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# **Accessible PDF for assessments: Guidelines**

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**Guidance from UKAAF**



## Why format quality matters

"When organisations send me information in formats that I can read myself it allows me to be independent, feel informed and appreciated - just like every other customer."

End-user

"Producing consistently high quality accessible formats helps us to maintain our reputation, to gain new customers and to retain existing ones."

Transcription agency

"We are committed to ensuring that our customers with print disabilities receive the same information, of the same quality, as everyone else."

Service provider

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## **Who is this guidance for?**

This guidance from the UK Association for Accessible Formats (UKAAF) is primarily aimed at schools and academic institutions, awarding bodies, designers and transcribers. It will be particularly useful for any organisation producing an assessment in PDF format to ensure they are made accessible for candidates with print impairments. This document is guidance, for experienced desktop publishers: it is not a detailed training manual. Please refer to the Further Resources section for sources of training materials.

## **Disclaimer**

This guidance may include references to external websites, services or products for which UKAAF accepts no responsibility. This information is given without any representation or endorsement of those websites, services or products.

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## 1 Introduction

By obtaining these guidelines you are demonstrating your commitment to helping people with a print disability to read your materials if they find reading standard print materials difficult or impossible.

UKAAF guidance concentrates specifically on materials suitable for blind and partially sighted people - such as large print, audio, braille and electronic file formats. However, this guidance is intended to support the provision of material for individuals with other print disabilities, such as dyslexia.

The provision of accessible information is a key requirement of the Equality Act which service providers must follow, but good customer service and business practice includes communicating with your customers and staff in ways which meet their reading needs. By providing accessible format materials, you not only demonstrate your commitment to equality and inclusion, but also increase your reach and customer base. It therefore makes good business sense.

This guidance will help you and your organisation to incorporate good practice into your business and provide good quality accessible format materials in a timely and appropriate way.

## 2 About UKAAF

The UK Association for Accessible Formats (UKAAF) is the industry association whose mission is to set standards for accessible formats that meet end-user needs through:

- development, delivery and promotion of codes, standards, and best practice for the production and provision of accessible formats

- consultation and collaboration with transcribers, service providers and users of accessible formats.

Members of UKAAF include organisations and individuals with an interest in the provision of quality accessible formats, such as service providers, transcribers, educators, researchers, print services, publishers, and end-users.

Through its leadership and representation, standards-setting, and by fostering a spirit of cooperation between members, UKAAF ensures that the needs and requirements of end-users are understood by service providers and transcribers to help improve the quality of accessible formats.

Please see the section on "Where to get further help" (Page 33) at the end of this document for more information about the benefits of being a member of UKAAF.

### **3 Definition of print disability**

A print-disabled person is anyone for whom a visual, cognitive, or physical disability hinders the ability to read print. This includes all visual impairments, dyslexia, and any physical disabilities that prevent the handling of a physical copy of a print publication.

Source: Copyright Licensing Agency Print Disability Licensing Scheme, Guidelines for Licensees 2010.

### **4 General information**

This guidance aims to offer advice on how an organisation can ensure they are meeting the minimum standards for accessible PDF for assessment published separately by UKAAF. The minimum standards outlines two levels of accessibility and this guidance also follows this structure.

## 4.1 What is an accessible PDF assessment?

An accessible PDF assessment works with assistive technology such as screen or text reader software to allow print impaired candidates access to the contents of the examination paper. In order to be made accessible the reader software needs to be told what content the PDF is displaying. It should be easy to navigate through the assessment with or without a mouse and have text-to-speech software coherently read the assessment.

Accessible PDFs also enable print impaired users to tailor the display to suit their own needs in software such as the freely available Adobe Acrobat Reader. For example, dyslexic candidates may have a particular text and background colour combination to help them read more effectively.

Level One is a PDF version of the standard assessment intended for use by sighted candidates who are print impaired. Level Two is intended for use by candidates who are blind or who have a significant visual impairment. In addition, for Level Two accessibility, some aspects of the assessment may need to have been modified by a specialist, for instance a Qualified Teacher of the Visually Impaired, to make it accessible to a candidate who has little or no sight. For both levels, there is the option for the assessment to contain on-screen answer boxes (form fields), which would also allow candidates to record their responses in the PDF file.

While these standards are closely aligned to the guidance for PDFs within the Web Content Accessibility Guidelines (WCAG 2.0) they have been written to take account of the need to balance accessibility against assessment criteria and regulations when producing PDFs for use in assessments.

## 4.2 Terminology

As in the minimum standards document, this guidance also uses the terms 'text-to-speech software' and 'screen-reader software'. Text-to-speech software (TTS) refers to tools designed for a sighted user that can read aloud with synthetic speech when selected by mouse or navigated to by the user. Entry level TTS tools involve the user selecting text and copying it to the clipboard from where the TTS software reads it aloud while some may be able to read aloud the text within the PDF reader application. Screen-reader software refers to tools designed for users who are blind or have a significant sight loss. Screen-reader software enables a user to navigate through a document using the keyboard to navigate in conjunction with audio output and for **all** relevant content to be vocalised.

In this guidance there is reference to 'associated regulations'. This term is used to refer to any regulations or guidance (e.g. published by Ofqual, Welsh Government, JCQ, etc) that exist for the type of assessment being made as an accessible PDF.

## 4.3 Software packages

Assessments may be typeset and prepared in a variety of ways. It is not possible for this guidance to detail how to fulfil each element of the minimum standards in the full range of software available, for example Adobe InDesign and QuarkXPress. This guidance aims to give additional detail on each element of the minimum standards and, where possible, give examples of how this might be achieved during the design and typesetting process.

The easiest way to ensure the accessibility of the PDF is to build as many of the accessibility standards as possible into the original document. Where it's not possible for these to be built into the

original document in the software used, the accessibility features will need to be created in the PDF file itself.

### **4.3.1 Adobe InDesign**

Adobe InDesign allows accessibility features to be added at source. PDF tags, alt tags, and the content order you assign stay with the document as you revise it. Refer to InDesign accessibility guides at

<http://www.adobe.com/accessibility/products/indesign.html>

### **4.3.2 Microsoft Word**

There are several ways to create a PDF file from a Word document. The Adobe Acrobat Task Ribbon is a good choice before final tweaking in Acrobat itself. Guidance on 'Creating an accessible PDF from Word' can be downloaded from Adobe Acrobat Training Resources:

<http://www.adobe.com/accessibility/products/acrobat/training.html#11>

Ensuring your Word document is structured for accessibility will help to reduce the amount of work required to create an accessible PDF. Guidance on creating structured Word documents can be found in the Training and Guidance section of the Load2Learn website:

<https://load2learn.org.uk/training/>

### **4.3.3 QuarkXPress**

PDF files created with current versions of QuarkXPress do not support accessibility. Such files will need to be made fully accessible using a PDF editing package. Refer to the Adobe accessibility website for further guidance:

<http://www.adobe.com/uk/accessibility.html>

The guidance covers steps to make PDF assessment accessible using Adobe Acrobat Pro; most of these can be achieved using your DTP or authoring package at the design stage.

## 5 Level One: Accessible PDF for sighted candidates

This guidance provides advice on making the PDF accessible at two different levels. Level one is intended for candidates who are sighted and who use text-to-speech (TTS) software to access written documents. The candidates, therefore, can see to navigate around the document and to access visual material, but need all text elements of the assessment to be accessible to their text-to-speech software.

Within this level of accessibility, there are also two sub-levels of file: those **without** form fields to be completed by the candidate, and those **with** form fields to be completed by the candidate. Where the intention is that the candidate will record their answers separately to the PDF file, sections 5.1 to 5.15 should be used to make the accessible PDF. Where it is intended that candidates will record their responses in the PDF file, you should also refer to section 5.16.

### 5.1 Document properties

**Standard:** The Document Properties are correctly populated and set up according to the UKAAF Accessible PDF guidance.

**Purpose:** To ensure the correct title of the file is shown in the title bar and announced to TTS users.

During an assessment a candidate is likely to have to switch between a number of files and applications. Ensuring that the

document properties are correctly populated including the title field will aid candidates in navigating between files. Advanced TTS applications and screen-reader tools will announce these fields to a candidate.

**External guidance:** <http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF18>

## 5.2 Primary language

**Standard:** The correct primary language is assigned.

**Purpose:** The appropriate TTS voice for the correct language is used.

The document language is stored in the **Advanced** tab under **Document properties**. This tells assistive software what language voice to use.

If you need to set a different language for specific paragraphs of text this can be done from **Content: View and edit page content information**. Right click on the foreign language container and from the **Content** tab select the required language.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF16>

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF19>

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (pages 41-42).

### 5.3 Making text accessible to text-to-speech software

**Standard:** All text required by the candidate (including text on images, graphs, maps, etc.) can be accessed by text-to-speech software.

**Purpose:** Learners with print impairments can use TTS software to support their reading of the questions.

Use the Accessible Text version of the PDF and Reflow view to check that all text needed by the candidate can be accessed. The Accessible Text version is created by saving the PDF file as a text file (File > Save As Other > Text in Adobe Reader). The text within this file or visible in the PDF Reflow view should provide the TTS software with the text content with correct spellings and in the correct order.

Errors within the underlying accessible text can also occur if the content of the PDF file has been edited by OCR. Text within images that may need to be accessed by a candidate (for example labels on a diagram) should be accessible to the clipboard and TTS software.

**External guidance:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 23-24).

### 5.4 Making audio output accurate

**Standard:** The audio output of the text-to-speech accurately reflects the text on screen.

**Purpose:** The text spoken by the TTS software is accurate for the assessment and does not increase the difficulty of the task for the candidate.

Listen to the audio version of the accessible text using the Adobe Read Out Loud tool or a clipboard reader with the Accessible Text version of the PDF. Examine any areas which when spoken do not represent the text within the assessment PDF and correct if possible within the assessment criteria.

This is particularly important if numbers, subscripts, superscripts, or other font attributes have been used within the text. The pronunciation of acronyms and special symbols can vary between different TTS voices and should not be corrected. However, the assessment criteria may require that the reading of symbols and abbreviations are specified (for example, ensure 1cm is read as “one, c, m”). Editing the underlying text or using expansion text techniques can prescribe how any voice should read aloud text.

**External guidance:**

As per 5.3

Expansion Text techniques:

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF8>

<http://wwwimages.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 78).

## 5.5 Coherent reading order

**Standard:** The document has a coherent reading order for text-to-speech software.

**Purpose:** Text within an equation are read aloud or presented in the reflow view in the correct order.

For Level One, it is important that the text within a question is presented to the clipboard or in reflow view in the correct order. An

incorrect reading order, or partially tagged assessment document, could mean the candidate is presented with incorrect information. This should have been identified in 5.3 and 5.4. Incorrect reading order will also impact keyboard users as it defines the order with which the user will navigate through the file (the tab order).

Reading order within a PDF can be set through tagging items. Whilst it is not necessary to fully tag a PDF file to achieve Level One, if you encounter reading order issues in 5.3 and 5.4 or the assessment has a complex layout, it is likely that some tagging will resolve this. Setting the reading order through tags does nothing to affect the PDF visually in any way.

To set the reading order, items in the file need to be tagged in the correct reading order for TTS software. If you create the original document in a design package, you may be able to set much of the reading order in an articles or object manager facility. However, if the document was imported to the design package from another source, such as MS Word, you will probably need to touch up the reading order in the PDF file using PDF editing software rather than the articles/objects manager. The articles/object manager may also be used to exclude content (such as page numbers) from the TTS output.

### **External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF3>

[https://helpx.adobe.com/acrobat/using/touch-reading-order-tool-pdfs.html#check\\_and\\_correct\\_reading\\_order\\_acrobat\\_pro](https://helpx.adobe.com/acrobat/using/touch-reading-order-tool-pdfs.html#check_and_correct_reading_order_acrobat_pro)

## **5.6 Navigation**

**Standard:** The file has an appropriate navigational structure and uses heading styles consistently throughout the assessment so

that candidates can easily navigate between or within instructions, questions and stimulus material.

**Purpose:** Candidates can quickly orientate themselves and move through the question paper.

Providing structure within the PDF files aids navigation through the document, particularly for candidates using the keyboard. Very often these bookmark links are automatically imported into the PDF file from structured documents created in software such as MS Word, Adobe InDesign, etc. These should be correct for the assessment criteria and have meaningful names. Bookmarks can also be used to link source material to questions.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF9>

## 5.7 Tagging lists

**Standard:** Lists are appropriately tagged.

**Purpose:** Lists are read correctly by TTS tools and maintain structure when zoomed.

Lists without tags may be read incorrectly by TTS software if as punctuation to guide the speech tool is missing. Items may also be run together when zoomed. Tagging content as a list allows some TTS tools to pause in the correct places and for the layout of the items to be retained when zoomed. Tagging lists also aids users to navigate through items.

Most content authoring tools will enable lists to be formatted correctly and this mark-up should be transferred to the PDF version. If lists are not being represented correctly (as identified in 5.3 and 5.4) then correcting the tag structure of the list should address this.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF21>

## 5.8 Bookmarking sections and questions

**Standard:** Each new Section or Question within the assessment is bookmarked.

**Purpose:** Bookmarks within the file helps with orientation and navigation.

This helps candidates to locate particular sections or questions within the document.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF2>

## 5.9 Text reflow

**Standard:** Where papers do not have form fields, text reflows correctly when zoom tools are used, so that all elements of a question are co-located before and after reflow.

**Purpose:** Candidates can magnify text without losing the end of lines off the right hand side of the screen.

Reflow view allows candidates to zoom or magnify the content of the PDF so that the text is reflowed and candidates do not need to horizontally scroll to read each line. While reflow will not be available on pages containing form fields other layout items such as the use of tables can also stop reflow being available. It is important to check that reflow is available wherever possible by removing unnecessary fixed layout items. All elements of a question should remain co-located before and after reflow.

**External Guidance:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 23).

## 5.10 Colour contrast

**Standard:** Any coloured text within the assessment meets colour contrast guidelines (as published by WCAG). If a page has a background colour this is of sufficient contrast to the text to meet the needs of candidates who are colour blind.

**Purpose:** Candidates can see all the information relevant to a question.

Use of colour within the file should meet colour contrast guidelines. However, where an assessment item requires the candidate to identify a colour, then the assessment criteria takes precedent.

**External guidance:**

Guidance on testing contrast levels:

<http://www.w3.org/TR/WCAG20-TECHS/G18.html>

## 5.11 Altering colours

**Standard:** The assessment allows the candidate to alter the colours in the PDF file.

**Purpose:** Candidates can personalise their view of the question paper to meet any visual or perceptual needs they may have.

Some candidates will find altering the colour of the font or background will make it easier for them to read the content of the PDF (e.g. high contrast combination of a black background with white text or a coloured background to reduce glare). This may be

achieved by replacing the document colours or through external assistive technology. The PDF should be checked to ensure that altering the colour of the background and font does not impact assessment items.

**External Guidance:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 15-16).

### 5.12 Shortcut keys

**Standard:** Standard keyboard shortcut keys are working.

**Purpose:** Learners with poor mouse control navigate around the document more efficiently with keyboard strokes.

Ensure that a candidate is able to navigate through the PDF file using standard keyboard functions such as up, down, Ctrl-C etc.

### 5.13 Permitting clipboard reader access

**Standard:** Permissions are enabled to allow clipboard reader access so that text can be selected and read out by TTS software.

**Purpose:** Some TTS tools work by reading the clipboard contents. If text cannot be copied to the clipboard these tools will not function.

To ensure computer reading tools using the clipboard can access the contents of the PDF **Content Copying** should also be enabled.

**External guidance:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 33-34).

## 5.14 Mathematical and scientific notation

**Standard:** Where mathematical and scientific notation is accessible to the text-to-speech software (e.g. inline content), the vocabulary used complies with the assessment criteria and associated regulations.

**Purpose:** To ensure TTS software reads notation correctly when permitted and does not read incorrect content when notation is present.

Without remediation it is likely that notation will be partially read or incorrectly read by TTS tools. For example, when a TTS tool encounters a fraction within a line of text, it is likely that it will announce the numerator in the correct position and the denominator at the end of the line. Similarly numbers with notation will often be announced but not the symbols. Incorrect reading can confuse the candidate and these issues should have been identified in 5.4 and 5.5. Consideration for how to remediate this issue should be based on the individual assessment criteria and adjustment regulations will specify which mathematical and scientific notation can be read aloud. Use of the techniques described in 5.4 to alter how notation is read aloud can be used to ensure the notation is correct in the speech output or to remove any speech output in related to the notation.

The way that each notation is read aloud by the TTS software will need to meet whatever rules apply to each individual assessment and should not compromise the assessment criteria of the question. You may need to clarify the correct way to express notation with the owner of the assessment.

## 5.15 Security and permissions

**Standard:** The agreed security and permissions have been set.

**Purpose:** To allow TTS tools to operate properly.

It is vital to ensure that **Content copying for accessibility** is not turned off in the security settings when saving the PDF from Adobe Acrobat Pro. This setting is on by default and should not be altered. In both cases first check that **Content copying for accessibility** and **Content copying** are both **Allowed** in the **Security** tab of **Document properties**. Note that any changes only take effect when the PDF document is saved.

**External guidance:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 33-34).

## 5.16 Insert form fields

**Standard:** Form fields are inserted at appropriate points in the assessment.

**Purpose:** To allow candidates to insert their answers in the question paper rather than having to switch to a different software programme for writing the answers.

Where candidates are required to respond in the PDF file, all answer boxes or buttons will need to be made form fields. This step, and the subsequent steps in this section, will need to be completed in the PDF file using PDF editing software.

**External Guidance for all form fields standards:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (pages 80-90).

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF12>

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF23>

### **5.16.1 Setting form fields to not scroll**

**Standard:** Form fields do not scroll.

**Purpose:** Ensure the candidate's whole answer is visible on a print out.

Ensure Text Field Properties do not have "Scroll long text" selected in the Options tab. This requirement ensures that if a paper is printed out, all the content is visible.

### **5.16.2 Making unique form fields**

**Standard:** Each form field is unique and not a duplicate of another form field.

**Purpose:** To prevent the same answer from appearing in two different answer boxes. Candidates also need to be able to navigate through the assessment to locate answer boxes.

### **5.16.3 Setting the tab order**

**Standard:** The tab order of the form fields is set so that candidates can tab through correctly.

**Purpose:** You will need to make sure that the tab order for the PDF includes the answer boxes and buttons, and that they are in the appropriate order, i.e., immediately following the question.

#### 5.16.4 Allow multiple responses

**Standard:** All check boxes or radio buttons allow multiple responses to be selected.

**Purpose:** Candidates are not led to know that only one response is correct.

Where candidates are given multiple choices from which to select their response, there should be no restrictions on the number of responses that candidates can give. It should be possible for the candidate to give any number and any combination of responses.

#### 5.16.5 Adding instructions for saving

**Standard:** Instructions have been amended to provide centres and candidates with information on how to save and return their responses.

**Purpose:** To ensure candidates do not accidentally lose their work.

## 6 Level Two: Modified Accessible PDF File for candidates who are blind

Papers for use by a candidate with limited or no sight and who cannot see the paper will need further accessibility features, such as additional tagging. The additional accessibility features are necessary because the candidate is likely to be using screen-reader software to read the paper.

### 6.1 Level One criteria is satisfied

The first step in making an accessible PDF to this level of accessibility is to ensure that all of the criteria for Level One have been met. There are then further criteria that will allow the

additional accessibility required by candidates who cannot see the content on the screen.

## 6.2 Structuring the reading order

**Standard:** Reading order is structured to provide continuous reading of the content in a logical order.

**Purpose:** The candidate is able to navigate through the PDF using the keyboard and hear all necessary content in the correct order.

In order for a candidate using a screen-reader to navigate through a document, all content that they need to access must be tagged as the correct content type and included in the reading order to give a logical structure. Candidates using screen-reader software are generally not able to see and select the text to be read aloud and must rely on the software being able to navigate through the file.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF3>

[https://helpx.adobe.com/acrobat/using/touch-reading-order-tool-pdfs.html#check\\_and\\_correct\\_reading\\_order\\_acrobat\\_pro](https://helpx.adobe.com/acrobat/using/touch-reading-order-tool-pdfs.html#check_and_correct_reading_order_acrobat_pro)

## 6.3 Tables are tagged and accessible

**Standard:** Tables are consistently and appropriately tagged with row and column headers provided.

**Purpose:** To enable screen-reader users to navigate through tables and hear the content of cells.

Tables that the candidates need to navigate to extract data should be correctly tagged as headers (TH) and data cells (TD). This supports navigation by screen-reader software. In some cases

tagging the table structure may compromise the assessment criteria and guidance from a modifier should be sought.

Tables are often used within PDFs to aid layout of the exam papers, for example a box drawn around content within the exam paper to help with visually separating the content, rather than to be a table of information. When content is tagged as a table unnecessarily, it will limit the use of zoom tools within Adobe Reader and it will lead to the PDF failing accessibility tests.

Where content has been tagged as a table but is a layout feature, table tags should be removed and content within the table should be tagged as appropriate.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF6>

<http://wwwimages.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (pages 21, 62-66).

<http://wwwimages.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 52).

## 6.4 Providing table summaries

**Standard:** Table summaries are provided where this does not compromise the assessment criteria.

**Purpose:** Table summaries describe the content of the table for screen-reader users.

Table summaries should only be added if they are appropriate for the assessment criteria. In order to preserve the integrity of source material it is necessary to make a decision on an individual basis.

**External guidance:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (page 21, 63).

## 6.5 Adding Alternative Text to images

**Standard:** All necessary and informative images are allocated an alternative text description that complies with the assessment criteria and associated regulations.

**Purpose:** To enable screen-reader software to describe images and visual content within the assessment.

Graphics which convey important information can have alternative text (Alt text) applied. Alt text provides a description of important graphics for screen-reader users. Alt text should always be present if an image is tagged and included in the reading order. However, the Alt text should comply with the assessment criteria and any associated regulations.

Anchoring graphics in-line with text helps to ensure the read order is correct without further editing. This does not affect the visual position of the graphic but allows it to be announced by the screen-reader software in its correct position in conjunction with Alt text. In complex layouts where graphics aren't anchored some further work on the reading order is necessary. Anchoring graphics in-line with text should be possible in design packages, and is also available in MS Word.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF1>

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (pages 76-77).

## 6.6 Mathematical and scientific notation

**Standard:** All mathematical and scientific notation is identified and tagged with appropriate alternative text, so that assistive technology reads it coherently and the vocabulary used complies with the assessment criteria and any associated regulations.

**Purpose:** To ensure screen-readers read notation correctly as per assessment regulations and modification.

Without remediation it is likely that notation will be partially read, incorrectly read or not read by screen-reader software.

Consideration for how to remediate this issue should be based on the guidance for modifying the paper. For notations that appear as images, alt-tags can be used to describe the contents. The techniques described in 5.14 can be used to alter how notation is read aloud can be used to ensure the notation correctly in the speech output or to remove any speech output in related to the notation.

## 6.7 Content not required is excluded from the reading order

**Standard:** All content not required by the candidate, such as bar codes or reference numbers, are tagged as an Artefact.

**Purpose:** To remove unnecessary content from the reading order.

Content which does not need to be read aloud to a candidate should be tagged as an Artefact to remove it from the reading order. For example, this may be applied to reference numbers and markers instructions, as well as tables used for layout purposes.

**External guidance:**

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF4>

## **6.8 Assigning alternative text descriptions for answer lines and boxes**

**Standard:** Answer lines and answer boxes are assigned an alternative text description.

**Purpose:** To remove content that does not need to be read aloud and assist with orientating the candidate within the paper.

Content included within the assessment to indicate where the candidate should enter their answers should be tagged with a suitable alternative text. Where content that may be recognised as text (for example a dotted line) is used to indicate an answer area, its tag should be amended so that it is not read as text and the alternative descriptions should be added into the tagging order.

## **6.9 Complying with modifications**

**Standard:** The content of the assessment complies with the modifications supplied by a Qualified Teacher of the Visually Impaired (QTVI) or a suitably experienced individual.

**Purpose:** To ensure that the text in each question gives the blind candidate all the information required to answer the question.

Where a candidate cannot see the content of the paper, there are some occasions where the text in the original version of the question does not give enough information for the candidate to

answer the question. This may be particularly true in pictorial or visual questions. In these cases, it is likely that the commissioner of the work will also have had the assessment reviewed by a QTVI in order for them to provide modifications that give candidates who are blind or who have low vision access to these resources. The producer of the accessible PDF needs to ensure that they follow any modifications mark up provided by the commissioner of the assessment when the file is finished. If there is any ambiguity in the mark up provided, queries will need to be addressed with the commissioner of the accessible PDF.

UKAAF is publishing separate guidance for QTVI modifiers who are marking up papers to ensure that they are accessible to screen-reader software.

## 6.10 Insert form fields

**Standard:** Form fields are inserted at appropriate points in the examination paper.

**Purpose:** To allow candidates to put their answers in the question paper rather than having to switch to a different software programme for writing the answers.

Where candidates are required to respond within the PDF file, all answer boxes or buttons will need to be made form fields. This step, and the subsequent steps in this section, will need to be completed in the PDF file using PDF editing software.

**External Guidance for all Forms specific requirements:**

<http://www.images.adobe.com/content/dam/Adobe/en/accessibility/products/acrobat/pdfs/acrobat-xi-pro-accessibility-best-practice-guide.pdf> (pages 80-90).

<http://www.w3.org/TR/WCAG20-TECHS/pdf.html#PDF12>

### 6.10.1 Setting form fields to not scroll

**Standard:** Form Fields do not scroll.

**Purpose:** Ensure the candidate's whole answer is visible on a print out.

Ensure Text Field Properties do not have "Scroll long text" selected in the Options tab. This requirement is so that if a paper is printed out, all the content is visible.

### 6.10.2 Labelling form fields

**Standard:** Each form field is unique and not a duplicate of another form field.

**Purpose:** To prevent the same answer from appearing in two different answer boxes. To enable the candidate to identify the different form fields within the document.

You will need to make sure it is possible to locate the correct form field for each question.

### 6.10.3 Setting the tab order

**Standard:** The tab order of the form fields is set so that candidates can tab through correctly.

**Purpose:** To enable the candidate to move through the form fields using the keyboard.

You will need to make sure that the tab order for the PDF includes the answer boxes and buttons, and that they are in the appropriate order, i.e. immediately following the question.

#### 6.10.4 Tooltips for questions

**Standard:** The tooltip for each form field identifies the question to which it refers.

**Purpose:** Adding a tooltip to form fields enables screen-reader software to tell the candidate that they need to type in the box.

Under **Tools** choose **Forms** and **Edit**. This will automatically select any Form fields for editing. Double click the Form field to bring up the **Text field properties** pane. Under **General**, add an appropriate **Tooltip** for the Form field. For example, in a text box you could put **Type your answer here**, for example.

#### 6.10.5 Allow multiple responses

**Standard:** All check boxes or radio buttons allow multiple responses to be selected.

**Purpose:** Candidates are not led to know that only one response is correct.

Where candidates are given multiple choices from which to select their response, there should be no restrictions on the number of responses that candidates can give. It should be possible for the candidate to give any number and any combination of responses.

#### 6.10.6 Adding instructions for saving

**Standard:** Instructions have been amended to provide centres and candidates with information on how to save and return their responses.

**Purpose:** To ensure candidates do not accidentally lose their work.

## 7 Further resources

As well as the guidance referenced in earlier sections more general information on creating accessible PDFs are listed here.

Guidance on accessible PDFs is available on the gov.uk website at <https://www.gov.uk/service-manual/user-centred-design/resources/creating-accessible-PDFs.html>.

A more in-depth introduction for PDF accessibility is available from WebAIM <http://webaim.org/techniques/acrobat/>

Further information on creating accessible PDF documents is available on the Adobe accessibility website:

<http://www.adobe.com/uk/accessibility.html>

Documentation on creating accessible PDF with InDesign is available from the Adobe website:

<http://www.adobe.com/accessibility/products/indesign.html>

Adobe Acrobat Pro provides a range of tools for making PDFs more accessible. A guide to using these tools is available at <https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html>

Additional solutions for checking PDF accessibility are available from CommonLook (<http://commonlook.com/accessibility-software/commonlook-pdf/>, commercial solution) and PAC-2.0 from Access For All (<http://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac.html>, free)

Guidance on inserting form fields to assessments is available from <http://www.adapteddigitalexams.org.uk/Making-Prelims/>.

Not all centres and candidates will be fully aware of how to use the accessibility features of Adobe Reader XI. Guidance for centres and their candidates is available from the UKAAF website:

<http://www.ukaaf.org/formats-and-guidance#electronic>

## **8 Where to get further help**

UKAAF assists businesses and organisations by advising how to meet the needs of customers and clients with print disabilities; providing guidance on how to source and provide quality accessible formats like large print, audio, braille, electronic file formats and Easy Read; and helping you to understand your responsibilities as a service provider.

Through our website and magazine, members will also gain access to:

- findings from public consultations and end-user research
- research and innovation in accessible formats
- information on suppliers of transcription services
- guidance and advice on standards for accessible formats
- opportunities to review and help to develop standards and guidance.

In addition to supporting service providers and transcribers, UKAAF also represents people with print disabilities. We believe that because format quality matters, end-users should have genuine input into the development of standards for accessible information. By collecting and sharing users' views with service providers and transcribers we can help them to deliver a quality service which meets users' needs.

UKAAF has a User Advisory Group (UAG) so we can include blind and partially sighted people and others with print disabilities in

ongoing research and consultation on key accessible format issues.

There are many benefits of being a member of UKAAF, not least to demonstrate your commitment to quality accessible formats. For more information visit us at [www.ukaaf.org](http://www.ukaaf.org).

## **9 Your feedback is welcome**

We would welcome your views on this guidance, any suggestions for additions, or case studies of how this guidance has helped you. You might like to share your experience in an article in our magazine 'Format Matters'.

You can phone, email or write to us - our details are at the back, or use the feedback form on our website [www.ukaaf.org](http://www.ukaaf.org).

If you find UKAAF's guidance valuable, please encourage others to join by visiting our website.



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