Checklist: Accessibility in Excel

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# Introduction

This document provides assistance in creating Excel spreadsheets that are as accessible as possible. However, to make an Excel spreadsheet fully accessible in accordance with the EN 301 549 guidelines, our extended checklist in accordance with EN 301 549 is required. You can find explanations on how to implement the individual aspects in the "Excel accessibility" implementation guide.

This checklist focuses on the use of Excel files for tabular and numerical data and their visualisation using diagrams. Other uses for which Excel were not originally intended are difficult or impossible to implement without accessibility (e.g. large tables with structured text, site maps).

The checklist consists of a table with four columns. The first column is for ticking off as well as numbering the aspects. The second column categorises the aspects to be considered, which are explained in more detail in the third column. The fourth column provides information on the specific needs for which this aspect is particularly helpful.

Please bear in mind: In any case, the list of requirements is exemplary, but not exhaustive!

# Notes on using the checklist

When creating a new document, it is recommended that the integrated accessibility check in Excel is activated from the start date and runs parallel to the creation process. In this way, some barriers can be recognised and prevented immediately. The "Check accessibility" option is helpful, but does not guarantee complete accessibility, which is why it should be used in addition to a manual check.

Please note that further requirements must be taken into account when exporting the document to PDF (see Checklist "[PDF accessibility](https://openmoodle.uni-bielefeld.de/mod/resource/view.php?id=1878)"). If you want to make your material available, we recommend using the original format (e.g. Word, PowerPoint) to prevent further adaptations and ensure accessibility.

This checklist is not suitable if at least one of the following cases applies:

* Scripts are used (e.g. VBScript)
* There are embedded objects (created with the Excel function "Insert object")
* There are videos or online videos

In these cases, the catalogue of requirements in section 10 of EN 301 549 should be consulted directly.

# Authorship and licence

Staff: Christin Stormer and Gottfried Zimmermann. The project [SHUFFLE – Hochschulinitiative digitale Barrierefreiheit für Alle](https://www.shuffle-projekt.de/) is financially supported by the Foundation [Innovation in der Hochschullehre](https://stiftung-hochschullehre.de/). This document is released under [CC BY 4.0 licence](https://creativecommons.org/licenses/by/4.0/).

# Checklist

| Check/No. | Type | Aspect  | In digital education, **particularly** helpful for individuals who... |
| --- | --- | --- | --- |
| 1.1 | General | A reference to internal or external textual or graphic objects is made by explicit naming, not solely by means of a description via visual or auditory features. | ... would like to orientate themselves in the document.... primarily use a sensory channel. |
| 1.2 | General (colour) | The use of colours is generally sparing. | ... do not perceive all colours clearly. ... be distracted by colours. ... perceive stimuli strongly.... work independently of colour display. |
| 1.3 | General (colour) | If colours are used to convey information (e.g. in diagrams or to mark text), labels, symbols or patterns also convey the same information. | ... work independently of colour display.... be distracted by colours. ... perceive stimuli strongly.... do not perceive all colours clearly. |
| 2.1 | Document | The file name is easy to understand and meaningful and has the same or similar content to the title in the metadata. | ... use a voice output or a screen reader.... want to find their way around quickly. |
| 2.2 | Document (language) | The main language of the document corresponds to the language set for the spell check. | ... use a voice output or a screen reader. |
| 2.3 | Document | The title is stored in the metadata, meaningful and easy to understand. | ... use a voice output or a screen reader.... want to find a document via a search engine. |
| 3.1 | Spreadsheet | Worksheets have meaningful and easy-to-understand names. These differ from other worksheets in their names. | ... use a voice output or a screen reader.... want to find their way around quickly. |
| 3.2 | Spreadsheet | The worksheets are arranged in a sensible order. There are no blank worksheets. | ... use a voice output or a screen reader.... would like to orientate themselves in the document. |
| 3.3 | Spreadsheet | Each worksheet contains a maximum of one table.If a worksheet contains several tables, these are arranged in a sensible order. | ... use a voice output or a screen reader.... would like to orientate themselves in the document. |
| 3.4 | Spreadsheet | A worksheet contains either one or several tables or illustrations, diagrams and text boxes.  | ... use a voice output or a screen reader. |
| 3.5 | Spreadsheet | At the beginning of the worksheet there is a note about the illustrations, diagrams and text fields it contains. | ... use a voice output or a screen reader.... navigate with the keyboard. |
| 3.6 | Spreadsheet | When saving for the last time, the worksheet with which the users should start is selected. In all worksheets, the cell with which the users should start is also selected (usually A1). | ... use a voice output or a screen reader.... want to find their way around quickly. |
| 3.7 | Spreadsheet | If there is a visual heading and/or instructions on the worksheet, these are located in cell A1. The title corresponds to the worksheet title (in a longer form if necessary). | ... use a voice output or a screen reader.... want to find their way around quickly. |
| 3.8 | Spreadsheet | Fixations are set sensibly so that column and row headings are always visible. | ... need/want structure.... want to find their way around quickly. |
| 4.1 | Table | Tables are labelled as such, have a unique name and a meaningful caption. | ... use a voice output or a screen reader.... want to find their way around quickly.... want to reference the table. |
| 4.2 | Table | The column header is located in the first row and is marked as "Header". Row headings (if available) are in the first column, which is marked as "First column".Column and row headings are meaningful and easy to understand. | ... use a voice output or a screen reader.... want to find their way around quickly. |
| 4.3 | Table | Tables are not nested and do not contain split or merged cells.  | ... use a voice output or a screen reader.... enlarge the table. |
| 4.4 | Table | Complex tables (more than 2 dimensions) are divided into several simple tables. | ... use a voice output or a screen reader.... need/want structure.... find it difficult to understand the content of complex tables. |
| 4.5 | Table | The selected table template provides sufficient contrast for the table contents. This also applies to "banded tables" (rows in different colours).Texts have a contrast ratio to the background of at least 4.5:1. | ... do not perceive all colours clearly.... cannot see well.... read the document in poor lighting conditions (or via the projector). |
| 4.6 | Table | A table has no empty rows or columns. | ... use a voice output or a screen reader. |
| 5.1 | Cell | Text cells only contain short texts. These texts are left-aligned (in contrast to numbers). | ... use a voice output or a screen reader.... have difficulty following the reading flow.... have difficulties recognising/reading the text.... need/want structure. |
| 5.2 | Cell | The contents of cells are arranged in a logical order (from left to right). | ... use a voice output or a screen reader.... need/want structure. |
| 5.3 | Cell | Text cells are located in front of illustrations, diagrams and text fields on a worksheet and are organised in a logical sequence. | ... use a voice output or a screen reader.... need/want structure. |
| 6.1 | Text | The font is sans serif (e.g. Arial, Helvetica) and not too thick or too thin.  | ... have difficulty following the reading flow.... have difficulties recognising/reading the text.... need/want structure. |
| 6.2 | Text  | Emphasis using capital letters, italics, bold, underlining or text effects (colour gradient as colour fill, glow effects, text outline) are used sparingly. | ... have difficulties following the reading flow ... have difficulties recognising/reading the text.... need/want structure. |
| 6.3 | Text (Link) | URL does not appear as plain text. Instead, hyperlinks are inserted, clearly named and easy to understand. | ... can be easily interrupted in the flow of reading.... want to find their way around quickly.... use a voice output or a screen reader. |
| 7.1 | Diagram | A chart is generated from Excel on the basis of a table (data).  | ... use a voice output or a screen reader. |
| 7.2 | Illustration, diagram, text field | Illustrations, diagrams and text fields have a meaningful name. | ... use a voice output or a screen reader.... would like to orientate themselves. |
| 7.3 | Illustration, diagram, grouping | Content-carrying illustrations, diagrams and groupings have a short, concise alternative text.The alternative text of diagrams refers to its table via its table name, contains the diagram type and information on the content.Illustrations and groupings with no substantive meaning are marked as decorative. | ... use a voice output or a screen reader.... cannot see well. |
| 7.4 | Illustration, diagram, grouping | Content-heavy (complex) illustrations, diagrams and groupings of graphic elements are specifically described in the document (as a table, alternative text, other text or link to a website), if necessary with the data contained. | ... use a voice output or a screen reader.... cannot see well.  |
| 7.5 | Illustration | No illustrations are used to represent texts ("font graphics"). Exception: Essential font graphics have a meaningful alternative text. Redundant font graphics are labelled as decorative. | ... use a voice output or a screen reader.... enlarge texts.... want to view texts in high contrast mode. |
| 7.6 | Illustration, diagram | Graphic information-bearing elements (e.g. lines, neighbouring surfaces) have a minimum contrast of 3:1 to the background. | ... do not perceive all colours clearly. ... do not see well.... read the document in poor lighting conditions (or via a projector). |
| 7.7 | Illustration | No animated graphics (GIFs) are used. | ... react sensitively to light stimuli.... are easily distracted. |
| 8.1 | Export/Print | Tables that extend over more than one page have a header and footer on each page. These are free of relevant information.The table header row is repeated on every page ("repeat row"). | ... need/want structures.... find it difficult to concentrate.... would like to orientate themselves in the document. |
| 8.2 | Export/Print | Page breaks in table rows are suppressed for tables. | ... quickly lose their bearings. |

# Sources:

* Hochschule Emden/Leer. Campus Didaktik: [Handreichung für die Erstellung von barrierefreien Bildungsmaterialien. Excel 356.](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj4loPezJX7AhXJ_7sIHZ4ZAnYQFnoECAkQAQ&url=https%3A%2F%2Fwww.hs-emden-leer.de%2Ffileadmin%2Fuser_upload%2Fcd%2FDokumente%2FAnleitungen%2FLeitfaden_Excel.pdf&usg=AOvVaw2xqYQBaw2KBlyHM6nsJLHx) last accessed on 13.03.2023.
* Microsoft: [Gestalten barrierefreier Excel-Dokumente für Personen mit Behinderungen.](https://support.microsoft.com/de-de/office/gestalten-barrierefreier-excel-dokumente-f%C3%BCr-personen-mit-behinderungen-6cc05fc5-1314-48b5-8eb3-683e49b3e593) last accessed 13.03.2023.
* University of Kassel. Servicestelle zur barrierefreien Aufbereitung von Lehrmaterialien: [Leitfaden zur Erstellung barrierearmer Dokumente.](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj4loPezJX7AhXJ_7sIHZ4ZAnYQFnoECEAQAQ&url=https%3A%2F%2Fwww.uni-bamberg.de%2Ffileadmin%2Fbafbs%2FLeitfaden_zur_Erstellung_barierearmer_Dokumente_der_Universitaet_Kasssel.pdf&usg=AOvVaw0iN_GXnWtnWMBb66TIz9EJ) last accessed on 13/03/2023.