examples of unacceptable methods** (1 mark may not be awarded)

Mark's brief explanation gives no indication of understanding the problem since it is **not clear** what the relationship between counting on in 10s and solving the problem is. Not only would this strategy on its own not lead to a correct answer, but there is no indication that he recognises the need to find the difference between two lots of 35p and £2.

count on in 10's

£1.00

0

0

Mark

Jennifer's working shows no evidence of recognising that she has to subtract two lots of 35p from £2. Her method is **neither appropriate nor correct** since her attempt at calculating shows that she does not understand the problem.

HTU  
1 00p  
- 35p  
-----  
1 35

£135.

0

0

Jennifer

To get an answer of £1.20 instead of £1.30, Nisha can be assumed to have used an appropriate mental method. However, since **the answer is incorrect and she has not shown any working**, she cannot unfortunately be awarded either mark, as there must be evidence of subtraction.

£1.20

0

0

Nisha

Kevin made a good start by calculating the cost of the two drinks. The text he then wrote in his explanation implies that he knows what to do, but he has not explained in enough detail the method he used to get an answer of £1.50. There is **not enough information** for Kevin to be awarded the method mark.

$35 + 35 = 70$  and then you count how much money she has left

£1.50p

0

0

Kevin

Andrew's working shows no evidence of recognising that he has to subtract two lots of 35p from £2. His method is **inappropriate and incorrect** since his attempt at calculating shows that he does not understand the problem.

$35 - 2 = 37$

£37

0

0

Andrew

Chrissie has explained carefully how to calculate how much money would be left if one drink costing 35p was bought. However, this is **not sufficient for the working mark**, as there must be evidence of subtracting the cost of two drinks from £2.

$2\text{f} - 35\text{p} = 65 + 1\text{f} = 1\text{f}65\text{p}$

£165p

0

0

Chrissie

# Finding the level

Add up each child's total score out of the maximum of 36 marks (not including the practice questions), and write this total in the box marked 'Score' on the front of the child's test booklet. Then refer to the table below to find the level (and grade if level 2), and enter this on the front of the booklet in the box marked 'Level and grade'. This information will then be available to transfer on to any recording or reporting document.

**Evidence shows that it is easy to make careless slips in adding up total scores, and these slips could disadvantage the child; thorough checking and rechecking are, therefore, strongly recommended.**

The key stage 1 mathematics test covers only a limited range of material pitched at level 3. **It can indicate only where a child has performed well enough to be awarded level 3 at the threshold.** It does not indicate how much further into level 3 or beyond a child might be able to go. However, if a child scores very highly on this test (at or near 100 per cent) you should consider whether assessment at level 4, using the key stage 2 mathematics tests, is appropriate.

<i>Number of marks</i>	<i>0-4</i>	<i>5-7</i>	<i>8-13</i>	<i>14-18</i>	<i>19-24</i>	<i>25-36</i>
<b>Level</b>	No level awarded	Level 1 awarded	Level 2C awarded	Level 2B awarded	Level 2A awarded	Threshold level 3 awarded

# Age standardised scores

This section provides age standardised scores from the 2002 key stage 1 mathematics test. The scores are for **optional** use, and you need only refer to this section if you wish. The purpose of the information set out here is to allow you to convert the child's actual score in the tests – the 'raw score' – to an age standardised score. Age standardised scores take into account the child's age in years and months, so you have an indication of how each child is performing relative to other children of the same age. However, age standardised scores will not affect the child's level of achievement in the national curriculum as awarded by the outcome of the tests.

The tables were calculated from the results of standardisation trials of each test with over 2,000 children in a nationally representative sample of schools. The information in the tables is specific to each test and cannot be used for any others.

## **Working out age standardised scores**

You will need each child's test score and age at the time of testing, in years and *completed* months. For example, a child born on 30 March 1995 and tested on 15 May 2002 would be 7 years and 1 month old.

Using the table on page 24, you can convert the raw test score into an age standardised score by:

- locating the child's age in years and completed months at the time the test was taken, along the top of the table;
- locating the child's raw test score down the left side of the table;
- reading off the standardised score from where the row and column meet.

The average standardised score is 100. A higher score is above average and a lower score is below average. About two-thirds of the children will have standardised scores of between 85 and 115. Almost all children fall within the range 70 to 130, so scores outside this range can be regarded as exceptional.

## **Making use of age standardised scores**

If you choose to find the standardised scores, you may use this additional information about the children's performance in any way you wish. For example:

- You may decide to inform parents about how a child's performance in the test relates to his or her age at the time the test was taken, eg *a standardised score of 112 shows us that the child's performance was above average for his or her age.*
- You could use the information in planning teaching, for example to identify children whose achievement, although within the expected range, may have been surprising in relation to their age at the time of taking the test, eg *these scores were very good for these children once their age was taken into*

*account – perhaps I could be stretching that group with more challenging work.*

- You may be able to identify patterns in results, which indicate teaching and learning issues to be addressed, eg *the performance of girls in our middle age group is consistently better than the boys in that group, but this pattern is not repeated in the other two age groups. Why might that be? Is there something we need to think about here?*
- Standardised scores may be averaged across a group, for example the whole class or school. In the ‘average’ class or school, the average score should be close to 100; if it is much above or below this, the performance of your class or school varies from the national average.
- Similarly, standardised scores could be used to consider differences in performance between boys and girls, or between children who are learning English as an additional language and those who are not, in your school. (This will give you useful information only if the group is reasonably large; the average of just a few children is not a reliable indicator.)

### **National comparisons – using the shaded bands**

The tables of standardised scores are divided into five shaded bands. These bands give an indication of how the scores relate to the national population. The band nearest the top of a table contains the scores that correspond to the lowest fifth of the population; the next band, the next fifth; and so on. If a child has a score in the final band, you know that his or her score is in the top 20 per cent nationally, once age has been taken into account.

\*\*\*

Very low standardised scores are printed in the table as \*\*\*. This means that they would be below the lowest score in the table, but cannot be calculated with the necessary degree of statistical reliability. If an exact score is needed, for example to calculate an average for the class, the next score below (69) should be used as appropriate for these children.

### **Confidence bands**

Any scores derived from a short test are subject to some margin of error. A margin of error does not mean children have been assessed incorrectly. It is simply a statistical estimate, based on the fact that tests can only sample the particular area of learning which they assess. To indicate how wide this margin of error is likely to be, a ‘90 per cent confidence band’ has been calculated. This means that you can be 90 per cent sure that the child’s true score lies within the confidence band. The 90 per cent confidence band for the mathematics test is 8 marks. So, for example, if a child has a standardised score of 110 in the test, you can be 90 per cent certain that the true score is between 102 and 118.

## Mathematics test

Raw score	Age in years and months																			
	6.05	6.06	6.07	6.08	6.09	6.10	6.11	7.00	7.01	7.02	7.03	7.04	7.05	7.06	7.07	7.08	7.09	7.10	7.11	
0	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
3	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
4	74	73	72	71	71	70	***	***	***	***	***	***	***	***	***	***	***	***	***	***
5	78	77	76	75	74	74	73	72	71	71	70	***	***	***	***	***	***	***	***	***
6	81	80	79	79	78	77	76	75	75	74	73	72	71	71	70	***	***	***	***	***
7	84	83	82	82	81	80	79	78	77	77	76	75	74	74	73	72	71	71	70	70
8	87	86	85	84	83	83	82	81	80	79	79	78	77	76	75	75	74	73	72	72
9	89	88	87	87	86	85	84	83	83	82	81	80	79	79	78	77	76	75	75	75
10	91	90	90	89	88	87	87	86	85	84	83	83	82	81	80	79	78	78	77	77
11	93	92	92	91	90	89	89	88	87	86	85	85	84	83	82	81	81	80	80	79
12	95	94	93	93	92	91	90	90	89	88	87	87	86	85	84	83	83	82	81	81
13	96	96	95	94	94	93	92	92	91	90	89	89	88	87	86	85	85	84	83	83
14	98	97	97	96	95	95	94	93	92	92	91	90	90	89	88	87	86	86	85	85
15	100	99	98	98	97	96	95	95	94	93	93	92	91	90	90	89	88	87	87	87
16	101	100	100	99	98	98	97	96	96	95	94	94	93	92	91	91	90	89	89	88
17	102	102	101	100	100	99	98	98	97	96	96	95	94	94	93	92	92	91	91	90
18	104	103	103	102	101	101	100	99	99	98	97	97	96	95	95	94	93	92	92	92
19	105	105	104	103	103	102	101	101	100	99	99	98	97	97	96	95	95	94	93	93
20	107	106	106	105	104	104	103	102	102	101	100	100	99	98	98	97	96	96	95	95
21	108	108	107	106	106	105	104	104	103	102	102	101	100	100	99	98	98	97	96	96
22	110	109	109	108	107	107	106	105	105	104	103	103	102	101	101	100	99	99	98	98
23	112	111	110	110	109	108	107	107	106	105	105	104	103	103	102	101	101	100	99	99
24	113	113	112	111	111	110	109	108	108	107	106	106	105	104	104	103	102	102	101	101
25	115	114	114	113	112	112	111	110	109	109	108	107	107	106	105	105	104	103	103	103
26	117	116	115	115	114	113	113	112	111	111	110	109	109	108	107	106	106	105	104	104
27	119	118	117	117	116	115	115	114	113	113	112	111	110	110	109	108	108	107	106	106
28	121	120	119	119	118	117	117	116	115	115	114	113	113	112	111	111	110	109	108	108
29	122	122	121	121	120	119	119	118	118	117	116	116	115	114	114	113	112	111	111	111
30	124	124	123	123	122	122	121	121	120	119	119	118	117	117	116	115	115	114	113	113
31	127	126	126	125	125	124	124	123	122	122	121	121	120	119	119	118	118	117	116	116
32	129	128	128	127	127	127	126	126	125	125	124	124	123	122	122	121	121	120	119	119
33	131	131	130	130	130	129	129	128	128	128	127	127	126	126	125	125	124	124	123	123
34	133	133	133	133	132	132	132	131	131	131	130	130	130	129	129	129	128	128	127	127
35	136	135	135	135	135	135	135	135	134	134	134	134	134	133	133	133	133	133	132	132
36	137	137	137	137	136	136	136	136	136	136	136	136	136	136	136	135	135	135	135	135

Very low scores are printed in the table as \*\*\*.

This means that they would be below 70.

EARLY YEARS

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