

Sight Loss
Friendly Church:
Focus on...
Braille



from TORCH TRUST

Not all vision impaired people read braille; but for those who do, it's a vital lifeline.

Louis Braille





World Braille Day is celebrated on the birthday of Louis Braille (4 January), the inventor of the braille code.

Louis was born in 1809 and blinded in early childhood due to an accident in his father's workshop. He developed the braille code from a tactile reading and writing system used in the military. He was also a church organist, and developed the braille music code to support him in this profession.

Prior to braille, blind people generally either did not read at all or read slowly from raised print letters.

What is Braille?

Braille is a series of raised dots which enables blind people to read and write.

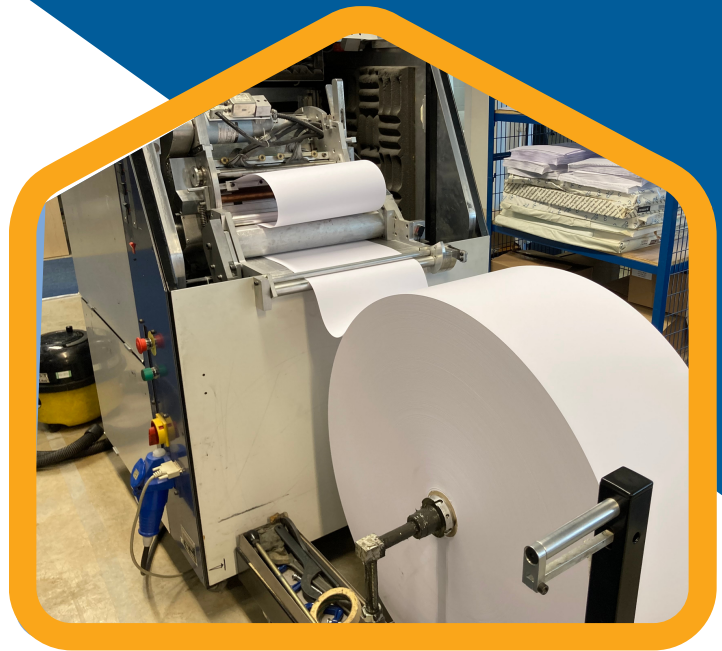
It is divided into cells, each cell having six dots arranged like this . A braille cell can represent a letter e.g. T , symbol (such as punctuation) e.g. full stop , or a group of letters (known as a contraction) e.g. 'and' . Certain combinations of dots change the meaning of the cells that follow, e.g. to indicate that a letter is capitalised or to represent a number, and contractions can be comprised of more than one cell. Thus, although there are only 63 unique combinations of dots per cell (excluding the unusable totally blank cell), there are 180 contractions.

The size of a braille cell is roughly equivalent to the size of a print letter at 24pt.

How Braille is Produced

Braille is traditionally embossed onto relatively thick paper. At the most basic level, paper is inserted into a frame which guides a stylus, and dots are punched down into the paper one at a time.

Colloquially known as a "slate and stylus", this setup is very cheap and frames are available in a wide variety of sizes, from small 3×5" pocket frames to full page A4 frames.



More common in the UK, however, is the Perkins Braille, first manufactured in 1951. This is akin to a typewriter, with six keys plus a space bar, backspace and new line key. Dots are punched upwards one cell at a time. This has two distinct advantages, namely that it is much quicker to braille on a Perkins and it is easier to read what you are brailleing. The major disadvantage is that, unlike with a frame, it is not possible to braille on both sides of the page.

With practice, using a Perkins-style keyboard, braille can be input at roughly the same speed as a person can touch type. However, braille embossers make braille production even quicker. Entry level embossers can emboss a sheet of double-sided braille in roughly 30 seconds, and commercial grade embossers can emboss upwards of 600 pages per hour (at least double the speed of entry level embossers). In both cases, they connect to a computer via a standard USB port or over a network, and specialist software is used to convert documents in standard formats.



Practicalities of Paper Braille

Not only is braille paper thicker than standard paper, but it also tends to be a little wider than A4 to account for the size of braille cells. Nonetheless, on average, one side of print will typically occupy 2-2.5 sides of braille.

Furthermore, braille tends to become unwieldy if more than about 50 sheets (100 pages double-sided) are bound together. Thus, books tend to be divided into multiple braille "volumes".

Harry Potter and the Philosopher's Stone, for example, is about 220 pages in print. In braille, this equates to somewhere between 440 and 550 pages, and the book is therefore produced in five volumes. It is especially important to understand this because often it is not practical for a braille reader to carry every volume of a book. So if, for example, you want to share just a passage of a book let the braille reader know in advance so that only the appropriate volumes need to be brought.

Signage and Labelling

With the right tools, it is possible to emboss braille into many hard surfaces, such as the plastic and metal used for signage. However, this cannot usually be done domestically and will instead need to be ordered at the point of commissioning the signage.

If braille needs to be added retrospectively, sheets of clear self-adhesive plastic can be purchased and used with braille production equipment in place of paper. Braille labels and signs can be produced on this and attached to the existing print sign.

Alternatively, 9mm or 12mm labelling tape can be inserted into a specially adapted labelling gun which will produce braille labels, or an electronic braille labeller can be purchased.

Braille Technology

Braille can increasingly be used without paper, most commonly via a refreshable braille display. This is a single line of braille cells made from small metal or plastic pins, which are individually raised and lowered based on electronic signals. These displays often have a Perkins-style keyboard for braille input and can either be connected to a computer/smartphone/tablet or used stand-alone. More advanced versions of these devices, called notetakers, are fractionally larger and contain more advanced facilities such as email, web browsing and calendar/contact syncing.

Using a combination of a braille display in conjunction with an iPhone running the Kindle app, for example, a braille reader has instantaneous access to literally hundreds of thousands of books via a device which is smaller than a laptop computer, and is able to navigate through these books much more efficiently than a paper copy.

That said, the fact that only one line can be displayed at a time dramatically alters the reading experience, so some readers may prefer to use paper.

Limitations of Braille

Other than its bulk, there are very few limitations which cannot be overcome. However, it should be noted that braille can generally only be written in one size and it cannot be coloured. Special signs exist in braille to show where underlining, bold and italicising occur in print, but they are used sparingly as often the purpose is to define, e.g. a heading, and other devices can be used in braille to achieve this. These include leaving blank lines and centring the text.

It is also very difficult to include illustrations, charts, graphs, diagrams etc in braille books. Techniques do exist for producing tactile images, but they are generally at a very low resolution and, in order to be clearly understood, even the most simple of images will occupy at least half a page. In practice, images are often produced and bound separately, with cross-references in the main text to the appropriate page of the image volume.

Producing Your Own Braille

As discussed above, using an embosser and some translation software, it is possible to produce most formats of computer file in braille. In general, editable formats such as Microsoft Word translate better than read-only formats such as PDF.

For the best results, documents should be "styled" correctly, e.g. headings should be styled as headings. See our guide on producing accessible documents for more information.





Obtaining Braille Resources

In the UK, the major suppliers of braille books to purchase or borrow are:

- Torch Trust
- RNIB
- Scottish Braille Press

If you need to commission braille resources, such as newsletters or orders of service, you could additionally try:

- www.pia.co.uk/en/services/braille
- www.allformats.org.uk
- www.a2i.co.uk/
- www.vstrading.co.uk/
- www.connectodesign.co.uk/