# Creating accessible tables[[1]](#footnote-1)

Tables can be one of the most difficult elements to follow for some people with print disability. Readers who cannot see the table must remember information that sighted readers can see at a glance; in other words, which column and row the value in each cell relates to.

People using screen readers use tabs or left and right arrows to navigate the table. The screen reader will read each cell in the order that it is set up (from left to right, row by row). If the table is set up in a logical manner then the information will be organized logically, making the table straightforward to read. If the table is not set up properly, however, the reading order may be jumbled and it will be difficult to understand the contents of the table.

## Set-up

Tables should be supplied as text rather than images, so they can be read by screen readers or in braille. If the table is an image for some reason (for example, it is in a historical photograph) and its contents are relevant to understanding the image, the data must be provided as a full transcript in the image description.

Create tables in MS Word using the Insert > Table function rather than as a series of tab stops. This informs readers who cannot see it that the material is intended to be read as a table. A user can then interpret which row and column intersection each cell refers to as they move down the table. This helps to make the table more accessible.

Tables should have:

* clearly defined headers
* borders
* good color contrast
* adequate space between text and border so that the cell contents do not merge visually with the borders of the table.

Ensure that tables are not overcrowded, to avoid decreasing readability and usability. A lack of space makes it difficult for readers to differentiate text from borders.

## Columns and rows

Use columns and rows appropriately:

* Do not create tables that have only one column. This is confusing for users of screen readers, as they can’t find the second column they expect of a table. If the material is only a single column wide, it should be treated as a list instead.
* If a table has only 2 columns, consider whether this could be redesigned as a list.
* Try to keep the number of columns in a table to a minimum and avoid having more columns than rows. This will also help keep the table on a single braille page when it is transcribed, making it easier to track.
* Ensure that all columns have headings, even if the heading seems obvious and could be inferred from the table caption. Headings help readers track what the data in any given cell refers to, so they should never be omitted. Rows should also have headings if there is a row cell that is functioning as a label for the entire row. Open the Table Design tool in MS Word to create column or row headings, using the check boxes to mark them as “Header row.” This will distinguish the headings from table data cells.
* Do not merge columns or rows. Merged elements are difficult to comprehend for users of screen readers.

Correct alignment of values aids visual interpretation:

* Text should always be left-aligned, unless it is a column of single words.
* Numbers should generally be right-aligned or aligned on the decimal place.
* Try to keep the same number of decimal places in a column (add extra zeros in some numbers if necessary to achieve this).

## Table cells

Do not leave empty cells. A reader listening to the information may find an empty cell confusing, as they don’t know whether they missed the data because it’s not there or because they accidentally skipped it. If there are no values for a cell, signify this by using a zero or a convention for “null data” for numbers, or “n.a.” or “not applicable” for text.

If cells are left deliberately empty, such as in a textbook where students are expected to add the missing values, explain this in the body text or table caption.

A table with empty cells and explanatory text

The table below has missing values. Solve the equation using the values provided and complete the table.

| Equation | $$x$$ | $$y$$ | $$z$$ |
| --- | --- | --- | --- |
| $$x+y=z$$ | blank | 3 | 5 |
| $$x-y=z$$ | 8 | blank | 8 |
| $$x+z-y=x$$ | blank | 4 | Blank |

## Large tables

Avoid creating large, complex tables wherever possible, particularly if the information is for a general readership or educational use. If the table is too big, the braille transcription of it will not fit on one page, making the table much harder to read.

If the table is a large one, consider whether it can be broken up into simpler, smaller tables covering individual aspects of the topic, rather than condensing all the information into one big table. This is an improvement that can benefit all readers, not just people with print disability, as it makes the information more digestible in the same way that having shorter paragraphs makes the text more accessible.

Breaking up a table also removes the problem of having multiple table headings. The headings can sit outside the table instead, structured either as headings in the main heading hierarchy or as table captions. This allows the headings to be picked up by navigational aids in a way that they will not be if they are embedded in the table.

Example of a complex table

Olympic gold medallists in all men’s freestyle swimming events between 2004 and 2016.

| Distance | 2004 | 2008 | 2012 | 2016 |
| --- | --- | --- | --- | --- |
| blank | Gold medallist | Time | Gold medallist | Time | Gold medallist | Time | Gold medallist | Time |
| 50 m | Gary Hall (US) | 21.93 | César Cielo (Braz) | 21.30 | Florent Manaudou (Fra) | 21.34 | Anthony Ervin (US) | 21.40 |
| 100 m | Pieter van den Hoogenband (Neth) | 48.17 | Alain Bernard (Fra) | 47.21 | Nathan Adrian (US) | 47.52 | Kyle Chalmers (Aus) | 47.58 |
| 200 m | Ian Thorpe (Aus) | 1:44.71 | Michael Phelps (US) | 1:42.96 | Yannick Agnel (Fra) | 1:43.14 | Sun Yang (Chi) | 1:44.65 |
| 400 m | Ian Thorpe (Aus) | 3:43.10 | Park Tae-hwan (S Kor) | 3:41.86 | Sun Yang (Chi) | 3:40.14 | Mack Horton (Aus) | 3:41.55 |
| 1500 m | Grant Hackett (Aus) | 14:43.40 | Oussama Mellouli (Tun) | 14:40.84 | Sun Yang (Chi) | 14:31.02 | Gregorio Paltrinieri (Ital) | 14:34.57 |

However, it can easily be broken into multiple, simpler tables. These are much more straightforward to read.

Breakdown of the complex table into smaller tables (Tables 1 to 3) for the first 3 distances shown in Figure 5.2

1. Olympic gold medallists in all men’s 50-metre freestyle swimming events between 2004 and 2016

| Year | Gold medalist | Country | Time |
| --- | --- | --- | --- |
| 2004 | Gary Hall | United States | 21.93 seconds |
| 2008 | César Cielo | Brazil | 21.30 seconds |
| 2012 | Florent Manaudou | France | 21.34 seconds |
| 2016 | Anthony Ervin | United States | 21.40 seconds |

1. Olympic gold medalists in all men’s 100-metre freestyle swimming events between 2004 and 2016

| Year | Gold medalist | Country | Time |
| --- | --- | --- | --- |
| 2004 | Pieter van den Hoogenband | Netherlands | 48.17 seconds |
| 2008 | Alain Bernard | France | 47.21 seconds |
| 2012 | Nathan Adrian | United States | 47.52 seconds |
| 2016 | Kyle Chalmers  | Australia | 47.58 seconds |

1. Table 3. Olympic gold medalists in all men’s 200-metre freestyle swimming events between 2004 and 2016

| Year | Gold medalist | Country | Time |
| --- | --- | --- | --- |
| 2004 | Ian Thorpe  | Australia | 1 minute 44.71 seconds |
| 2008 | Michael Phelps | United States | 1 minute 42.96 seconds |
| 2012 | Yannick Agnel | France | 1 minute 43.14 seconds |
| 2016 | Sun Yang | China | 1 minute 44.65 seconds |

A sample description for a table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Runner | Race 1 | Race 2 | Race 3 | Average | Rank |
| Runner 1 | 79 s | 64 s | 71 s | 71.333 s | 3 |
| Runner 2 | 73 s | 65 s | 68 s | 68.667 s | 1 |
| Runner 3 | 63 s | 67 s | 77 s | 69.000 s | 2 |
| Runner 4 | 68 s | 72 s | 81 s | 73.667 s | 4 |

Caption: The times of the top 4 runners (in seconds) in the sprint event.

Alt text: A table shows the results of 3 races for 4 runners, their average times and their rank. The average times range from approximately 68.7 to 73.7 seconds. Runner 2 is ranked first and Runner 4 last.

Descriptions can be added to text tables in MS Word by selecting the table, “Table properties” and then “Alt text.” If there are any images in the table, don’t forget to describe them too.

Further comparison between designs for a table

1. A table of data that is overcrowded and difficult to read.

| ID | Vendor | Item | SKU |  Cost |  RRP | Notes |
| --- | --- | --- | --- | --- | --- | --- |
| 10234 | Southpines | Light to Dark Shades | L2DS221655 |  $5.43 |  $19.17 | Do not accept returns |
| 10235 | Southpines | Dark to Light Shades | D2LS221655L |  $5.43 |  $19.17 | Do not accept returns |
| 10236 | Marbles | Sea Shanty and Shack | SSS2222 | $6,000.00 | $23,400,000.00 | These sales must all go through HQ |
| 10237 | Southpines | Tyre Runner and Rear Bar | TRRB2230 |  $55.00 |  $1,966.25 | Made to order, pls remind customer |
| 10238 | Captain Chips | Frenchies Playdough Frier | FPF22987 |  $12.89 |  $108.00 | Have met Australian Safety standard |
| 10239 | Southpines | Frenchies Playdough Master Frier | FPMF22987A |  $15.89 |  $164.12 | Have met Australian Safety standard |
| 10240 | Captain Chips | Curly Deep Fry | CDF22988 |  $12.39 |  $99.78 | Have met Australian Safety standard |
| 10241 | Squall | Cape Cod Fishing Line | CCFL222002 |  $16.10 |  $168.49 | Only a limited supply left, switch off |
| 10242 | Squall | Cape Cod Hook Set | CCHS222003 |  $12.55 |  $102.38 | - |
| 10243 | Squall | Cape Cod Reel'm in Set | CCRMIS222004 | $550.00 | $196,625.00 | Must include the Cheroke with this |
| 10244 | Southpines | Beach Towel and Bucket | BTB226653 |  $8.80 |  $50.34 | Switch picture monthly on website |
| 10245 | Southpines | Beach Towel and Trowel | BTT226654 |  $8.04 |  $42.02 | Switch picture monthly on website |

1. The same table with increased white space and alternating rows of soft color behind the text, which makes the data much easier to read.

| ID | Vendor | Item | SKU | Cost | RRP | Notes |
| --- | --- | --- | --- | --- | --- | --- |
| 10234 | Southpines | Light to Dark Shades | L2DS221655 |  $5.43 |  $19.17 | Do not accept returns |
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If you have further concerns or questions about formatting your tables, please contact manuscript editorial or your acquisitions editor for guidance.

1. This guide is adapted from Julie Ganner, Agata Mrva-Montoya, Maryanne Park, and Kayt Duncan, *Books without Barriers* (Ultimo: Australian Publishers Association, 2023). [↑](#footnote-ref-1)