

How to Make Tactile Books



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All children need picture books

Book illustrations are very important to small children. Looking at the pictures, the child learns new words and concepts and gains information about the surrounding world. Tactile, three-dimensional pictures give the same experience to children with visual and multiple disabilities.

Tactile books are colourful picture books which contain pictures for a child to touch. They are designed for children with visual and multiple disabilities of all ages, young people and adults. Bright colours and clear colour contrasts benefit a reader with low vision. Different materials also stimulate other senses – touch, hearing, even smell. In addition to pictures, the books have text in both ordinary letters and Braille. There can also be a separate text or audio supplement.

A visually impaired child who has grown familiar with tactile pictures from an early age is better equipped to examine relief pictures and diagrams in textbooks. The child might need assistance in interpreting the images, but new knowledge and experience found through tactile pictures develops with each picture and each book.

I wish inspiration, success and delight to everyone who decides to start making tactile picture books.

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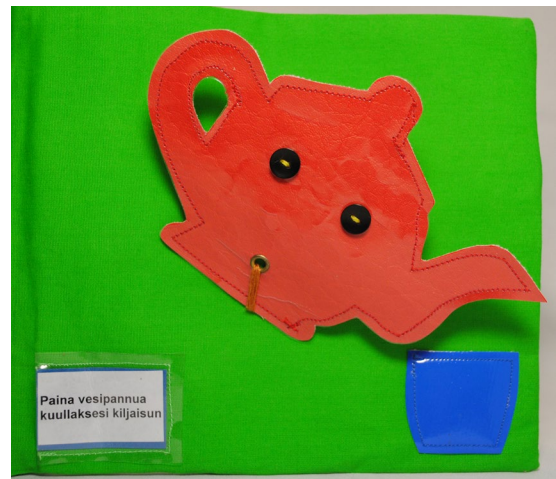
The right book at the right age

Whether children are sighted or visually impaired, their age plays a role in what kind of books they find interesting. It is advisable to consider both the reader's age and stage of development when planning the theme of the book, the length of the text, the amount and type of pictures and other details. The layout of the book should be clear and colourful.

First books

First books for small children are picture books with little or no text. Fabric is the best material for these books. They can even consist entirely of soft pages. The pictures need not be large, as the reader's hands are tiny. One clear picture per page is sufficient with the name of the pictured object in text.

The pictures in these first books do not necessarily have to depict anything in particular. They can for example provide diverse stimuli for the senses and inspire and activate hand-eye coordination. Clear colour contrasts are important. The books may contain a variety of surfaces and materials with different shapes and feel. Familiar objects may also be attached to the books.



The pictures in a first book are simple. Underneath the teapot, there is a button which squeaks when pressed.

Picture books for small children

As the child develops and starts to speak, there should be more text in the books. Illustrations should still remain simple but as varied as possible: different surfaces, shapes and objects on various backgrounds. A couple of pictures per page are enough. The books may also contain sounds or smells.

The books can describe the child's everyday life. Some pictures can depict unfamiliar or abstract things that the child may discuss with an adult. This helps the child learn new things and concepts.

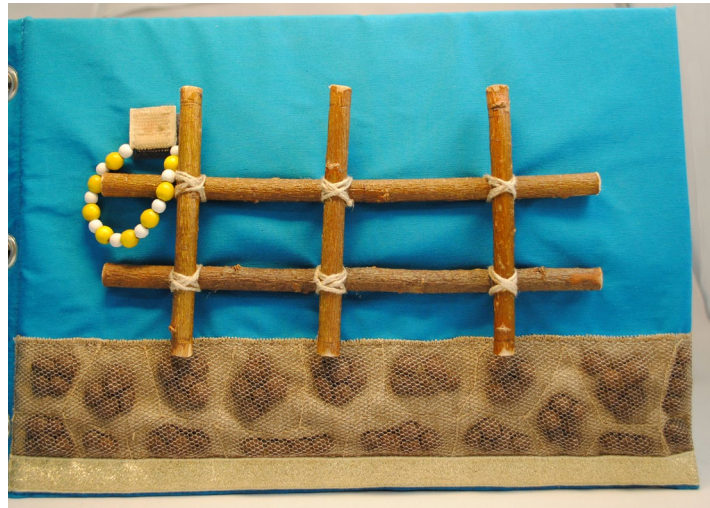


Books for small children can contain a variety of items which guide them to test how they function.

Books for preschool and school children

Children approaching preschool age are able to read and listen to longer fairy tales and stories. They are also interested in books with information and small tasks. There may be more complex pictures and smaller details in these books. However, the books should not be too heavy or difficult to handle as the readers are still small.

Tactile books for schoolchildren may contain even more themes: they can depict adventures, hobbies, feelings or everyday life, for example family life or going to school. Books that require and develop logical thinking are also popular.



Books for older children can include a wider variety of pictures and stories. Different textures and materials make the pictures more illustrative. The pictures can have detachable parts such as the bracelet in the picture above. The detachable items in this book are a part of the story: the reader collects the items from each picture while reading the story and puts them back in their places at the end.

Shape and size

There are usually no more than ten pages in a tactile book, otherwise the book gets too thick. The picture is always on the right and the text on the left-hand side of the spread.

Tactile books are sent to lenders in document cases. The book must not measure more than 30 x 30 cm to fit into the mailing cases used by Celia. A4 size (about 29 x 21 cm) is recommended, either vertically or horizontally. The first books for small children should be smaller, about 20 x 20 cm, and should not be heavy.

Theme and text

Coming up with the theme and text

The text of a tactile book can be either self-created or borrowed from others. A printed picture book can be used as a source. When a printed book is turned into a tactile book, the illustrations must often be reduced in number and simplified. The original author and name of the book must always be mentioned. If the tactile books are made to be sold, attention must be paid to copyright issues: publication permission is required from the copyright holder of the original book. One's own texts and stories based on old folk tales can be freely published.

All kinds of poems, songs and rhymes develop the child's memory in an entertaining way. Folk tales and classic fairy tales are fun to read. They offer food for thought, as well as lots of humour. When choosing a topic for the book it may be wise to pick one that appeal to both boys and girls.

The tactile book should be planned to suit the child's age and stage of development. Books are needed for readers of different ages and levels of development. In other words, the themes may vary from simple descriptions of items and fairytales to everyday life and the large questions in life.

Text length and font

If the tactile book is based on an existing fairytale or book, the text often needs to be shortened. A longer text can also be included as a separate supplement to the book, but ideally the text should fit on the left side of the picture page (see picture on page 10).

The text should preferably be typed, with a minimum 16 point font size. If you write the text by hand, use a textile marker. Celia will prepare a Braille version of the text if the book is included in the library collection.

In addition to text, a recording with sound effects, a narration of the book or songs can also be included.

Front and back cover

The title of the book is on the front cover. The name of the book's creator can also be included if space permits. Otherwise, it should be on the back cover.

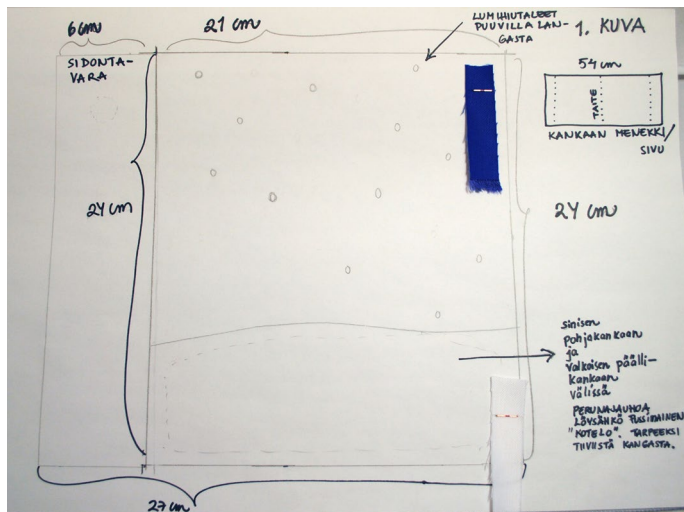


The title of the book is on the front cover. The book creator's name can also be on the front cover if it fits. Celia prepares the Braille text.

Illustrations

Planning and sketching

Always plan the book carefully before starting! This makes it easier to prepare the pictures and ensures that the finished book meets the readers' needs. Always begin by sketching the pictures. Prepare a separate sketch for each page. The sketches should include plans for textiles and other materials. Think about the colour and texture contrasts between the picture and the background, too. Remember to leave a sufficient binding margin of about 4–5 cm (in addition to the area allocated for the seam) on the left side of the picture.



Make a sketch of every picture, planning the elements and the materials to be used (if the same materials are used on several pages, they do not need to be included in every sketch). Remember to mark the area for the binding and seam so that you don't forget them when you prepare the book! The surface material needed for one page is two times the width of the page because the the fabric is folded from the outer edge of the page to form the surface of the text page on the reverse side.



A finished picture page prepared according to the sketch on the next page.

Detail: less is more

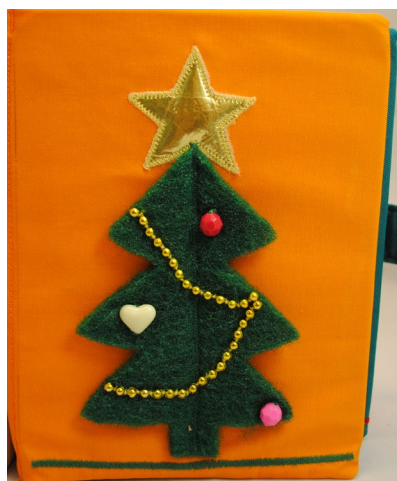
The relief pictures of a tactile book usually include far fewer details than illustrations that are meant to be seen. When planning the illustrations, begin by choosing pictures that are essential to the story and can be made into tactile illustrations. It is important that the pictures match what is written in the book; the pictures should only contain elements which are mentioned in the text. For example, if the text does not mention that the sun is shining, there shouldn't be a sun in the picture as this would confuse the reader. Not everything needs to be in the picture, only the most important things.



Colour contrasts

Use strong colour contrasts, such as dark colours on a light-coloured background and vice versa. Clear colours and good colour contrasts are essential for children with partial sight. Colours are also important for parents describing the pictures: they bring adjectives into the conversation which, in turn, enriches the child's vocabulary.

Primary colours usually bring out the picture better than tertiary colours, therefore earth tones are not recommended. In addition, single-coloured textiles and materials make the picture easier to grasp than multicoloured materials.



The texture and colour of the page's base textile, which is the picture's background, should be easy to distinguish from the thing depicted in the picture. The picture on the side demonstrates the use of good contrasts: it is easy to make out the dark, wiry spruce from the clear, light background fabric. Another picture page is also slightly visible, made with a background fabric of a different colour.



An example of a poor choice of colour and material. A reader with low vision will have difficulties in discerning the multicoloured teddy bear from the multicoloured background, and the image is unclear. The light and tertiary colours do not create strong contrasts which makes the picture even more difficult to read. Select single-coloured, bright background fabrics. The picture was prepared specifically to illustrate poor contrasts. It has not been taken from a book in the Celia collection.

Picture structure

Make a different picture for each page. Usually between five and ten picture pages are enough to tell the story. Pictures are at their best when they are simple: one or two characters per page are enough. The most user-friendly angle depicts the characters directly from the front or the side. It is better to use complete characters than partial ones. Tactile pictures involving perspective are not advisable, as they are difficult to interpret.

To make animal and human characters more recognisable, all limbs as well as both eyes, ears, wings and the tail must be visible. Size ratio must reflect the characters: the creature that is biggest in real life must also be biggest in the book. The easiest way is to make the biggest animal first, for example, and then adjust the sizes of the other animals accordingly.

At times it is necessary to slightly alter reality in order to make the picture more understandable. It can be necessary to enlarge some objects and shrink others. Some features might have to be enhanced in an unrealistic fashion: for example, the stripes of a tiger or a zebra or the dots on a ladybird can be made distinguishable by touch by making them raised or from a different material. Ready-made animals, possibly equipped with sound, may also be used in the illustrations.



Characters should be depicted directly from the front or from the side. Even when a character is shown from the side, it is recommended that you depict the head from the front so that both eyes and ears are visible. All limbs must be clearly visible so that the image is as lifelike as possible.

Thick elements should be placed in different places in the book, if possible, to ensure that the thickness of the book is even.

Numbering the pages

Page numbers can be indicated with beads or buttons. This makes it easier to assemble the book after the pages have been separated from each other. Page numbers are not needed if the book has a fixed binding. Page numbers should always be placed in the top right-hand corner of the picture page, far enough away from the characters and other elements in the picture. If you are unsure, do not put page numbers in your book.

Page numbers should always be in the top right-hand corner of the picture page. If the pages cannot be detached from the book, page numbers are not necessary. Page numbers can be marked with beads, for example. There must be sufficient space between the numbering and the actual picture so as not to confuse the two.



Materials

Safety and durability first

A tactile book must always be safe for the child. The books must not contain parts that may come loose or break easily. Small children often put the books in their mouths; therefore the pictures must not be toxic or contain any small parts that may come loose.

Any objects that are meant to be loose or moved around should be attached with a strong ribbon to prevent them from getting lost. The ribbon must not be more than 20 cm long so as not to get caught around the child's neck. The fixing point of the ribbon should be tested, as the ribbon should be long enough to reach every page of the book, if necessary. Objects can also be held in place by a piece of Velcro or a small belt closed with a snap button.

Avoid toxic materials and glues and choose surface materials that are easy to clean. If the book is to be in a library loans collection, it must withstand vacuuming and wiping in between loans.

Select your picture materials with imagination and creativity. The more tactile experiences the book offers, the more it interests the reader. The book's creator should also study the book materials and their features by touch.



If there are detachable elements in the picture, they must be attached to the page with string. The elf in the picture has been attached to the surface material with a strip of Velcro to ensure that she stays inside book when the book is not being read.

The ribbon must not be over 20 cm in length so as not to get caught around the child's neck! Finding a suitable fixing point for the ribbon should ensure that this ribbon is long enough even when the item attached to it should be taken from one page to another.

Choose lifelike materials

When choosing materials it is important to remember that the illustrations are read by hand and sometimes even by mouth. Stain-resistant single-coloured textiles such as Wertex or Teflon-coated fabric are good choices for page surfaces as they offer a firm base for attaching the pictures. Choose the colour of the surface material according to the illustrations to create colour contrasts. Every page does not need to be in the same colour.

Good surface contrasts and lifelike materials are also important for the sake of credibility: a mitten should not be made of silk or a rubber boot from terry cloth. For stuffing or padding self-made pictures, use hygienic materials. Even though hard materials are durable and therefore recommended, do not use any sharp or scratchy materials in the books as they may cause injuries.

Tactile illustrations that are meant for older children may contain parts that enhance fine motor skills, such as zips, press studs, buttons, Velcro, pockets or wheels.



In addition to colours, pay attention to texture contrasts and choose lifelike materials. Frayed jute has been used for the snowman's broom. It feels different from the soft "snow" and resembles a real broom.

Music and sounds

Sounds, such as rattling, tinkling, squeaking, sizzling, crunching and crackling make tactile books even more appealing. Not every page needs to make a sound, but the book should nevertheless contain some source of sound, such as a small jingle bell, for example.

Even ordinary ingredients can create interesting sounds: for example, potato starch inside a piece of plastic sounds like snow and corn grains sound like waves under a piece of fabric glued onto a cardboard surface. Craft shops sell flat toy squeaker inserts that can be hidden inside animal characters to make them squeak. Some crunched-up paper and plastic and the packaging used inside chocolate boxes can make interesting rustling sounds.



Even small musical boxes can be used in tactile books, however battery-operated devices should be avoided.

Smells

Different scents or spices may be used in tactile illustrations. Some materials also have their own characteristic smell. But remember that strong scents may cause allergic reactions. Scents and smells also tend to fade over time.

Binding the pages

Tactile books are usually bound with sail rings or string which allows the book to be taken apart for reading, cleaning and repair. If necessary, Celia can attach the sail rings to the book if it will be included in the library collection. In this case, leave a sufficient binding margin on the left side of the picture page.

Book covers can be equipped with a fastener such as a strip of Velcro or buttons. This makes the book sturdier and protects the pictures.



A finished page without the holes required for binding. If necessary, the holes and the binding are made by Celia. There is a wide binding margin on the left-hand side of the picture.

Making the pages

Measure the pages of the book from the surface material, including area for the seam and margin. Then cut the fabric and use pins to mark the area for the seam on the fabric's reverse side.

After sewing the top and bottom edges, take the measurements for the cardboard to be inserted between the fabrics.

If you use cardboard, cover it with self-adhesive plastic to prevent it from bending and getting wet. Alternatively, you can use a plastic tablemat. Round off any sharp corners.



Large characters and items are sewn on the picture page only at this point. The pictures must be sewn very firmly, as young readers sometimes handle the pictures roughly. An illustration may also be attached only partially or left loose. For example, the head or ears of an animal can be left loose. A string (20 cm in length maximum) should be attached to loose items and elements which the readers can hold. Put a strip of Velcro on the item, too, to ensure that it does not hang down between the pages.

For the cover page, finish the illustrations and the text before sewing the page and inserting the cardboard. The name of the book and the book creator are more important than a tactile cover picture.

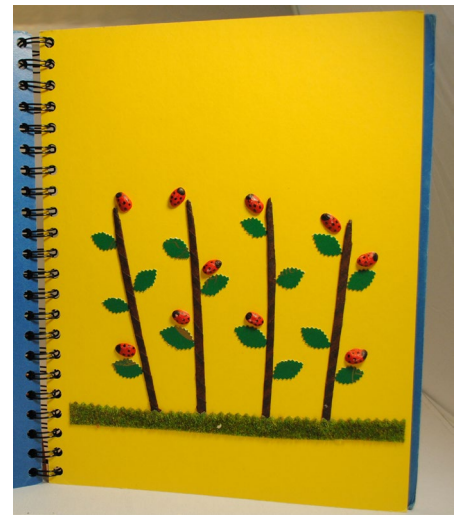
After inserting the cardboard sheets inside the pages, sew the area allocated for binding. The fabric tactile book is now ready for binding.

Collage tactile books made of cardboard

Cardboard can also be used as surface material for the pages of a tactile book. Cardboard books with unique tactile illustrations are best suited for preschool aged children up, as pictures glued onto cardboard are flatter and more difficult to interpret than pictures in fabric books. Nevertheless, even these books can contain things that can be grasped with small fingers. For example, animal ears and tails can be attached from the base with the other end left loose. Likewise, the ends of a scarf may be left for tying or a door to be opened and closed. With the help of a fastener, the hands of a clock may become movable. Many objects, such as windmills, may be made into functioning, flat miniature models.

Even with cardboard books it is advisable to attach all possible parts by sewing and only then glue the finished illustrations to the pages.

For tactile books with cardboard pages, it is best to use spiral binding. Celia can take care of the spiral binding if the book will be included in the library collection. Remember to leave a margin of at least two centimetres on the left side of the picture for spiral binding!



A picture page from a completed collage book. For collage books with cardboard pages, it is best to use spiral binding which can be prepared at Celia.

Images (Book title / Book's creator)

- p. 4 Loruja taaperoille (Rhymes for toddlers) / Lynette Rudman
- p. 4 Vastakohtia (Opposites) / Anneli Salo
- p. 5 Lassen koulumatka (Lasse's school route) / Heidi Erjomaa
- p. 6 Pieni ankanpoikanen (Small duckling) / Kaija Jansson and Päivikki Kokkonen
- p. 7 Celia's example book
- p. 8 Rukkanen (Mitten) / Malmin Martat (Malmi's Marthas)
- p. 8 Maijan joulu (Maija's Christmas) / Seija Räikkä
- p. 8 Celia's example book
- p. 9 Onkiretki (Fishing trip) / Anneli Salo
- p. 9 Joulu (Christmas) / Marjatta Tuura
- p. 10 Tiina tonttutyttö (Tiina the elf girl) / Marjatta Tuura
- p. 11 Celia's example book
- p. 11 Joulun odotus (Waiting for Christmas) / Seija Räikkä
- p. 12 Celia's example book
- p. 13 Ursula rannalla (Ursula on the beach) / Liisa Hietaketo-Vieno and Anneli Salo
- Front cover: Milla Aarnio

BOOK CREATOR'S CHECKLIST

When you're creating a book, check the following:

- **durable and non-toxic materials**
- **good colour contrasts**
- **clear material contrasts**
- **text length and picture complexity of the same level**
- **ribbon attachments for any detachable items in the book**
- **for canvas books, ten picture pages at the most**
- **thick pictures placed in different places on different pages**