Well prepared!

Making exam papers work for learners with sight problems

RNIB supporting blind and partially sighted people

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Further copies (order code ED516) can be purchased from rnib.org.uk/shop or by calling RNIB on 0303 123 9999.

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Contents

Introduction

Welcome to RNIB's illustrated guide to how assessment and examination materials are modified. In this second edition of **Well prepared!** you will find:

- information and advice about the range of access arrangements for learners with a visual impairment taking examinations
- an overview of the principles for modifying test and exam papers for large print users
- examples of how these principles have been used to modify real exam questions, enabling you to compare the modified large print questions with the original questions
- common modification issues for individual subject areas.

To keep this guide accessible to the widest audience we have only included print examples of modified questions, where changes from the original are easily identified. The same principles apply to the modification of papers for production in braille, which will form the focus of a future publication.

We have deliberately kept the technical information simple, so that the main points stand out clearly. You can find out more detail about the modification and production of large print and braille papers in "Best practice guidance for the modification and production of examination papers for candidates with a visual impairment". Details are given on page 121.

The first edition of Well prepared! proved very popular and we hope this updated edition will help teachers and support staff to prepare pupils more effectively for public tests and examinations. It will enable you to introduce appropriate modifications so that the learners you support can become familiar with the different approaches. This book also demonstrates clearly and simply how changes to the presentation of curriculum materials can make them more meaningful and accessible to learners with visual impairment.

We hope that this guide will help to increase the knowledge and understanding of teachers and support staff about the access arrangements currently provided for learners who have sight problems. At RNIB, we do not necessarily support all aspects of this provision and are working with the awarding bodies and other agencies to improve it where possible.

Rory Cobb and Vernon Webb
September 2010

Access arrangements for examinations

Introduction

Children and young people take tests and examinations in many contexts. The access arrangements for candidates with visual impairments vary and individual arrangements may also change with developments in the examination system or the law. The information provided here gives an overview of the approaches most commonly used for public examinations in the UK. Candidates who have been introduced to the sorts of modifications used in examinations and who have learned to use them in class and for homework, are likely to become more familiar with the conventions used and feel more confident when they approach real examinations.

If you are entering a young person for an examination it is vital to check the relevant websites to find details of access arrangements for particular tests or qualifications. In many cases access arrangements can be requested online. It is essential that you are aware of the deadlines for requesting papers in alternative formats. Please note that some access arrangements for vocational qualifications may be different from those outlined here.

Access arrangements are intended for candidates who have the required knowledge, understanding and skills, but who are unable to demonstrate these in an assessment in its usual form due to a difficulty or disability. The purpose of an access arrangement is to remove disadvantage without giving a disabled candidate any advantage over other candidates.

This book introduces you to a number of arrangements which might benefit a candidate with a visual impairment, such as adult support, modified papers, extra time, early opening and using technology. In every case it is important to look carefully at the difficulties that an individual candidate faces so that you can tailor the request for access arrangements to their specific needs. The guiding principle is that a candidate should be able to use their normal working methods in tests and examinations wherever possible. However, it is also important that access arrangements do not interfere with the knowledge, understanding or skills which are being assessed. If in doubt, consult the awarding body concerned about what is and what is not permitted. Often the adjustments or access arrangements are agreed easily, but where a solution can't be reached with the awarding body, Ofqual, the independent regulator of qualifications and exams, can step in to help achieve an appropriate arrangement.

Modified papers in alternative formats

A range of modified papers are needed to meet the needs of candidates who have a visual impairment. At the time of writing in 2010 the following range of modified papers to meet the needs of candidates who have a visual impairment is available in the UK for General Qualifications (see Further information on page 121):

1. **A4 modified enlarged (18 point bold).** Here the layout and presentation of the standard paper is simplified to remove elements of visual complexity, without changing the level of difficulty of the content. Pictures and diagrams may be removed or redrawn to make them more visually accessible.
2. **A3 modified enlarged (24 point bold).** The presentation here is the same as the A4 modified enlarged paper but the paper is then enlarged to A3 size to provide a larger print size.

   The standard font used in modified enlarged papers is Arial.
3. **Braille.** Here the layout and presentation of the standard paper is simplified and the content is transcribed into contracted braille, with tactile diagrams and/or models where appropriate.

Modification of examination papers for General Qualifications is carried out according to a document called "Best practice guidance for the modification and production of examination papers for candidates with a visual impairment", which is available on RNIB's website at rnib.org.uk/curriculum

Schools and colleges can also apply for permission to open papers one hour early in order to produce enlarged copies of standard papers for candidates who do not require modified presentation. Enlarging an ordinary paper to A3 size usually results in a print size of around 14 point, depending on the size of the original print.

For National Curriculum tests in England the range of papers is as follows:

- **B4 enlarged version of the standard test (14 point).** B4 is a paper size half way between A4 and A3. The content and presentation of questions is unchanged from the original.
- **B4 modified enlarged (18 point bold).** These papers are modified along the same lines as the A4 modified enlarged papers for General Qualifications.
- **Braille.** These papers are modified and produced in the same way as braille papers for General Qualifications.

Schools may open National Curriculum papers early with permission to customise their presentation to meet a child's individual needs.

RNIB is working to extend the range of alternative formats available to learners with a visual impairment and we hope the list above will change in future.

Choosing the best format

Choosing the appropriate format for an individual candidate is obviously very important and one good way of deciding which suits the candidate best is to provide past papers to practise with. It is not always possible to obtain past papers in every format for a particular examination but where this is the case awarding bodies should be able to advise you how to find past papers set out in a similar style.

Early opening to make further changes

For reasons of resourcing and cost it may not be possible to obtain papers in the candidate's exact preferred format. In such cases further modification may be required within the school or college and you usually need permission to carry this out. Rules vary about opening papers early to make such changes, depending on the nature of the examination. Any changes made to the presentation of a paper at a local level should not affect the content of the questions unless these have been approved by the awarding body.

Examinations on coloured paper

For candidates who have difficulty with the contrast between print and background it may be appropriate to gain permission to open the paper early and make a high quality photocopy of it onto their preferred colour of paper.

Using adult support

Reader

Candidates who are unable to read independently or quickly enough in an exam may need the help of a reader. For a candidate with a visual impairment it should not be necessary to provide evidence of their reading speed and comprehension when applying for this arrangement.

As well as reading the text of questions, a reader may help a candidate with a visual impairment to identify diagrams, graphs and tables, but must not explain or clarify the questions or text, or advise on timing or the choice or order of questions. In general, readers are not allowed in sections of papers which are testing reading, as candidates cannot be granted marks for a skill that they are unable to demonstrate.

Scribe

A candidate with a visual impairment, who is unable to write, type or braille independently or at sufficient speed, may benefit from dictating their answers to a scribe who will write word for word as the candidate dictates. A scribe must strictly follow the candidate's instructions to draw or add to maps, diagrams and graphs. Some awarding bodies may limit the use of a scribe in English or modern foreign language papers where spelling or punctuation are being assessed.

Practical assistant for written exams

A practical assistant may be needed for written exams, for example to guide the candidate to the correct passage of text on a page, or to place a ruler in the correct place for a line to be drawn. Blind candidates may require a practical assistant to record the position of points or lines indicated on a tactile graph by means of pins and elastic bands.

Practical assistant for practical exams

A practical assistant is unlikely to be permitted in assessments that are testing practical skills. However, if the practical assistant will be carrying out only minor tasks, it may be appropriate to ask for this arrangement. For example, there may be safety issues related to a candidate with a visual impairment carrying out specific tasks in the practical assessments for a science exam. In such situations a candidate would be credited with all the marks except those given for skills which have been performed by the practical assistant.

Colour naming

In some exams, for example geography and science, the recognition of colours may be central to the focus of the assessment. Where candidates have difficulty distinguishing between different colours a fully sighted person should be allowed to name colours for them.

Using technology

Computer reader

A candidate who uses a computer screen reader as their normal way of working should be able to use the computer to read text in an exam. The same arrangements apply to this access arrangement as for using a reader. It is not currently common practice for papers to be supplied in electronic format for this purpose. You may therefore need to ask permission to open the paper early in order to scan it and set up the computer screen reader.

Voice-activated software

A candidate who uses voice-activated software as their normal way of working should be able to use it to dictate their answers in an exam. The same arrangements apply to this access arrangement as for using a scribe.

Specialist access equipment

Equipment used by the candidate in their normal day to day studies should be allowed in examinations wherever possible. This includes desktop and laptop computers, braille writers, electronic video magnifiers, optical magnifiers or coloured overlays. Depending on the skills being assessed it may be necessary to turn off some specialist functions on ICT devices, such as spellcheckers or calculators and ensure that the candidate has not got access to any files during the exam which would assist them with answering the questions.

Extra time

For a variety of reasons, many candidates with a visual impairment need extra time to complete an exam. For example, it could take candidates longer to read the text or they may need more time to find their way round a modified paper in large print or braille. The amount of extra time requested should be based on evidence of the candidate's normal working speed using the access arrangements and the type of material in the examination concerned. Extra time typically varies from around 25 to 100 per cent of the time allowed for the standard paper. Where completing a task in a set time is one of the skills being assessed, extra time may not be allowed.

Supervised rest breaks

Some candidates may find the amount of reading, writing and processing involved in a timed examination very tiring. In some cases it may be appropriate to seek permission for supervised rest breaks. Any time taken for a rest break should be added to the end of the exam, so that candidates are not disadvantaged.

Exemptions for General Qualifications

Under the Disability Discrimination Act 2005*, a candidate with a disability taking General Qualifications may be exempted from a whole component of a qualification as a very last resort if:

- there is no access arrangement available which can provide access to the assessment
- the candidate is unable to fulfil all the requirements of that component.

Where an exemption is granted, the marks gained in sections of the assessment which have been taken, will be increased proportionally to make up for lost marks. However, candidates should be aware that an "indication" may be placed on their certificate stating that not all the assessment criteria for that award have been met. On principle, at RNIB we do not approve of exemptions because we believe it is the responsibility of awarding bodies to design qualifications to be as inclusive as possible. However, we recognise that this will take time to achieve in all qualifications and that exemptions may very occasionally be needed as an interim measure.

*The Equality Act, which became an Act of Parliament on 8 April 2010, will replace the Disability Discrimination Act (DDA 1995) in October 2010. Some aspects of the provision mentioned in this section may change as a result.

Standardised tests

A wide range of tests (such as Cognitive Ability Tests or CAT) is used in schools to establish the inherent ability of children, independent of their knowledge and understanding of particular subjects. These tests are sometimes used for school selection purposes too. They are scored according to the number of correct answers achieved within a fixed time period and are standardised on children with normal vision. Questions in these tests, especially those testing non-verbal reasoning, rely heavily on accurate visual identification, for example detecting a pattern in a series of drawn shapes.

The agencies that produce these tests in the UK can often provide versions in alternative formats on request and these may be suitable for children with mild or moderate visual difficulties. However, at RNIB we advise caution in using modified versions of these tests for children with serious visual impairment, because there are serious questions about whether they can be modified in a way which compensates appropriately for the visual skills required to access and answer the questions. Where a child has a significant visual impairment we suggest that alternative evidence of their ability should be sought, based on their classroom performance. It may also be appropriate to seek the input of a qualified educational psychologist to assess the child's ability.

Time and preparation

Removing any disadvantage in examinations that arises from visual impairment while maintaining the original purpose and integrity of the assessment is not always straightforward. Deciding on and getting permission for most of the access arrangements described above should not be difficult, but for some examinations and some candidates extensive discussion may be needed to agree the correct way forward. The best advice is to ask questions sooner rather than later – if possible, right at the start of the course. This gives you the maximum amount of time to identify and resolve any areas of difficulty with the awarding body concerned. It also ensures that you can prepare the candidate appropriately so that they are familiar and confident with their access arrangements well before the examination itself.

Key principles of modification

This section is taken from Section A of the RNIB/JCQ document "Best practice guidance for the modification and production of examination papers for candidates with a visual impairment". We have printed it here to help readers to understand the context in which modification of questions takes place.

Examination paper modifiers should be experienced subject specialists who work with students with a visual impairment. The purpose of modifying an examination paper is to make the paper accessible to a candidate with a visual impairment. It is the role of the modifier to recommend to the Awarding Body what action is needed to achieve this end. Questions should only be altered by the modifier when it is necessary to do so in order to provide this access. If a modifier needs to alter a question, the following principles should be applied:

1. The amended question must assess the same skills, knowledge and concepts as the original question in the print paper and enable the candidate to meet the same assessment objectives in National Curriculum subjects.
2. The question should be of an equivalent level of difficulty as the original.
3. Any alteration should preserve the balance of the original examination paper in terms of both the content and the weighting of questions.
4. A modified question should not require candidates to spend a disproportionately large amount of time to gain relatively few marks.
5. Where modification of an existing question is not possible, the modifier may propose a replacement question which attempts to meet the same assessment criteria for approval by the Awarding Body. In the event that a replacement question is deemed unacceptable by the Awarding Body, the modifier and Awarding Body should consult to determine what action will be taken, with due consideration to ensure the minimum of disruption or confusion for the candidate.

Awarding bodies should provide modifiers with as much information as possible to assist them in making informed judgements on the issues listed above, including details of the assessment criteria to be tested in individual questions.

The modifier should recommend to the Awarding Body the additional time allowance which would be appropriate for the majority of candidates. This will not preclude different arrangements being requested by centres for individual candidates.

The modification of a paper may lead to the need to amend the overall instructions of the paper or the instructions for individual questions.

continued...

Modifiers preparing both large print and braille papers should not introduce differences between these unnecessarily.

Consistency from year to year is of importance, particularly because candidates may make use of past papers for practice. Where possible, modifiers should therefore refer to past papers as a basis for making their modifications.

Modifying curriculum materials and exam questions

These are the main approaches that you might take to modify the content and presentation of visual material.

A Picture or diagram simplified or shown differently

The purpose of this approach is to reduce visual complexity so that pupils with visual impairments can demonstrate their knowledge and understanding of the subject content without having to struggle to access the information. This is by far the most common type of modification. The following five paragraphs describe the most commonly occurring approaches:

Removal of unnecessary detail
Some pictures or diagrams include details for the sake of realism which are not needed to answer the question. Example A1 shows a tube of glue but the question only requires the candidate to identify the hazard signs on it.

3D diagram converted to 2D diagram(s)
It is quite common for pupils with visual impairments to find it difficult to make sense of 3-dimensional drawings or pictures. They are generally avoided in modified papers. One alternative is to show the necessary information in one or more 2-dimensional diagrams, as has been done in Example A2. If the 3D aspect of the diagram needs to be retained, this would be better achieved by the use of a real item or model as in Example D1.

Line graph
Line graphs are very common in many subjects, so pupils should have had plenty of practice before meeting one in an exam. Example A3 illustrates some of the aspects that must be considered to make a line graph accessible.

Bar chart
Bar charts are also very common. The original in Example A4 may look fairly clear, but the aspects pointed out in the notes would make it very difficult for a visually impaired pupil without modification.

Music stave notation
Music is a very specialised form of diagram, packed with information for the reader. Every dot and line has some musical significance, so must be made readable by a large print user. Modified Stave Notation (MSN) as used in Example A5 is a well-developed discipline that ensures legibility.

B Picture or diagram supplemented by written explanation

Some tasks may require additional written explanation to ensure that a pupil with a visual impairment grasps what is happening in a picture or diagram, even if this has also been simplified, or enlarged as in Examples B1 and B2. You need to be careful to ensure that the combination of extra wording with a simplified diagram does not give an unfair advantage to the candidate.

C Picture or diagram replaced with written description or information

In some questions a picture or diagram may be replaced completely by a written description, or written information as in Examples C1 and C2. It is important to make the description as neutral as possible, so that it tells the pupil as much as the original picture does but no more. To achieve this, it is important to understand the assessment objective of the question.

D Picture or diagram replaced with a real item or model, and cut-outs

Some tasks involve pictures or diagrams that can better be presented as real 3D objects or models, as in Example D1. This is especially true in maths questions that require pupils, for example, to show spatial understanding or to calculate volumes.

If a pupil is asked to visualise or imagine the manipulation of a shape on a grid then it might be more appropriate for a candidate with a visual impairment to manipulate physical cut-outs of the shapes involved (see Example D2).

E Picture or diagram removed because unnecessary

Many tasks include pictures simply to illustrate the text without adding any new information (Examples E1 and E2). In such cases, you may simply decide to remove these illustrations. The wording of the text can often remain completely unaltered.

F Amount of information reduced

Some tasks require candidates to scan tables, graphs or text in order to obtain information. This can present pupils with visual impairments with a challenge because one of their main difficulties lies in locating specific information quickly and accurately. Tasks of this kind may therefore be modified to reduce the amount of information so that they remain equivalent in time and effort to the original. This approach has been used with a scatter diagram in Example F1 and a table of data in Example C2.

G Scale diagram altered and/or tolerance in mark scheme increased

It is unfair to expect a pupil with a visual impairment to measure with the same degree of accuracy as sighted pupils except where the ability to measure to a defined level of accuracy is the skill being assessed. Tasks which involve accurate measurement may therefore need to be modified so that a pupil with a visual impairment can work independently to their own equivalent level of accuracy. It may be necessary to alter the scale, or to express it differently as in Example G1.

In Example G2 the question hasn't been altered, but the tolerance for an acceptable answer has been increased in the mark scheme. Part (c) in Example A3, where a value has to be read from a graph, would probably be treated similarly.

H Inherently visual material or question replaced with non-visual equivalent

Some tasks rely on visual information in such a way that the original material may need to be replaced completely. An example might be the use of a photograph or picture such as that in Example H1 which the pupil is supposed to analyse. The use of a simple written description runs the risk of giving away the answer. Any replacement material should test the same skills and meet the same overall learning objective.

I Drawing task replaced

Drawing is not necessarily an efficient way for a pupil with a visual impairment to convey information to demonstrate their understanding except where drawing is the skill being assessed. In Example I1 a drawing task has been replaced with a recognition task.

J Question unaltered but allowable answers modified

A question in a standard exam paper might not take account of the methods used by severely visually impaired people to do things, or make assumptions about the visual accessibility of systems that sighted people use in daily life. The two cases in Example J1 show how it might be appropriate to give marks for non-standard answers, so long as they are justified by adequate explanation or evidence.

Principles and judgement

In all of these examples modifiers have exercised their professional judgement in order to ensure that the key principles of modification listed at the start of this section are upheld. There is no single correct way of doing this and not all teachers will agree with the modifications adopted in every paper. The important thing is to understand the range of modifications that may be used and to ensure that candidates are familiar with them. Remember that visually impaired candidates will not be required to compare their modified

questions against the standard version. As long as the modified version tests the same skills, knowledge and understanding at the same level of difficulty, it has served its purpose.

The modifier's skill lies in understanding the purpose of the question, identifying what information has to be retained and deciding how to convey this in the modified version. In some instances this may appear simple and obvious. In many cases, however, effective modification requires a knowledge and understanding of the educational implications of visual impairment and a strong grasp of the subject itself. This is why all modifications of externally set exam papers should be undertaken in conjunction with subject specialists working in the field of visual impairment.

Subject specific guidance

Introduction

This section identifies common modification approaches for the most commonly taught school subjects. The types of visual material used, or the visual understanding required by a question, and the modifications needed are not completely different for each subject in the curriculum. Most subjects fall into groups with similar types of content. For instance Child Development and Physical Education have a lot of overlap with Biology (Science). Some of the suggestions for these more common subjects also apply to more than one subject. Other subjects not mentioned here will usually be covered by one of the groups below, or may have similarities to more than one group.

Most principles of modification are relevant to both large print and braille. A fundamental starting point in every case is to be clear what the question is assessing so that you can make sure that the modified version serves the same purpose.

For further information see the RNIB/JCQ document "Best practice guidance for the modification and production of examination papers for candidates with a visual impairment" which is available on the examinations page within the mainstream education section of RNIB's website at rnib.org.uk/curriculum. You may also wish to look at our guidance on teaching National Curriculum subjects to learners with a visual impairment.

English

1. Check whether illustrative material (such as photos or cartoons) is really needed. If it is, supplement it or replace it with a short text description in clear language, that doesn't give the answer away or give unfair advantage.
2. If the appearance of a text example (font, size, style etc) is important but will not be apparent in the modified version, add a simple factual text description. Be careful not to interpret the intentions of the design, for example to stimulate a particular emotional response, if that is the point of the question.
3. Put long passages of text into a booklet, separate from the questions. This helps candidates navigate through the paper more easily.
4. With a long passage of text, consider putting the questions first so that candidates know what they are looking for when they read it.

Geography

1. **Maps – exam board approaches to modification**
   Maps can feature widely in exam courses. Modification of maps and associated tasks is a complex area, beyond the scope of a short summary. Possibly the most important consideration is how your particular awarding body modifies map questions, so try to obtain some recent modified past papers.

2. **Maps – general approach to modification**
   If you do find yourself modifying a map question then try to base it on a modified map, to be used either instead of or alongside the original, in which as much unnecessary detail as possible is omitted and necessary detail is enhanced. For instance in a grid reference question you might omit all except the item(s) to be located and the grid lines, which should be black and of appropriate thickness.

3. **Maps – symbols and labels**
   Try to stick consistently to a set of appropriately modified map symbols throughout the course and in any modified exams you produce. It might reduce congestion to use single-letter labels on the map with an accompanying key. There is not a standard set of symbols used in modified exam papers.

4. **Maps as sources of information for a question**
   If the skill to be tested in a question is not map reading, but interpreting data presented on a map, for example populations of countries, then it might be more appropriate to present the information as a table. It might also be desirable to reduce the number of items of data. See Example C2.

5. **Pictorial sources and satellite photographs**
   These are likely to be inaccessible. Modified pictures could be used alongside or instead of the original, or the question could be replaced if this is permitted by the assessment requirements of the course.

History and Religious Education

Pictorial or diagrammatic sources are often used to provide stimuli or evidence for evaluation. They may be modified as follows:

1. **Diagram or photograph used only to provide a stimulus**
   A written description will probably be appropriate. Slight amendment of the existing text might be enough. The description should not give away the answer or exceed 8 lines of large print. If the picture is to be retained alongside a written description then the picture quality should be as good as possible; it might be helpful to enlarge the picture or to enhance some details.

2. **Maps**
   When used to provide information to the candidate, maps are usually better replaced by a written description, a table or a time chart. Where a map needs to be retained it should be produced using the guidance for geography.

3. **Graphs**
   These are often more appropriately presented as tables. The amount of information might be reduced, but check which items are explicitly referred to in the question, or are needed for an answer. Where a large table is unavoidably divided across two pages, it may be necessary to repeat column or row headings.

4. **Evaluation of the validity of a visual source**
   If the key information about a source is in the title or other words used, it may be possible to provide a description. If, however, the imagery used in the source is very visual, or any description would be too complex, a description is likely to be inappropriate. Try instead to replace the source with a written one, for example a contemporary poem, song or newspaper account covering the same topic.

5. **Information about the origin of sources**
   It is important to retain this. Look at the practice on the print paper. It might be better positioned directly after the source, in brackets, to distinguish it clearly from a written description.

ICT, Computing and Business Studies

1. **Items in bold print**
   The usual convention in modified large print papers of using upper case to denote text in bold print should not be used where the letter case is significant to the context or the meaning of the question. File names are sometimes written in bold print in standard print papers; it is better to use quotation marks in the modified version and write:

   ... the file called "filename"...

   Letter case of database field names, data values such as proper names and variables in programming code is significant and should be preserved in the modified version.

2. **Tables, such as spreadsheet extracts, Profit & Loss Accounts**
   - Omit shading and use thick double lines under column headings or to the right of row headings instead.
   - If blank cells are to be completed, number or letter them and change the wording to ask the candidate to write what should go in those cells.
   - Give a brief overview in the question text of the rows and columns occupied, especially if a screen reader user is to work electronically with a worksheet that has been provided, without access to a hard copy.

- Database extracts are sometimes very large and should be reduced; check the effects of any such changes on the question and allowable answers.

3. **Pictures of screen-shots**
   When a picture of a computer screen is included in a question, for example a webpage, it might be adequate to show just the essential information rather than modify the picture. If the picture is to be retained in a modified large print paper shading should be removed and the level of detail reduced wherever possible. A visually impaired candidate, especially one using a screen reader, may have a limited appreciation of the overall screen design.

4. **"Normal" working methods**
   Assumptions may have been made in the design of a question as to what is the normal way of performing a computer task. Watch out for questions where the candidate with a visual impairment might have a different experience and may give an unexpected but perfectly valid answer. For instance, a question about choosing an item from a menu might assume that a mouse would be used, but "keyboard" should also count as a correct answer.

5. **Visual devices and processes**
   A question might ask for comment on the advantages and disadvantages of a device or process with significant visual content, for example interactive white boards or video conferencing. A candidate with a visual impairment might list features usually considered to be advantages as disadvantages, based on their own experience. They should still get marks if they show they understand the process and explain their reasoning. You might like to re-word the question to make it clearer what is expected.

Maths and science

1. Graph grid lines should be no closer than 5mm. They should be black, not grey and they should be of suitable thickness (usually between 2pt and 4pt).

2. When testing graph-reading skills it might be helpful to move a data point onto a grid intersection on the modified grid, unless the question is testing the skill of interpolating values between grid lines.

3. Candidates should not be expected to measure distances less than 5mm or angles less than 5°. It might be necessary to change the values in a question, or the dimensions of a drawing, or the positions of points on a graph, or to change the tolerance on what is accepted as a correct answer in a mark scheme.

4. If a question requires the candidate to take measurements from a scale drawing and do calculations with them, any change in scale factor that occurs as a result of enlargement of the diagram should be taken into account.

5. Watch out for small symbols such as °, indices and subscripts. They may not be big enough to be seen clearly, even in the MLP font Arial 18 point bold: $^{o}C \quad x^{2}$

   They may need to be bigger still, perhaps 4 points bigger. This can be done in Microsoft Word by selecting the superscript character, then pressing Ctrl with] (right square bracket) 4 times: $^{o}C \quad x^{2}$

   There are shortcut keys to help type this sort of thing – ask an expert!

6. Algebraic symbols should not be italicised. Mathematical and chemical formulae, expressions and equations should be clearly spaced away from the preceding and following text.

7. For transformation questions (translation, rotation, reflection) provide cut-out shapes made from card. If the candidate is asked to draw, you could turn the question round by giving them pictures of the object before and after a transformation and asking them to describe the steps in the transformation.

8. 3D drawings, for instance of apparatus or machines, should be simplified to one or more 2D drawings, possibly with descriptions too. Label them to make it clear which view is shown, for example plan view, side view, end view.

9. Labels:

   - should be in the standard MLP font
   - should not run over any part of the diagram if possible
   - arrow-heads may help the reader to understand what the label line is pointing to
   - label lines can cause confusion with other lines on the diagram and might stand out better if dotted or dashed
   - to avoid the use of label lines consider labelling directly on the diagram with single letters or numbers and adding a key.

Modern foreign languages

1. Questions should be placed before rather than after a long piece of text, which may also be split into blocks with parts of the question between blocks.

2. Illustrations may be omitted if not necessary to the question. If they are relevant then a description is required. This should be in English, except where the student is required to read in the relevant language, for example foreign language text in the original picture.

3. Unnecessary information can be removed. For example if the question refers to a hotel in Madrid, phone numbers could be removed if not required to answer the question.

4. Text labels accompanying drawings or other symbols should be positioned above the drawing. (See also the advice about labels in the maths and science section above.)

Music

1. In large print musical score examples the stave should have increased line spacing (with correspondingly enlarged note heads) and line thickness, and should usually be extended to fill the page width, but keep to A4 paper.
2. Bar lines, note stems, note tails and beams should be thickened.
3. Note tails (for example on quavers) should all go the same way, if possible, that is all up or all down.
4. Empty horizontal space around notes and bar lines should be reduced, not enlarged in proportion with other items.
5. Take care that small items such as the dots with dotted notes and staccato dots are enlarged adequately.

List of modified examples

This section illustrates ways in which examination and assessment questions can be modified, with particular reference to content rather than layout. The table below lists different approaches which may be taken when a modifier changes the original print question to meet the needs of a visually impaired candidate. More than one approach may be used with a particular question.

The following pages give examples of each approach. The last page of each example contains notes about what has been altered, and what else might have been altered in this or similar examples. You might find it instructive, especially in staff training sessions, to look at the original and modified questions and see whether you can tell what was altered, before you turn to the notes on the last page.

Please note: The examples are not intended to give a true representation of font or picture size. Some examples taken from real modified exam papers have been reduced or re-created to fit the A4 format of this book. Arial 18 point bold has been used throughout these examples. If the examples were enlarged in order to re-create the original for training purposes the font would actually be larger than required.

Example A1

Type A: Picture or diagram simplified or shown differently

Key Stage 3 Science for 14 year olds

Example A1: original question

(c) (i) What do the hazard warning symbols, **A** and **B**, on this tube of glue mean? Choose from the box below and write your answers on the lines.

corrosive	**explosive**	**flammable**	**toxic**	**radioactive**

A _____ 1 mark

B _____ 1 mark

(c) (i) A tube of glue has two hazard warning symbols, A and B. What do the hazard warning symbols, A and B below, mean?

A

B

Choose from the box below and write your answers on the lines. [2 marks]

corrosive	explosive	flammable	toxic	radioactive

A _____

B _____

Type A: Picture or diagram simplified or shown differently

Removal of unnecessary detail

Notes

1. The picture of the tube and the word “GLUE” have been removed, leaving just the symbols, ie the part of the original picture that the question text refers to. The modified version is testing the same knowledge, and the rest of the tube of glue is unnecessary detail.
2. The question text and pictures have been rearranged into a more logical order to reduce visual scanning, ie introduction, question, pictures, words to choose from and place to write them.
3. The wording “DO NOT BREATHE IN FUMES” and “DO NOT SWALLOW” is less clearly unnecessary. “Fumes” might remind a pupil of fires or explosions; “Do not swallow” might trigger a pupil to think of poison and toxicity.

Subjects

Any.

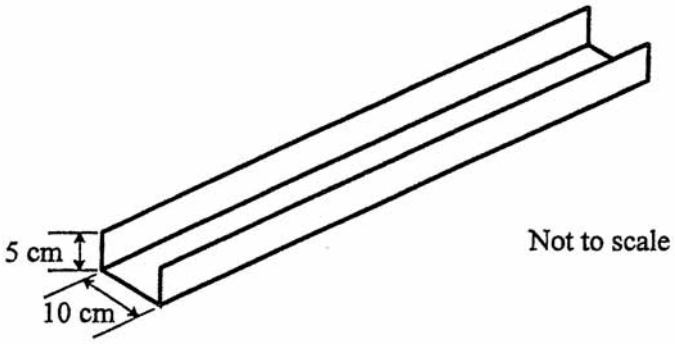
Example A2

Type A: Picture or diagram simplified or shown differently

GCSE Maths for 16 year olds

Example A2: original question

7. The diagram shows a length of plastic guttering.



The cross-section of the guttering is a rectangle measuring 10 cm by 5 cm.

(a) Calculate the area of plastic needed to make a 200 cm length of guttering.

.....

.....

.....

.....

Answer ..... cm^2 *(2 marks)*

7. The diagram below shows the end view of a length of plastic guttering. The cross-section of the guttering is a rectangle measuring 10 cm by 5 cm.

The second diagram shows the side view of the same length of guttering.

Not to scale

(a) Calculate the area of plastic needed to make a 200 cm length of guttering. [2 marks]

.....

.....

.....

.....

.....

Answer ..... cm^2

Type A: Picture or diagram simplified or shown differently

3D diagram converted to 2D diagram(s)

Notes

1. The perspective view has been replaced by an end view and a side view.
2. The question text has been altered slightly so that it refers appropriately to the modified diagram.

Subjects

Maths, Science and Design Technology.

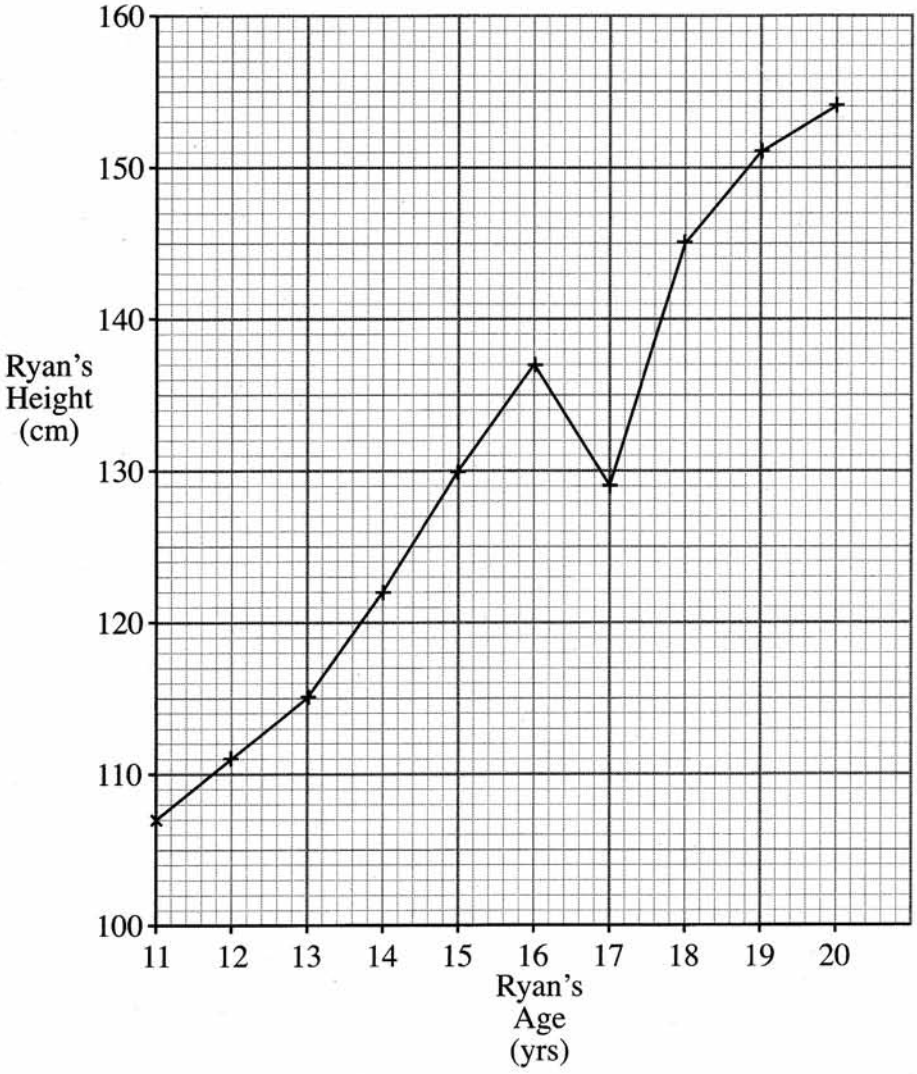
Example A3

Type A: Picture or diagram simplified or shown differently

Key Stage 4 Maths for 14–16 year olds

Example A3: original question

21. Ryan's height has been measured every year on his birthday from the age of 11. The measurements have been recorded on a chart.



(a) Write down Ryan's height on his 13th birthday.

Answer: ..... cm.

(b) Write down Ryan's age when he became 125 cm tall.

Answer: ..... years old.

(c) One of the measurements was wrongly recorded.
Draw a circle around the wrongly recorded point on the chart **and** estimate what you think Ryan's height should be at that age.

Answer: Ryan's height should be ..... cm.

[4]

21. Look at the diagram for Q.21 in the separate booklet.
It shows a chart.

Ryan's height has been measured every year on his birthday from the age of 11.
The measurements have been recorded on a chart.

(a) Write down Ryan's height on his 13th birthday.

Answer: _____ cm.

(b) Write down Ryan's age when he became 125cm tall.

Answer: _____ years old.

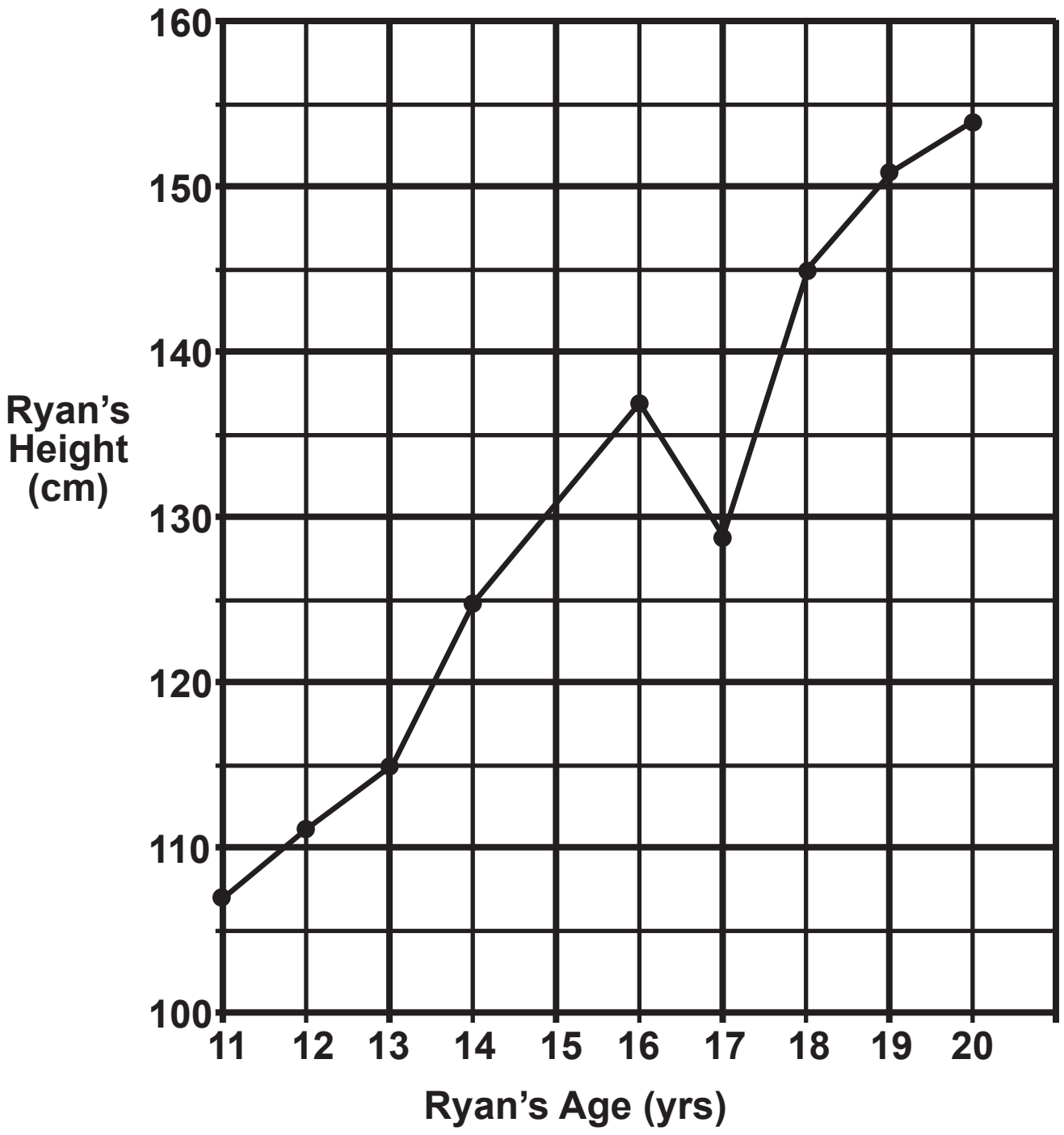
(c) One of the measurements was wrongly recorded.
Draw a circle around the wrongly recorded point on the chart AND estimate what you think Ryan's height should be at that age.

Answer: Ryan's height should be

_____ cm.

[4 marks]

This example has been reduced from the A3 original to A4 for inclusion in this book.



Type A: Picture or diagram simplified or shown differently

Line graph

Notes

1. Most of the minor grid lines have been omitted.
2. The crosses at the data points have been replaced by large dots.
3. The data point at height=125 cm has been moved from 14.4 years to 14 years, ie onto a grid intersection.
4. The graph has been moved out of the question to a separate diagram booklet.

Additional notes

In a line graph it might also be necessary to modify the following features:

- If there are multiple dependent variables on the same graph: the lines must be adequately differentiated, eg solid, dotted, dashed, and a key to the line types will probably be required.
- If the horizontal axis labels are too close and run into each other:
  - the labels could be staggered:

    1990 1992 1994
    1991 1993
  - alternate values could be omitted:
    1990 1992 1994
  - trailing zeros could be omitted and the unit altered accordingly:
    100 200 300 ... (kg)

    could become:
    1 2 3 ... (hundreds of kg).

Subjects

Mainly Maths and Science, but can occur in many other subjects too.

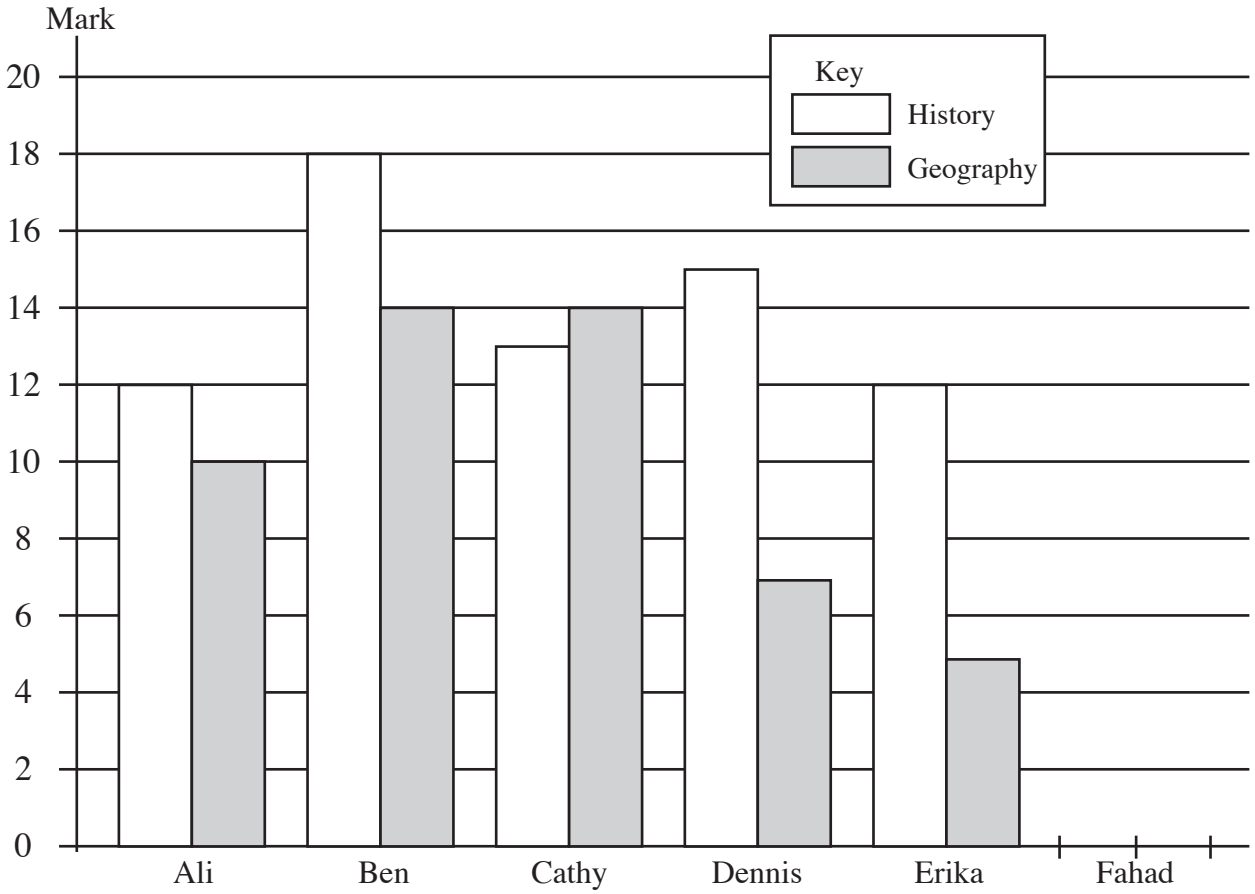
Example A4

Type A: Picture or diagram simplified or shown differently

GCSE Maths for 16 year olds

Example A4: original question

3. Six students each sat a history test and a geography text.
The marks of tive of the students, in each of the tests, were used to draw the bar chart.



(a) How many marks did Ali get in his history test?

.....

(1)

(b) How many marks did Dennis get in his geography test?

.....

(1)

(c) One student got a lower mark in the history test than in the geograohy test.
Write down the name of this student.

.....

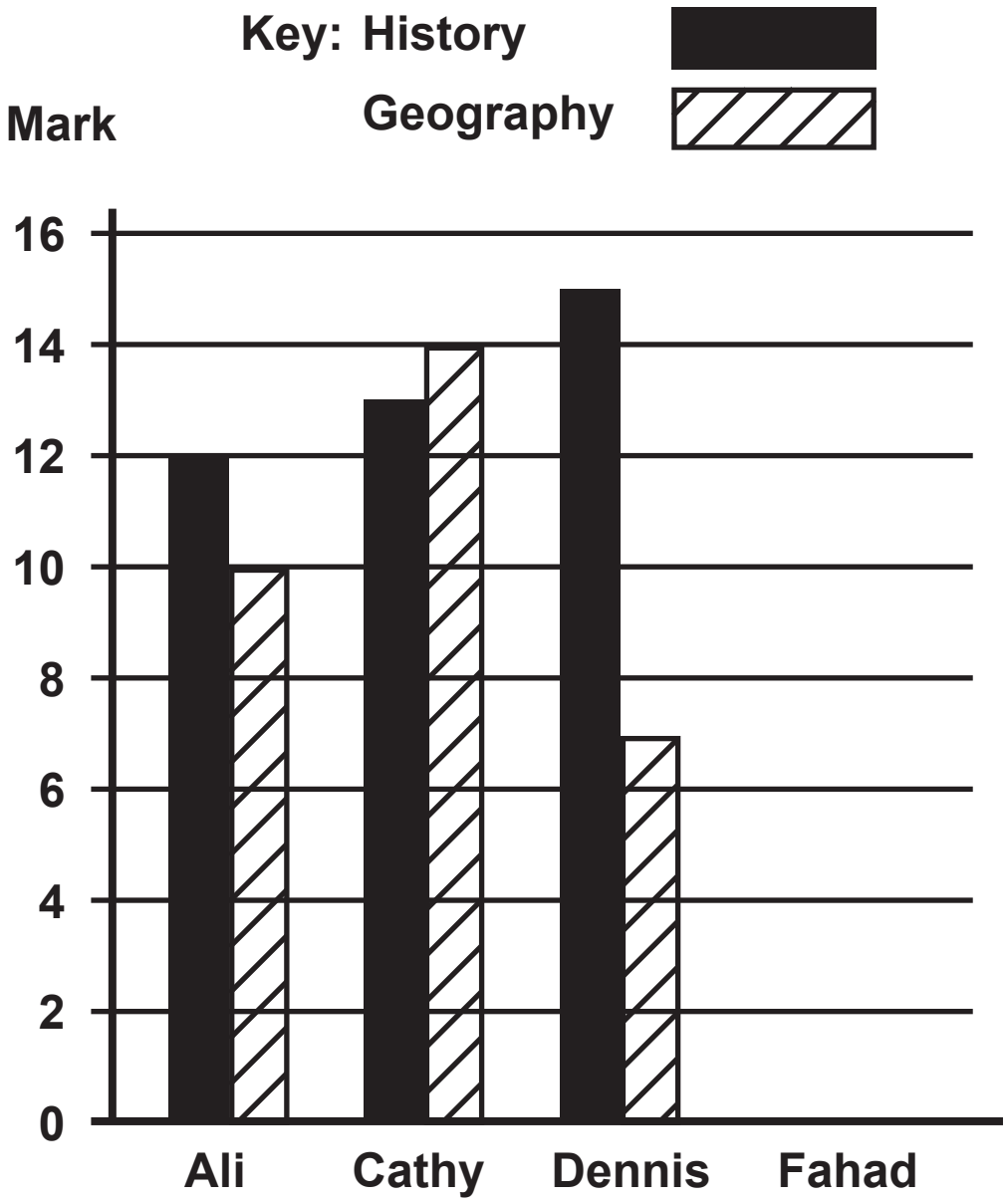
(1)

Fahad got 16 marks in the history test.
She got 11 marks in the geography test.

(d) Use this information to complete the bar chart.

(2)

Diagram 5


Key: History
Geography
Mark
16
14
12
10
8
6
4
2
0
Ali
Cathy
Dennis
Fahad

Type A: Picture or diagram simplified or shown differently

Bar chart

Notes

1. The number of data points (bars) has been reduced by omitting 2 of the 6 pupils. The ones omitted are the only ones not referred to in the question text. All other aspects of the question are suitable without modification, so it was not necessary to alter the question wording.
2. The removal of 2 pupils meant that the vertical range of the chart could be reduced from 20 to 16.
3. The key has been moved so that it falls outside the grid lines. Also it has been centred horizontally on the page. The candidate will notice it more naturally in the course of reading the page from top to bottom.
4. The shading of the bars has been changed from white (unfilled outline) and grey to black and striped. White bars can be difficult to distinguish from the grid.

Additional notes

It might also be necessary to modify the following features in a bar chart:

- Add major grid lines if they're not in the original, especially if values have to be read from the chart.
- Omit some or all minor grid lines.
- Change the retained grid lines from grey to black.
- The widths of the bars and the spaces between them might require adjustment to make it easier for the candidate to read off values.
- It might be desirable to adjust some data values, perhaps onto a grid line or intersection, to make them easier to read. In the question text values to be read off or plotted may require alteration for a similar reason.
- Other methods of dealing with congested x-axis labels include staggering alternate values vertically, omission of alternate values or scaling by powers of 10 and adjusting the units label accordingly. See page 40.

Subjects

Mainly Maths and Science, but can occur in many other subjects too.

Example A5

Type A: Picture or diagram simplified or shown differently

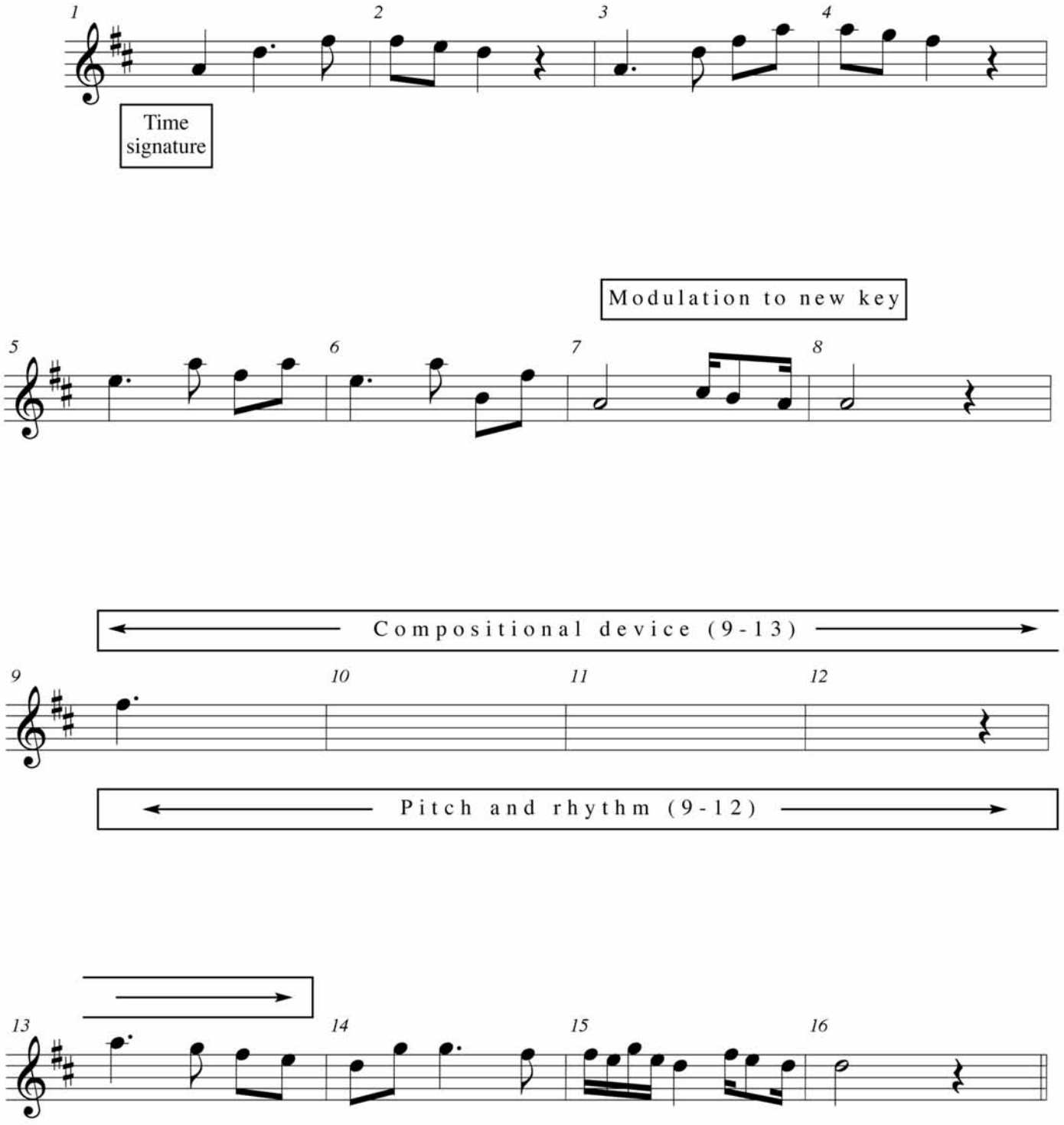
GCSE Music for 16 year olds

Example A5: original question

Area of Study –Music for Stage and Screen

9. The following extract will be played **four** times. There will be a 1 minute silence after the final playing for you to complete your answers. The melody is printed below.

You have 1 minute to read the question before the first playing of the extract.



(a) (i) At the beginning of the extract insert the time signature. [1]

(ii) Above the stave in bar 1, write in an appropriate Italian term [e.g. *Allegro*] to describe the tempo of the extract. [1]

(b) Give the full name of the key of the extract. [1]

Key: .....

(c) Complete the melody by writing in the missing notes (pitch and rhythm) in bars 9 - 12. [5]

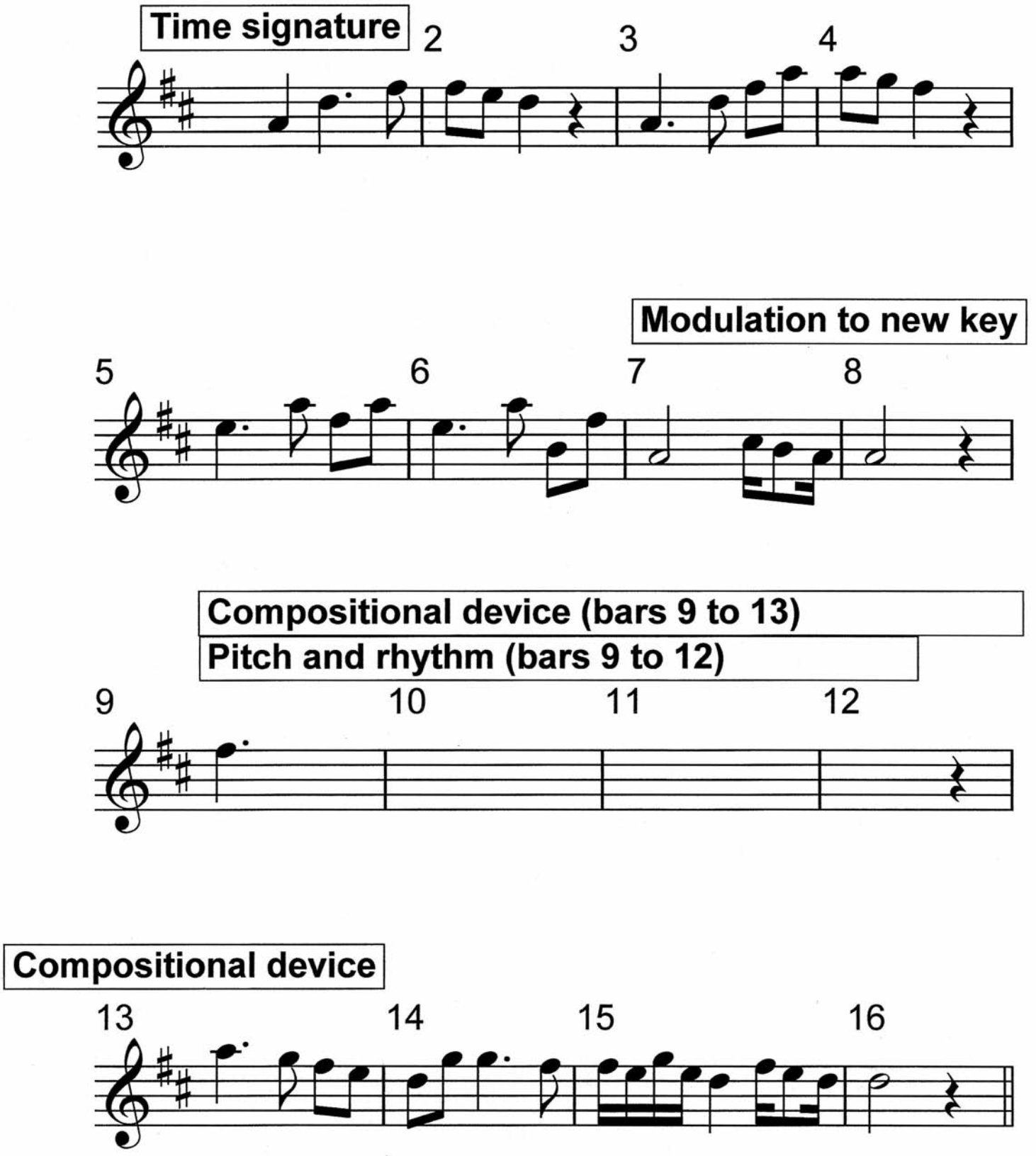
(d) Name the key to which the music modulates in bars 7-8.

Key: ..... [2]

(e) Give one word to describe the compositional device in bars 9-13. [1]

Compositional device: .....

Example A5: modified large print



9. The following extract will be played four times. There will be a one minute silence after the final playing for you to complete your answers. The melody is printed on page "x".

a. Give the time signature, in bar one. [1 mark]

b. Give an appropriate Italian term (for example, Allegro) to describe the tempo of the extract. [1 mark]

c. Give the full name of the key of the extract. [1 mark]

d. Complete the melody for the missing notes (pitch and rhythm) in bars 9 to 12 either by writing in the score or describing precisely each note in order. [5 marks]

e. To which new key has the music modulated in bars 7 and 8? [2 marks]

f. Name the compositional device used in bars 9 to 13. [1 mark]

Type A: Picture or diagram simplified or shown differently

Modified music stave notation

Changes to the stave notation

Music stave notation is a specialised type of diagram where it helps a reader with a visual impairment if some elements are enlarged but where it is more helpful to reduce the spacing rather than enlarging the whole passage. The following steps were taken with the example shown:

1. Spacing of the 5 lines of the stave has been increased.
2. Lines of the stave have been thickened.
3. The first stave has been stretched to fit the width of the A4 page and matches the other 3 staves.
4. Bar lines have been thickened.
5. Bar numbers have been enlarged and they are non-italic.
6. Notes have been compacted left to right.
7. Note stems have been thickened.
8. Note tails are all below the note head.
9. Note beams have been thickened.

It can be seen that the overall space used is almost the same size as the original.

Changes to the question wording

The question wording is essentially unaltered. The main exception is in part d where allowance has been made for the fact that the pupil may be using a word processor or scribe, rather than writing directly on the stave.

Example B1

Type B: Picture or diagram supplemented by written explanation

GCSE History for 16 year olds

Example B1: original question

1. This question is about women in paid employment.

Study the sources below and then answer the questions which follow each source. [20]

Source A

[Women air mechanics in the First World War]

(a) Use Source A and your own knowledge to describe the type of work done by women in the First World War. [3]

Example B1: modified large print

This modified large print example has been reduced and rearranged to fit on one page.

1. This question is about women in paid employment.

Study the source below and then answer the question which follows. [20]

Source A

[Women air mechanics in the First World War. In the photograph, four women can be seen working on different parts of the military aircraft. They are wearing long protective coats on top of their uniforms.]

(a) Use Source A and your own knowledge to describe the type of work done by women in the First World War. [3]

Type B: Picture or diagram supplemented by written explanation

Notes

1. A short description of the picture has been added. The question isn't directly about just the picture; the picture and its associated text act as prompts for material that has been studied during the course.
2. The picture was enlarged 50 per cent in each direction.
3. The picture clarity was possibly improved for the modified paper, but that might only have been an accident of the photocopier! It is worth bearing in mind that picture quality is difficult to ensure if, for example, a paper is photocopied for a practice paper, or during early opening for a candidate who requires a different print size. "Photo" or "picture" settings on the photocopier should be used.

Subjects

English, Humanities and others.

Example B2

Type B: Picture or diagram supplemented by written explanation

GCSE English for 16 year olds

Example B2: original question

Reading: MEDIA TEXT

Read this newspaper article, written at a time when parts of Britain were facing wintry weather conditions. Then **answer Question 2.**

Your answer will be marked for reading. Plan your answer and write it carefully.

Snow falls – and much of Britain comes to a pathetic, predictable standstill

by Michael McCarthy – Environment Editor
9 February 2007

A flurry of snow slowed down southern Britain yesterday and brought much of it grinding to a halt.

It was hardly a Russian winter. There were no white-outs, blizzards or five-foot drifts. Three to four inches was a typical fall, the amount you can sweep off the top of your car with your gloved hand.

© A Room With Views / Alamy

We are so unused to snow of any kind now that the winters are warmer. Yesterday even a little snow was enough to cause chaos. Airports closed. Roads were blocked. Trains were cancelled. Schools didn't open – so a vast army of pupils had an unscheduled day off, on a day when the snow covering in many places was only deep enough to build snowmen knee-high. What would they think of us in Chicago?

There was plenty of warning, too. The Met Office sent out a precise forecast but it made no difference on the day. It was still a snowy knockout.

Hundreds of thousands of people were delayed on their journeys into central London, with major interruptions to trains across the South and South-east, while London Underground reported delays right across the Tube network. Many people chose to stay in bed.

It was a similar story on the roads. In spite of the fact that an army of 400 gritters and salt-spreading machines had been out, three major routes across the South-east were blocked by lorries jack-knifing: the M25, the A22 and the A3. According to Essex Police, there were 23 crashes on the county's roads in just two hours, while 19 accidents in five hours were reported to police in Wiltshire.

Airports were worst affected of all. Five airports – at Birmingham, Bristol, Cardiff, Stansted and Luton – closed their runways for part of the morning, while Heathrow and Gatwick cancelled dozens of flights and delayed others. Tens of thousands of passengers were held up.

© Richard Osbourne / Blue Pearl Photographic / Alamy

A surprisingly large number of schools also closed their doors for the day. In London more than 400 schools – one in five – were shut. In addition, 600 schools in Wales, all 400 in Birmingham, 300 in Herefordshire and Worcestershire, 175 in Gloucestershire, 200 in Essex, 100 in Cambridgeshire and 100 in Norfolk and Suffolk were closed by local authorities and head teachers. The childcare services website www.emergencychildcare.co.uk reported record demand for childminders and nursery places.

Fresh snow is unlikely today, but after a cold night the dangers are more likely to be ice on the roads and freezing fog. Cold enough to shut down the country once more? After yesterday, it seems entirely possible.

Michael McCarthy, Snow Falls, 9 February 2007 © The Independent

2 How does the writer persuade you that Britain's response to the snow is 'pathetic'?

In your answer, you should write about:

- the **information** the writer selects to persuade you
- the **language** and the **pictures** he chooses. **[21]**

Example B2: modified large print

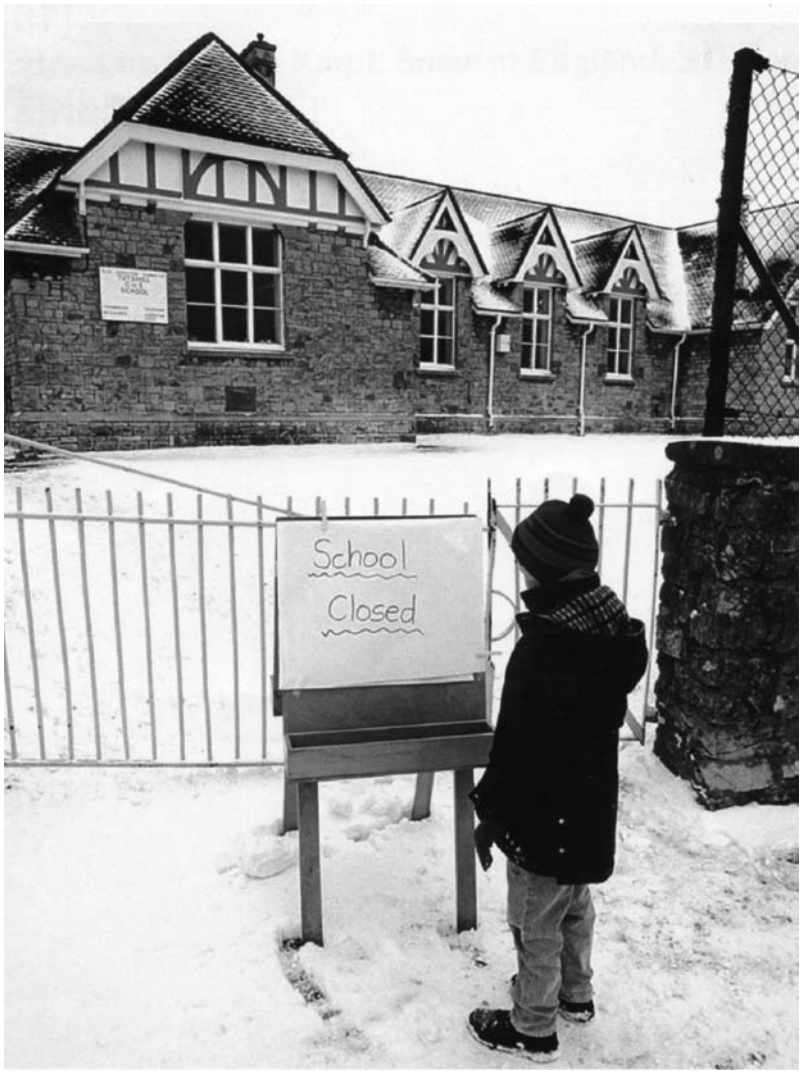
READING: MEDIA TEXT

Read this newspaper article, written at a time when parts of Britain were facing wintry weather conditions. Then ANSWER QUESTION 2.

Your answer will be marked for reading. Plan your answer and write it carefully.

Snow falls – and much of Britain comes to a pathetic, predictable standstill

By Michael McCarthy – Environment Editor
9 February 2007



© A Room With Views / Alamy

A flurry of snow slowed down southern Britain yesterday and brought much of it grinding to a halt.

It was hardly a Russian winter. There were no white-outs, blizzards or five-foot drifts. Three to four inches was a typical fall, the amount you can sweep off the top of your car with your gloved hand.

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There was plenty of warning, too. The Met Office sent out a precise forecast but it made no difference on the day. It was still a snowy knockout.

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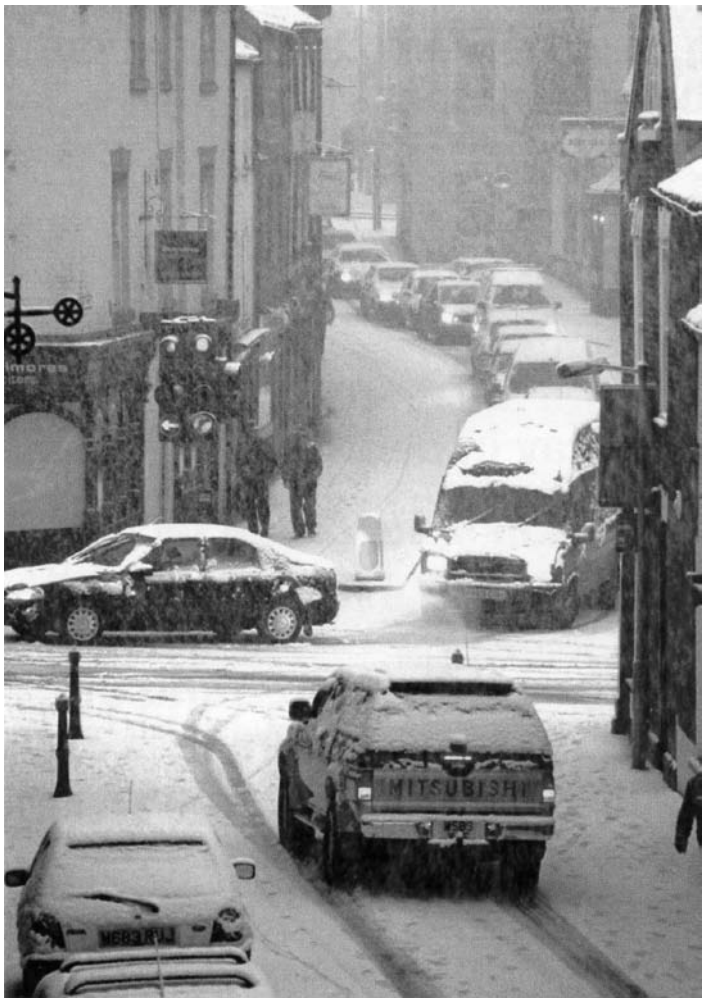
A surprisingly large number of schools also closed their doors for the day. In London more than 400 schools – one in five – were shut. In addition, 600 schools in Wales, all 400 in Birmingham, 300 in Herefordshire and Worcestershire, 175 in Gloucestershire, 200 in Essex, 100 in Cambridgeshire and 100 in Norfolk and Suffolk were closed by local authorities and head teachers. The childcare services website www.emergencychildcare.co.uk reported record demand for childminders and nursery places.

Fresh snow is unlikely today, but after a cold night the dangers are more likely to be ice on the roads and freezing fog. Cold enough to shut down the country once more? After yesterday, it seems entirely possible.



© Richard Osbourne / Blue Pearl Photographic / Alamy
Michael McCarthy, Snow Falls, 9 February 2007 © The Independent

[This article is illustrated by two colour photographs. The first, near the beginning, shows a school, its roof and yard covered with snow. In front of closed school gates, a child, in warm hat, coat and scarf, stands reading a handwritten notice on a school painting easel: 'School Closed'.

Next to the closing paragragh is a photograph of a snow scene showing traffic at a road junction in a town or city. There is nose-to-tail traffic tail-back along one approach to the junction; vehicles in all directions have some snow on their roofs but tyre tracks show that the snow on the roads is not deep. Few people are seen walking on the pavements.]

2 How does the writer persuade you that Britain's response to the snow is 'pathetic'?

In your answer, you should write about:

- **The INFORMATION the writer selects to persuade you**
- **The LANGUAGE and the PICTURES he chooses.**

[21]

Type B: Picture or diagram supplemented by written explanation

Notes

1. Each picture is supplemented by a paragraph of text.
2. The pictures are enlarged slightly.
3. High quality colour reproduction should be used, as it was in the original and modified questions.
4. The paragraph spacing is increased, which is appropriate for extended passages of text.

Subjects

English, Humanities and others.

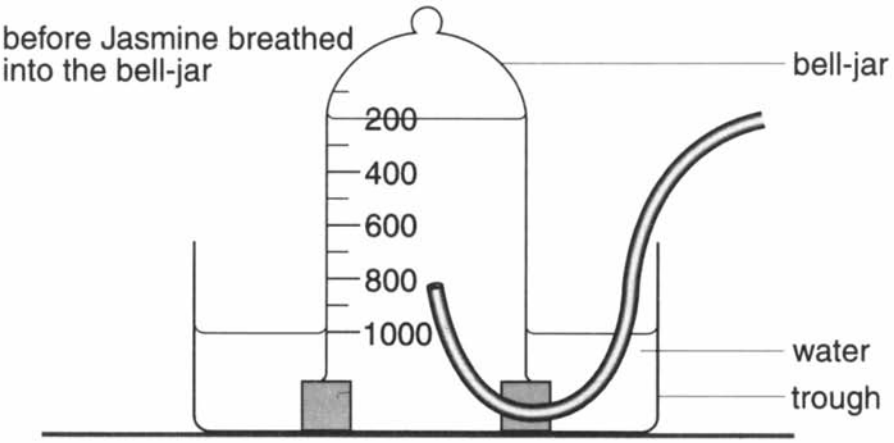
Example C1

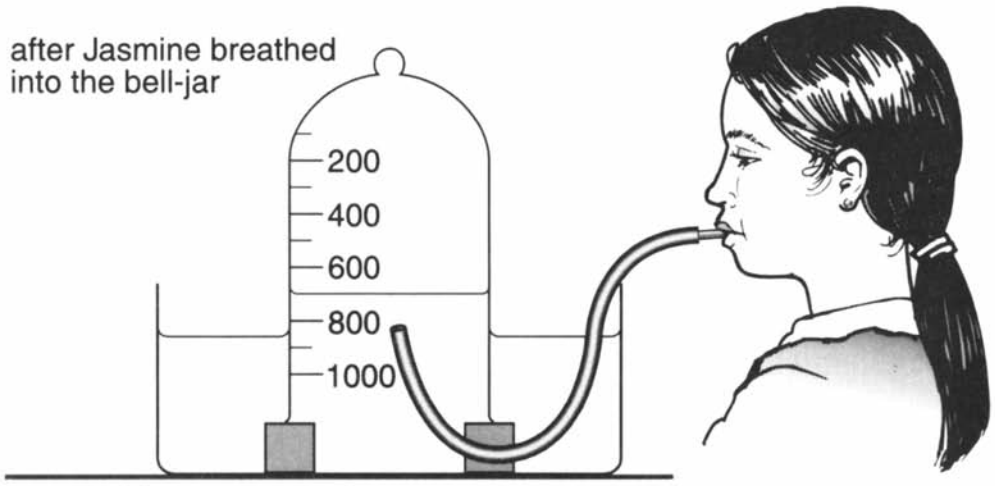
Type C: Picture or diagram replaced with written description or information

Key Stage 3 Science for 14 year olds

Example C1: original question

13. (a) Jasmine was trying to find out how much air she breathed out in one breath. She poured water into a bell-jar and placed it upside down in a trough of water. The bell-jar had a scale marked in cm^3.





(i) How much air did Jasmine breathe out?

1 mark

_____ cm^3

13. (a) Jasmine was trying to find out how much air she breathed out in one breath.

She poured water into a bell-jar and placed it upside down in a trough of water.

Before Jasmine breathed into the bell-jar it contained 200 cm^3 of air.

She inserted a rubber tube into the bell-jar and breathed through it.

After Jasmine breathed into the bell-jar it contained 700 cm^3 of air.

(i) How much air did Jasmine breathe out? [1 mark]

_____ cm^3

Type C: Picture or diagram replaced with written description or information

Notes

1. The pictures of a bell-jar with a volume scale have been removed.

2. The two scale readings have been incorporated into the question wording.

These changes might save a candidate with a visual impairment a lot of time, scanning the pictures and extracting the necessary detail. The modifier decided that the subtraction sum alone was adequate to gain 1 mark.

Conversely it might be argued that some candidates would find the picture easier to understand than the text description, especially if it triggered a memory of a practical demonstration. This example illustrates the point that modification is often a matter of judgement about the visual needs and skills of the majority of candidates.

Subjects

Science, Maths and others.

Example C2

Type C: Picture or diagram replaced with written description or information

GCSE Geography for 16 year olds

Example C2: original question

(d) Study **Figure 3.**

This map shows the population annual growth rates for some countries in Asia.

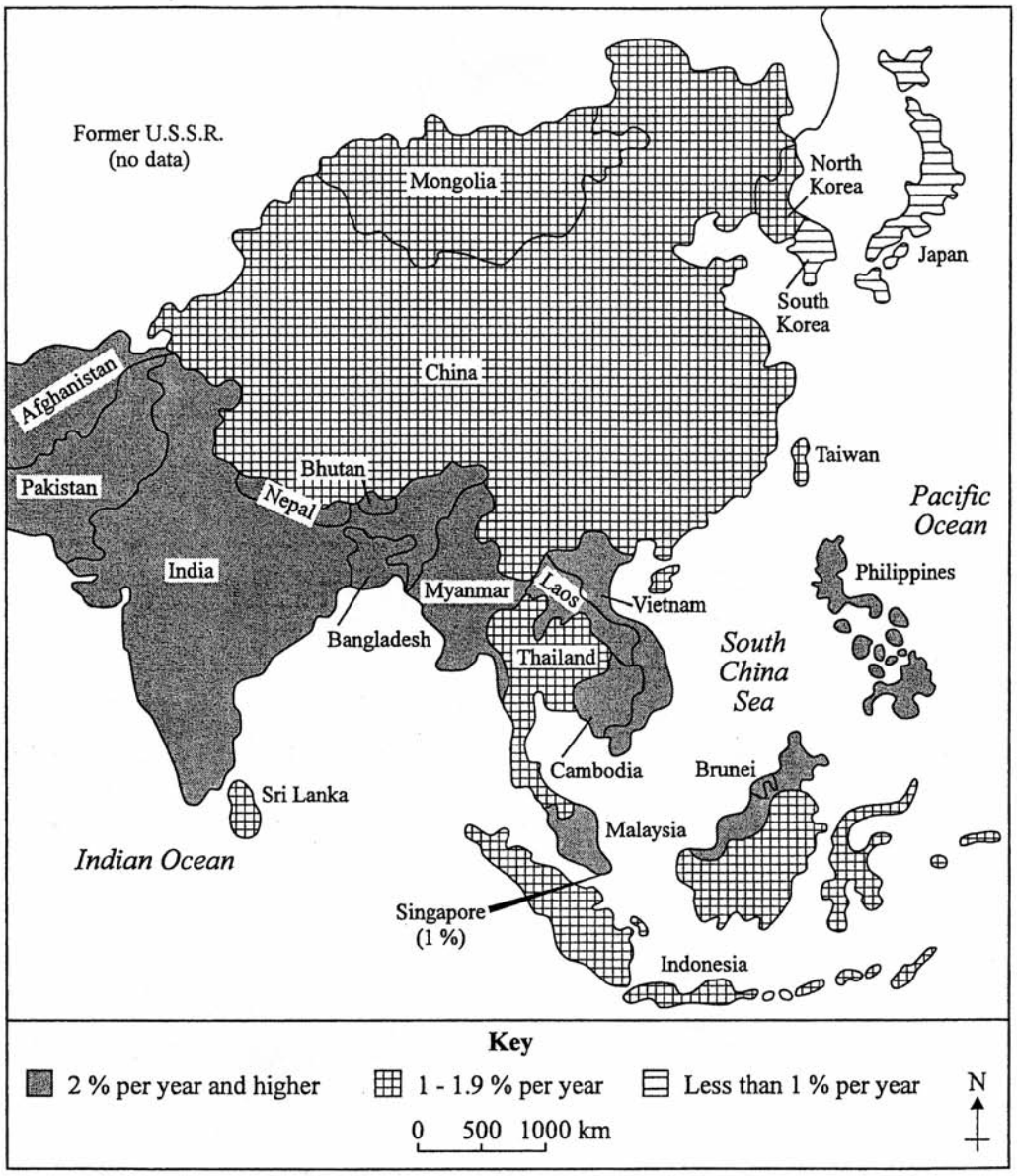


Figure 3

(i) Using **Figure 3**, name the **two** countries with a population growth rate of **less than** 1% per year.

1 . .....

2. .....

(2 marks)

(d) Study Figure 3 below.
This shows the population annual growth rates for some countries in Asia.

FIGURE 3

country	percentage growth per year
Afghanistan	4·8
Bangladesh	2·0
Bhutan	2·4
Cambodia	3·5
China	1·1
India	2·5
Indonesia	1·8
Japan	0·3
Laos	3·3
Malaysia	2·2
Mongolia	1·9
Myanmar	2·2
Nepal	2·1
North Korea	1·7
Pakistan	2·8
Philippines	2·4
South Korea	0·5
Sri Lanka	1·2
Vietnam	2·1

(i) Using Figure 3, name the TWO countries with a population growth rate of LESS THAN 1% per year. [2 marks]

1. .....

2. .....

Type C: Picture or diagram replaced with written description or information

Notes

(The font size in this copy has been reduced from 18 point to 16 point in order to fit the example on one page.)

1. The map and its associated key have been replaced by a table. The map only indicated which one of the three ranges each value fell into; the table gives actual values, obtained from a different source.
2. Centred decimal points have been used in the second column of the table, in preference to full stops.
3. The number of countries has been reduced from 23 to 19 to reduce the visual searching task.
4. The correct answers are unchanged in the modified question.

Subjects

Geography, History and others.

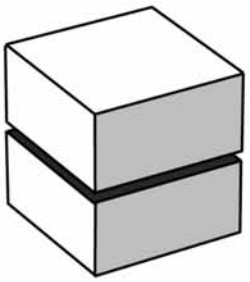
Example D1

Type D: Picture or diagram replaced with a real object or model, and cut-outs

Key Stage 3 Maths for 14 year olds

Example D1: original question

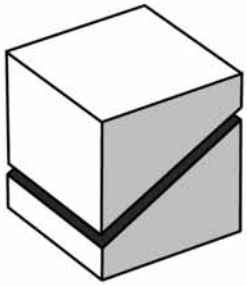
5. (a) I slice a cube in half like this:



How many faces does each piece have?

....
1 mark

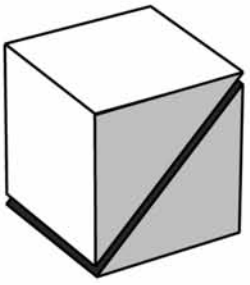
(b) Then I slice another cube in half like this:



How many faces does each piece have?

....
1 mark

(c) I slice a different cube in half through its corners like this:



How many faces does each piece have?

....
1 mark

Example D1: modified large print

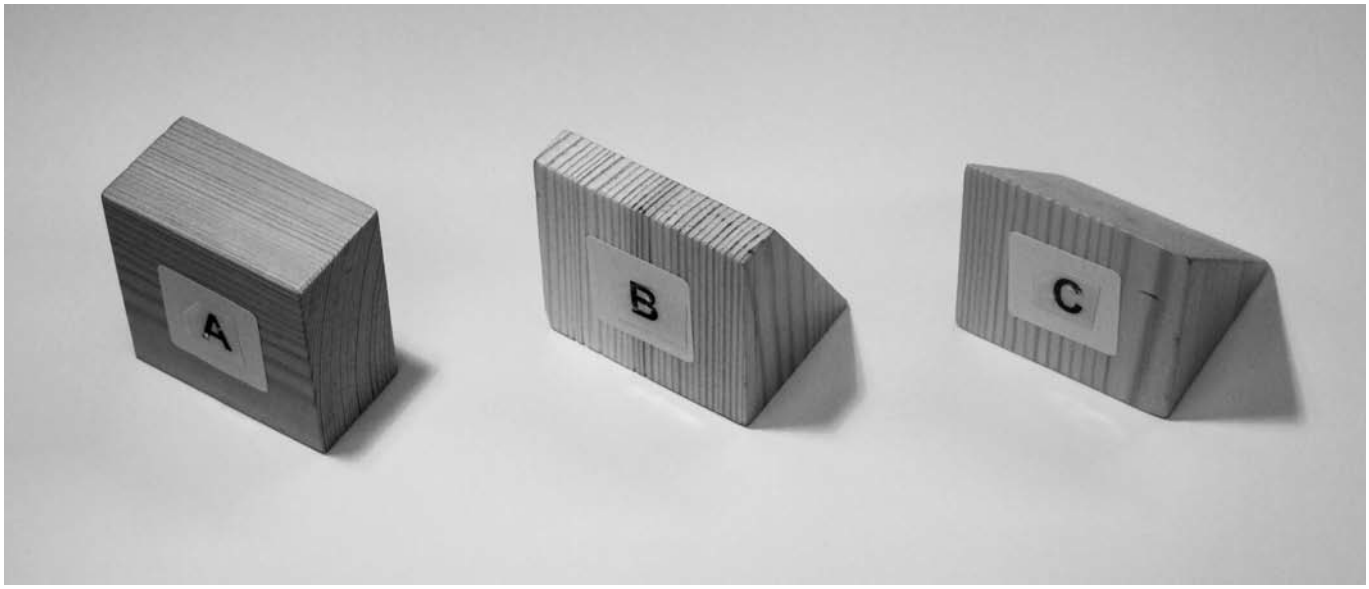
5. For this question you have been given three shapes. Each shape has been made by cutting a cube in half.

(a) Look at shape A.
How many faces does shape A have?

(b) Look at shape B.
How many faces does shape B have?

(c) Look at shape C.
How many faces does shape C have?

[This photo shows the 3 cubes that the visually impaired candidate would use.]



Type D: Picture or diagram replaced with a real object or model, and cut-outs

Notes

1. Each type of half-cube is cut out of wood and the 3 shapes are labelled A, B and C.
2. The wording is changed to suit the use of models.
3. There is less emphasis on the arrangement of halves in the original cube, which is not directly relevant to the counting of faces.

Subjects

Maths.

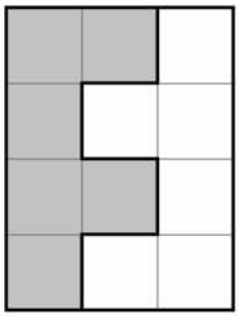
Example D2

Type D: Picture or diagram replaced with a real object or model, and cut-outs

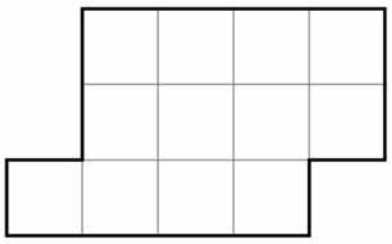
Key Stage 3 Maths for 14 year olds

Example D2: original question

9. (a) The diagram shows how two congruent 'F-tiles' fit together to make a rectangle.



Show how the two congruent 'F-tiles' can fit together to make this shape.



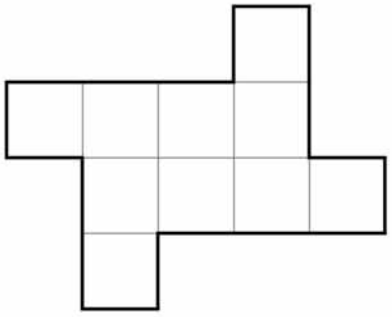
1 mark

(b) Two other tiles fit together to make a different shape.

The two tiles are congruent but they are **not 'F-tiles'**.

What shape could the tiles be?

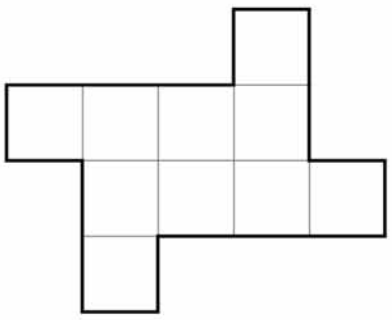
Show them on the diagram.



1 mark

What **other** shape could the tiles be?

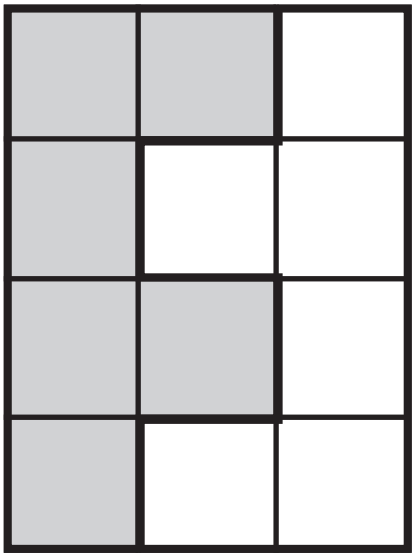
Show them on the diagram.



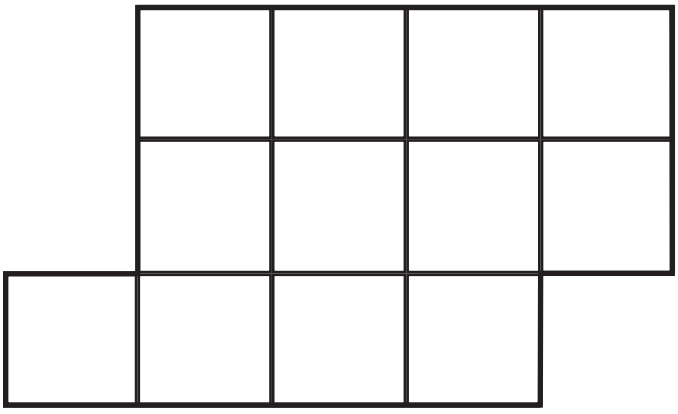
1 mark

9. This question involves fitting shapes together. Three different cardboard tiles are provided.

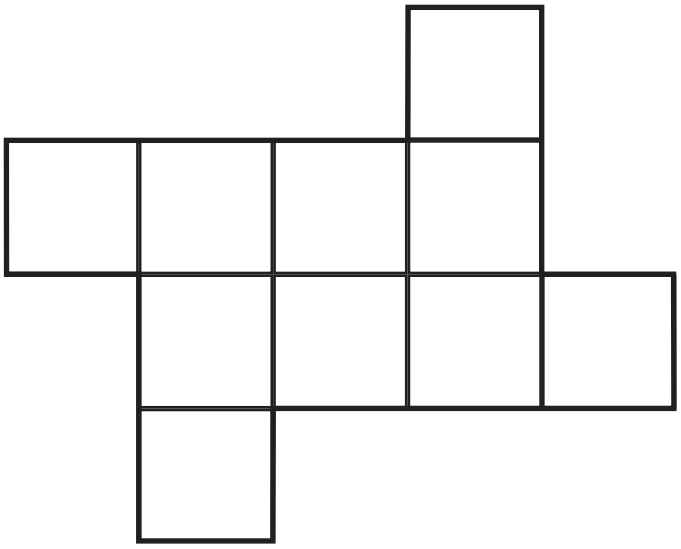
Look at tile A.
This diagram shows how two can fit together to make a rectangle.



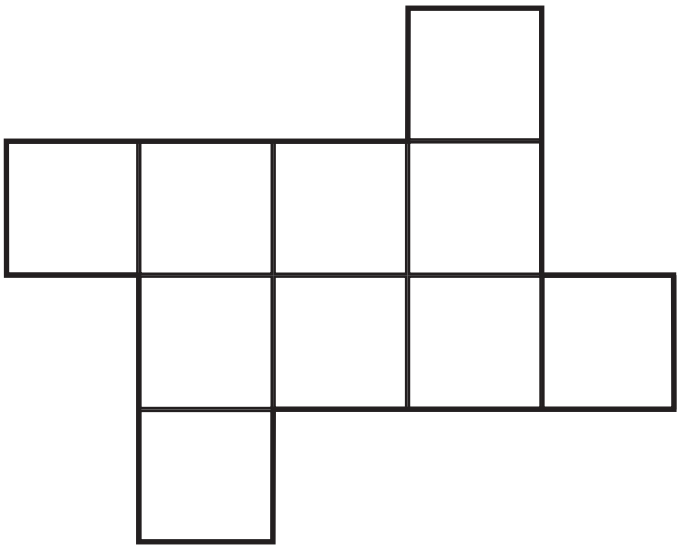
(a) Look at tile A.
Show how two can fit together to make this shape.
[1]



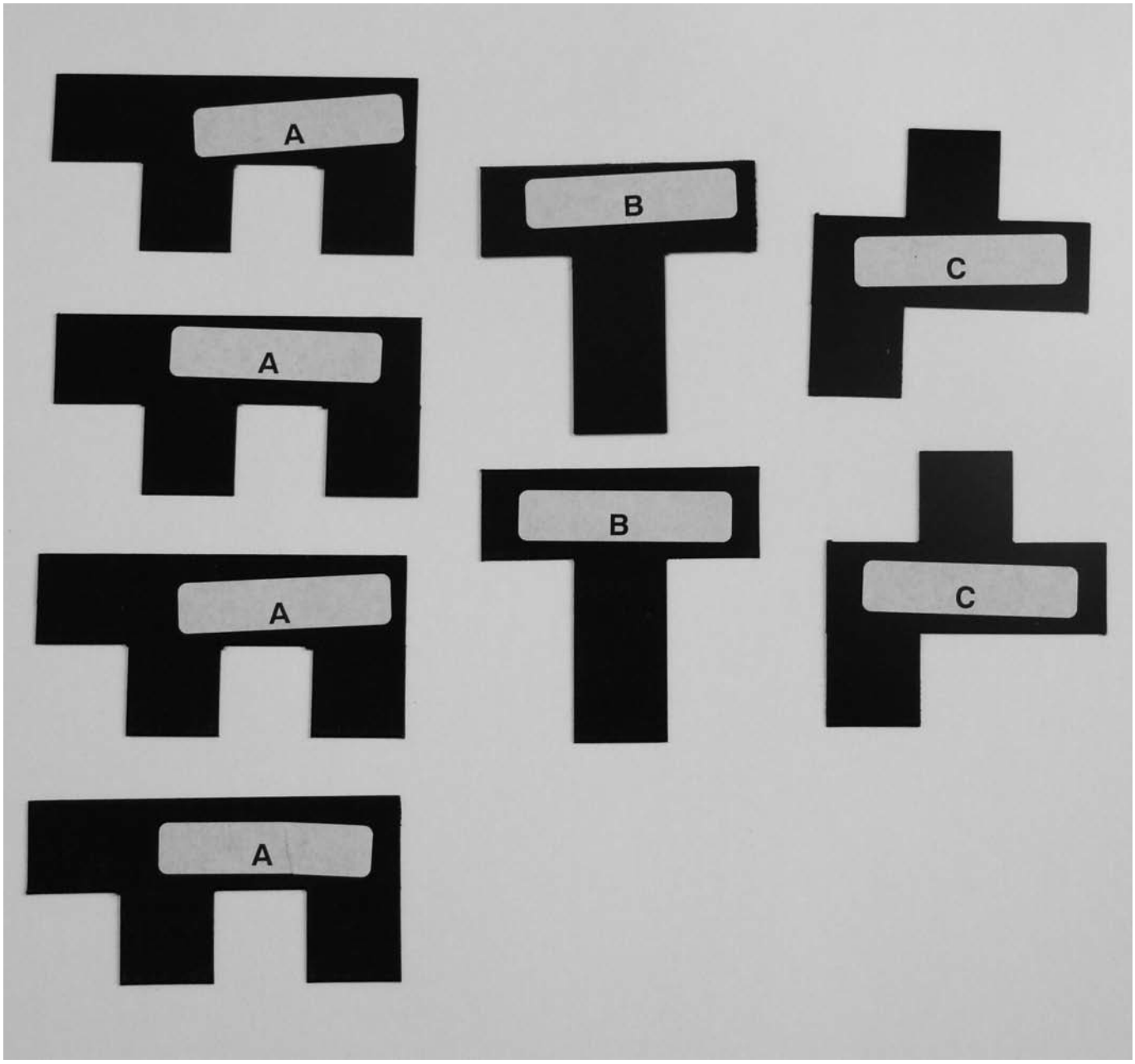
(b) Look at tile B.
Show how two can fit together to make this shape.
[1]



(c) Look at tile C.
Show how two can fit together to make this shape.
[1]



[This is a photo of the cardboard tiles given to candidates with visual impairment. The tiles are made to scale to match the diagrams in the modified question paper.]



Type D: Picture or diagram replaced with a real object or model, and cut-outs

Notes

1. The F-shaped tile has been made into a cut-out and labelled A.
2. Part (a) of the question uses the same tile shape and grid, but the language has been simplified, omitting the words “congruent” and “F-tile”.
3. In parts (b) and (c), instead of asking the candidate to work out what shapes the tiles could be, they are given the shapes as cut-outs B and C and asked how they could fit together within the grid shape.

Subjects

Maths.

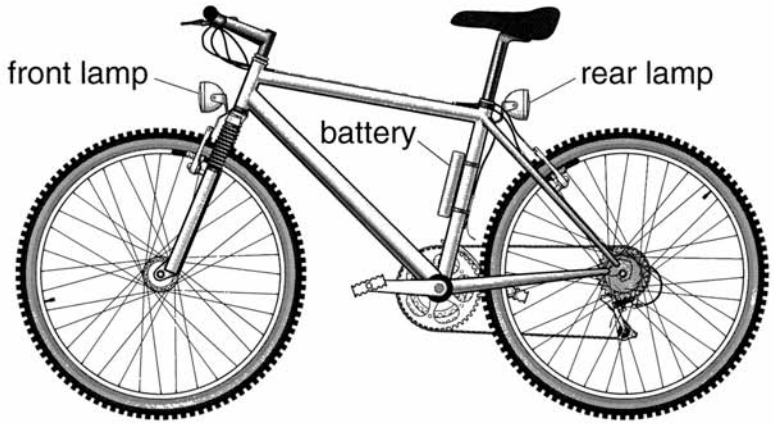
Example E1

Type E: picture or diagram removed because unnecessary

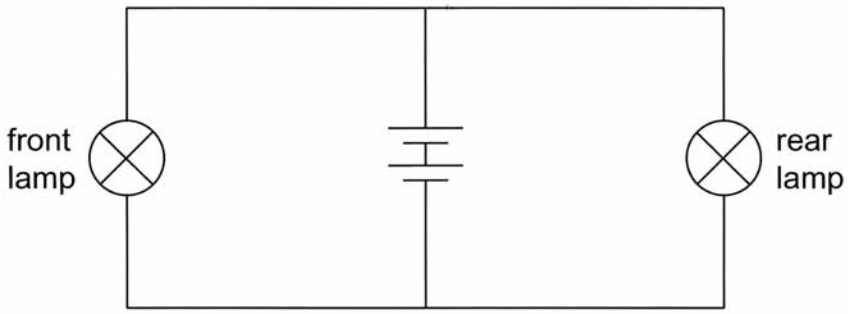
Key Stage 3 Science for 14 year olds

Example E1: original question

15. Nina's bicycle has a front lamp and a rear lamp.
Both lamps are connected to the same battery.



(a) The circuit diagram for the lamps is drawn below.



15ai

(i) **On the circuit diagram above**, place a letter **A** to show the position of a switch to turn **only** the front lamp on and off.

1 mark

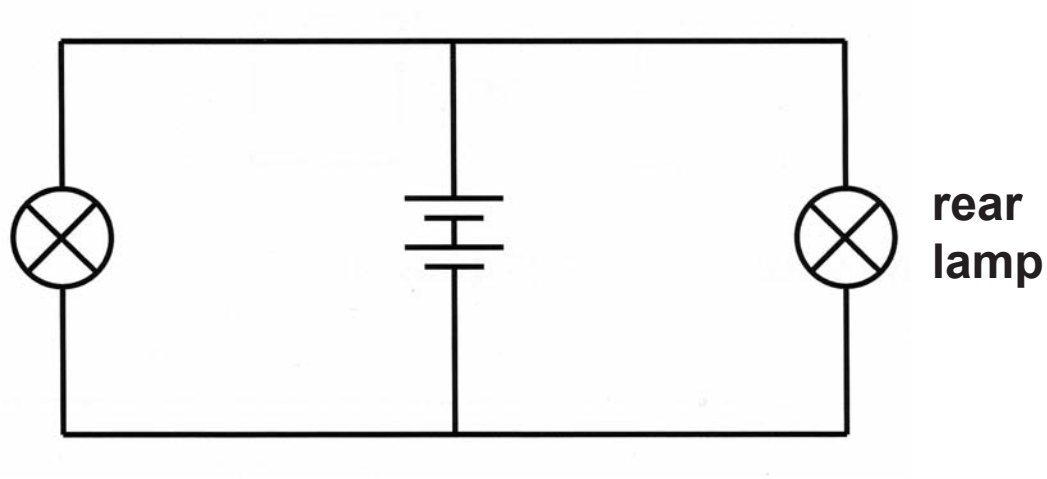
15aii

(ii) **On the circuit diagram above**, place a letter **B** to show the position of a switch to turn **both** lamps on and off at the same time.

1 mark

15. Nina's bicycle has a front lamp and a rear lamp. Both lamps are connected to the same battery.

(a) The circuit diagram for the lamps is drawn below.



(i) On the circuit diagram above, place a letter A to show the position of a switch to turn only the front lamp on and off. [1 mark]

(ii) On the circuit diagram above, place a letter B to show the position of a switch to turn both lamps on and off at the same time. [1 mark]

Type E: picture or diagram removed because unnecessary

Notes

1. The picture of a bicycle has been omitted.
2. The wording has been left unchanged because the original wording contained all the information that was needed to answer the question.

Subjects

Any.

Example E2

Type E: picture or diagram removed because unnecessary

GCSE Science for 16 year olds

Example E2: original question

4

Advertisement

BUY ELECTRIC

THE GREEN CHOICE

Guaranteed to improve air quality

Electric cars are powered by a battery.
They are often used in towns.
This is because they only travel 50 miles before the battery has to be recharged.
The batteries are recharged by plugging them into mains electricity.

(a) Some people think driving electric powered cars rather than petrol powered cars will improve air quality.

Put a tick (✓) next to the **best** explanation for this.

They will reduce air pollution in towns.	☐
They will reduce air pollution around power stations.	☐
Less fossil fuels will be burned in power stations.	☐
More fossil fuels will be burned by cars.	☐

[1]

4. Electric cars are powered by a battery.
They are often used in towns.
This is because they only travel 50 miles before the battery has to be recharged.
The batteries are recharged by plugging them into mains electricity.

(a) Some people think driving electric powered cars rather than petrol powered cars will improve air quality.

Put a tick (✓) next to the BEST explanation for this. [1]

They will reduce air pollution in towns. ☐

They will reduce air pollution around power stations. ☐

Less fossil fuels will be burned in power stations. ☐

More fossil fuels will be burned by cars. ☐

Type E: picture or diagram removed because unnecessary

Notes

1. The advertisement and picture contain no information that isn't already in the question text, so it has been omitted.
2. The question text has been left unaltered.

Subjects

Any.

Example F1

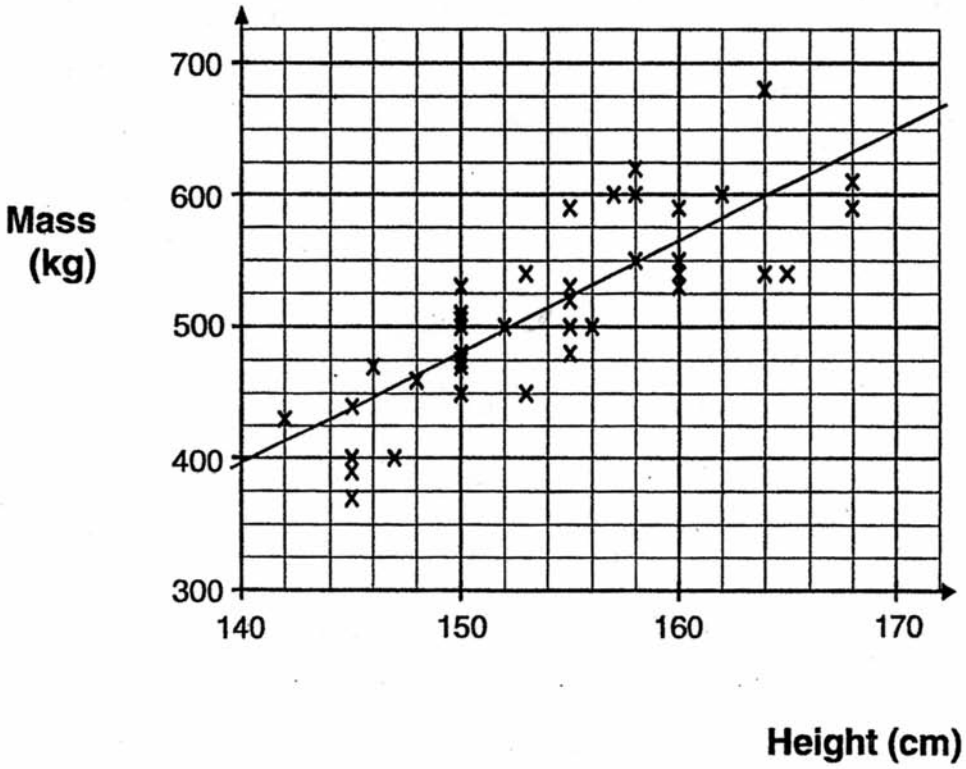
Type F: Amount of information reduced

Key Stage 3 Maths for 14 year olds

Example F1: original question

Horses

13. The scatter diagram shows the heights and masses of some horses.
The scatter diagram also shows a line of best fit.



(a) What does the scatter diagram show about the **relationship** between the height and mass of horses?

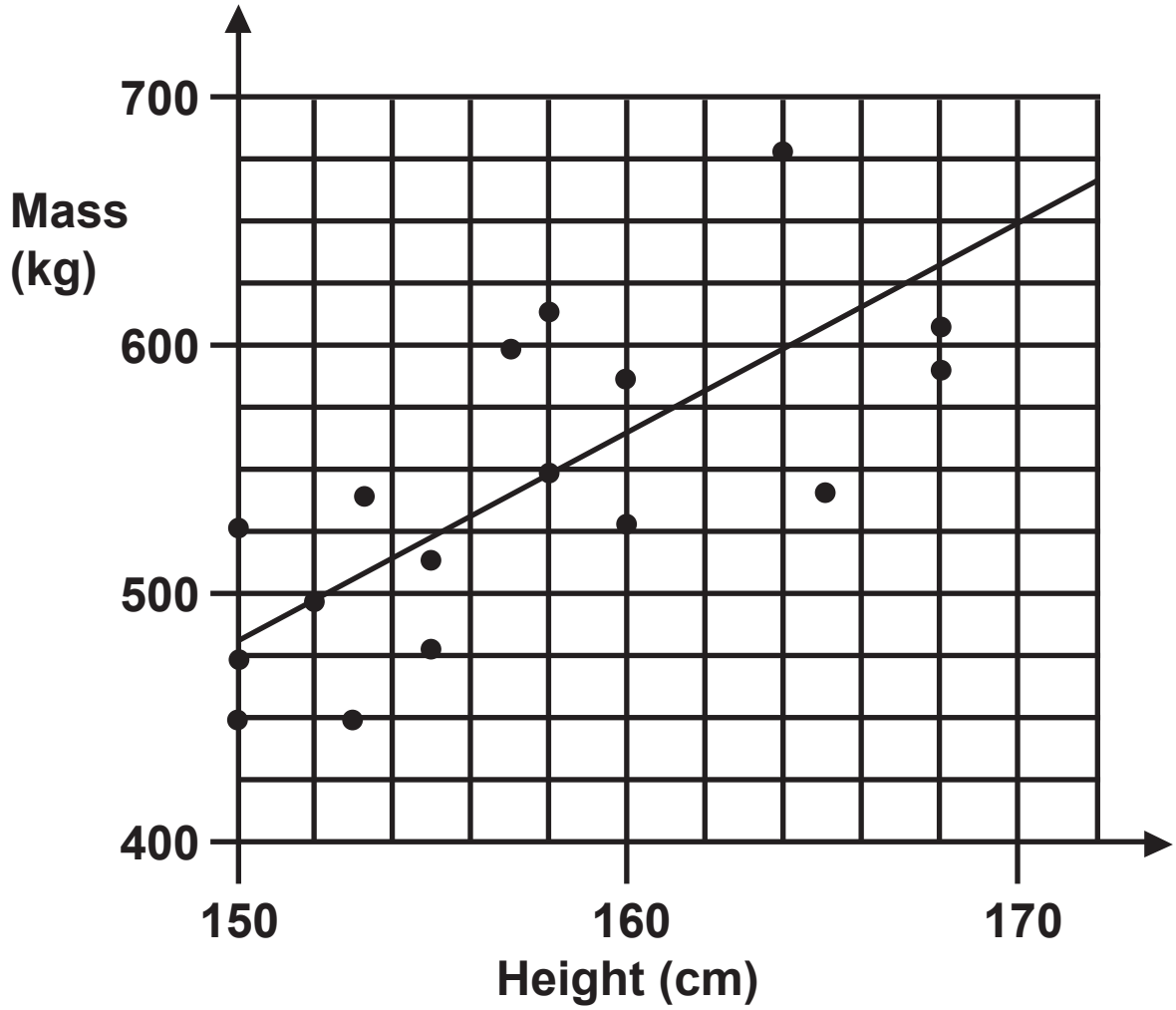
....

1 mark

13. HORSES

The scatter diagram below shows the heights and masses of some horses.

The scatter diagram also shows a line of best fit.



(a) What does the scatter diagram show about the RELATIONSHIP between the height and mass of horses? [1]

Type F: Amount of information reduced

Notes

1. The data points have been changed from crosses to large dots, large enough to show clearly even at a grid intersection.
2. The horizontal range has been reduced from 140–170 to 150–170 and the vertical range has been reduced from 300–700 to 400–700.
3. The grid lines for the reduced ranges are well-spaced and the intervals have not been altered.
4. The number of data points has been reduced by about 50 per cent, more or less uniformly across the diagram.
5. No two data points overlap or are very close.
6. The line of best fit is more or less unaltered and is still a reasonable line of best fit for the reduced number of data points.
7. The changes to the graph don't make any difference to the question.

Subjects

Anywhere graphs or tables are part of the question.

Example F2

Type F: Amount of information reduced

Key Stage 4 Maths for 14–16 year olds

Example F2: original question

New cars use petrol, diesel or other fuels.

Some of the other fuels are gas and electricity.

The table shows information about the new cars with the lowest CO_2 emissions in five categories.

Category	Car	Fuel	CO_2 emissions (grams/km)
Supermini	Volkswagen Polo Blue Motion	Diesel	99
Small family	Toyota Prius Hybrid	Petrol/Electricity	104
Family	Renault New Laguna Hatch	Diesel	130
Small MPV	Ford Focus C-Max	Diesel	127
Executive	BMW 5 series E60	Diesel	136

The annual CO_2 emissions of a new car can be calculated as shown.

Example

Car	Ford Focus C-Max
Annual mileage	35000 km
Annual CO_2 emissions	$127 \times 35000 = 4445000$ grams
	$= 4445$ kilograms

Example F2: modified large print

New cars use petrol, diesel or other fuels.

Some of the other fuels are gas and electricity.

The table below shows information about the new cars with the lowest CO_2 emissions in five categories.

Category of Car	Fuel	CO_2 emissions (grams/km)
Supermini	Diesel	99
Small family	Petrol/Electricity	104
Family	Diesel	130
Small MPV	Diesel	127
Executive	Diesel	136

The annual CO_2 emissions of a new car can be calculated as shown below.

EXAMPLE

Category of Car	**Small MPV**		
Annual mileage	**35 000 km**		
Annual CO_2 emissions	**127 x 35 000**	**=**	**4 445 000 grams**
		=	**4445 kilograms**

Type F: Amount of information reduced

Notes

1. There is only one car model quoted in each Category, so it is adequate to list just the Categories and omit the Car column.
2. The Category column has been renamed Category of Car to make it clear that it is about cars.
3. A double line has been used to separate the column headings from the data (used in preference to shading, which is sometimes used in standard papers).
4. In the specimen calculation the car model has been replaced with the Category of Car.
5. Subscripts in "CO_2" have been enlarged so as to be about 16 point in size. Generally superscripts or subscripts should be about 16 point in size and appropriately raised or lowered, and the main text characters associated with them should be 18–20 point.

Subjects

Anywhere information is given in table form.

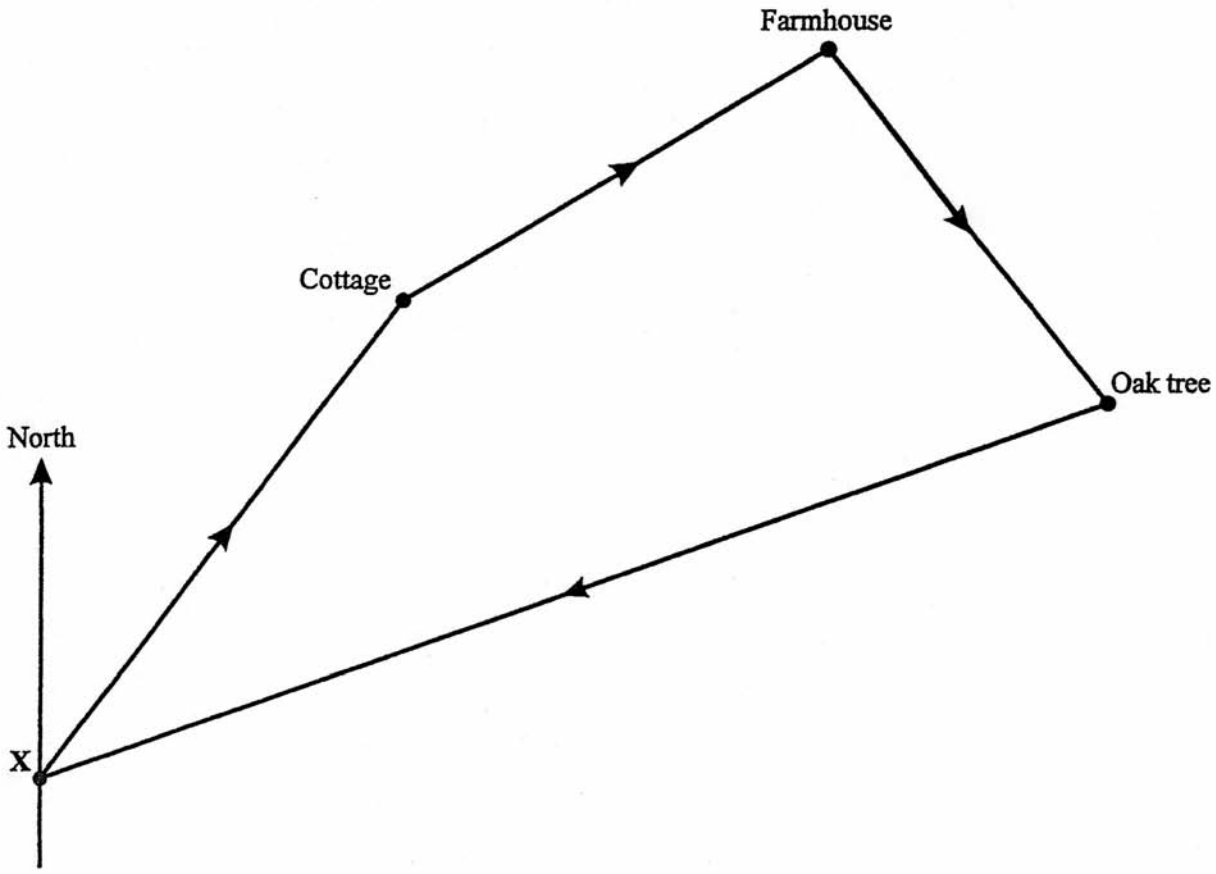
Example G1

Type G: Scale diagram altered and/or tolerance in mark scheme increased

GCSE Maths for 16 year olds

Example G1: original question

1. The diagram shows an accurate plan of a race.



(a) The start and finish of the race is at **X**.

(i) What is the bearing of the cottage from **X**?

Answer .....degrees *(1 mark)*

(ii) What is the bearing of **X** from the oak tree?

Answer .....degrees *(1 mark)*

(b) The plan has been drawn using a scale of 1 mm to represent 10 m.
Use the map to estimate the length of the race in kilometres.
Give your answer to the nearest tenth of a kilometre.

(b) The plan has been drawn using a scale of 1 mm to represent 10 m:
Use the map to estimate the length of the race in kilometres.
Give your answer to the nearest tenth of a kilometre.

.....

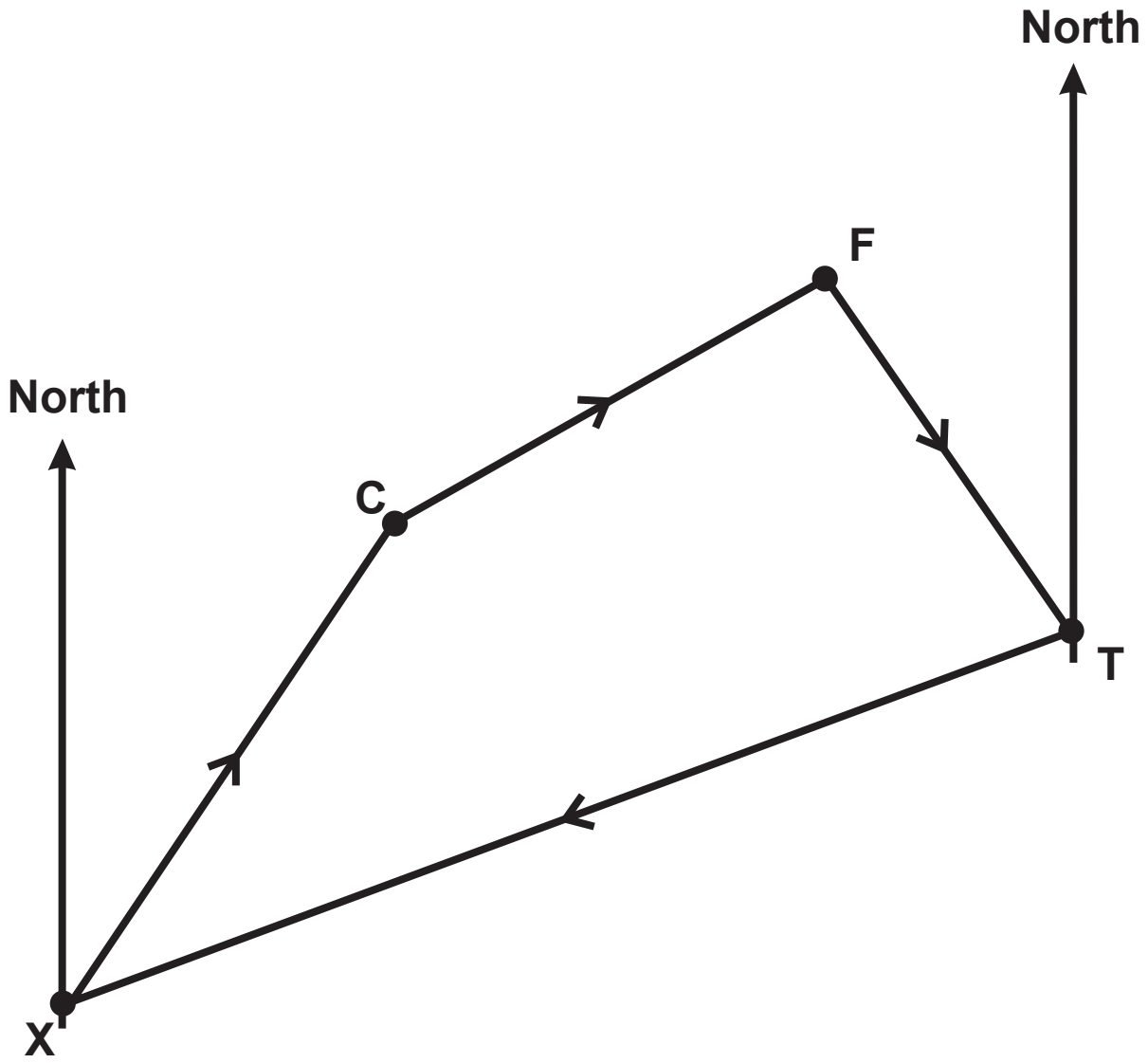
.....

.....

.....

Answer ..... km *(3 marks)*

Diagram for Question 1



1. The diagram on the separate sheet provided for this question shows an accurate plan of a race.

(a) The start and finish of the race is at X, there is a cottage at C, a farmhouse at F and an oak tree at T.

(i) What is the bearing of the cottage from X? [1 mark]
Answer ..... degrees

(ii) What is the bearing of X from the oak tree? [1 mark]
Answer ..... degrees

(b) The plan has been drawn using a scale of 0·5 cm to represent 50 m.

Use the map to estimate the length of the race in kilometres.

Give your answer to the nearest tenth of a kilometre. [3 marks]

.....

.....

.....

.....

.....

Answer ..... km

Type G: Scale diagram altered and/or tolerance in mark scheme increased

Notes

1. The distances and angles of the race route have been altered slightly:
   - Angle NXC, the one to be measured in part (a)(i), has been reduced from 37° to 35°, which is easier to measure to the nearest 5°, as would be allowed for an MLP paper.
   - In the actual printed modified exam paper all four distances XC, CF, FT and TX are close to whole numbers of centimetres, for ease of measurement to the nearest 0.5 cm and for ease of marking. The marking scheme for part (b) should, of course, be altered to match any change in the correct answer.
2. The lines and place dots have been thickened.
3. The arrow heads have been changed to larger, open ones.
4. A duplicate North line has been added parallel to the original at the right hand side of the map. It is necessary to have a duplicate North line through T in order to answer part (a)(ii), but there is no indication in the question text that it was necessary for the candidate to show that they could draw an accurate parallel line on the right hand side in order to gain the mark. They still have to show that they know which angle to measure.
5. The place names along the race route (Cottage, Farmhouse, Oak tree) have been replaced with single letters C, F and T. This makes the diagram less cluttered than it would be with large print place names. The place names have been incorporated into the question text instead.
6. The diagram would be on a separate, removable sheet, so that comb or other binding wouldn't get in the way of a protractor being used near the edge of the sheet.
7. The scale in part (b) has been stated in a different, equivalent form – 0.5 cm to 50 m in place of 1 mm to 10 m. This relates more logically to the measurements the candidate will make. They might be confused by the original version, knowing that they cannot see or be expected to see a 1 mm division on a drawing or on a ruler.

Subjects

Maths, Geography and Design Technology Graphics.

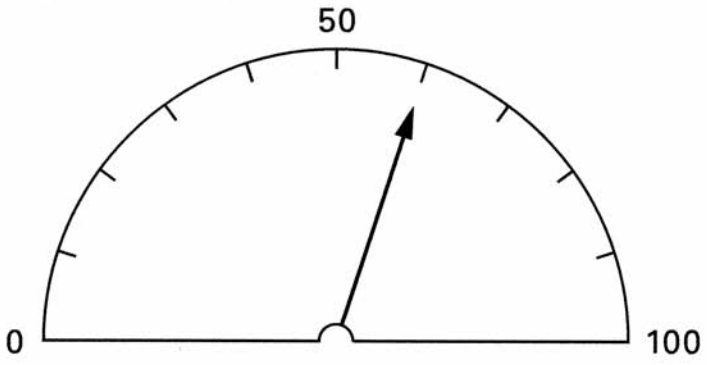
Example G2

Type G: Scale diagram altered and/or tolerance in mark scheme increased

Key Stage 3 Maths for 14 year olds

Example G2: original question

3. (a) Look at this scale.

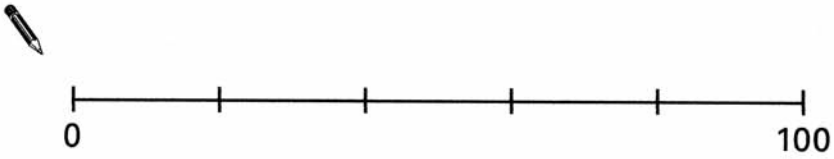


What value is the arrow pointing to on the scale?

..... 1 mark

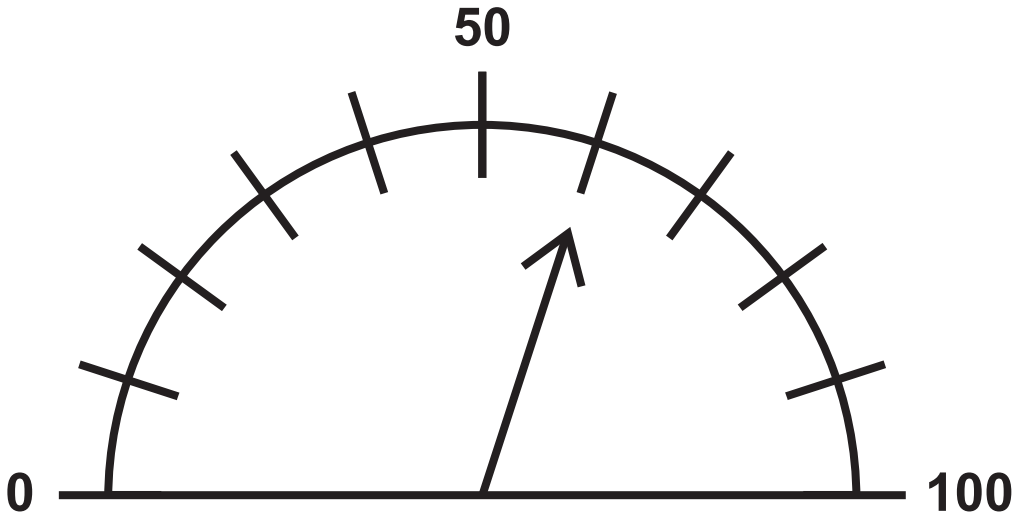
(b) Here is a different scale.

Draw an arrow (↓) so that it shows the **same value** as the arrow in part (a).



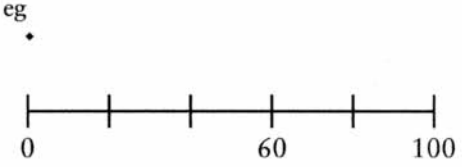
1 mark

3. (a) Look at the scale below.
What value is the arrow pointing to on the scale?
[1 mark]

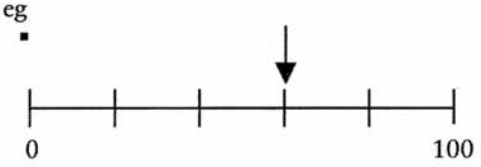
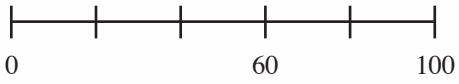


(b) A different scale is shown below.
Draw an arrow (🡻) so that it shows the SAME VALUE as the arrow in part (a). [1 mark]

Standard mark scheme

Tier & Question						Scales
3-5	4-6	5-7	6-8			
3					Correct response	Additional guidance
a				1m	60	✓ *Value between 59 and 61 inclusive* ! *Units given* Ignore
b				1m	Indicates the correct position eg  	✓ *Unambiguous indication* eg  ! *Follow through* Accept follow through from part (a), provided their (a) is not 0, 50 or 100 ! *Position not indicated accurately* Accept within 2mm

Modified mark scheme

Tier & Question				Scales		
3-5	4-6	5-7	6-8			
3					**Correct response**	**Additional guidance**
a				1m	60	✓ Value between 58 and 62 inclusive ! ***Units given*** Ignore
b				1m	Indicates the correct position eg  	✓ ***Unambiguous indication*** eg  ! ***Follow through*** Allow follow through from part (a), provided their (a) is not 0, 50 or 100 ! ***Position not indicated accurately*** Accept within ±5mm

Type G: Scale diagram altered and/or tolerance in mark scheme increased

Notes

This example illustrates how a mark scheme might need to be modified for large print users even when the way in which the question is presented needs little change.

1. The changes to the scales diagrams are minimal, including line thickness, arrow head size and print size of the text and enlarged numbers on diagrams.
2. The question wording follows the original very closely.
3. In the mark scheme for the modified large print paper, the tolerance for the answer given to part (a) has been increased from "between 59 and 61 inclusive" to "between 58 and 62 inclusive".
4. For part (b) the accuracy of the position indicated has been increased from "Accept within 2 mm" to "Accept within ±5 mm".

Subjects

Maths and Science.

Example H1

Type H: Inherently visual material or question replaced with non-visual equivalent

GCSE History for 16 year olds

Example H1: original question

SOURCE E

A large crowd listening to Hitler speaking in Berlin, 1932.

7 (c) Study Source E.

How useful is this source to an historian studying Hitler's rise to power? Use the source and your knowledge to explain your answer. [6]

Example H1: modified large print

Alternative Source E in modified paper

SOURCE E

> **The hours passed, the sun shone, expectations rose. 'The Führer is coming!' A ripple went through the crowds. Around the platform hands were raised in the Nazi salute. There stood Hitler in a simple black coat and he looked over the crowd, waiting – a forest of swastika pennants swished up, the jubilation of this moment was expressed in a roaring salute.**

[An account of a large crowd at a Nazi meeting in 1932]

7. (c) Study Source E.

How useful is this source to an historian studying Hitler's rise to power? Use the source and your knowledge to explain your answer. [6 marks]

Type H: Inherently visual material or question replaced with non-visual equivalent

Notes

1. The original question refers explicitly to the source.
2. The source was not suitable for modifying to make it visually accessible. It contained a large amount of small detail that would not have been clear if the picture was enlarged.
3. It is always preferable to keep close to the original question, so an alternative non-pictorial source should be found if possible. In this case a very close parallel source was located; it might have been written to describe the same scene.
4. The text source is not the same as a description replacing a picture, as in Examples Type C. It contains an element of descriptive expression and emotional response from the relevant time and place that conveys not just the appearance of the scene, but the atmosphere too. It is, in fact, an alternative historical source.

Subjects

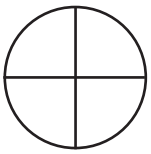
History and Religious Education.

Example I1

Type I: Drawing task replaced

GCSE Maths for 16 year olds

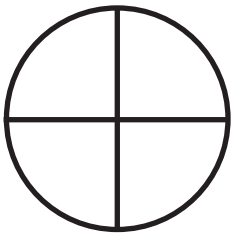
Example I1: original question

1 (d) In a pictogram the symbol  represents 20 people.

Draw a symbol that would represent 5 people.

(1 mark)

1. (d) Look at the pictogram symbol below.

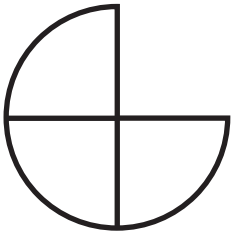


It represents 20 people.
Now look at these three symbols

A

B

C



Write the letter of the symbol that would represent 5 people. [1 mark]

Answer _____

Type I: Drawing task replaced

Notes

Drawing is a particularly difficult skill for candidates with visual impairments. It is not often a good way of assessing knowledge in any subject other than drawing.

In this example the candidate is asked to recognise the correct answer from 3 alternatives instead. The question wording is altered accordingly.

Subjects

Anywhere drawing is used as a method of answering, except where drawing is the skill being assessed.

Example J1

Type J: Question unaltered but allowable answers modified

AS ICT & Computing for 17 year olds

Example J1: original question

7 For each of the following user interfaces, give an example of an application of its use, the hardware which would be used with the interface in your application and describe why it is suitable for the application.

(i) Menu based interface.

Application .....

.....

Hardware .....

.....

Suitability .....

.....

.....

..... [4]

(ii) Natural language interface.

Application .....

.....

Hardware .....

.....

Suitability .....

.....

.....

..... [4]

14 The company is looking at producing on-line training for different subjects in schools. ICT has changed the way lessons in class are delivered, research is conducted and assessment is completed.

Discuss the impact of ICT on education.

The quality of your written communication will be assessed in your answer to this question.

Example J1: modified large print

Modifier's notes to examining body

Question 7

(i)

Mark scheme: Note about hardware: A visually impaired user is likely to use the keyboard (in preference to the mouse) for making choices in a menu based interface, and a screen reader to tell them the choices and the effects of their keyboard actions. The hardware they are using here is the sound card and loudspeaker/headphones, or a refreshable braille display, rather than the video monitor. Full credit should be allowed for an answer based on these alternatives.

(ii)

Mark scheme: similar comments to those being given for part (i) above. If a voice-to-text system is being used then the display of the text would usually be a video monitor, but a visually impaired user might require screen reader software with a loudspeaker or headphones, or a refreshable braille display. Although complex to master, such systems are in use.

Question 14

Mark scheme: A severely visually impaired candidate might have a very different range of positive and negative experiences from pupils with normal sight. For instance it is very difficult to make interactive whiteboard displays accessible to pupils who cannot see anything clearly at a distance.

Another common issue is that problems often arise in schools over access to networked PCs, where many features and facilities of operating systems such as MS Windows that are designed to help users with disabilities are "locked down" for a variety of reasons, usually associated with security, and thus are not available to users who rely on the keyboard rather than the mouse.

This possibly different outlook on the part of a candidate with a visual impairment should be recognised and credited appropriately in the mark scheme, as long as they show an adequately informed appreciation of the issues.

Type J: Question unaltered but allowable answers modified

Notes

Sometimes the correct answer(s) to a question potentially do not include those that might be given by a visually impaired candidate. Two types of questions come to mind. There may be others that you can think of, and others might arise, particularly as the emphasis on the application of visually based ICT systems in everyday life and the use of such applications as topics for exam questions increases.

The first type of question relates to a severely visually impaired candidate's methods of working. In particular the almost exclusive use of the keyboard in preference to the mouse, and the use of screen readers. The speech heard by a screen reader user makes little if any reference to the visual presentation of the information displayed on the screen. It is simply a linear stream of information, usually in an order determined by the software display design (especially in the case of web screens) or the screen reader software.

The second type of question is one where value judgements are sought on the effects of the introduction of communications systems that have no benefit and possibly some disadvantages for a visually impaired user, for example interactive whiteboards and video conferencing.

It is difficult to tell when this situation might arise with GCSEs and above because neither modifiers nor staff at candidates' examination centres have access to mark schemes. When modifying tests for internal use in schools you will be at liberty to discuss what is marked as correct by the staff who set the test.

It seems prudent to consider whether the expected answers to a question in a public exam include those likely to be given by a candidate with a visual impairment, and to pass your observations to the examining body if you feel that a candidate's answers might not be understood by a marker who wasn't familiar with the experiences and ways of working of visually impaired learners.

Subjects

ICT, Computing and any others that make assumptions about how sighted and visually impaired people do things.

Further information

General Qualifications

The Joint Council for Qualifications (JCQ) is responsible for producing regulations relating to the use of access arrangements for General Qualifications (for example GCSEs, GCE A level, Key Skills, Functional Skills and Entry Level qualifications). The regulations "Access Arrangements, Reasonable Adjustments and Special Consideration" are updated by the JCQ each year in September and posted on their website at www.jcq.org.uk

Modification of examination papers is carried out according to a document called "Best practice guidance for the modification and production of examination papers for candidates with a visual impairment", which is available on RNIB's website at rnib.org.uk/curriculum

National Curriculum tests

Full details of National Curriculum test arrangements are available at www.qcda.gov.uk/tests

Standardised tests

Information about access arrangements for standardised tests is available from GL Assessment at www.gl-assessment.co.uk

For further details of exam modification contact RNIB's Children, Young People and Families team at cypf@rnib.org.uk

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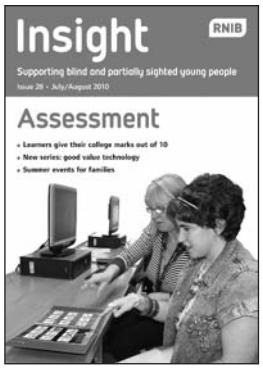

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